Does Tourism Contribute to Balanced Regional Development? Evidence from Greece

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Abstract Tourism constitutes a key pillar of the national economy and/or a growth engine for regional/local economies in many countries. However, there is a question as to whether it ultimately leads to economic convergence or divergence among regions. This paper aims to contribute to the limited literature on this topic by empirically investigating the spatial distributions of both economic and tourism activity in Greece based on regional time series data (2005–2019). Gini coefficients of economic, tourism demand, and tourism supply indicators are calculated and compared. The results indicate that regional tourism disparities are larger than regional economic inequalities. Furthermore, the Gini coefficients of tourism demand and supply indicators display an upward trend, suggesting that tourism activity becomes even more concentrated. This spatial concentration occurs in both wealthier and less prosperous regions, but tourism does not seem to ultimately result in economic convergence, as economically lagging regions perform poorly and even display a downward trend in tourism indicators. The analysis also suggests that domestic tourism is a more effective instrument for balanced regional development than inbound tourism. Tourism policy implications stemming from the results are also discussed.

Keywords Regional tourism disparities · Spatial distribution · Balanced regional development (BRD) · Gini coefficient · Greece

JEL Classification R12 Size and Spatial Distributions of Regional Economic Activity · Z32 Tourism and Development

1 Introduction

For many countries, tourism serves as a pillar of the national economy and/or a driver of growth for regional/local economies. There is an abundance of studies

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in the tourism literature that have analysed and pointed to its significant economic impact on the national (e.g. Jones, 2010; Narayan, 2004) or regional/local level (e.g. Frechtling & Horváth, 1999; Saayman & Saayman, 2006). Therefore, at the central, regional, and local policy levels, tourism development is often treated as an essential means for achieving economic prosperity and mitigating spatial (regional or local) disparities.

Nevertheless, some researchers (e.g. Bohlin et al., 2016; Williams & Shaw, 1995) argue that tourism does not always reduce spatial inequalities, but actually enhances them. More specifically, it is possible for a country to experience GDP growth as a result of tourism, but for touristically and economically developed regions to enjoy a disproportionate share of this growth because they have a substantial concentration of tourism activity (tourism supply and demand). This spatial concentration and polarisation of tourism activity are usually typical of mass tourism (Brenner & Aguilar, 2002; Tosun et al., 2003). The research question that arises, therefore, is whether tourism ultimately contributes to regional economic convergence or divergence and, hence, promotes or hinders balanced regional development (BRD).

Despite the importance of this issue, however, the literature on this topic is limited (Goh et al., 2015; Li et al., 2016). Moreover, with respect to Greece, only a few relevant studies have been conducted and these do not clearly state if tourism ultimately promotes BRD. The present study, therefore, seeks to add to the small body of literature by investigating whether, and how, tourism activity in Greece can contribute to BRD. In particular, the aims of this paper are (a) to assess whether regional tourism disparities are greater/less than regional economic inequalities; (b) to determine if tourism activity is considerably concentrated; (c) to ascertain if there is a trend of convergence or divergence in tourism disparities; (d) to deduce whether tourism leads to regional economic convergence or divergence; and (e) to evaluate which form of tourism (inbound or domestic) is a more effective instrument for BRD.

The paper is structured as follows: the next section discusses the two contrasting arguments that have been presented in the literature (tourism reduces/reinforces regional inequalities) and also reviews relevant studies in Greece. Section 3 outlines the method used for analysing the spatial distributions of tourism and economic activity. The fourth section presents the main results, followed by the discussion and conclusion.

2 Literature Review

Tourism reduces regional inequalities

The notion that tourism can benefit poorer peripheral areas and offset regional inequalities appeared in the wake of early regional development theories. In 1964, Christaller argued, in the polar periphery context, that tourism could constitute a growth instrument for peripheral regions, as the movement of residents from metropolitan centres to coastal, rural, and mountain destinations could reverse the

flow of income and employment away from central poles, thus redistributing wealth and setting overlooked areas on the path of economic development (Murphy & Andressen, 1988; Telfer, 2002). Friedmann also, in 1966, regarded tourism as a development option for problematic regions with limited growth potential in other sectors of the economy (Oppermann, 1993). Lastly, Peters in 1969 maintained that tourism has the innate capacity to reallocate growth away from industrial centres to neglected regions (Krakover, 2004; Williams & Shaw, 1995).

Empirical studies upholding the above argument have been conducted in developed and developing countries. In the case of Israel, for example, Krakover (2004) uses data on hotel rooms, guest nights, revenues, and employment to ascertain that the tourism industry spurred a convergence trend and not polarisation to central regions. Although inbound tourists mainly visited the big cities (Tel Aviv and Jerusalem), significant domestic tourism flows to the periphery boosted the share of those areas in the above indicators. Moreover, private tourism investments were transferred to the periphery, attracting even more tourists. The researcher, however, cautions against generalised conclusions, pointing to certain particular factors regarding Israel: (a) the country's small size; (b) government incentives (subsidies) for investments in peripheral regions; and (c) security concerns on the northern borders and in the cities of Tel Aviv and Jerusalem.

Also, Soukiazis and Proenca (2008) test tourism's impact on regional growth and how it affects regional convergence in Portugal's NUTS II and NUTS III regions by employing the conditional convergence model. Using accommodation capacity as a proxy, they find that tourism has a positive impact on regional growth at both regional levels. Moreover, it is a relevant conditional convergence factor, contributing to the reduction of regional asymmetries.

