Markku Sotarauta & Nina Suvinen

Towards Generative Place Leadership

**Policy Platforms and Innovation Ecosystems
in Promotion of Green Growth**

Faculty of Management and Business
Tampere University

1   Introduction

Place leadership has emerged during the last 15–20 years to add an analytical leverage in the efforts to explore the secrets of regional development. One of the main ambitions in this line of study is to better understand agency of change at various subnational levels (Beer & Clower, 2014; Collinge & Gibney, 2010; Sotarauta et al., 2017). In its own way, place leadership aims to answer a number of research questions embedded in regional development studies. These include, for example, how to choose priorities for regional development in a multi-actor and multi-purpose context; how to value regional development from several, potentially contrasting perspectives; how to collaborate for regional development while simultaneously appreciating the ambitions and objectives of individual actors (how to combine collective intentions with individual intentions and vice versa) and how to see beyond existing structures to identify the ways human interaction may be mobilised and coordinated, and by whom. By posing questions such as these, place leadership literature acknowledges the notoriously complex nature of collective action in a multi-vision, multi-actor and multi-power context, and does not assume that place leaders would lead transformational processes similarly to leaders in individual organisations (Beer & Clower, 2014).

Place leaders work to bring different actors together, and in doing so, they need to work across geographical, governance, professional and disciplinary boundaries (Ayres, Flinders & Sandford, 2017). By definition, place leadership is concerned with mobilising, directing, coordinating and facilitating interorganisational development strategies and practices across many institutional and organisational boundaries (Collinge & Gibney, 2010). A rapidly emerging body of case studies accompanied with a few cross-regional comparisons demonstrate place leadership exists as a specific form of leadership (e.g. Beer et al., 2018; Hu & Hassink, 2017; Karlsen & Larrea, 2012; Norman, 2013; Sotarauta & Beer 2017; Sydow, Lerch, Huxham & Hibbert, 2011). Place leadership studies are interested not only in what leadership is like but also in the context it is embedded in and its purpose. As Nicholds et al. (2017) point out, actors may take place leadership roles in proper conditions, in which they work to navigate in the midst of competing interests and ambitions. Importantly, place leadership is conditioned not only by the local and regional characteristics but also by the issues under radar (Beer et al., 2018).

With climate change advancing and the challenge of sustainable development mounting, there is an increasing need to enhance place leadership towards these ends. In this article, we scrutinise green growth from a place leadership perspective. In its summary for policy-makers (Green Growth, 2011), the OECD defines green growth as follows: "Green growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. To do this, it must catalyse investment and innovation which will underpin sustained growth and give rise to new economic opportunities". According to Jänicke (2012), we should not forget the need to continuously pursue growth in all possible ways by inventing and taking up resource-saving technologies and operational models, and simultaneously banishing environmentally harmful

products and processes into the pages of history books (Jänicke, 2012). We need green (clean) industries that "develop and sell products, solutions or technologies that improve the environment, either directly or through a more efficient utilization or resources" (FORA 2009, cited in Grillitsch and Hansen 2018). Green growth may have highly varying characteristics as shown in a collection introducing 50 Nordic green growth cases (Mikkola et al., 2016).

Of course, there are also critical voices arguing that green growth is not the recipe to tackle climate change (Hickel, 2018). In this article, we are not in a position to argue for or against the green growth agenda. We take it as a point of departure and aim to see how it is strived for at a regional level to learn about place leadership. If green growth were not the solution, we believe the lessons learnt in this context would also be applicable in another context and for other purposes. Ultimately, it all boils down to mobilising collective action and working across institutional and organisational divides.

In this paper, we explore how place leadership aims at producing transformational changes in the context of green growth. We ask what the main leadership strategies are that key actors pursue to gain leverage in their efforts to boost green growth. We use the well-known categories of transactional and transformational leadership (Bass, 1999; Burns, 1978), and also follow Dawley (2014) and MacKinnon et al. (2019), by focusing on institutional path creation (for green growth), which is about "releasing the future potential beneath existing institutions and institutionalising the released potential" (Sotarauta & Suvinen, 2018, p. 86). The following are the main research questions: (a) What do place leaders do to boost green institutional paths? (b) How do they aim to amplify their limited power base? and (c) How do they amplify their ability to influence both place-based and placeless agents? We scrutinise these questions in the context of green path development in two Finnish regions (the Tampere region and Central Finland, see section 4 for more detail).

The paper contributes, in particular, to the literature on place leadership but also to that on green growth and related path development. The article first discusses place leadership and changing policy context before moving on to introduce the two Finnish cases, the methodology and the data. After that, it introduces the basic premises of green path development, in general, and in the Finnish context, and it then presents empirical observations before discussing and concluding with the main observations of the study at hand.

2   The Quest for Transformational Leadership

Whether a region is peripheral or central, innovative or less so, successful efforts to construct and/or improve local/regional conditions for green growth depend, to varying degrees, on the local capacity to mobilise collective action, and this calls for well-established place leadership. Following Grint (2010), the main premise is that "the development of place is not the rolling-out of logical (technical) plans from the centre but the consequence of local agents (leaders) shaping the decisions and interpretations of what is, and is not, possible" (p. 366). Applying the OECD (2015) report on local economic leadership, place leadership is about shaping and influencing

activities over which leaders have limited formal authority, but which affect regional development broadly. Studies focusing on place leadership have endeavoured to understand the networked processes of transformation instead of solely focusing on structures determining regional economic development (Beer, forth).

Hambleton (2014) emphasises the importance of place-based leadership, as the significance of placeless leadership, which is not interested in considering its impact on a place, has been gaining influence in the global economy. Hambleton's insight highlights the need to identify novel ways to mobilise a wide spectrum of decision-makers as well as resource and knowledge holders to work for a place. The challenge of mobilising core actors is more often than not beyond place leaders' authorisation and sphere of direct influence. Indeed, with regional development being a multi-actor context, no actor alone has the power or resources to change the system; the role of an individual leader is limited, but the importance of leadership has become more and more recognised (Grint, 2010).

Importantly, place leadership is not about local or regional government's usual service delivery or administrative functions, but about the mobilisation of collective action for a place in question. Place leadership is expected to reach beyond transactional leadership that could also be labelled as management of place, where the focus is on administrative responsibilities and municipal services (Collinge & Gibney, 2010). In other words, transactional leadership does not work to produce systemic changes to achieve, for example, green growth-related ambitions, but ideally, place leadership is about wider systemic changes. Indeed, the definitions of place leadership are rooted, at least implicitly, in an assumption that it works for transformative changes, including the promotion of green growth that has become an established part of the EU's innovation and regional development policies. For example, in the practical guide for authorities managing smart specialisation strategies, both transformational leadership and green growth are highlighted by encouraging national and regional policy-makers to "lead the development of an ambitious long-term vision of smart and sustainable growth under the research and innovation strategies for smart specialisation. The focus on transformative innovation requires the engagement of key stakeholders in all phases from policy design to monitoring and evaluation" (Doranova et al., 2012). A European-wide effort to reach beyond standard domains of the public sector has been launched, and the need for transformational leadership has become explicit.

