

Tourism Performance and Management of the French Territory: The impact of the NOTRe territorial reforme

*Performance touristique et gestion du territoire français :
l'impact de la réforme NOTRe*

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ABSTRACT

The purpose of this paper is to analyze the performance of the French tourism and hospitality sector through a regional approach and to consider the impact of the NOTRe territorial reform. Efficient use of resources is a key issue in order to maintain its position as the world's leading tourist destination and improve its competitiveness. To do this, a non-parametric approach based on DEA is adopted. More

precisely, this paper proposes a study of the potential performance gains through mergers of French regions. The findings show potential performance gains, in particular through the learning effect.

Key-words

Territory, Tourism planning, Performance, Benchmarking, Merger

RÉSUMÉ

Le but de cet article est d'analyser la performance du secteur touristique et hôtelier français à travers une approche régionale et de s'interroger sur l'impact de la réforme territoriale NOTRe. En effet, une bonne gestion des ressources est nécessaire afin que la France renforce sa position de première destination mondiale et améliore sa compétitivité. Pour ce faire, une approche non-paramétrique basée sur la méthode DEA est adoptée. Plus précisément, cet

article propose une étude des gains de performance touristique potentiels dans le cadre des fusions des régions françaises. Les résultats soulignent des gains potentiels de performance notamment à travers l'effet d'apprentissage.

Mots-clés

Territoire, Tourisme, Performance, Benchmarking, Fusion

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1. INTRODUCTION

A system is a “set of elements in dynamic interaction, organized with a goal in view” (De Rosnay, 1977). As Goncalves (2012) has pointed out, a system allows the various actors in a sector and inhabitants to interact with each other. A systemic approach therefore involves a comprehensive analysis of complex phenomena (Botti, 2011). The author has applied the systemic approach in order to consider destinations as companies and has gone beyond the definition of a geographical area in order to emphasize the composite nature of the destination product which can then be “consumed” by the tourist. The destination, whether considered as a product or a company, exists in a competitive environment (Flagestad and Hope, 2001; Goncalves, 2012). Botti (2011, p.71) has identified three similarities between a destination and a company. First, like a company, a destination is integrated within an environment. It attempts to carry out activities by using the individuals which form it and the available resources. As a tourist product, the destination sets out to attract and cater for the demand that originates in its environment. In both cases they have to cope with external factors, which can affect their activities. Secondly, the destination is a tourism product. Like a firm, it will use its resources and capabilities in order to attract and retain consumers, namely tourists. It provides products that are suited to the market and is not limited to one of the sectors it comprises (accommodation, restaurants, leisure activities, etc.). Thirdly, a destination needs to be regulated in order to be able to adapt to a disruption in its environment. A destination can thus be seen as a system made up of three interdependent subsystems (a decision system, an information system and an operating system).

In the literature, the competitiveness of destinations is often linked with their performance (Ritchie and Crouch, 2003; Botti *et al.*, 2009). The study of destination performance often depends on what data is available data and therefore follows the existing territorial and administrative divisions. Until recently, the territory of metropolitan France was divided into 22 regions. However, in January 2016, a territorial

reform known as NOTRe (Nouvelle Organisation Territoriale de la République - New Territorial Organization of the Republic) reorganized the territory into 13 regions. Territorial reform that reduced the number of regions was not a new idea. Indeed, in 2009, a proposed 15-region map of France was debated, and in 2012, the creation of 8 territories was proposed under the name “Territories in motion” in order to bring each municipality closer to a strong economic hub (Source: www.cartesfrance.fr). In January 2014, the debate was re-opened and considered halving the number of regions. Then in April 2014, the government proposed a map of 12 regions. In November 2014, after several other debates, the map of the 13 new regions of France was finally adopted by the National Assembly. Six regions remain unchanged, namely Brittany, Corsica, Île-de-France, Centre, Pays de la Loire and Provence-Alpes-Côte d’Azur. Many territorial jurisdictions will be redistributed. However, as far as tourism is concerned, the regions will not play a leadership role and this will remain shared between the various local and regional stakeholders. However, the reform will generate major regional hubs in terms of accommodation capacity since all the regions will have at least 10,000 rooms.

In the same way that a firm can merge with another the NOTRe reform results in the merger of a number of French regions. In order to analyze this question, we have implemented the systemic approach (Botti, 2011) and the theoretical framework of mergers. This raises the issue of the impact of the new territorial division of France on the performance of the French tourism sector. In the context of the French tourism paradox, i.e. that France is the leader in terms of international tourist arrivals but only in 5th position in terms of tourism receipts, will this new division of the French territory allow more efficient management of resources¹? Good use of resources is indeed necessary, in order for France to consolidate its position as the number one tourist destination and improve its competitiveness. We therefore need to identify potential benchmarks for the French territory in order to improve practices in underperforming regions. To this end, we first of all decided to use the

¹ The efficiency in question is the articulation between the resources used (inputs) and the results obtained (outputs). This is a technical efficiency (Farrell, 1957) which is linked to the articulation between inputs and outputs, and must be distinguished from other forms of efficiency (Leibenstein, 1966).

DEA method (Data Envelopment Analysis) in order to obtain efficiency scores for each French region. Secondly, we used the Tone proposal (Cooper *et al.*, 2007) to identify whether the mergers are efficient or not from a tourist point of view and Bogetoft and Wang's decomposition methodology (2005) in order to identify the various potential performance gains.

The remainder of this paper is structured as follows. Section 2 presents the theoretical framework. Section 3 provides a brief review of the literature on destination performance and management. Section 4 presents the data used and describes the methodological framework, namely non-parametric DEA methodologies in the context of mergers. Section 5 shows the results obtained. Finally, some ideas for further consideration are given in Section 6.

