THE FAIR TRADE OF ENVIRONMENTAL EFFECTS AND REGIONAL DISPARITIES

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ABSTRACT
This paper describes consequences of allocation of environmental effects for companies located in regions marked by economic disparity. It implies a dualistic causality through pointing at how attempts to decrease environmental effects would also increase the regional disparity. To the point, any attempt to allocate environmental effects on the company level, would potentially increase the regional disparity, while regional disparity itself may cause negative environmental effects. The paper illustrates the matter through a single case study supported by data on transportations among regions in Sweden. It concludes that the delicate dilemma of allocating environmental effects is not simply a matter of apply a system level on transportation, but also of balancing various interests towards one another. Contributions are made to the ongoing debate on sustainability through indicating that allocation of environmental effects is not as straightforward as the corporate level social responsibility suggests. The paper also contributes to research on economic disparities through indicating that an increased attention to environmental effects may have regional consequences and thereby potentially threaten other goals set by the society.

Keywords: Allocation; Case study; Economic disparities; Environmental effects; Logistics; Transportation

INTRODUCTION
Regional economic disparities have been widely researched. Aims with such studies have been to describe imbalances between countries, regions, or cities vis-à-vis rural areas in terms of employment, finances and the like (Beenstock & Felsenstein, 2008; Hackbart & Anderson, 1975; Meyer, 1963). Regional imbalances could in that sense be understood as inequalities in terms of resources between various geographical areas. Reasons for such inequalities may be prosperities of individual regions, but may also result from centricity – periphericity of regions and companies, where population densities may have affected companies’ location decisions, for instance. While much effort has been placed on describing regional economic disparities and reasons therefore, less is known about the effects of such disparities in areas such as environmental consequences.

Attention is increasingly brought to environmental consequences of operations, not the least related to global goals and sustainability (Brundtland, 1987; United Nations, 2018). Studies have acknowledged how the firm level is not enough to grasp environmental impact which has previously been captured through discussing network-level assessments of environmental impact, not the least related to the IMP perspective (Öberg, Huge-Brodin, & Björklund, 2012). Such studies have though disregarded other types of effects, such as those of regional economic disparities of assessments and allocations of environmental effects. This paper points at this research gap and asks: What consequences does the allocation of environmental effects have on regional economic disparities? The paper thereby focuses on regional economic disparities and their consequences for, but also of, how environmental effects are allocated. We thereby adopt a two-way causality discussion to the area. The purpose of this paper is to describe
consequences of allocation of environmental effects for companies located in regions marked by economic disparity. In the paper, regional economic disparities specifically refer to an imbalance in population and thereby market potential and employment rate among regions. Empirically, a single case study related to the allocation of environmental effects of transports is used to illustrate the matter.

Through adopting an IMP perspective on the matter, contributions are made to research on sustainability related to the allocation of environmental effects. There is an ongoing debate in that field on how the include more holistic perspectives, but these are mostly presented in terms of life cycle analyses and thereby focuses on a single item from an eco-system point of view. The integration of various effects as those of regional economic disparity and environmental effects is a delicate issue as it puts conflicting motives head-to-head, where the integrative ontology of IMP helps to capture complexities.

THEORETICAL BACKGROUND AND FRAMING

Regional disparities – a brief literature description

Studies on regional economic disparities early concentrated on describing differences between regions (Meyer, 1963). Such studies included the variation in distribution of income, employment and growth, often on national levels. Other studies focused on differences between cities and rural areas, and also aimed to find solutions for such differences (Fisher, 1979; Nikiforev, 1975). More recent studies have increasingly concentrated on imbalances in regions including several countries, such as the development of Eastern Europe, the European Union or Asia (Barjak, 2001; Bosker, 2009; Casellas & Galley, 1999; Maza & Villaverde, 2004; Sen, 2006) or the so-called north-south dilemma (Takahasi, 2001). In studies such as Malizia and Ke (1993), effects of economic disparities are discussed, thus indicating that economic disparities are not only an effect of an imbalance in resource distribution (cf. Quah, 1996), but also causes such effects (unemployment and stability in the specific paper). Martin and Sunley (2006) describe regional economic development in terms of path dependence, meaning that history shapes the future of strong vis-à-vis weak regions.