However, in practice, leadership is more often than not short-term and transactive instead of taking pains to connect heterogeneous groups of actors in a mutual and continuing pursuit of a higher purpose. All too often, action is taken and new strategies formulated, only when the need for change is visible, and it may not be an exaggeration to argue that, in most countries and regions, regional development strategies and related leadership all too easily remain in a transactional project mode. Actors satisfy themselves in making close agreements on what is expected to be accomplished during the time span of a project. The reward is thus seen as contingent, because beneficiaries of public money need to contribute to a regional strategy in a

predefined way. If all this happens, development efforts turn into a transactive management of public funds instead of transformational leadership for the future.

By definition, transformational leadership is closely linked to efforts to boost green development paths, as it is, by necessity, based on long-term partnerships that reach beyond individual objectives and aim to serve higher purposes instead. Ideally, also in regionally embedded transformational leadership, several actors would engage with each other to raise one another to higher levels of motivation and purpose (Burns, 1978). Interestingly, path development, regional innovation systems and related policies are not usually conceptually connected with transformational leadership, even though the latter could easily be seen as an ideal form of place leadership. Indeed, transformational leaders are supposed to motivate other actors to exceed themselves – to do more than expected – by enhancing the sense of importance and value of tasks at hand, and thus transformational leaders stimulate others to surpass their own interests and work for a common good (Bass, 1999). Transformational leadership is commonly defined "as a leadership approach that causes change in individuals and social systems … Enacted in its authentic form, transformational leadership enhances the motivation, morale and performance of followers through a variety of mechanisms" (Roberts, 1985). Bass (1999) relates transformational leadership to: (a) leaders' charisma (idealised influence); (b) the ways leaders use symbols and images to direct the efforts of other actors (inspirational motivation); (c) the ways leaders direct others to see and think about old problems in new ways (intellectual stimulation) and (d) the ways leaders coach others to find their way to contribute to higher purposes (individualised consideration). Transformational leaders motivate others to do more than they thought possible. By challenging expectations, they aim to raise the bar (Bass & Riggio, 2006, p. 4).

3   Evolving Policy Context in Finland: From Cluster Development to Ecosystem Cultivation

The fairly rapidly changing policy context in Finland is altering the ways collaborative efforts for green innovation are managed and led. In the 1990s and early 2000s, Finland witnessed a growth era led by the Nokia-dominated ICT cluster. Simultaneously, there was a clear shift towards emphasising cluster and innovation policies, and a policy entity labelled as cluster-flavoured innovation policy was constructed (Cai et al., 2018). After a long period of continuous growth in R&D and active construction of tools for innovation policy, Finland moved to a no-growth era in its R&D expenditure (Table 1). R&D expenditure was at its highest in 2011 (3.7% of GDP) and has been decreasing ever since (2.7% of GDP in 2017) (Statistics Finland, 2017).

Table 1 R&D expenditure in Finland, the Tampere region and Central Finland

	1995	2000	2005	2010	2017	Change (%) 1995–2010	Change (%) 2010–2017
Finland	2172,3	4422,6	5473,7	6971,3	6173,2	220,1	-12,9
Tampere region	211,1	633,9	878,9	1119,2	660,5	430,2	-69,4
Central Finland	75,9	181,4	223,9	203,7	226,9	168,4	10,2

From the early 1990s to the beginning of the 2010s, different types of collaborative cluster and innovation programmes formed the core of Finnish innovation policy, but, in the 2010s, the policy landscape has been changing (Ormala, 2019). For example, the two cluster and innovation-oriented flagship programmes – the Strategic Centres of Excellence for Science, Technology and Innovation (Shok) programme and the Centre of Expertise (CoE) programme – were brought to an end. These two programmes were constructed to serve as coordinated communication forums for the main actors in the country and to improve innovation capacity as a whole, and in respective regions and clusters. Due to a changed policy landscape, and with less money available to mobilise and coordinate collective innovation processes, Finland's innovation policy community has been aiming to reach beyond the R&D oriented science, technology and innovation (STI) dominated policy at all levels. Inspiration is being sought, especially from the concepts of platform and the innovation ecosystem, with the aim being to see beyond clusters for the identification of such porous thematic areas that would allow new surprising combinations of knowledge and actors to emerge. Consequently, the tendency to select target clusters is diminishing, and innovation policy is no longer based on a preselection of clusters to be targeted. Indeed, as Asheim, Boschma and Cooke (2011) maintain, it is more or less impossible to foresee the growth sectors and winning clusters of the future. New industries are often the result of spontaneous processes instead of outcomes of policy interventions. Moreover, 'picking-the-winner' policies seem to focus on the same industries regardless of the country or region in question (Asheim, Boschma & Cooke, 2011). For these reasons, together with the financial ones, Finland is moving towards using an innovation ecosystem as a core organising concept in its innovation policy.

The concept of the innovation ecosystem emphasises more than its predecessors (clusters and systems of innovation): the complexity of innovation activities, coevolution and the interdependencies between different actors. Autio and Thomas (2014) define an ecosystem as "a network of interconnected organizations, *connected to a focal firm or a platform*, that incorporates both production and use side participants and created as appropriates new value through innovation [emphasis ours]". The approach draws upon open innovation literature (Chesborough & Appleyard, 2007), and thus sees innovation ecosystems as being potentially open to all possible contributors; an innovation ecosystem is said to be an organisational form of distributed creativity (Rinkinen, 2016). Studies focusing on innovation ecosystems see network relationships as being looser than what has been the case in innovation systems

literature. Well-developed adaptive capacity is underlined, and looseness is seen as crucial, as fruitless connections may thus fade away, and new ones are formed at a faster pace (Rinkinen, 2016). Importantly, the innovation ecosystem approach emphasises more market mechanisms than institutionally oriented innovation systems literature (see for more information: Iansiti & Levien, 2004; Moore, 2006; Nambisan & Baron, 2013; Rinkinen, 2016). In this thinking, innovation ecosystems are built on platforms, and therefore the platform approach is focused on integrating different but related actors, activities and knowledge (Asheim, Boschma & Cooke, 2011), and hence enhance new kinds of networks effects. A platform is expected to serve multiple needs; it is a physical and/or virtual space, where different actors with differing ambitions and objectives encounter to identify common interests and seek for collaboration. Various actors simultaneously utilise a platform and the capabilities of many actors operating on it and contribute to its expansion and further development (Ailisto et al, 2016).