In developing countries, China accounts for several empirical studies corroborating this notion. Wen and Sinha (2009) and Wen (2015) applied the Gini coefficient and used time series data in major tourism indicators of inbound tourism and tourism supply. Although inbound tourism is heavily concentrated in coastal—and more economically developed—areas, they identify a convergence trend in the regional distribution of both inbound tourism and tourism supply. This is due to the inland areas' gradual improvement of their share over the years, leading to a slow but noticeable reduction in the regional disparity. However, the authors do not account for domestic tourism's regional effect, although it constitutes the larger proportion of tourism arrivals and receipts. This limitation is addressed by Goh et al. (2014, 2015) who compare the spatial distribution and the impact of both inbound and domestic tourism on China's regional development. Despite using different methods (Mean Log Deviation decomposition, and Gini coefficient decomposition combined with Granger causality tests, respectively), they conclude that (a) declining tourism spatial inequalities are mainly and increasingly caused by domestic tourism, and (b) that the latter is a more effective instrument for BRD than inbound tourism. Li et al. (2015, 2016), in turn, employ a more sophisticated method, that of the conditional convergence model. They conclude that tourism development in China has a positive effect on BRD, with domestic tourism making a greater contribution than inbound tourism.

The importance of domestic tourism in reducing regional inequalities is also evidenced in Brazil by Haddad et al. (2013). The authors use national survey data for domestic tourism and employ an interregional input–output model to compute the tourism multiplier effects. They reason that domestic tourism's total net multiplier effects are a 'zero-sum game' at the national level but its regional distributive effects are significant, thus narrowing the gap between regions in this country.

Tourism reinforces regional inequalities

The above argument has been challenged by a number of researchers who contend that tourism activity is concentrated in central, economically evolved, or privileged regions, which have the necessary tourism infrastructure and transport networks, as well as central government policy and promotion support. Such polar concentrations enhance disparities among regions and, therefore, increase divergence.

This is a relatively frequent phenomenon in developing countries. In Malaysia, for example, tourism activity became concentrated over the course of a decade in two states (Kuala Lumpur and Penang), which are also the country's political and financial centres, and was much less developed in peripheral states (Oppermann, 1992). In Peru, meanwhile, O'Hare and Barrett (1999) conducted a regional-level analysis and found that the country's wealthier regions benefitted more over time from inbound tourists, as they tended not to visit poorer ones as much. In their local-level analysis, moreover, it transpired that inbound and domestic tourists gravitated towards each region's main province or administrative capital. In South Africa, lastly, Rogerson (2014) divides municipalities into three groups, namely (a) metropolitan, (b) priority district, and (c) other district municipalities, with priority districts representing the most lagging and underdeveloped regions. His findings show that the country's tourism space economy is consistently dominated by metropolitan municipalities, which are the most prosperous and economically advanced areas.

The polar concentration of tourism activity can also occur in developed countries. In a study on the United Kingdom, Williams and Shaw (1995) use time series data and conclude that tourism favours wealthier regions, contributing to even greater disparities. There are two reasons for this: firstly, the development of international tourism has altered Britons' preferences, who tend to choose foreign destinations over domestic ones. At the same time, inbound tourists are showing an inclination towards Britain's big cities. Secondly, the evolution of new forms of tourism—such as cultural, business, and urban—has shifted domestic tourism flows from the periphery to urban centres. Zimmerman (1998) also notes, in the case of Austria, a considerable shift in tourism demand towards the wealthier states of Vienna and Lower Austria. Particularly critical of the belief that tourism reduces regional disparities, Bohlin et al. (2016) carried out a longitudinal analysis based on guest night statistics in Sweden. Their results indicate that metropolitan areas have grown faster in guest nights than rural and peripheral ones, owing to their ability to attract visitors, especially inbound tourists. Thus, centripetal forces to metropolitan areas exist, contrary to Christaller's perception, which overlooked the fact that large cities can appeal to both leisure and business travellers.

Spatial distribution of tourism in Greece

Only a few studies have examined regional tourism inequalities in Greece. Liargovas et al. (2007) investigated the allocation of European Union funding for regional tourism development among Greek regions. To that end, they developed a 'Regional Tourist Development Index' (RTDI) and then calculated the RTDI as well as the per capita Community Support Framework (CSF) funding for each of Greece's 51 prefectures (NUTS III regions). Their analysis revealed that the distribution of investments favoured the prefectures with the higher RTDI scores, thus contributing to a process of divergence. Gaki et al. (2013), moreover, employed and calculated the Herfindahl–Hirschman index and the Krugman Dissimilation index for each of the 13 NUTS II regions (see Fig. 1) at specific years (2000, 2003, 2005, and 2007). They found that tourism activity was highly concentrated, creating tourism disparities among regions.

In another study, Klouri (2018) examined the distribution of travel receipts, arrivals, and guest nights from inbound tourists among the 13 Greek regions. Tourism activity was found to be concentrated in five regions, representing between 82–89% of the above tourism indicators. However, her analysis was based on rather static