2. THEORETICAL FRAMEWORK:

business mergers and performance

The management of mergers and acquisitions is still very much on the agenda and an important issue in view of the rising number that are taking place (Sargis Roussel, 2004). Merger and acquisition is currently considered to be the most widespread development strategy (Meier and Schier, 2009), despite the fact that more than 50% of mergers are followed by a failure (Napier, 1989, Buckley and Ghauri, 2002, Schoenberg, 2006). These operations fall within the framework of strategic management and in particular within the framework of external growth strategy, in which the means of production are held by players outside the firm, and are at the heart of industrial and technological policies (Meier and Schier, 2009).

A merger involves the joining together of businesses and is a way in which a firm can develop (Meier and Schier, 2009). If we consider that a region can be likened to a company (Botti, 2011), we can apply the theory of business mergers to the merger of French regions through territorial reform.

The literature gives several definitions of mergers (Sargis Roussel, 2004). Mergers can be seen as

an "organizational transformation" (Buono and Bowditch, 1989, p.12), as "strategic agreements" for the purpose of pooling resources (Mayrhofer 2007, p.82) or a means of gaining "access to strategic skills" (Sargis Roussel, 2004, p.2).

Mergers create a renewal in terms of jobs and stimulate the exchange of knowledge (both organizational and relational). Merger operations highlight the concept of operational, managerial and financial synergy, i.e. the creation of value for the companies concerned, as embodied in particular in the theory of efficiency. Synergy is the main motivation for a merger (Hoberg and Philips 2010, as cited in Chalençon, 2011, p.3).

However, according to Meier and Schier (2009), the outcomes in terms of synergy and productivity growth have not been clearly established in the literature. Shrivastava (1986) has shown that a majority of merger operations do not result in better performance. This can be explained by inappropriate partner selection (Shrivastava, 1986, p.65) or by organizational resistance to the change (Pablo, 1994, p.831). In general, in order to explain the failures of mergers and acquisitions, Sargis Roussel (2004, p.4) points out that the literature highlights either poor forecasting and evaluation (ex-ante reason) or an inadequate return on investment (ex post reason).

According to Mayrhofer (2007, p.82), the fact that firms merge can be explained by firm-centered theories (transaction cost economics and evolutionary theory) and theories that focus on links between a firm and its environment (the industrial economy and the resource dependency model). Chalençon (2011) studied the paradox that affects mergers and acquisitions, i.e. their disappointing results compared to very good expected performance, and also highlighted the motivations that drive managers to adopt merger strategies. On the basis of various theories, including efficiency theory, this scholar found that the most frequently mentioned of these are "the emergence of market power, the effects of synergies, access to new markets and new technologies" (Chalençon, 2011, p.3), and "the personal interests of managers" (Chalençon, 2011, p.19). To do this, the author applied various theories including efficiency theory.

Analysis of performance may justify mergers (Meier and Schier, 2009). This is why in the literature a number of scholars have evaluated the performance of mergers in a number of domains. For example, Manuela *et al.* (2016) recently analyzed post-merger operational and financial performance in the aviation sector.

Our study applies the theory of efficiency and takes into account the net gains that can be obtained by the synergy resulting from the merger of French regions. Managing the allocation of resources whether for a firm or a destination is a key factor in the implementation of an operation of this type. For this reason, this study will set out to analyze the merger projects for regions in order to assess whether or not the management of resources is efficient and hence validate the choice of destination managers.

3. PERFORMANCE AND DESTINATION MANAGEMENT: towards better practices

Efficiency and productivity in the tourism industry has been extensively analyzed in the literature. A large number of contributions have considered the hospitality sector, travel agencies, etc. The focus of tourism destination is more recent, emerging a decade ago. The concept of destination refers to a geographical area that offers a tourist product made up of, among other things, one or more attractions (Botti *et al.*, 2008). The study of the competitiveness of destinations requires a comprehensive approach and this has been formalized by the fundamental contribution of Ritchie and Crouch (2003) which introduced a conceptual model of destination competitiveness. On the one hand, this model operates in two types of environment: the micro and the macro. The macro, or global, environment takes account of the fact that the tourist system is an open system in that it is affected by various phenomena and external elements that are not specific to it. The micro, or competitive, environment is an integral part of the tourism system and determines the actions of its players. In addition, the model has five foundations: the resources and factors that strengthen

the destination, the tourist attractions, destination management, development and tourism policies, and the determinants that amplify the foregoing factors. Our research will focus on the competitive advantages of the destination, that is to say its capacity to deploy its resources, by measuring performance through efficiency.

A destination can take different, more or less complex, forms and study boundaries often coincide with administrative boundaries because they are determined by the availability of data. Tsionas and Assaf (2014) present a very interesting review of the literature on this subject. Analysis of destination performance is therefore carried out at different scales, for example at the global level (Peypoch, 2007a, Assaf and Josiassen, 2012), at the continental level (Assaf, 2012), at the national and regional level (Cracolici *et al.*, 2007, 2008); Botti *et al.*, 2009; Barros *et al.*, 2011), or at the conurbation level (Corne, 2015).