In these respects, the basic assumptions behind ecosystem thinking challenge some of the long-held assumptions of how regional innovation development efforts are supposed to be led and managed. First, as Rinkinen (2016) observes, ecosystems are essentially global, and the role of a region is not visible in the literature concerning ecosystems. The national level perspective is the main way in which ecosystem discussion is connected to the geographical context. As Rinkinen (2016) also maintains, it is fairly difficult to define the geographical boundaries of ecosystems. Second, in most of the innovation ecosystem studies as well as in the new innovation policy of Finland, it is assumed that an innovation ecosystem is led by a dominant actor, which enables ecosystem members to invest in a shared future and common goals. These two observations reflect the business studies origin of the concept. More often than not, Apple, Google and Amazon, and especially the innovation ecosystems built around their digital platforms, are used as cases in point and metaphorical inspiration in Finland.

4   Methodology and Cases

The empirical study follows a case study design. The cases in this paper deal with the cleantech-related path development in the Tampere city-region and bioeconomy-related path development in Central Finland. The two case studies were carefully chosen to illustrate the two main green growth-related industries in two different Finnish regions. The two different regions, with their differing industries, and distinct green path development patterns were chosen to provide us with two contexts and two sets of experiences, policies and prospects to study manifestations of place leadership. Therefore, the study does not follow a matched-pair design, but rather it draws on two parallel single cases.

We use the concept of cleantech as defined by Annala and Teräs (2017, p. 7): "Cleantech refers to products, services, processes and solutions which improve productive and sustainable use of natural resources while reducing emissions and other negative environmental impacts … cleantech is not tied to any specific sectors but can be seen more as an asset to promote green growth in any field and in any resource use". Bioeconomy refers, according to Finland's

Bioeconomy Strategy (Suomen biotalousstrategia, 2014), "to an economy that relies on renewable natural resources to produce food, energy, products and services". The main ambition is to "reduce our dependence on fossil natural resources and prevent biodiversity loss", but also in the spirit of green growth, "to create new economic growth and jobs in line with the principles of sustainable development … to push our bioeconomy output up to EUR 100 billion by 2025 and to create 100,000 new jobs" (Suomen biotalousstrategia, 2014).

The Tampere region includes the City of Tampere and 21 smaller municipalities. According to Statistics Finland, the region had a population of 512,081 in 2017, compared to a figure of 402,467 for the Tampere City Region alone. Tampere is the birthplace of Finnish heavy industry and is one of the traditional industrial regions in Finland. It is most notably the home of the machinery and automation, ICT and health technology industries. The region and the city have adopted several green path development-related concepts to frame local and regional development. These include a circular economy, cleantech and a bioeconomy. In this paper, we focus on cleantech, but acknowledge the difficulties in measuring economies according to these thematic concepts as well as the problems of their often-fuzzy use in policy circles.

Central Finland includes the City of Jyväskylä and 22 smaller municipalities. According to Statistics Finland, the region had a population of 276,021 in 2017, compared to a population of 184,333 for the City of Jyväskylä. The region hosts traditional forest industry, forestry and machine production industries as well as new technology and bioenergy companies. As the region is one of the traditional Finnish forestal regions and more than 80% of it is covered by forest, a bioeconomy has quite naturally emerged as the core organising concept in policy-making. Even though the measurement of the bioeconomy has proven difficult, as Mikkola et al. (2016) observe, without any question it is one of the economic cores of the region. According to Mikkola et al.'s estimate, the bioeconomy provides roughly 15,000 jobs in the region, including in the manufacture of pulp, paper, cellulose, cardboard and wood products, as well as in food and energy production (Mikkola et al., 2016).

The empirical study began with a literature review of relevant material describing and analysing the overall development of the case regions or some specific features of them. This included written material from the Internet, relevant journals, related newspaper articles and respective policy documents. Drawing on thus collected secondary data, the overall understanding of the main features of the two cases was constructed, and the main policy approaches were identified. The main aim of this exercise was to describe the cases and their institutional set-up for the second round of data collection. This phase identified generic path development patterns, the main policy instruments and other actions for further data gathering and analysis. The unit of analysis was local/regional development officers, as earlier studies have shown that they often take a place leadership role in Finland (Beer et al., 2018; Sotarauta, 2010; Sotarauta & Beer, 2017), but the analysis was open to other potential leaders too.

Next, 30 key actors were interviewed from the national and local/regional development agencies as well as from firms and research/educational organisations. Five of the interviewees

represented national level public organisations, and the rest were from the two case regions. The interviews followed the idea of a thematic interview (semi-structured interview). The themes were the following: (a) *What was the interviewee involved in, and why?* What was the main ambition? (b) *What were the most important activities?* Why is what the respective organisation is doing important? Is there a formulated strategy guiding its actions? Examples of success and/or failure? and (c) *Who were the most important actors in his/her field, and why?* Who/what influences the developments in the field and her/his activity and how, locally, regionally, nationally and globally? The main aim was to construct an overall view on the main activities, to identify the actions of key people in their efforts to influence the process, and thus to find out what drives the path development process, and how these kinds of processes are intentionally directed to serve several interests.

5   Place Leadership in Greening Regions

5.1   Green path development in Finland

Many governments at all levels of the action have taken up the green growth challenge, aiming, one way or another, to organise economic and innovation policies accordingly (Cagnin, Amanatidou & Keenan, 2012; Coenen, Hansen & Rekers, 2015), and the need to have public policies for driving transformational changes has been widely recognised (Grillitsch, Hansen, Coenen, Miörner & Moodysson, 2018; Mazzucato, 2015). In its 'Government Programme', Prime Minister Juha Sipilä's Government (2015–2019) proclaimed that it will, among other ambitions, bring the Finnish economy onto a path of sustainable growth (Finland, a land of solutions, 2018). The Finnish Government engages itself explicitly in green growth by setting a vision for 2025 as follows: "Finland will be a pioneer in the bio and circular economies and in cleantech. By developing, introducing and exporting sustainable solutions we have improved the current account, increased our self-sufficiency, created new jobs, and achieved our climate objectives and a good ecological state in the Baltic Sea".

However, these kinds of statements, in their various forms, have been creeping in the Finnish politics and policy for some time now. From the early overall statements of the Prime Minister Kalevi Sorsa's IV Government Programme (1983-87) focusing on air quality, recycling and reuse of waste, for example, several sector-based strategies (e.g. bioeconomy) now specify the government programme. Moreover, in the Tampere region and Central Finland, as our analysis of 26 policy documents shows, since the early 2000's, for the first time in local policy history, the emphasis has been on integrating environmental themes with economic ones and vice versa. The current policy approach in the case regions clearly builds on green growth thinking with the aim being to boost economic development but in a sustainable way.