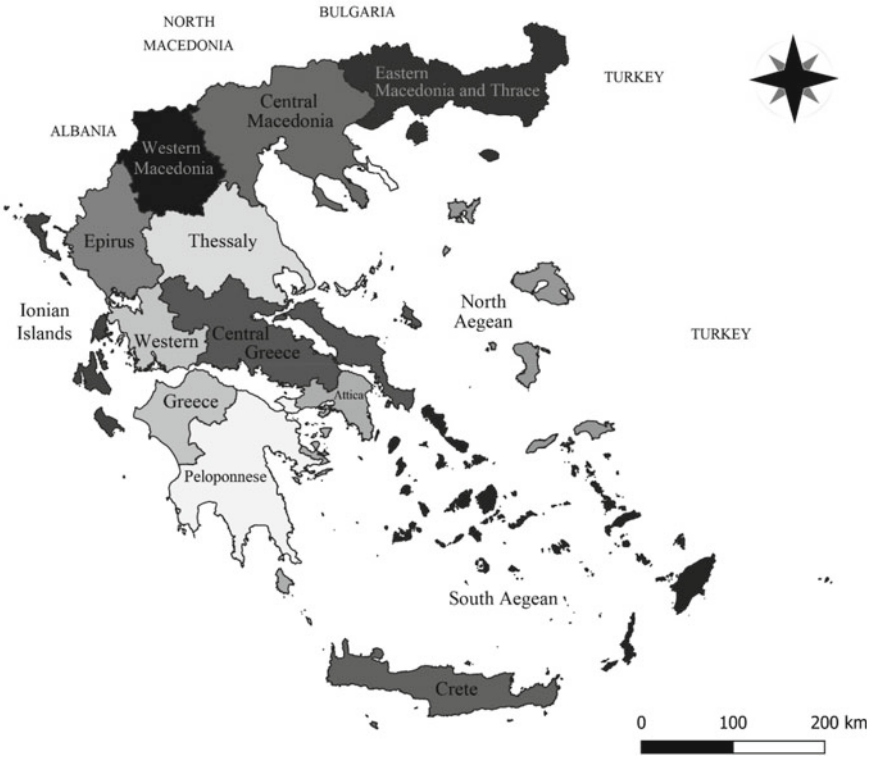

Fig. 1 Regions of Greece (NUTS II). *Source* Own illustration, using QGIS software

data (January–June of 2016 and 2017) and did not take into account the impact of domestic tourism, which constitutes a large proportion of tourism activity. These limitations are not the case in the study by Papatheodorou and Arvanitis (2014) who investigated the impact of the economic crisis on Greek tourism. They calculated Gini coefficients for the years 2005–2012 and found that it did not affect the existing patterns of inbound and domestic tourism spatial concentration, but positively affected that of internal tourism (creating an upward trend in disparities over the last few years). The concentration of domestic tourism was far smaller than that of inbound, with internal tourism's concentration lying between the two.

In conclusion, the aforementioned studies indicate or imply that there is a significant concentration of tourism activity in Greece. However, some research gaps have been identified. Firstly, the spatial distributions of tourism and economic activity are not compared. In other words, it is not known whether regional tourism disparities are greater/less than regional economic inequalities. Furthermore, it would be interesting to ascertain if there is a positive correlation among them. Secondly, economic variables (such as GDP per capita) for each region are not provided or at least utilised. As a result, it is not clearly stated if tourism activity is concentrated in wealthier or economically lagging regions, thereby hindering or promoting BRD, respectively.

3 Methodology

Regional time series data were used to examine the spatial distributions of economic and tourism activity. These data were collected from the Hellenic Statistical Authority (ELSTAT) and the Hellenic Chamber of Hotels. More specifically, GDP per capita data were used for the period 2005–2018. On the tourism demand side, only guest nights in hotel accommodation by domestic and inbound visitors for 2005–2019 were used. Data regarding tourism receipts from domestic visitors are not available, and those from inbound visitors have only been published in recent years (2016–2019). Lastly, data for the number of hotel beds during 2005–2019 were used as a supply-side indicator. It should be noted that figures on guest nights and capacity at campsites and short-stay accommodation (apartments and rooms to let) were not utilised. The inclusion of the former would bias the results as campsites are mostly concentrated in coastal regional units. Data for the latter type of establishment are too recent.

Certain coefficients/indexes have been employed for the analysis of spatial tourism distribution and inequalities. The one that has been more widely used—with variations—is the Gini coefficient (e.g. Goh et al., 2015; Li et al., 2015; Papatheodorou & Arvanitis, 2014; Wen & Sinha, 2009). Others include the Gini-Hirschman coefficient (Gaki et al., 2013), the Theil entropy index (Wang et al., 2015), the Mean Log Deviation (MLD) index (Goh et al., 2014), and the Krugman Dissimilation index (Gaki et al., 2013). This study employs the Gini coefficient as presented by Wen and Tisdell (1996), Wen and Sinha (2009), and Li et al. (2015) for analysing both economic and tourism disparities. It is given by the following formula:

$$G = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n \times n \times \bar{y}}\right) \times (y_1 + 2y_2 + 3y_3 + \cdots + ny_n)$$

where G represents the Gini coefficient, n is the number of observations, $\bar{y}$ is the mean of observations, and y_1, y_2, y_3, … y_n represent individual observations of the relevant variable y in descending order of size.

The coefficient's values range from zero (absolute equality) to unity (complete inequality). As such, the larger the coefficient is, the greater the degree of inequality. In our case, the Gini coefficient was calculated by listing the observations of variable y for the 13 Greek regions in descending order, and then multiplying them by corresponding weights valued from one to 13. In particular, coefficients of (a) economic development (GDP per capita as proxy), (b) tourism demand (domestic, inbound, and total tourism guest nights as proxies), and (c) tourism supply (hotel beds as proxy) were calculated separately.