France as a destination has been the subject of several studies. Peypoch (2007) proposed an inter-regional comparison in terms of productivity, whereas Botti *et al.* (2009), following the contribution of Ritchie and Crouch (2003), studied the efficiency of France at the regional level. Subsequently, Barros *et al.* (2011) estimated the performance of French tourism at the regional level with a two-stage DEA model. The present research is a contribution to the literature on the analysis of the efficiency of tourism destinations and specifically the case of the French destination, and makes two main innovations. First, it describes a multi-input, multi-output production technology including a human capital factor, which is quite unusual among existing studies literature. Indeed, to our knowledge, of the extensive literature using the DEA method in the analysis of the tourism sector, only the work of Cracolici and Nijkamp (2006) uses a similar input. This absence can probably be explained by a lack of data. However, human capital is one dimension of performance (Mincer, 1958) and training has been identified as one of the four foundations of the French government's recent action plan to mitigate the French tourism paradox (Fabius, 2015). Our study therefore includes the role of education and training on tourism performance. Secondly, this paper analyzes the NOTRe territorial reform in

France and its potential impacts on the efficiency of the tourism sector. It sets out to decide whether this reform seems appropriate from the standpoint of tourism, in the context of the French tourism paradox that has been observed since the 1980s.

4. RESEARCH DESIGN

4.1. Data and methodologies

The dataset was sourced from the Institut National des Statistiques et Etudes Economiques (INSEE) and the Fond National d'Assurance Formation de l'Industrie Hôtelière (FAFIH) for the year 2013.

The data was available for all the 96 Départements of metropolitan France and has been aggregated at the regional level.

Four inputs and three outputs were selected in accordance with the literature and data availability

limitations². The first input was the number of employees in the hospitality sector, the second was the number of people enrolled in training for the hotel and catering sector, whether academic, involving in-service training, or an apprenticeship, the third was the number of hotel rooms in metropolitan France, and the fourth was the number of hotels. The outputs were the occupancy rate, the number of French and international arrivals and the number of overnight stays by French and international tourists. These variables are commonly used to evaluate the performance of a tourist destination (Tsionas and Assaf, 2014). The feature of this production technology is the human capital which is represented here by people enrolled in tourism training as described by Cracolici and Nijkamp (2006). Table 1 presents the variables, the indicators, the items evaluated and the relevant sources.

The model is output-oriented as the objective is to maximize the presence of tourists in France. The software programs used to perform the calculations were DEA ProSolver and R.

VARIABLES	INDICATORS	ITEMS EVALUATED	SOURCE
INPUTS	Number of employees in the hospitality sector	Labor input	FAFIH
	Number of people enrolled in tourism training	Human capital	FAFIH
	Number of rooms	Destination's resources in terms of accommodation capacity	INSEE
	Number of hotels		
OUTPUTS	Occupancy rate	Performance indicator for destination in terms of occupancy	INSEE
	Number of French/International arrivals	Measure of the tourists number	INSEE
	Number of overnight stays by French/International tourists		

Table 1 – Summary of variables used

² Data on the hotel sector was selected in order to maintain a degree of homogeneity because it was available for all the départements and is commonly used in empirical studies on performance due to the importance of hospitality in the tourism sector.

4.2. Benchmarking Analysis by the DEA Method

In this paper, the DEA method is used to measure tourism performance³ by applying the concept of efficiency, by which is meant the articulation between the resources used (inputs) and the results obtained (outputs). The choice of this method is justified insofar as we wish to have a means of measuring operational performance that does not impose too many restrictive assumptions. Moreover, the results of this approach can be refined and complemented by a benchmarking analysis, i.e. the identification of benchmarks, which represent best practices within the studied sector. Specifically, from a methodological point of view, this is an external, competitive, benchmarking process. Indeed, in the context of increasing competition between destinations, it is essential to analyze relative performance in order to remain competitive.

The DEA method is a non-parametric methodology. It was introduced and popularized by Charnes *et al.* (1978) and Banker *et al.* (1984), who gave their names respectively to the CCR and BCC DEA models. It performs a relative efficiency calculation for a given sample of Decision Making Units (DMU). It is an operational method that offers various advantages⁴ such as the possibility of using multi-input / multi-output production technologies or the fact that it is not necessary to specify a functional form for the production technology.

The level of efficiency for each DMU is measured by the distance from the best practice frontier. The CCR DEA model evaluates all units uniformly, with an assumption of constant returns to scale. An overall efficiency measure is then obtained, which we can decompose as follows. In contrast, the BCC DEA model assumes variable returns to scale and therefore provides a measure of pure technical efficiency. The scale efficiency measures the distance between the two frontiers of the CCR and BCC DEA models and therefore characterizes the scale effects, that is to say the size at which each unit operates in comparison to an optimal virtual size. The following relationship is thus obtained:

$$\text{CCR Score} = \text{BCC Score} \times \text{Scale efficiency}$$

The efficiency scores from the DEA method are calculated using linear programming techniques, namely optimization programs that satisfy a set of quantitative constraints. In the following empirical application, the various DEA efficiency scores are calculated using the DEA ProSolver software (Cooper *et al.*, 2007).

This first empirical step results in two benchmarking analyses of the French territory, one with 22 regions and the other with 13. It provides the information needed to construct a performance diagnosis in order subsequently to undertake a more detailed analysis of the merger process.

4.3. Mergers of French regions and performance gains with the DEA method

We have applied two approaches to analyze the impact of mergers of French regions. First, we shall implement Tone's proposal (Cooper *et al.*, 2007) in order to identify whether the mergers of the French regions in the context of the NOTRe reform are efficient or not from the standpoint of tourism. Second, we consider the decomposition of the potential gains that can be achieved through mergers (Bogetoft and Wang, 2005, Bogetoft and Otto, 2011) in order to identify several effects (learning, harmony and size).

Tone's proposal (Cooper *et al.*, 2007)

The decomposition of the DEA scores of the CCR model into pure technical efficiency and efficiency of scale highlights the following:

- The position of the DMU with regard to the frontier in terms of returns to scale.
- The score of the unit in question in relation to the frontier of the BCC DEA model.