In this paper, we do not focus on top-down policies but place leadership, at local and regional levels, in the strongly coevolving governance system of Finland (Sotarauta & Kautonen, 2007), the government programme and various other policies provide regional actors with an overall institutional context to construct their own modes of operation. In its own ways, Finland is in

line with Mazzucato (2015), who argues that policy-makers need to provide directions for change around which bottom-up solutions can then be experimented with. Mazzucato emphasises public sector leadership in setting processes in motion and directing them. In the efforts to promote green growth, place leadership may be of utmost importance as, according to Annala and Teräs (2017, p. 17), one of the main weaknesses in the Nordic countries has been the gap between national policy ambitions and actual outcomes at local level.

5.2 Green path development on policy platforms

In Tampere, both the City Government and the Regional Council aim to construct policy platforms not only to introduce new policy contents but also to mobilise new kinds of ecosystems, and thus novel ways of identifying the policy contents as well as organising interaction and communication between various actors. In their innovation ecosystem manual for the Tampere region, Raunio et al. (2016), reflecting the emerging mainstream, maintain that innovation platforms are based on open innovation thinking with the following aims: (a) to mobilise also small firms and individuals (e.g. citizens and students) and not only the main companies and universities and their research centres, as was the case in cluster policy; (b) to focus more on user experience rather than business clusters around successful products and (c) to carry out quick experimentations instead of large company led research programmes with their academic partners.

In the innovation ecosystem literature, ecosystems are expected to be connected to a lead firm, but in Tampere, it is the City of Tampere that has adopted this role. In its efforts to construct ecosystems, it is aiming to take a similar position in green growth-related innovation, as Apple has in its ecosystem, revolving around its operating system. Essentially, if cluster policies are constructed around multi-year and multi-actor development programmes with the aim being to use them as vehicles of mobilisation, platform policy in Tampere is basically constructed on something that will be done anyway. In principle, anything can be a platform in this way of thinking. In this article, we do not focus on all the identified platforms but only those revolving around green growth. The local development strategies identify Kolmenkulma and Hiedanranta among the key platforms.

Kolmenkulma eco-industrial park is a land-use project, in which a district is planned to become a home for companies operating in various fields of cleantech. The ambition is to maximise interaction between individual businesses for increased material and energy efficiency (to construct conditions for industrial symbiosis) and development of eco-friendly concepts by sharing energy resources and services. A special bio and circular site (waste-to-value and value from by-products) serves as a platform for new green developments. ECO3 is to mobilise and put together companies and R&D activities so that they form a place-based innovation ecosystem connecting the organisations through material and knowledge flows (see for more information: ECO3 – Smart and Ecological, 2019). For its part, a new residential area Hiedanranta is supposed to, in line with ecosystem thinking and platform policy, serve "as a development

platform for experiments and projects that promote smart technology, sustainability and circular economy solutions". Hiedanranta serves as a platform in the search for new ways of collaboration between the city, residents, businesses and other organisations (see for more information: Innovative Hiedanranta). For example, among the dozens of projects already launched, the commercial production of carbon-negative district heating has begun. Hiedanranta is an innovation platform for Carbofex Ltd to produce district heating alongside its main product that is biochar (see for more information: Tampere's Hiedanranta).

In Central Finland, the specific ecosystem case is being constructed around the new bioproduct mill of Metsä Group, which is a 1.2 billion euro investment with an annual pulp production capacity of 1.3 million tons. The mill produces not only high-quality softwood and hardwood pulp but also a range of other bioproducts (tall oil, turpentine, bioelectricity, product gas and sulphuric acid). The institutional leader, Metsä Group, is building the first ring of the ecosystem around its bioproduct mill - its products as well as multiple material flows, including side streams and effluents the manufacturing process produces. Some of the first ring partners are converting side streams of the pulp production into bio products that either create additional value to the local community (district heat) or are new businesses in their own right (bioenergy). The local development actors are actively involved in constructing a second ecosystem ring. They work to mobilise companies from different industries like manufacturers related to bioeconomy, knowledge intensive services, logistics, maintenance services, housing, and so forth, and they also aim to induce scientific research to become members of the ecosystem and potentially also locate in the region. All in all, the bioproduct mill is seen as a platform for other organisations to experiment with and produce their own products.

As our interviewees in both cases fairly unanimously saw, the ambition of using platforms as policy vehicles is to contribute to building value chains, enhancing their quality, introducing innovation and creating additional value. Land-use planning, main infrastructure projects and industrial investments as well as waste management are used as platforms to build innovation ecosystems (i.e. to mobilise heterogeneous groups of actors to benefit from each other's resources and capabilities). In Tampere, all this is enabled by the City of Tampere, and at an operational level the infrastructure actors are seen as anchor organisations, and in Central Finland, Metsä Group is the core actor. Interestingly, it is much more common than in cluster policy to integrate regional development and innovation activities around these kinds of major projects. This represents a clear deviation from the earlier local innovation policy approach that was constructed around multi-year and multi-actor development programmes to identify policy platforms as something that would be done anyway.

5.3 From cluster management to change agency – place leadership as everyday practice

An evolving policy landscape has changed the roles of local and regional policy practitioners. As a mode of organising collaboration, the policy platform model differs clearly from innovation and cluster programmes, which were actively used in Finland earlier on. Instead of launching a

programme, coordinating its planning and implementation and evaluating the outcomes, platforms require new modes of action. If programmes are based on a predefined vision and strategy as well as mobilisation by funding strategic projects, platforms by necessity call for continuous monitoring of global markets and individual strategies of local enterprises, and thus in our understanding, place leadership is called for. However, our interviewees did not explicitly talk about leadership, but the need to pool resources and capabilities to support green growth in selected target areas was explicitly expressed. Consequently, leadership was implicitly present in most of the interviews. This reinforces earlier observations that place leadership is a difficult to identify, if not outright hidden, form of leadership. This is due to its indirect nature; actors do not want to be led and leaders do not want to explicate their leadership role so as not to lose their indirect leverage (Sotarauta, 2016; Sydow et al., 2011).

Several of our public sector interviewees defined themselves and their organisations as change agents, whose main purpose is to guide other actors in new directions and to construct spaces for change. Most of them recognised the need for transformational changes but saw the limits of achieving them. They were very aware of their limited capacity to influence in a multi-actor and multi-purpose setting, and hence they emphasised indirect soft measures, such as awareness raising, coaching, dialogue, visioning on platforms and guiding interaction towards experimentation. Consequently, instead of emphasising strategy documents or programme periods as was done in the period of cluster programmes, the interviewees talked about development being a continuous process both for increasing visibility of the green economy-related issues and for promoting technological and operational solutions to be experimented with. In the interviews, the process view did not reach only to the future but also to the past, as it was reminded that the new policy concepts and tools do not emerge in a vacuum but unfold over time, until the momentum to push for major changes is there. And, thus, according to interviewees, change agents are expected, on policy platforms, to open windows of opportunity for new ideas to emerge. In sum, in our words, many of the interviewees talked about generating processes, monitoring them and shepherding them in desired directions established on a general level in various public strategies and policy documents. Somewhere behind process generation, there is an implicit wish that all this will lead to concrete experimental projects in the short term and transformations in the long run. Of course, in the policy documents this wish is explicitly stated.