4 Results

Table 1 and Fig. 2 present the values and the evolution of the Gini coefficients for the years 2005–2019. It is evident that in both tourism demand and supply indicators,

Table 1 Gini coefficients of economic and tourism indicators

	GDP per capita	Domestic tourism guest nights	Inbound tourism guest nights	Total tourism guest nights	Hotel beds
2005	0.2078	0.2706	0.6223	0.5071	0.4756
2006	0.2222	0.2678	0.6312	0.5097	0.4776
2007	0.2270	0.2726	0.6251	0.5058	0.4768
2008	0.2319	0.2814	0.6296	0.5086	0.4743
2009	0.2365	0.2807	0.6308	0.5036	0.4751
2010	0.2262	0.2792	0.6417	0.5230	0.4761
2011	0.2294	0.2869	0.6454	0.5414	0.4827
2012	0.2218	0.2904	0.6551	0.5567	0.4840
2013	0.2230	0.2926	0.6556	0.5614	0.4850
2014	0.2224	0.3067	0.6377	0.5512	0.4825
2015	0.2231	0.3184	0.6337	0.5513	0.4861
2016	0.2286	0.3206	0.6383	0.5565	0.4859
2017	0.2374	0.3108	0.6310	0.5544	0.4900
2018	0.2429	0.3108	0.6321	0.5641	0.4972
2019	N/A	0.3103	0.6325	0.5653	0.4994

Source Calculated from the Hellenic Statistical Authority and the Hellenic Chamber of Hotels

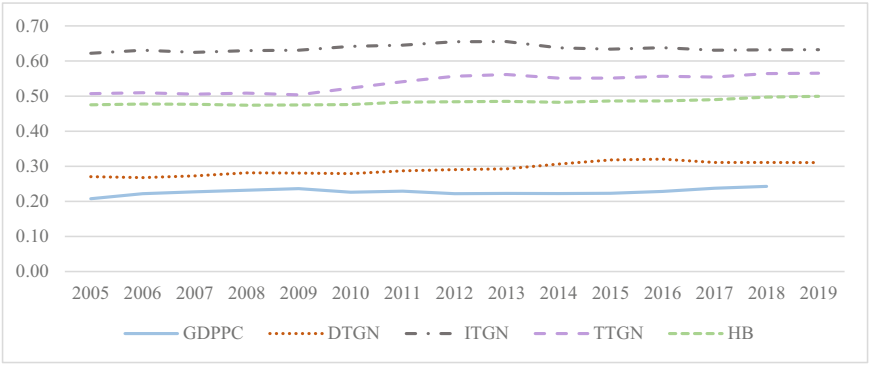

Fig. 2 Gini coefficients of economic and tourism indicators. *Note* GDPPC means GDP per capita; DTGN means domestic tourism guest nights; ITGN means inbound tourism guest nights; TTGN means total (or internal) tourism guest nights; HB means hotel beds

they are consistently larger than that of the economic development indicator. This means that the spatial distribution of tourism activity is more imbalanced than that of general economic activity. Hence, regional tourism disparities are larger than regional economic inequalities.

We also observe that the Gini coefficients of economic and tourism activity follow a parallel course, and more particularly an upward trend, with the overall increase being 16.89% for GDP per capita, 14.70% for domestic tourism guest nights, 11.47% for total (internal) tourism guest nights, 5.01% for hotel beds, and only 1.63% for inbound tourism guest nights. Indeed, the Gini coefficient of GDP per capita is positively correlated with that of hotel beds (0.46), domestic tourism guest nights (0.37), and total tourism guest nights (0.22), but has no correlation with that of inbound tourism guest nights. The above correlation coefficients do not represent a cause-and-effect relationship, but nevertheless suggest that regional economic inequalities would become larger as tourism activity becomes more concentrated. This is possible for countries such as Greece where the economy relies heavily on tourism.

In Table 2, the data demonstrate that tourism activity in Greece is considerably polarised, both on the tourism demand and supply side. Specifically, half of the country's total tourism guest nights and hotel beds was concentrated in only two regions (South Aegean and Crete) in 2019 (53.62% and 48.03%, respectively). Taking also into account the next top three regions (Ionian Islands, Central Macedonia, and Attica), this concentration reaches 84.62% and 78.08%, respectively. In fact, the polarisation of demand is mainly induced by inbound tourism, which constitutes the larger proportion (84.61%) of total guest nights. The first two and five regions were dominant in this form of tourism, gathering 60.02% and 89.96%, respectively, of the country's inbound tourism guest nights. On the contrary, their participation in domestic tourism guest nights was much lower (18.41% and 55.30%, respectively), indicating fewer disparities.