Regardless of if regions are defined as areas within countries, as cities vis-à-vis rural areas, as clusters of countries, or even entire-world differences, the central issue in studies on regional economic disparities is that there are imbalances between regions. Such imbalances could either be viewed as existent per se, where focus is on consequences of those imbalances, or are referred to as outcomes of inequalities in resource distribution. Path dependence indicates a circular causality pattern of regional economic disparities; disparities would be expected to grow and distance in economic terms increase as poor regions continue to attract less and less economic activities, for instance. A development where certain regions prosper, while others experience a negative development have attracted governmental support systems to decrease imbalances. The importance developing rural areas has for instance included relocation support to firms and decentralisation of governmental organisations.

Still, an imbalance between regions means that there might also an imbalance in demand and supply. The relocation of companies and other organisations may decrease such imbalances, but also often increase the need for exchanges between prospering and less-fortunate regions. In the light of goals of decreased transportation (European Commission, 2001), regional disparities may increase the need for transportation between regions. Puga (1998) describes how transportation costs may affect companies’ location decisions and if the aim is to decrease transportation, companies would increasingly move to prospering areas marked by centricity with regards to customers. Fundamentally, there is thus a risk that an increased focus on
decreasing transportation would increase regional economic disparities, which means that two goals that are on the political agenda, the environment and economic disparities, may counterforce each other. This is the issue discussed in this paper.

Environmental effects

Environmental effects could be understood as the undesirable, yet acknowledgeable, negative effects that an activity may have on the environment (cf. Brundtland, 1987). The effects may appear as pollution, noise, damp, and the like, that negatively affect elements such as air, water or ground. Their source would ultimately be mankind and mean an interference with ecological systems. The past decades have seen an increased focus on the environment, not only in research, but also in the political debate (Bolton & Hannon, 2016; Carter & Easton, 2011). Decreasing environmental effects are a central goal driven by environmentalists and by society as such.

To come to terms with environmental effects, interest has been directed to the development of environmental-friendly alternatives and entirely new solutions that will have none or less negative impacts on the environment. An example of more environmental-friendly alternatives is fuel that is not as harmful to the environment as oil, while electrically-driven cars represent a new solution to decrease negative effects on the environment. Related to transportations, different transport modes (e.g., trains rather than cars) and local production and consumption (Baron, 2012) exemplify environmental-friendly alternatives and entirely new solutions, respectively.

To foster a development of environmental-friendly solutions, increased attention has been placed on allocating environmental effects. Such allocation means that products or companies are seen as carriers of environmental harm and therefore also should carry the costs of pollution, and the like (cf. Desey & Dobias, 1992). The idea of allocating environmental effects and possibly attach costs to them is ultimately a means to steer behaviour. Built on ideas of utility maximisation (Handa, 1982; Tomer, 2001; Van Ees & Garretsen, 1993), it is believed that (individuals and) companies will only act in an environmental-friendly manner if this is expressed by costs matching the environmental harm. This anticipates that each individual party will attempt to maximise its utility per cost unit and therefore steer over to finding environmental-friendly solutions (alternatives or entirely new solutions) once the utility per cost quota exceeds more harmful alternatives. From this follows the importance of pricing and distributing environmental effects in a manner that will not cause undesirable behaviour by individuals and companies. Obviously, and increasingly recognized in research, companies may aim to positively contribute to a more sustainable environment in other ways than through guiding principles or direct allocation based on their per kilometre footprint, for instance (cf. Alrazi, de Villiers, & van Staden, 2015; Vilanova, Lozano, & Arenas, 2009). Such positive contributions may be a means to position the firm and raise profit, or follow from idealism related to the business, and hence be more proactive than to follow allocation schemes produced by governmental authorities. Still, such schemes would not be negotiable and many heavy industries have shown to foremost encompass their environmental behaviour to what is required, while more consumer-oriented companies would include the environment as a means to position the business (Öberg, 2012).

The transportation sector is responsible for a substantial part of environmental effects (Eurostat, 2003). With a growth in transport volumes, increased attention has been directed at coming to turns with emissions and other environmental effects sourcing from the sector. Such programmes include more environmental-friendly alternatives, in terms of fuels and transportation modes, but also aim to decrease overall transportation volumes (European
Commission, 2001). This would be achieved through: (i) contributing to mode shift (ways of transportation, from road to rail, for instance); (ii) reducing the demand for transport, and; (iii) reducing the environmental impact of transport (improve utilisation) (Aronsson & Huge Brodin, 2006; European Commission, 2001).