Our interview data suggests that platform policy necessitates local and regional level policy practitioners to take a leadership position in their everyday networks and processes. They may not be great leaders – in a traditional sense – with strong institutional positions or abundant resources, but they lead processes from the middle by influencing thinking and network formation, and in these efforts a platform is the main vehicle, an innovation ecosystem the objective and regional transformation the ultimate purpose. We label this type of development work as 'everyday place leadership', as it revolves around mobilisation and coordination of many organisations' activities, and it is the nature of their everyday work. We acknowledge that this

type of action is not usually described by using the concept of leadership, but by doing so, we pose a question as to whether the way local and regional actors generate grassroots level processes in their everyday work is the missing link between transformational and transactive leadership. In the Tampere case, everyday place leaders include upper and middle level officials working for the City of Tampere as well as local and regional development agencies. The City of Tampere as a local authority is functioning as an institutional leader; it defines policy platforms, makes the activities possible and provides a generic direction for many kinds of actions. In Central Finland, Metsä Group has taken the role of an institutional leader and yet, in both cases, various officials from the local and regional development agencies act as everyday place leaders.

5.4 Vision and strategic awareness

It is often argued that leaders mobilise with their compelling visions (Nanus, 1992). In the context of innovation ecosystems and everyday place leadership, the role of a vision is more complex than in corporate organisations. First, according to some of our interviewees, a kind of generic shared vision is implicitly around them all the time. Many stressed the role of climate policy without expounding what it actually is, some stressed market pressure as a main source of inspiration to find new directions without specifying it and some saw regulation as important without being able to specify its impact on local actions in concrete terms. They all agreed the pressure is there – something must be done to make the economy green. One of the interviewees highlighted the importance of "the national mindset" that is manifested "everywhere". This kind of shared policy ambition is more resembling a 'cognitive-cultural institution' (see Scott, 2001) than a vision, but, all in all, it provides the development and innovation processes with a generic direction, and for everyday place leaders, something to refer to and legitimise their actions with. Indeed, the overall direction setting is more resembling shared strategic awareness than an outright vision.

The strategic awareness of a green growth agenda comes from so many national and international policy documents as well as the media that, at local and regional level, it is taken as a fact of policy life, and thus not debated or mulled over further as such. Instead, place leaders focus on directing collective sensemaking and framing processes, in which the main questions are the following: What does all this mean to us and what should we do to create proper conditions locally for green paths to emerge? It was seen that when public actors are of one mind and have a shared vision on how to answer these questions for mobilisation of local networks, it allows them to move together on an agreed trajectory towards shared goals, which again is crucial in collaboration with firms and universities. To make progress in collective action, strategic awareness should be framed towards a shared understanding of, and vocabulary on, the issues in hand, and with these efforts a deviation from cluster policy to platform policy was seen as useful – a new policy approach, be it good or less so, forces actors to rethink both their positions and modes of operation.

The core theme in Tampere is to improve cleantech, but also the concepts of the circular economy and bio economy are used as a guiding metaphor. Cleantech is by nature a cross-cutting field used in many sectors; it is based on the historical strongholds of the region, especially machine building but also ICT. However, the interviewees used several concepts interchangeably when describing policy platforms and their activities. For many, cleantech and the circular economy were closely connected, and it seems that the conceptualisation was not of interest to them, but instead they focused on concrete activities related to mobilisation and coordination of specific processes. Everyday place leaders are process specialists as the substance specialists come from firms and universities. As one of the interviewees stated: "Cleantech is a typical modern phenomenon, some kind of a field of activity is generated and then you can conceptualise it with different kinds of concepts, words and points of view. But these current sector classifications can't grasp it anyway". Everyday place leaders use concepts as vehicles of mobilisation, and thus precision is of less importance to them.

5.4.1 Place leadership on platforms contrasted with cluster management

As has become obvious above, platforms are identified for mobilisation and the coordination of collective search and innovation processes, and they also serve in construction of shared awareness of the issues at hand and different interpretations of them. Without delving deep into the nuts and bolts of everyday place leadership, it is possible to conclude that it calls for a well-developed understanding of the place and its many processes. The ecosystem approach is especially challenging for everyday place leaders, as they may not focus only on their own city or region, but they are forced to ask such nonspatial questions as how we are able to connect our place and its activities to wider ecosystems, how to secure as strong a position in them as possible and how to attract actors from elsewhere to utilise a local platform and contribute to its activities – what kind of local conditions serve local actors best in their efforts to connect to wider ecosystems? Obviously, everyday place leaders are not in a position to generate answers to these questions alone, and thus they mobilise development processes, in which answers emerge step by step. Instead of one definitive answer, multiple sets of answers may emerge serving each actor differently. Everyday place leaders need to learn about other visions, motives and rationales, governance systems and policy processes, instead of depending on one grand answer flowing from above. Consequently, leading processes and networks for green growth requires many kinds of information and knowledge to navigate through a policy jungle.

As platform policies are fairly open in their mode of operation, objectives are not clearly defined; the ambition, objective and wish are that various actors will contribute to platforms and exploit them as they see best. Different actors participate in the platform activities from their own points of departure, and rationales for participation may differ significantly from each other. In this way, place leaders aim to mobilise firms and other actors to work not for the region but for themselves, and they thus generate such processes and networks that in the end may produce significant results for local and regional development too. Hence, construction of

innovation ecosystems is not by definition restricted to only platform owners' objectives, as platforms are open to all sorts of ambitions and potential outcomes. Additionally, the ambition and belief are that through a series of experiments something surprising might emerge and that radical innovations may be introduced. In this way, ecosystems are expected to be more sensitive to changes in the markets than earlier institutionally oriented cluster-flavoured innovation programmes.

One of the core ideas in Tampere is to improve local conditions for experimentation, to use platforms as vehicles for it and to link small businesses to main public actors and corporations, and in Central Finland, the core idea is to construct an ecosystem around one of the main corporate players of the bioeconomy. The lead idea is to create opportunities for companies to test specific platform-related solutions through pilots, as without specifically constructed opportunities, small and emerging businesses may easily be marginalised in spite of the potential embedded in their ideas. From the place leadership perspective – in a nutshell – transition from cluster to platform policies has changed development work at a local/regional level as summarised in Table 2.