Table 2 Share of Greek regions in DTGN, ITGN, TTGN, and HB

Regions		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change (2005–2019)
South Aegean	DTGN	10.35	8.58	9.10	9.52	9.65	9.25	8.83	8.79	8.67	8.62	8.12	8.71	8.87	11.43	11.26	0.91
	ITGN	28.14	28.10	27.68	27.15	27.81	29.52	29.47	28.29	28.38	27.46	27.90	26.72	27.29	30.13	31.06	2.92
	TTGN	23.55	23.19	22.85	22.52	22.62	24.28	24.88	24.42	24.72	24.14	24.50	23.58	24.32	27.25	28.01	4.46
	HB	22.89	23.33	23.23	23.15	23.47	24.02	24.58	24.75	24.93	24.62	24.95	24.76	25.44	25.96	26.12	3.23
Crete	DTGN	6.89	6.36	6.95	6.81	7.87	7.81	7.77	7.34	7.11	6.94	7.10	6.94	6.36	6.72	7.16	0.26
	ITGN	28.77	29.56	29.83	30.81	30.81	31.31	31.89	33.17	33.61	32.33	31.71	33.12	32.08	30.09	28.96	0.19
	TTGN	23.12	23.73	23.88	24.50	24.26	25.24	26.53	28.04	28.69	27.85	27.48	28.55	27.93	26.50	25.61	2.48
	HB	21.04	21.07	20.97	21.19	21.21	21.17	21.31	21.39	21.51	21.48	21.51	21.75	21.62	21.81	21.91	0.87
Ionian Islands	DTGN	7.15	6.72	6.96	6.85	7.37	7.38	6.89	5.47	5.04	4.38	4.50	4.51	4.59	5.08	5.24	-1.90
	ITGN	14.89	14.03	13.13	12.93	13.03	12.28	12.07	12.68	12.39	12.09	12.27	12.90	12.57	12.87	12.89	-2.00
	TTGN	12.89	12.19	11.52	11.33	11.42	11.01	10.92	11.25	11.02	10.73	10.93	11.43	11.28	11.67	11.71	-1.18
	HB	12.02	11.97	12.14	12.03	11.88	11.59	11.63	11.53	11.63	11.66	11.67	11.71	11.59	11.75	11.84	-0.17
Central Macedonia	DTGN	14.69	15.92	15.55	16.53	16.43	16.18	16.28	15.76	15.30	15.90	17.31	17.45	16.91	16.18	15.83	1.14
	ITGN	7.24	8.12	8.75	9.69	9.16	8.97	9.16	10.21	9.61	9.61	9.30	9.00	9.11	8.66	8.82	1.58
	TTGN	9.16	10.08	10.52	11.49	11.24	10.83	10.74	11.31	10.67	10.72	10.67	10.47	10.37	9.81	9.90	0.74
	HB	11.62	11.59	11.66	11.58	11.50	11.44	11.47	11.41	11.13	11.49	11.25	11.39	11.26	11.04	10.86	-0.76
Attica	DTGN	15.28	15.96	16.08	15.37	14.62	14.74	15.49	16.25	16.9	17.72	17.67	16.73	16.68	15.41	15.81	0.53
	ITGN	9.88	10.50	10.48	9.92	9.41	8.78	8.36	7.38	7.42	9.05	8.91	8.60	8.81	8.18	8.23	-1.65
	TTGN	11.27	11.87	11.94	11.35	10.90	10.32	9.95	9.14	9.18	10.58	10.41	10.02	10.08	9.29	9.40	-1.88
	HB	9.14	8.83	8.83	8.68	8.45	8.10	7.83	7.76	7.61	7.39	7.56	7.48	7.43	7.30	7.35	-1.79
Peloponnese	DTGN	9.02	8.99	9.12	9.39	9.39	9.68	9.95	9.97	10.48	10.36	10.27	10.48	10.56	11.44	11.05	2.03

(continued)

Table 2 (continued)

Regions		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change (2005–2019)
	ITGN	2.58	1.83	1.98	1.58	1.84	1.72	1.77	1.44	1.49	1.76	1.77	2.04	2.17	2.30	2.25	-0.33
	TTGN	4.24	3.63	3.84	3.64	4.00	3.78	3.59	3.13	3.16	3.28	3.23	3.51	3.53	3.71	3.60	-0.64
	HB	4.76	4.72	4.73	4.71	4.75	4.91	4.72	4.76	4.89	4.95	4.95	4.77	4.68	4.60	4.60	-0.16
Thessaly	DTGN	8.70	8.31	7.64	7.71	7.56	7.62	7.89	8.25	7.95	7.92	7.70	8.24	8.30	7.33	7.64	-1.06
	ITGN	1.71	1.38	1.31	1.33	1.45	1.37	1.34	1.32	1.36	1.51	1.52	1.39	1.41	1.49	1.49	-0.22
	TTGN	3.51	3.12	2.96	3.01	3.19	2.99	2.80	2.69	2.58	2.64	2.58	2.58	2.52	2.39	2.44	-1.07
	HB	3.90	3.86	3.88	3.92	3.88	3.82	3.71	3.71	3.69	3.78	3.70	3.69	3.64	3.45	3.41	-0.49
Central Greece	DTGN	5.96	6.20	6.96	6.27	6.27	6.57	6.05	5.90	6.18	6.01	5.96	6.14	6.33	6.64	6.58	0.62
	ITGN	1.23	1.13	1.12	1.01	1.10	1.04	0.95	0.80	0.66	0.83	0.87	1.03	1.12	1.13	1.14	-0.08
	TTGN	2.45	2.41	2.64	2.39	2.58	2.46	2.09	1.81	1.68	1.75	1.75	1.92	1.96	1.98	1.98	-0.47
	HB	4.25	4.11	4.05	4.04	4.06	4.05	4.00	3.93	3.82	3.78	3.69	3.67	3.61	3.56	3.45	-0.79
Eastern Macedonia and Thrace	DTGN	6.85	6.56	6.05	6.27	5.71	5.40	5.34	6.12	6.49	5.92	5.59	5.53	5.64	4.87	4.70	-2.15
	ITGN	1.14	1.17	1.14	1.27	1.29	1.19	1.26	1.35	1.49	1.49	1.67	1.52	1.60	1.47	1.47	0.33
	TTGN	2.61	2.52	2.42	2.59	2.55	2.28	2.16	2.29	2.42	2.27	2.34	2.22	2.25	2.00	1.97	-0.64
	HB	2.62	2.62	2.70	2.64	2.69	2.77	2.83	2.82	2.76	2.70	2.74	2.70	2.74	2.68	2.61	-0.01
North Aegean	DTGN	3.73	3.68	3.49	3.45	3.26	3.00	2.88	2.56	2.65	2.76	2.60	2.49	2.80	2.68	2.78	-0.94
	ITGN	2.62	2.55	2.27	2.27	2.26	2.06	2.02	1.88	2.01	2.12	2.24	1.79	1.84	1.74	1.66	-0.95
	TTGN	2.90	2.84	2.59	2.58	2.54	2.31	2.21	2.02	2.13	2.24	2.30	1.92	2.00	1.88	1.84	-1.07
	HB	3.19	3.11	2.99	2.94	2.96	2.90	2.87	2.87	2.88	2.82	2.81	2.78	2.76	2.72	2.69	-0.50
Western Greece	DTGN	5.26	6.32	6.02	5.91	5.85	6.07	6.06	6.94	6.35	6.36	6.61	6.55	6.43	5.38	5.33	0.07
	ITGN	1.34	1.20	1.81	1.56	1.39	1.33	1.27	1.01	1.11	1.23	1.36	1.36	1.35	1.15	1.19	-0.15