³ See Goncalves *et al.* (2011) and Goncalves (2013) for applications of this methodology to the tourism sector.

⁴ Contrary to parametric approaches (Coelli *et al.*, 2005) such as SFA (Stochastic Frontier Analysis), for example.

Tone's proposal (Cooper *et al.*, 2007) shows that two technically efficient DMUs are not necessarily efficient after their merger. More precisely, two units that are technically efficient in the BCC DEA model that are in a position of increasing returns to scale will become inefficient if merged. This proposition is illustrated by Figure. 1, in which the merger of units D and E results in the inefficient unit M.

Potential performance gains in a merger

With regard to the DEA method, the seminal work on the issue of mergers was performed by Bogetoft *et al.* (2003) and Bogetoft and Wang (2005).

The potential gains and/or savings that can be realized from mergers between several DMUs can have different sources. These gains (E) can be decomposed into several effects (Bogetoft and Otto, 2011, p.269:

- The learning effect (LE), which refers to a technical efficiency effect, resulting, for example, from the sharing of information on the best practices of each DMU.
- The harmony effect (HA), which characterizes the possible reallocations of resources and capacities within the merged entity.
- The size effect (SI) characterizes the gains from a scale effect, i.e. whether operating on a larger scale has advantages or not (for instance economies of scale).

The following relationship is thus obtained:

$$\mathbf{E\ Score = LE\ Score \times HA\ Score \times SI\ Score}$$

These effects can be represented by the following figure. Points A^* and B^* are the efficient projections

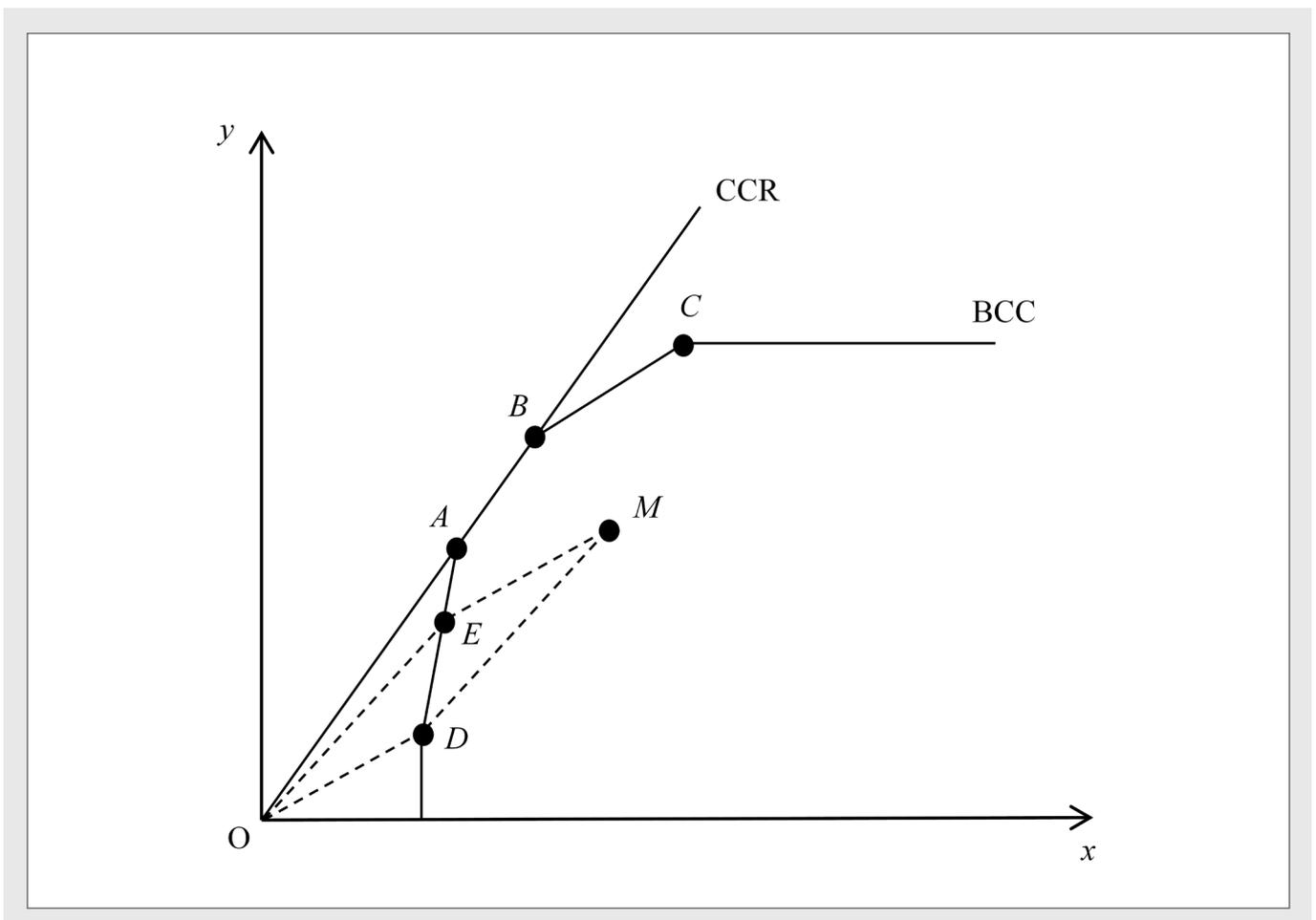


Figure 1 – Example of inefficient mergers
Source : Adapted from Cooper *et al.*, 2007, p.161

of DMU A and B . DMU $A+B$ represents the merger of DMU A and B . The distance between A^*+B^* and $A+B$ represents the potential efficiency gain resulting from learning effects. The distance between A^*+B^* and the frontier represents the other effects (harmony and size).