Table 2 The difference between cluster policies and platform policies from a place leadership perspective (Sources: interviews, policy documents, Räsänen, 2018)

	Cluster policy	Platform policy
Time horizon	Fixed programme period	Continuous process
Focus	Focus on a selected cluster/clusters	A platform can basically be anything depending on time and place in question – strategic definition
Objectives	Predefined programme-based objectives, assumed to be relatively clear	Multitude of objectives, potentially conflicting
Main actors	Preselected by carrying out a cluster analysis: Mainly local universities and corporations	Openness emphasised: Various formal and informal groups, individual talents, major organisations and ecosystem orchestrators
Main ambition	Selection and funding of best projects implementing the programme objectives	Capability building and management of a series of experiments leading potentially to something scalable
The main role of public actors	Initiation and formulation of a cluster programme, coordination of its implementation and funding	Identification of a platform, organising co-creation processes on it and shepherding evolving collaboration
Nature of interaction	Direct interaction (strong ties) between the dominant actors	Both direct and indirect interaction (both strong and weak ties)
Access to resources	Direct (linked to a programme), projects as a main tool, mobilisation of additional resources	Indirect, and to some extent also direct (depending on the platform). Platform provides opportunities and actors need to be capable of exploiting them.

The City of Tampere and Regional Council of Tampere region have not only changed the way local/regional development policy is designed and implemented but also produced manuals towards these ends (Cotton, 2018; Raunio et al., 2016). Platform policy quite naturally also includes the traditional way of influencing that is channelling all sorts of public funding to selected platforms. By doing so, the City Council aims to set a strategic direction for future development in Tampere and for various ecosystems there. Additionally, in its Smart Tampere Ecosystem Programme, the city recognises the importance of regulations in these efforts, and especially the need to change regulations or influence their change, if beyond their own decision-making. All this requires a capacity to identify and combine key projects and initiatives to enhance regional social and economic development and growth, as well as being able to broker the linkages between spatial levels to experiment with and enhance existing policy approaches. To make these demands even more challenging we add that everyday place leaders are expected to bridge institutional, disciplinary and sectoral boundaries for experimentation and explore the potential for innovation, and thus move beyond existing frames of reference for ecosystem building.

In essence, the processual nature of everyday leadership highlights collective construction and exploitation of platform-related knowledge. We argue that everyday place leadership is about leading by generating and directing knowledge processes. We summarise the core knowledge processes in Table 3, and stress that they are not one-off events but ongoing and continuous, formal and informal; they take place in the media, seminars and conferences, face-to-face, in planning procedures, etc. They are the ways to indirectly lead multi-actor processes. Individually, all of the processes and means used in Tampere are fairly minute actions, but if successfully linked to each other, and led well, they form an unbroken and progressive process, and hence may be tools to stimulate the search for innovative solutions.

Table 3. Knowledge processes identified from the data (left column; drawing on and modified from Sotarauta et al., 2012) and ways of influencing as presented by the City of Tampere in its Smart Tampere Ecosystem Program (2018) (right column)

Leadership processes	Everyday place leaders
Unlocking socially and historically embedded local/regional knowledge on platforms to serve construction of new ecosystems	Supporting companies' business and export by organising experiments, using social media, newsletters, etc. Utilising the city's data and infrastructure in business development through collaboration with the city's departments, hackathons, experiments, etc. Indicator: number of companies participating
Translating local knowledge into national/global policy and business language and feeding it into national and global knowledge processes to connect local actors to wider ecosystems	Discussing the companies' solutions internationally by newsletter, websites and other forms of international communication to inform global audiences about things done locally Indictors: amount of scaled solutions, increase in availability of communication
Tapping into global networks for tacit knowledge to learn about dominant discourses and ways to connect local activities to them	Organising field trips abroad, participating in conferences, international projects and organising/participating in international bench-learning networks
Transferring and **translating** global knowledge into local language, thinking and action to enhance collective sensemaking and better integration for global developments	
Discussing local platforms and emerging ecosystems as well as plans of individual actors to generate strategic awareness and provide various actors with opportunities to find both new opportunities to experiment their ideas for coming up with new solutions	Advancing the know-how, networking and the participation of local actors through seminars, workshops, business training, technology training, networking events, solution workshops, etc. Indicator: number of references
Debating, interpreting and combining different sources of knowledge into local understanding and awareness	

6   Generative Leadership: A Step Towards Transformational Leadership

As the focus here is on place leadership, our data do not allow us to assess how well the City of Tampere is acting on its own guidelines and bold statements, or how advanced the ecosystem around Metsä Group is. But, in both regions, actors are seeking new ways to influence the greening of economic development and innovation by using existing infrastructure, building new infrastructure and making major investments into platforms to mobilise actors to form ecosystems. What is also clear is that this kind of mode of operation requires sophisticated understanding of not only the place, but also specific processes and the dynamics of business areas related to ecosystems. Therefore, place leaders need to see beyond generic knowledge of

demographics, governance, formal policies and innovation systems as well as local industries, to understand individual ambitions, objectives and a variety of reasons to commit to collective action. This is a precondition to effective mobilisation.

The interviewees stressed the importance of generic drivers, which are important vehicles of mobilisation. They include, first, the general understanding in the country that something must be done to tackle climate change. Second, increasing demand from the global markets for various cleantech and bioproducts produced in the case regions was seen as a necessity for the mobilisation of firms and entrepreneurs. It was also highlighted that in cleantech and the bioeconomy – which are built on the traditional Finnish strongholds of paper and pulp, automation, engineering and ICT – the question is more about working towards new objectives induced by markets and customers than aiming to introduce radical innovations or completely new industrial paths. Third, the many public policies are crucial for place leaders, as they provide a generic direction, a legitimate context in which to operate and some financial support.

In this kind of overall policy context, our empirical observations suggest *place leadership takes generative modes of action to produce indirectly transformational effects*. This is due to the fact that, more often than not, place leadership simply is not powerful enough to produce transformational changes. Place leaders generate and direct such processes that presumably, in the course of time, lead to transformational outcomes. They, therefore, build on knowledge of the interests and motivations of many socio-political actors and then work to diverge external stimuli into internal responses and opportunities. Generating collective learning and knowledge processes on selected platforms is the way place leaders can influence the independent decisions of autonomous actors. Place leaders provide the linkages with localised knowledge and also aim to construct channels to global knowledge by drawing together tangible and intangible resources to organise for collective contemplation. In this sense, they not only strategize in a formal sense to achieve transformation, but they broker and direct formal and voluntarist relationships within the institutionalised policy domains and beyond, to draw knowledge sets into a coherent and collaborative local narrative.