(continued)

Table 2 (continued)

Regions		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change (2005–2019)
	TTGN	2.35	2.49	2.91	2.70	2.66	2.56	2.34	2.18	2.08	2.14	2.27	2.26	2.17	1.80	1.83	-0.52
	HB	2.37	2.58	2.54	2.59	2.56	2.56	2.42	2.41	2.43	2.56	2.40	2.39	2.34	2.27	2.28	-0.08
Epirus	DTGN	3.80	4.04	4.00	3.81	4.13	4.41	4.72	4.71	4.77	5.08	4.62	4.51	4.80	5.25	5.07	1.27
	ITGN	0.36	0.33	0.40	0.39	0.38	0.35	0.35	0.40	0.40	0.45	0.44	0.50	0.57	0.72	0.77	0.40
	TTGN	1.25	1.26	1.34	1.29	1.45	1.40	1.32	1.25	1.21	1.27	1.16	1.20	1.25	1.42	1.43	0.18
	HB	1.60	1.57	1.61	1.78	1.84	1.91	1.89	1.91	1.97	2.00	2.04	2.13	2.12	2.15	2.12	0.52
Western Macedonia	DTGN	2.32	2.36	2.08	2.11	1.89	1.91	1.84	1.95	2.09	2.03	1.93	1.70	1.72	1.60	1.54	-0.78
	ITGN	0.11	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.06	0.05	0.05	0.07	0.08	0.06	-0.05
	TTGN	0.68	0.66	0.61	0.61	0.60	0.55	0.47	0.45	0.45	0.41	0.38	0.34	0.34	0.31	0.29	-0.39
	HB	0.62	0.65	0.67	0.75	0.74	0.76	0.75	0.74	0.76	0.77	0.74	0.77	0.78	0.71	0.76	0.13

Note DTGN means domestic tourism guest nights; ITGN means inbound tourism guest nights; TTGN means total (or internal) tourism guest nights; HB means hotel beds

Source Calculated from the Hellenic Statistical Authority and the Hellenic Chamber of Hotels

A dynamic analysis based on Table 2 time series data, moreover, reveals that the tourism polarisation phenomenon is not only evident throughout the study period, but actually becomes more intense over the years. As such, the first five regions have managed to improve (as a group) their share in the country's total tourism guest nights and hotel beds by 4.63% and 1.38%, respectively, against the other eight regions (except for Epirus, and Western Macedonia in the case of hotel beds). This improvement is mainly due to the South Aegean and Crete, which together increased their share in the above indicators by 6.95% and 4.10%, respectively.

The continuous concentration of tourism activity is also evidenced by the gradual increase in the value of the Gini coefficients for all four tourism indicators (see Table 1 and Fig. 2). Their evolution clearly indicates that regional tourism disparities have intensified over the years. Comparing their values, however, we see that the Gini coefficients of inbound tourism guest nights are consistently larger than those of total tourism guest nights and hotel beds, while those of domestic tourism guest nights have consistently lower values. In other words, inbound tourism, which, as previously said, constitutes the larger proportion of tourism demand, is highly concentrated among the regions. In contrast, domestic tourism is more dispersed, thus generating fewer disparities.

The spatial concentration of tourism activity occurs in both wealthier and less prosperous regions. In particular, two out of the top five regions, Attica and South Aegean, are the wealthiest in Greece, with a GDP per capita steadily above the national average throughout the study period (see Table 3). On the other hand, tourism activity is simultaneously concentrated in less prosperous regions, such as Crete (sixth position in GDP per capita) and Central Macedonia (eighth place), helping them keep up with economic growth. In this respect, tourism polarisation contributes to both economic convergence and divergence.

Nevertheless, tourism's capacity to drive economic convergence does not appear feasible with respect to the poorest or economically lagging regions, such as the North Aegean, Eastern Macedonia and Thrace, Epirus, and Western Greece. These regions, albeit rich in natural and cultural resources, perform poorly in all tourism indicators ranking at the last positions in most years (see Table 2). Moreover, they even tend downwards in these indicators, with the exception of Epirus. Therefore, in conjunction with the above, the existing pattern of tourism's spatial distribution cannot be argued to ultimately lead to BRD.