Improved utilisation would include that less vehicles are run empty or not use their full freight capacity. In the best of systems, this would mean that transportation routes are constructed so that vehicles can unload and reload and minimise empty carriages (Öberg et al., 2012). Ultimately such a goal could also lead to the relocation of suppliers and customers in the logistic system. According to Wu and Dunn (1995) companies need to re-evaluate location decisions to come to turns with environmental effects. In extreme, and in order to minimise environmental effects, this would include that all suppliers and customers were located within a limited space (Saint, 2014), or possibly that there was an equilibrium between incoming and outgoing transports, so as to safeguard that no empty carriages would travel the roads. However, and the essence of this paper, such policies would work opposite to goals of keeping urban areas viable and may also further damage less prosperous areas on the expense of centralisation to more prosperous city areas. In that sense, there is a risk that attempts to minimise environmental effects of transportation may increase economic disparities, at the same time as such disparities may lead to negative environmental consequences.

An IMP perspective

The IMP perspective emphasises how companies are connected and affect one another based on interdependencies of parties (Hallén, Johanson, & Seyed-Mohamed, 1991). Such a perspective thereby extends the lens to capturing effects on broader levels than those formed by a single actor’s activities, and the network as indefinite (Anderson, Håkansson, & Johanson, 1994) points at how everything and everyone is interlinked – directly or indirectly. While the IMP perspective is extensively used to capture the interplay among business actors, the ideas of interdependence and interconnectivity would be relevant also when studying a specific type of effect of business, or indeed the causal interplay among various types of effects, such as those of environmental effects and regional economic disparity. These effects could be regarded as resources in systems of various effects (Baraldi, Gressetvold, & Harrison, 2012; Gressetvold, 2001; Waluszewski, Hadjikhani, & Baraldi, 2009) and here helps to capture the two-way causality between environmental effects and regional economic disparity as interdependent variables.

RESEARCH DESIGN

The empirical part of this paper is based on a single case study (the case study is considerably shortened in this version of the paper. Calculations and statistical data is part of the full case). The case study method allowed us to capture and discuss allocation of environmental effects in the context of regional disparities (Dul & Hak, 2008; Yin, 1994). While a case study approach allows for detailed data on specific events and companies, it does not allow for generalisation of results in the same capacity as data surveys on a large number of cases. However, results from a case study could be expected to be transferable to other cases (Guba & Lincoln, 1989; Hirschman, 1986) and thus give indicative learning lessons for other situations. In this specific paper, the case study aims to illustrate allocations of environmental effects in situations of imbalances between regions. With an increased focus on transportation and their effects, and with regional imbalances being evident between many regions (see e.g., Barjak, 2001; Casellas & Galley, 1999; Sen, 2006), our findings would be meaningful for other companies.
The company under study, Northern Bakery (anonymised case), was chosen as an interesting case based on its location in the north of Sweden, yet serving customers in the south of Sweden and abroad. The company has worked actively with environmental policies on a company level, and therefore provided access to data based on its interest for environmental effects and regional imbalances. Data for our case analysis was collected using a multisource data method (Denzin & Lincoln, 2000). Data sources included statistics about transportation to and from the region in question, data about the studied company’s transportations, interviews with the case company and other documentation about the company. Interviewees included the logistics and purchasing manager and the manager of environmental policies.

In the analysis procedure, we made calculations of environmental effects based on data from transportation statistics and the company’s routes of transportation and locations. We further calculated for environmental effects of the company based on if the company should relocate its business closer to customers. However, while we aim to give a detailed picture of the specific company, our findings and contribution of the paper lies beyond the scope of the specific company.

REGIONAL IMBALANCES OF TRANSPORTATION – THE NORTHERN BAKERY CASE

Northern Bakery is located in a small municipality in the northern part of Sweden. This part of Sweden is sparsely populated and the unemployment rate is high. Regional resources have for long been devoted at making companies relocate to the area, while Northern Bakery is located there since it was first founded more than a hundred years ago.