Based on our empirical observations, we add generative leadership to the place leadership literature to complement transformational and transactional leadership. Following Sotarauta (2016), we argue the main motive in generative leadership is not to find the best fit between the existing resources and the current opportunities but to create a misfit between resources and ambitions to challenge the actors to join the development efforts. Generative leadership is needed for: (a) the creation of conditions to nurture and stimulate innovation and business growth, (b) the facilitation of the adaptation of an entire ecosystem to a changing environment, (c) the construction of collective intentions and strategies to enhance the interaction in an innovation ecosystem and (d) the enhancement of both innovation and leadership capabilities or bringing new elements of them into existence. In a nutshell, generative leadership is about processes of influencing and teaching other actors to understand why and how certain activities and goals need to be accomplished, and thus to strengthen the transformational capacity of a

place. Applying Trickett and Lee (2010), generative leadership uses platforms as cooperative advantages to stimulate the emergence of innovation ecosystems. In these efforts, a platform is the main vehicle, an innovation ecosystem the objective and regional transformation the ultimate purpose

7   Conclusions

This study adds to the literature on green growth by specifically focusing on place leadership in the context of green path development. Conversely, it adds to the place leadership literature by exploring the important but understudied link between transformational leadership and green growth. We are also in line with the studies that call for a better understanding of agency in path development and green growth (Uyarra et al., 2017). The proposition, however, is not to take green growth or regional development studies towards leader-centric approaches – to study leadership is to study encounters between forces shaping green growth from the micro level perspective. We do not suggest that there might be a direct causality between the actions of what we labelled as everyday place leadership and green growth, but that the relationship is complex and, in many ways indirect, and therefore place leadership is generative by nature. We added generative leadership into the literature focusing on transformational and transactional leadership with the aim being to add analytical leverage in the efforts to understand how directionality of greening of the economy may be enhanced. At best, place leadership studies for green growth and related path development are forms of process-oriented inquiry, where the roles of actors and the ways to influence are fleshed out by analysing the leadership processes and experimenting with and exploring new angles on traditional problems.

We posed three interlinked questions: (a) What do place leaders do to boost green institutional paths? (b) How do they aim to amplify their limited power base? and (c) How do they amplify their ability to influence both place-based and placeless agents? In a nutshell, we show place leaders boost green institutional paths by generating a multitude of development processes that, in essence, revolve around collective learning as well as collective generation and dissemination of knowledge. Place leaders amplify their often-limited power bases by constructing policy platforms, which are aimed at providing placeless actors with unique opportunities in a specific place; place leaders work to integrate placeless actors into a specific place. In both cases, a major organisation provided the everyday place leaders working at the grassroots level with institutional leadership, and hence legitimisation for their efforts.

Moreover, we endorse Mazzucato's (2015) view that it is not enough to understand the importance of innovation ecosystems, but it is also necessary to focus on "what it is that each actor brings to that system". At the end of the day, the main thing is to influence entire systems for green growth and most notably the thinking patterns they are embedded in. With these efforts, ideally, place leaders are not aiming to break the resistance of other actors; they are not in a position to make them do something against their will, but they aim to induce them willingly to do things they would not otherwise do.

References

Annala, K. & Teräs, J. (2017). *Nordic working group for green growth – innovation and entrepreneurship 2013-2016 Synthesis report.* (Nordregio Report 2017 No. 2). Stockholm.

Asheim, B., Boschma, R., & Cooke, P. (2011). Constructing regional advantage: platform policies based on related variety and differentiated knowledge bases. *Regional Studies*, *45*(6), 1–12.

Autio, E. & Thomas, L.D.W. (2014). Innovation ecosystems: implications for innovation management. In Dogson, M., Gann, D.M., & Philips, N. (Eds.), *The Oxford Handbook of Innovation Management*, (pp. 204–228).

Ayres, S., Flinders, M., & Sandford, M. (2017). Territory, power and statecraft: understanding English devolution. *Regional Studies*, *52*(6), 853–864.

Bass, B. M. (1999). Two decades of research and development in transformational leadership, *European Journal of Work and Organizational Psychology, 8*(1), 9–32.

Bass, B. M. & Riggio, R. E. (2006). *Transformational leadership.* Mahwah: Lawrence Erbaum Associates.

Beer, A. (forthcoming) How and why to study place leadership: methodological choices and options. In Sotarauta, M. & Beer, A. (Eds.) *Handbook on City and Regional Leadership*. Edwar Elgar.

Beer, A. & Clower, T. (2014). Mobilising leadership in cities and regions. *Regional Studies, Regional Science*, *1*(1), 4–18.

Beer, A., Ayres, S., Clower, T., Faller, F., Sancino, A., & Sotarauta, M. (2019). Place leadership and regional economic development: a framework for cross-regional analysis. *Regional Studies*, *53*(2), 171–182.

Benneworth, P., Pinheiro, R., & Karlsen, J. (2018). Strategic agency and institutional change: investigating the role of universities in regional innovation systems (RISs). *Regional Studies*, *51*(2) 235–248.

Cagnin, C., Amanatidou, E., & Keenan, M. (2012). Orienting European innovation systems towards grand challenges and the roles that FTA can play. *Science and Public Policy*, *39*, 140–52.

Cai, Y., Normann, R., Pinheiro, R., & Sotarauta, M. (2018). Economic specialization and diversification at the country and regional level: introducing a conceptual framework to study innovation policy logics. *European Planning Studies*. doi: https://doi.org/10.1080/09654313.2018.1529142

Chesborough, H. W. & Aplleyard, M. M. (2007). Open innovation and strategy. *Californian Management Review*, *50*(1), 56–76.

Cleantech Finland – ympäristöstä liiketoimintaa. Kansallinen toimintaohjelma ympäristöliiketoiminnan kehittämiseksi (2007. Sitra.

Coenen, L., Hansen, T., & Rekers, J.V. (2015). Innovation policy for grand challenges. An economic geography perspective*. Geography Compass*, *9*, 483–96.

Collinge, C. & Gibney, J. (2010). Connecting place, policy and leadership. *Policy Studies*, *31*(4), 379–391.

Cotton, N. (2018). *The Smart City Cookbook: A Recipe for Successful Smart City Programs*. Tampere: City of Tampere & Business Tampere.

Dawley, S. (2014). Creating new paths? Offshore wind, policy activism, and peripheral region development. *Economic Geography*, *90*(1), 91–112.

Doranova, A., Griniece, E., Miedzinskim, M., & Reid, A. (2012). *Connecting Smart and Sustainable Growth through Smart Specialisation A practical guide for ERDF managing authorities*. Luxembourg: Publications Office of the European Union.

ECO3 – Smart and Ecological. Retrieved from https://eco3.fi/en Accessed March 15, 2019

Finland, a land of solutions: Government Action Plan 2018–2019. Finnish government publication series 29/2018. Retrieved from http://julkaisut.valtioneuvosto.fi/handle/10024/160985 Accessed: December 10, 2018).

FORA. (2009). Kortlægning af miljøteknologiske virksomheder i Danmark. Copenhagen: FORA.

Grillitsch, M. & Asheim, B. (2018). Place-based innovation policy for industrial diversification in regions, *European Planning Studies*, *26*(8), 1638–1662, doi: 10.1080/09654313.2018.1484892

Grillitsch, M. & Hansen, T. (2018). Green industrial path development in different types of regions. *Papers in Innovation Studies*, Paper no. 2018/11. Circle, Lund: University of Lund.