A brief description of the different components to be calculated is provided in Bogetoft and Otto (2011, p.275). The calculations in question were implemented with the R software and Bogetoft and Otto's "benchmarking" package (2015). The output-oriented CCR model was used in order to take account of competition between regions.

5. RESULTS

5.1. Benchmarking and efficiency analysis: a map of before and after the reform and the consequences of mergers

The map below presents the efficiency scores given by the CCR model for the 22 French regions before the territorial reform.

Table 2 presents the results obtained with the DEA method for the 22 French regions. The columns indicate the CCR efficiency score, the rank of each DMU, the decomposition (BCC score and scale efficiency-SCE), and the position of the DMU relative to its optimal virtual size.

The results from this first benchmarking analysis can be summarized as follows:

- 6 regions are 100% efficient in CCR (Burgundy, Champagne-Ardenne, Corsica, Franche-Comté,

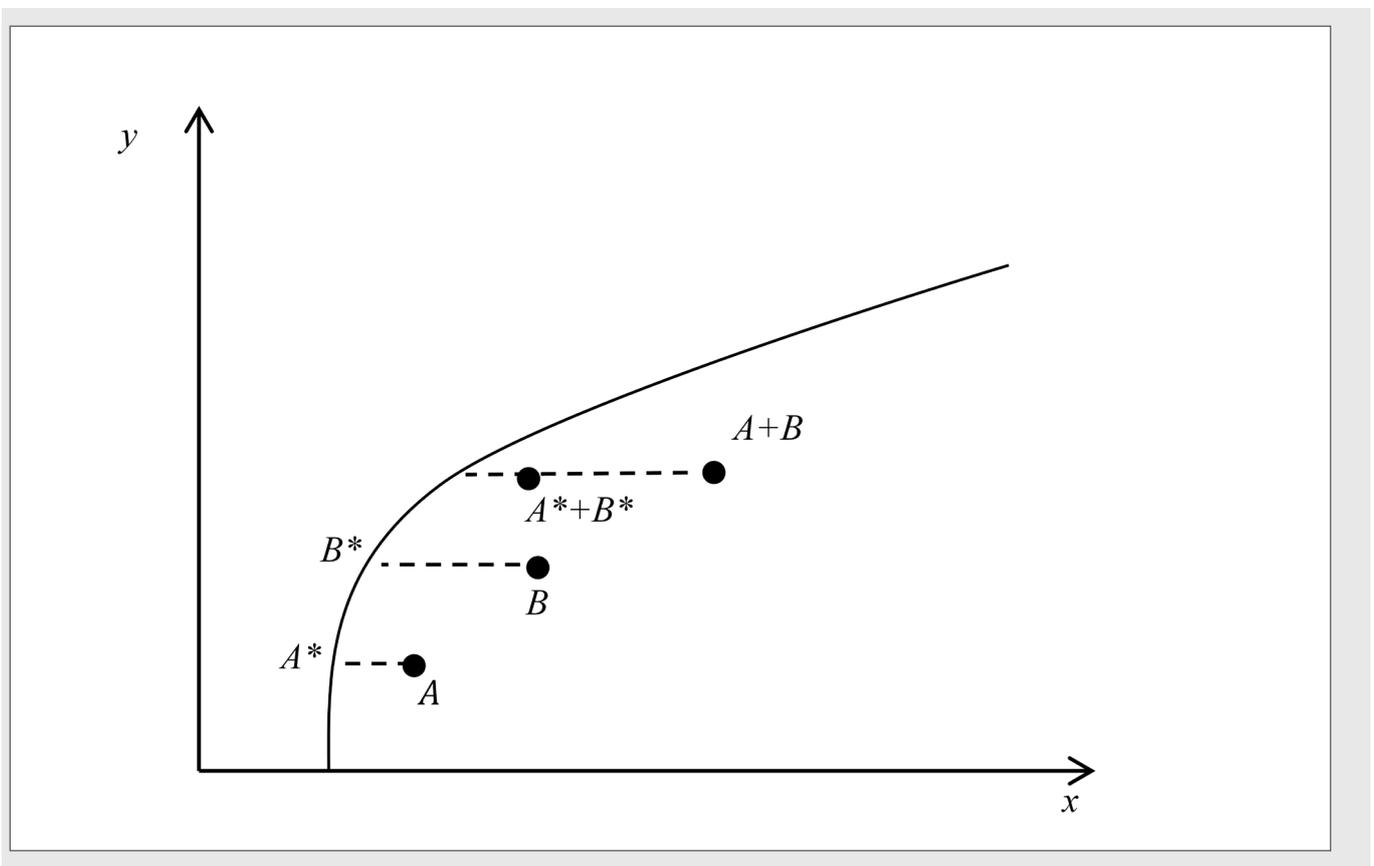
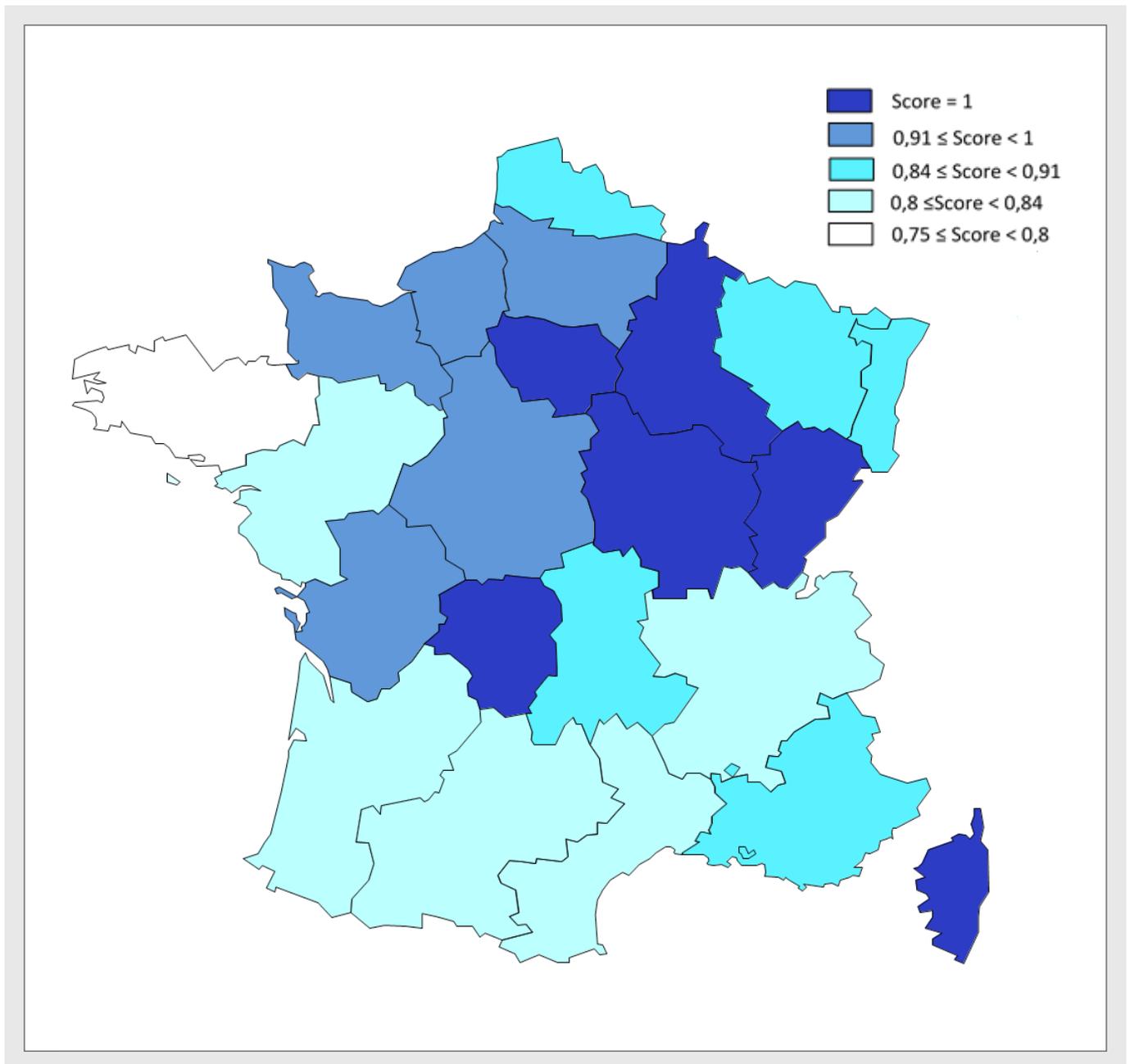