5 Discussion

This study investigated the spatial distributions of both economic and tourism activity in Greece with the aim of ascertaining whether tourism contributes to BRD. Based on the results the following can be extrapolated. First, regional tourism disparities are larger than regional economic inequalities, a condition that has also been the case in relevant studies in China (Goh et al., 2014, 2015; Li et al., 2015, 2016). Moreover, there is a positive correlation between the Gini coefficient of GDP per capita with

Table 3 GDP per capita indices as compared to Greece (=100)

Regions	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Attica	130.89	132.70	133.40	133.74	135.56	134.97	135.44	134.21	135.04	135.35	134.91	135.73	136.50	136.85
South Aegean	113.65	111.35	111.05	113.29	106.95	107.36	107.23	106.50	110.83	113.26	111.64	107.50	106.17	107.81
Ionian Islands	101.09	98.51	98.14	99.61	94.24	94.33	89.35	90.16	90.28	93.42	91.68	91.03	90.58	93.08
Western Macedonia	91.33	86.80	82.43	76.67	82.22	88.32	95.45	110.86	110.04	109.41	104.96	97.71	96.60	91.48
Central Greece	96.77	92.21	90.30	89.51	87.12	88.73	89.78	90.53	89.04	87.29	88.51	90.45	90.92	89.75
Crete	90.30	89.13	87.03	87.79	86.70	86.23	83.36	81.30	83.23	85.88	85.76	84.09	84.84	85.41
Peloponnese	78.75	78.85	79.36	78.85	78.85	80.15	81.53	83.20	83.32	82.17	84.02	84.46	84.77	83.26
Central Macedonia	78.65	78.89	79.74	79.83	79.09	77.73	78.17	77.89	76.54	75.81	77.35	78.05	77.79	78.38
Thessaly	76.06	76.40	75.04	74.91	74.03	71.48	71.08	73.30	73.66	74.32	75.34	74.97	74.86	75.11
Western Greece	76.94	78.03	76.90	75.04	73.52	75.51	74.21	75.04	73.78	73.60	73.48	72.63	71.97	72.15
Epirus	72.63	70.55	69.39	68.48	67.99	70.88	71.80	70.74	72.11	72.00	71.36	71.58	70.27	70.32
Eastern Macedonia and Thrace	72.47	68.47	69.99	71.27	71.41	74.41	71.52	71.69	69.89	68.94	68.77	69.62	68.71	68.35
North Aegean	77.44	77.42	79.07	80.79	79.45	78.57	78.84	78.94	78.69	79.34	77.67	75.08	71.31	68.28

Source Calculated from the Hellenic Statistical Authority

that of all tourism indicators, except for inbound tourism guest nights. Although this is not a cause-and-effect relationship, it still suggests that tourism activity in Greece enhances regional economic inequalities as it becomes more concentrated.

Second, this paper corroborates previous studies in Greece using older or static data (Gaki et al., 2013; Klouri, 2018) which found tourism activity to be considerably concentrated. It is, in fact, polarised both on the tourism demand and supply side, in five regions (South Aegean, Crete, Ionian Islands, Central Macedonia, and Attica). Third, it was found that regional tourism disparities have intensified over the years, as the Gini coefficients of all tourism indicators display an upward trend. This is in line with Liargovas et al. (2007) who, albeit using tourism investment as a proxy in their analysis, conclude that its allocation to each region created a process of divergence in tourism development. In contrast, Papatheodorou and Arvanitis (2014) argue that the Greek economic crisis (from 2009) positively affected only the spatial distribution of internal tourism, creating an upward trend in its Gini coefficient value, and did not change the existing patterns of domestic and inbound tourism. Nonetheless, the Gini coefficients of the latter two also increased, if slightly, during their entire study period (2005–2012), indicating a slow but gradual trend of divergence. This is substantiated by this study's more recent time series data.

Lastly, tourism activity in our case is concentrated in both wealthier and less prosperous regions, contrary to most of the relevant studies in other countries where its spatial concentration occurs in wealthier or more economically developed regions (e.g. Bohlin et al., 2016; O'Hare & Barrett, 1999; Wen & Sinha, 2009; Williams & Shaw, 1995). However, tourism in Greece does not seem to ultimately result in economic convergence. The reasons for this are (a) regional tourism disparities are consistently larger than regional economic inequalities; (b) tourism polarisation is becoming more intense over the years, positively affecting (enlarging) economic imbalances among regions; and, more importantly (c) the poorest or economically lagging regions cannot keep pace with tourism development as they perform poorly and even display (most of them) a downward trend in all tourism indicators. Thus, the existing pattern of tourism's spatial distribution reinforces regional economic inequalities, and therefore hinders, or at least does not promote, BRD.

In order to set this right, this paper suggests that domestic tourism is a more effective tool for BRD than inbound tourism as it has a more dispersed distribution (lower Gini coefficient values). This is also evidenced and advocated in relevant studies where regional economic and tourism inequalities are prominent (Goh et al., 2014, 2015; Haddad et al., 2013; Li et al., 2015, 2016; Seckelmann, 2002; Tosun et al., 2003). Papatheodorou and Arvanitis (2014), in contrast, maintain that Greek regions should aim for inbound instead of domestic tourism. It should be noted, however, that their analysis focuses on the impact of the economic crisis, which negatively affected domestic tourism and especially those regions that depended on it. Domestic tourism has since rebounded (at an average annual rate of 9% from 2012 to 2019 according to ELSTAT data) and, what is more, tends to favour less popular areas than mass tourism destinations.