Grillitsch, M., Hansen, T., Coenen, L., Miörner, J., & Moodysson, J. (2018). Innovation policy for system wide transformation: the case of strategic innovation programs (SIPs) in Sweden. Research Policy.

Grint, K. (2010). Placing leadership. *Policy Studies*, *31*(4), 365–366.

Hambleton, R. (2014). *Leading the inclusive city: Place-based innovation for a bounded planet*. University Policy Press Scholarship Online. doi: 10.1332/policypress/9781447304975.003.0005 Accessed 20 November, 2018.

Hickel, J. (2018). *Why Growth Can't Be Green. Foreign Policy.* Retrieved from https://foreignpolicy.com/2018/09/12/why-growth-cant-be-green/ Accessed December 10, 2018.

Hu, X. R. & Hassink, R. (2017). Place leadership with Chinese characteristics? A case study of the Zaozhuang coal-mining region in transition. *Regional Studies*, *51*(2), 224–234.

Iansiti, M. & Levien, R. (2004). Strategy as ecology. *Harvard Business Review*, *82*(3), 1–11.

Innovative Hiedanranta. Retrieved from www.tampere.fi/en/housing-and-environment/city-planning/development-programs/hiedanranta/innovative-hiedanranta.html Accessed February 1, 2019.

Jänicke, M. (2012). ''Green growth'': from a growing eco-industry to economic sustainability. *Energy Policy*, *48*, 13–21.

Karlsen, J. & Larrea, M. (2012). Emergence of shared leadership in impossible situations: Long-term experiences from a local policy network in the Basque Country. In Sotarauta, M., Horlings, L., & Liddle, J. (Eds.), *Leadership and Change in Sustainable Regional Development*. Abingdon, Oxon: Routledge.

Kasvun agenda – Yritysten menestyksestä työtä ja toimeentuloa. (2017). Työ- ja elinkeinoministeriön julkaisuja. Ministeriö, 11/2017. Helsinki.

Mackinnon, D., Dawley, S., Pike, A., & Cumbers, A. (2018). Rethinking path creation: a geographical political economy approach. *Economic Geography*, doi: org/10.1080/00130095.2018.1498294

Mazzucato, M. (2015). *The Entrepreneurial State: Debunking Public Vs. Private Sector Myths*. London: Anthem Press.

Mikkola, K., Randall, L., & Hagberg, A. (2016). *Green growth in Nordic regions: 50 ways to make it happen.* Stockholm: Nordregio Reports.

Moore, J.F. (1993). Predators and prey: a new ecology of competition. *Harvard Business Review*, *7*(3), 75–86.

Nambisan, S. & Baron, R. A. (2013). Entrepreneurship in innovation ecosystems: entrepreneurs' self-regulatory processes and their implications for new venture success, *Entrepreneurship Theory and Practice*, *37*(5), 1071–1097.

Nanus, B. (1992). *Visionary Leadership: Creating a Compelling Sense of Direction for Your Organization*. San Francisco: Jossey-Bass.

Nicholds, A., Gibney, J., Mabey, C., & Hart, D. (2017). Making sense of variety in place leadership: the case of England's smart cities. *Regional Studies*, *51*(2), 249–259.

Normann, R. (2013). Regional leadership: a systematic view. *Systematic Practice and Action Research*, *26*(1), 23–38.

OECD (2015). *Local Economic Leadership*. Paris: OECD.

Ormala, E. (2019). Suomen kilpailukyvyn ja talouskasvun turvaaminen 2020-luvulla. Työ- ja elinkeinoministeriön julkaisuja 2019:1; Helsinki

Raunio, M., Nordling, N., Ketola, T., Saarinen, J. P., & Heinikangas, A. (2016). *Avoin innovaatioalusta kaupunkikehittämisen lähestymistapana: Käsikirja kehittäjille*. Retrieved from

https://www.pirkanmaa.fi/wp-content/uploads/alustajohtamisen-käsikirjapieni.pdf / Accessed January 2, 2019.

Rinkinen, S. (2016). *Clusters, innovation systems and ecosystems: Studies on innovation policy's concept evolution and approaches for regional renewal*. Lappeenranta: Acta Universitatis Lappeenrantaensis 728.

Roberts, N. C. (1985). Transforming leadership: a process of collective action. *Human Relations*, *38*(11), 1023–1046.

Räsänen, P. (2018) *From Regional Clusters to Innovation Platforms*. A guest lecture at the Tampere University, March 15, 2018. Tampere.

Scott, W. R. (2001). *Institutions and Organizations* (2nd ed.). Thousand Oaks, California: Sage.

Sotarauta, M. (2016). *Leadership and the city: Power, strategy and networks in the making of knowledge cities.* Abingdon, Oxon: Routledge.

Sotarauta, M. (forthcoming) Leadership for Urban and Regional Innovation. In Bratton, J. (Ed.), *Organizational Leadership*. Sage.

Sotarauta, M. & Beer, A. (2017). Governance, agency and place leadership: lessons from a cross national analysis. *Regional Studies*. *51*(2), 210–223.

Sotarauta, M. & Kautonen, M. (2007). Co-evolution of the Finnish national and local innovation and science arenas: towards a dynamic understanding of multi-level governance. *Regional Studies*, *41*(8), 1085–1098.

Sotarauta, M. (2010). Regional development and regional networks: the role of regional development officers in Finland. *European Urban and Regional Studies*, *17*(4), 387–400.

Sotarauta, M., Beer, A., & Gibney, J. (2017). Making sense of leadership in urban and regional development. *Regional Studies*, *51*(2), 187–193.

Suomen biotalousstrategia. (2014), Edita Publishing Oy.

Sydow, J., Lerch, F., Huxham, C., & Hibbert, P. (2011). A silent cry for leadership. *Leadership Quarterly*, *22*, 328–343.

Tampere's Hiedanranta to be the first in Finland to produce carbon-negative district heating. Retrieved from www.tampere.fi/en/city-of-tampere/info/current-issues/2018/10/231020181.html Accessed February 1, 2019.

Towards green growth: A summary for policy makers May 2011. Paris: OECD. Retrieved from https://www.oecd.org/greengrowth/48012345.pdf Accessed November 20, 2018.

Trickett, L. & Lee, P. (2010). Leadership of "subregional" places in the context of growth, *Policy Studies*, *31*(4), 429–440.

Tutkimus- ja innovaationeuvoston visio- ja tiekartta. (2017). Retrieved from https://valtioneuvosto.fi/documents/10184/4102579/TIN-visio-ja-tiekartta.pdf/980ac849-fd12-4027-bcc2-ee290e36016a/TIN-visio-ja-tiekartta.pdf Accessed January 11, 2019.

Uyarra, E., Flanagan, K., Magro, E., Wilson, J.R., & Sotarauta, M. (2017). Understanding regional innovation policy dynamics: actors, agency and learning. *Environment and Planning C: Politics and Space*, *35*(4), 559–568.