Figure 2 – Performance gains resulting from a merger
Source : Bogetoft and Otto (2011, p.269)



Map 1 – Performance of the 22 French regions
 Note : Map created with the CoucouCarto software.

Ile-de-France and Limousin) and therefore represent best practices in the French tourism sector.

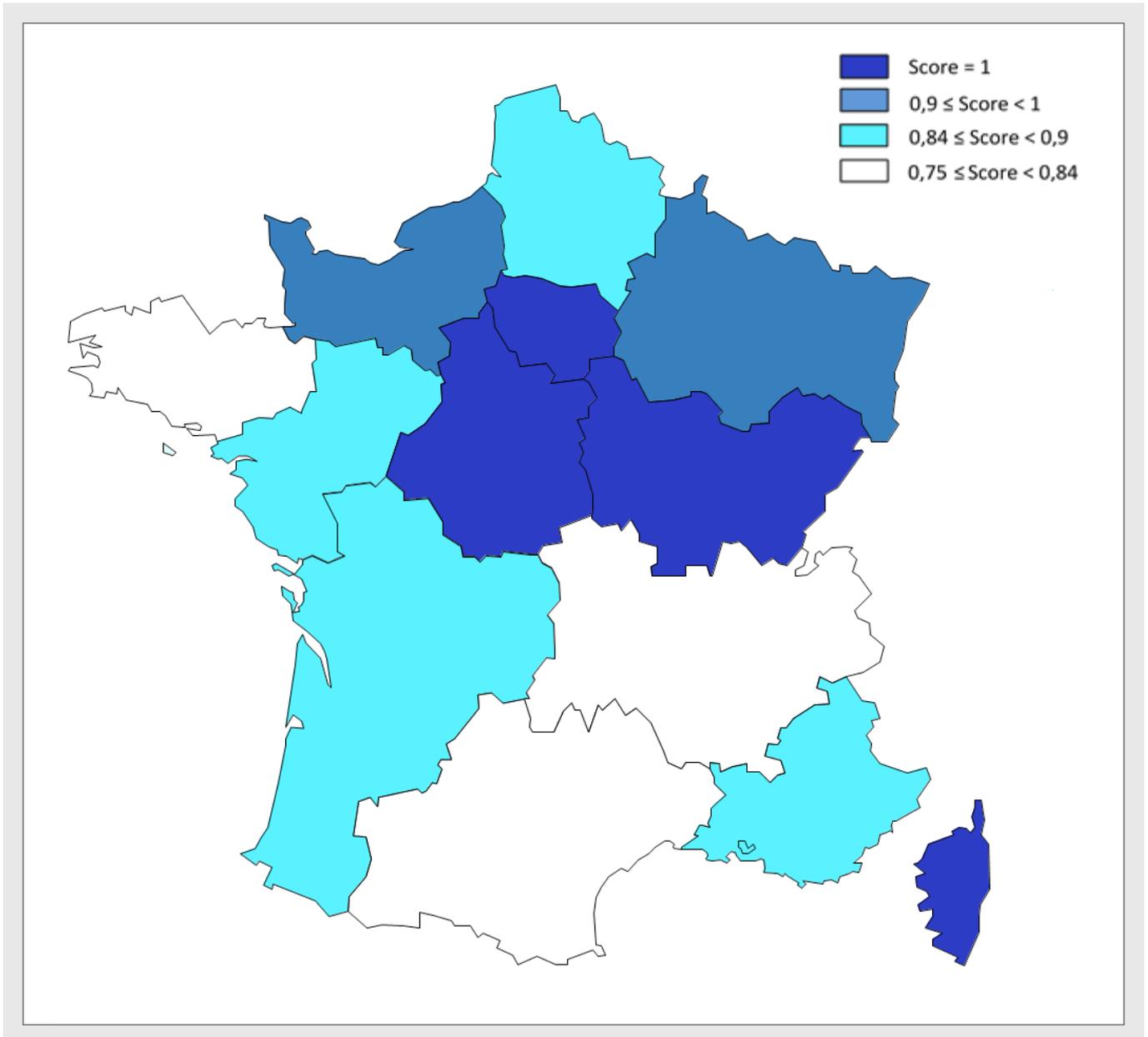
- The least efficient region - Brittany - has an efficiency level of 75%, and the average efficiency score of the French regions is 90%.
- Only 4 of the 6 technically efficient regions (Ile-de-France, Corsica, Burgundy, and Champagne-Ardenne) serve as benchmarks for the inefficient regions.