“The family is from around here and started the bakery here. Since the bread is made with traditions from the region and the family feels strongly for the area, it is still run from here. ... It is though a challenge to bake the bread here since most customers are in the south of Sweden.”

Still being owned within the founding family, the company has worked to position itself as a sustainable firm. Transportation though remains a main issue as the bread transports from the north to customers in the southern part of Sweden and internationally. The large distance would, if environmental effects are allocated per kilometre – in theory or practice – mean that the company would need to carry heavy such effects and a relocation to the southern part of Sweden (or indeed the Stockholm area) would assume to be advantageous from that point of view.

“A future-related question is the location of our warehouses to be able to deliver to the entire country from a financial and sustainable point of view. Should we develop our warehouse here? Or elsewhere? Financially? Sustainably?”

Based on statistics on logistics flow of food transportation in Sweden and from the company, where the national logistics statistics reflects the regional imbalance in terms of employments and centricity/periphery, there are 43 percent more transports to the area where Northern Bakery is located, than from it. Northern Bakery has developed a system where it uses return transports in the form of trains going back to the southern part of Sweden, for its transports to uneven that balance. Eager to position itself as environmentally aware, the company has thus tried to minimise its actual environmental effects, while these would be visible only on the system’s level including both inbound and outbound transportations. And, it has indeed considered the relocation to Stockholm for the sake of minimising calculated environmental effects when seen as charged for these per kilometre of transportation.
The company has some 300 employees and while being a middle-sized company it accounts as one of the main employers in the municipality where it is located. From an employment point of view, a relocation would hence hit hard on the local municipality.

**ANALYSIS**

There are some alternatives to consider related to the allocation of environmental effects, which could be seen to concern the company or the system level (Öberg et al., 2012). For Northern Bakery, the former would indicate how the company would be charged – or carry responsibility for – a large environmental effect. On the system level, and with the company largely using transports that would otherwise run empty in their return to more populated area, the company’s transportation effects on the environment would be much more neglectable.

Still, these calculations consider only the environmental effects of transportation, and certainly relate to other ones as choice of transportation mode, vehicle fleet for such transportations, and related. Moreover though, and at the center of the argument in this paper, it would not be enough to capture only the effects on the environment, but also those connected with the regional disparity (Beenstock & Felsenstein, 2008; Hackbart & Anderson, 1975; Meyer, 1963). Here, any choice to relocate to decrease the environmental effects would need to be contrasted with the effect for the region. Fundamentally, the relocation to a more central area – in terms of customers’ locations – would increase the regional disparity further, while not, on the system level, lead to less environmental effects. In the broader perspective, an increased focus on environmental effects specifically related to transportation as one of the main carriers of such effects, would lead to increased centralized location, as do any trends of local production, smart cities, and related. But what seems to be positive for the environment may pay dearly when it comes to less unfortunate regions. And political decisions become put towards other ones in this area. Together, this denotes a delicate dilemma between two political goals: that of environmental sustainability and that of balancing regions better. Through treating these as interdependent (Hallén et al., 1991): each affecting the other negatively, the complexity of issues is raised, which may not produce an answer for solution, but a better capturing of effects of intervention related to either goal.

**CONCLUSIONS**

This paper describes consequences of allocation of environmental effects for companies located in regions marked by economic disparity. It points at a dualistic causality related to the matter in how a company level focus on environmental effects may increase regional disparity related to remotely located regions, while remotely located regions may in their imbalance create uneven environmental effects. The two good of decreasing environmental effects while decreasing the imbalance among regions, thereby creates a delicate dilemma, for companies, those active in the regions, and those societal functions deciding on allocation of environmental effects and regional support, respectively.

The paper contributes to research on environmental effects of transportation through highlighting the difficulties of allocating environmental effects. Results from the paper forwards new insights into the discussion about the relationship between transportation and environmental effects, in showing that focus should not merely be placed on how to reduce transportation costs (cf. European Commission, 2001), but on the environmental consequences of transportation, which, according to this paper, need not necessarily follow the same route, and which may also have consequences for regions of economic disparities. The paper further contributes to research on economic disparities through indicating that an increased attention to
environmental effects may have regional consequences and thereby potentially threaten other goals set by the society.

REFERENCES