- In terms of the position of the 16 inefficient regions in relation to the CCR frontier, 5 regions have increasing returns to scale, which means that they are too small compared to the optimal virtual size and the other 11 regions are too large, exhibiting decreasing returns to scale. This finding is consistent with the empirical literature which states that, as a general rule, size-related performance problems are due to the fact that units are too large.

DMU	CCR SCORE	RANK	BCC SCORE	EE	POSITION ⁵
ALSACE	0,90	12	0,92	0,98	REC
AQUITAINE	0,82	18	0,88	0,93	RED
AUVERGNE	0,86	15	0,89	0,96	RED
BURGUNDY	1	1	1	1	-
BRITTANY	0,75	22	0,76	0,98	RED
CENTRE	0,97	10	1,00	0,97	RED
CHAMPAGNE-ARDENNE	1	1	1	1	-
CORSICA	1	1	1	1	-
FRANCHE-COMTÉ	1	1	1	1	-
ILE-DE-FRANCE	1	1	1	1	-
LANGUEDOC-ROUSSILLON	0,84	17	0,90	0,93	RED
LIMOUSIN	1	1	1	1	-
LORRAINE	0,86	14	0,87	0,99	RED
MIDI-PYRÉNÉES	0,80	20	1	0,80	RED
NORD-PAS-DE-CALAIS	0,87	13	0,91	0,96	REC
LOWER NORMANDY	0,98	8	1	0,98	REC
UPPER NORMANDY	0,91	11	1	0,91	REC
PAYS DE LA LOIRE	0,80	21	0,85	0,94	RED
PICARDY	0,97	9	1	0,97	REC
POITOU-CHARENTES	0,98	7	1	0,98	RED
PROVENCE-ALPES-CÔTE	0,85	16	0,97	0,88	RED
RHÔNE-ALPES	0,82	19	1	0,82	RED
MEAN	0,9054	-	0,9614	0,9431	
S.D.	0,0786	-	0,0684	0,0663	
MIN	0,7687	-	0,781	0,8134	
MAX	1	-	1	1	

Table 2 – Results for the 22 regions

⁵ This column indicates the position of the region in relation to its optimal virtual size, i.e. whether it is too small (IRS - Increasing returns to scale) or too large (DRS - Decreasing Returns to scale). When there is no inefficiency of scale (SCE=1), the problem of size does not arise.



Map 2 – Performance of the 13 French regions

Note : Map created with the CoucouCarto software.

In the context of the territorial reform, the performance of the French regions with the CCR DEA model is illustrated in Map 2.

Table 3 presents the findings obtained for the 13 regions that remain after the territorial reform.

This second analysis provides the following results:

- Four regions (Ile-de-France, Centre, Burgundy / Franche-Comté and Corsica) are efficient in CCR and serve as benchmarks for the nine other regions.

- The mean efficiency level is 90.82% and the minimum is 75%.

- Of the nine inefficient regions, five are too large and four are too small.

Overall, the findings are similar to those for the 22-region map. Mean performance increases very slightly, as do the disparities between the regions.

The case of Brittany and Pays de la Loire is interesting. In fact, although their overall performance increases as a result of the reform, these regions move

DMU	CCR SCORE	RANK	BCC SCORE	EE	POSITION
NPDC-PICARDY	0,8981	7	0,9505	0,9449	REC
LOWER AND UPPER ET NORMANDY	0,926	5	0,9406	0,9845	REC
BRITTANY	0,7687	13	0,781	0,9843	REC
PAYS DE LA LOIRE	0,8477	10	0,8566	0,9896	REC
ILE-DE-FRANCE	1	1	1	1	-
CENTRE	1	1	1	1	-
AQUITAINE-LIMOUSIN-POITOU-CHARENTES	0,895	8	1	0,895	RED
LANGUEDOC-ROUSSILLON MIDI-PYRÉNÉES	0,8134	12	1	0,8134	RED
PACA	0,8635	9	0,9693	0,8908	RED
AUVERGNE RHÔNE-ALPES	0,8332	11	1	0,8332	RED
BURGUNDY FRANCHE-COMTÉ	1	1	1	1	-
ALSACE CHAMPAGNE-ARDENNE LORRAINE	0,925	6	1	0,925	RED
CORSICA	1	1	1	1	-
MEAN	0,9082	-	0,9523	0,9536	
S.D.	0,0836	-	0,0686	0,0568	
MIN	0,75	-	0,76	0,8	
MAX	1	-	1	1	

Table 3 – Findings for the 13 regions subsequent to the reform

from a situation where they are relatively too large to a situation where they are relatively too small. Thus, the merger of some regions changes the relative position of each region in terms of size at the national scale.

5.2. Mergers and performance gains

The following results show that some mergers may lead to inefficiencies in the tourism performance of French regions. Based on Tone's proposal (Cooper *et al.*, 2007), it appears that the merger of regions in the case of the NOTRe reform has a negative effect for Lower and Upper Normandy, which are technically efficient in the BCC DEA model and exhibit

MERGED REGIONS	E	E*	LE	HA	SI
NPDC-PICARDY	1,141	1,028	1,110	1,028	1
LOWER AND UPPER NORMANDY	1,118	1,061	1,055	1,061	1
AQUITAINE-LIMOUSIN-POITOU-CHARENTES	1,144	1,011	1,132	1,011	1
LANGUEDOC-ROUSSILLON MIDI-PYRÉNÉES	1,250	1,024	1,221	1,024	1
AUVERGNE RHÔNE-ALPES	1,220	1	1,220	1	1
BURGUNDY FRANCHE-COMTÉ	1,014	1,014	1	1,014	1
ALSACE CHAMPAGNE-ARDENNE LORRAINE	1,105	1,005	1,099	1,005	1

Note : *E* is the score of the merged region, *LE* is the learning effect, *HA* is the harmony effect and *SI* is the size effect. *E** is an intermediate calculation which characterizes the gains after the learning effect

Table 4 – Potential performance gains from merged regions

increasing returns to scale (Table 2). As a result of the merger, Lower and Upper Normandy become inefficient with a BCC score of 0.9406 (Table 3). Except for this merger, this territorial reform is thus generally beneficial for the performance of the French tourism sector.

The potential performance gains due to mergers have been analyzed on the basis of the various effects highlighted by Bogetoft and Wang (2005) and Bogetoft and Otto (2011). Table 4 presents the results of this evaluation.

These results reveal the following about the seven mergers that have taken place in the framework of the NOTRe territorial reform. First, in no case has the performance of a merged region been modified by a size effect, as all the *SI* scores are equal to 1. Furthermore, five merged regions benefit from both learning and harmony effects. Finally, two mergers represent specific cases. The performance gain of the Auvergne Rhône-Alpes merger is fully explained by the learning effect ($E=LE$), and the gain of the Burgundy Franche-Comté merger is entirely explained by the harmony effect ($E=HA$).

These results also show that learning provides the best explanation of the overall performance gains. For example, the gain for the NPDC-Picardy region is about 14% and this score is mainly explained by the learning effect (11%). As Torres-Blay (2010) has pointed out, the learning effect is of great importance and a fundamental concern of managers. Indeed, firms will develop their knowledge through learning in order to improve their performance. Torres-Blay (2010) has defined learning as “a process of adjusting an organization’s behavior in response to changes in the environment, but it can also involve a process of transformation of an organization’s knowledge. Organizational learning is a process of improvement, but also the creation of the knowledge and skills that are necessary to ensure consistency between the organization, its strategy and the environment”. In addition, Argyris (1995) has distinguished between two types of learning, namely, simple loop learning and double loop learning. It is the first type that attracts our attention here because the change in behavior is based on repetition and imitation⁶. Imitation involves comparing the most effective practices in order to reproduce them and save time. It is thus the attempt

⁶ In double loop learning, the change in decision rules is based on experimentation and transformation and therefore involves more profound changes (Torres-Blay, 2010).

to achieve performance gains that we highlight in the case of the merger of the French regions, via the learning effect.

6. CONCLUSION

This analysis of the performance of the French tourism sector shows that, except from the Ile-de-France region, the most efficient French regions are not necessarily those which traditionally attract the most visitors. This study therefore follows on from the previous work by Peypoch (2007b) and Botti *et al.* (2009, 2011). In the short term, the territorial reform should not have a negative impact on the tourism performance of France's regions except for the merger between Lower and Upper Normandy. On the contrary, the mergers generate potential performance gains, in particular through the learning effect, i.e., the imitation of best practices. Our findings also confirm the forecasts made by tourism and hospitality professionals about the impact of this new territorial division (source: [www.hospitality-on.com], MKG Hospitality, June 2014).

However, this reform fails to take account of a specific feature of the tourism sector, namely that the division of tourism areas does not perfectly correspond to regional divisions. Reform that took account of the départements would no doubt have been a step in the right direction.

From an empirical point of view, this study could be supplemented by an analysis of the determinants of performance. This kind of two-step approach combining DEA with regression analysis of efficiency scores has been widely applied in the literature (Barros *et al.*, 2011), but recent theoretical debates provide grounds for caution with regard to this methodology (McDonald, 2009).

Finally, from a methodological point of view, the database available at département level allows us to envisage comparative analysis of the French regions using aggregated efficiency measures, in particular with innovative tools such as directional distance functions.

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