Therefore, from a regional policy perspective tourism stakeholders should try to boost domestic tourism if their aim is to reduce spatial inequalities and achieve

economic convergence. Undoubtedly, inbound tourism receipts constitute an important asset for the national economy as they comprise a considerable proportion of its total exports (26.9% in 2019 according to World Travel & Tourism Council (WTTC, 2021)). However, it is difficult for those regions that have been traditionally based on domestic tourism (e.g. Epirus, Western Greece) to compete with established destinations in inbound tourism. Domestic tourism, moreover, allows for income redistribution among regions, as Christaller initially stated in the polar periphery context.

Central government initiatives such as social tourism programs or 'Tourism for All', which subsidise vacations for the unemployed and low-income workers, are heading in the right direction, so long as the bulk of the domestic trips are to less visited regions. Furthermore, there should be a gradual detachment from the existing pattern of tourist development poles, which is mostly associated with mass tourism (Brenner & Aguilar, 2002; Tosun et al., 2003). Regions, and especially those that do not offer the three 's' tourism product (sea, sun, sand), should instead rely on the local endogenous development model. This model favours special interest tourism, as it is based on local participation and decision-making, local networking, and small-scale projects (Rogerson, 2002). The development of special forms of tourism (e.g. agri, eco, sports) will, in turn, enhance domestic tourism flows—as well as inbound tourism visits—to the less visited regions throughout the year.

6 Conclusion

This paper attempts to supplement the small body of relevant literature and address the research question of whether tourism reduces or reinforces regional economic inequalities. In relation to Greek studies, it also contributes by comparing the spatial distributions of economic and tourism activity, and by examining which form of tourism (inbound or domestic) is more efficient for economic convergence. Based on the research findings, this study adopts the second argument (tourism reinforces inequalities) as tourism activity in Greece gradually deepens divergence. From a regional policy perspective, domestic tourism is recommended as a more effective instrument for achieving BRD.

Assuredly, the present study has some limitations which need to be addressed. The main one is that the analysis of tourism's spatial distribution was based only on hotel accommodation data, as data for other types of lodging are too recent (short-stay establishments) or would bias the results (campsites). Nevertheless, most of the relevant studies use hotel beds (or rooms and employment) and hotel guest nights as a representative proxy of tourism supply and demand, respectively. Also, due to data unavailability tourism receipts were not used as an additional proxy of tourism demand. Lastly, it would be more appropriate to compare the Gini coefficients of GDP per capita with that of tourism GDP per capita when comparing the spatial distributions of economic and tourism activity, but unfortunately—as is also the case in other relevant studies—the latter data are not available at the regional level.

In closing, this paper examines the spatial inequalities in tourism at the regional (NUTS II) level. It would be interesting to investigate not only the inter- but also the intra-regional disparities using other methods of regional analysis, such as the Gini decomposition method or the Theil/MLD index. This would allow us to ascertain if overall tourism inequalities in Greece are also owed to within-region disparities. Also, there is a need to verify if the relationship between regional economic and tourism disparities is positive by applying advanced statistical methods.

References

Bohlin, M., Brandt, D., & Elbe, J. (2016). Tourism as a vehicle for regional development in peripheral areas—Myth or reality? A longitudinal case study of Swedish regions. *European Planning Studies, 24*(10), 1788–1805. https://doi.org/10.1080/09654313.2016.1194807

Brenner, L., & Aguilar, A. G. (2002). Luxury tourism and regional economic development in Mexico. *The Professional Geographer, 54*(4), 500–520. https://doi.org/10.1111/0033-0124.00346

Frechtling, D. C., & Horváth, E. (1999). Estimating the multiplier effects of tourism expenditures on a local economy through a regional input-output model. *Journal of Travel Research, 37*(4), 324–332. https://doi.org/10.1177/004728759903700402

Gaki, E., Lagos, D., & Kostopoulou, S. (2013, August 27–31). *Measuring regional inequalities in Greek tourism development* [Paper presentation]. 53rd ERSA Congress, Palermo, Italy. https://www.econstor.eu/bitstream/10419/124025/1/ERSA2013_00729.pdf

Goh, C., Li, H., & Li, M. (2014). A comparative analysis of domestic tourism and international tourism spatial distribution: Trends and impacts. *Journal of China Tourism Research, 10*(4), 388–413. https://doi.org/10.1080/19388160.2014.906933

Goh, C., Li, H., & Zhang, Q. (2015). Achieving balanced regional development in China: Is domestic or international tourism more efficacious? *Tourism Economics, 21*(2), 369–386. https://doi.org/10.5367/te.2013.0353

Haddad, E. A., Porsse, A. A., & Rabahy, W. (2013). Domestic tourism and regional inequality in Brazil. *Tourism Economics, 19*(1), 173–186. https://doi.org/10.5367/te.2013.0185

Jones, S. (2010). The economic contribution of tourism in Mozambique: Insights from a social accounting matrix. *Development Southern Africa, 27*(5), 679–696. https://doi.org/10.1080/0376835X.2010.522831

Klouri, A. (2018). Travel receipts and main indices by Greek region [in Greek]. In L. A. Pyrgiotis (Ed.), *Regions at a turning point: Post-digital communities, new regionalism and re-nationalisation—Sustainable development implications* (pp. 38–44). Association of Greek Regional Scientists.

Krakover, S. (2004). Tourism development—Centres versus peripheries: The Israeli experience during the 1990s. *International Journal of Tourism Research, 6*(2), 97–111. https://doi.org/10.1002/jtr.473

Li, H., Chen, J. L., Li, G., & Goh, C. (2016). Tourism and regional income inequality: Evidence from China. *Annals of Tourism Research, 58*, 81–99. https://doi.org/10.1016/j.annals.2016.02.001

Li, H., Goh, C., Qiu, H. Z., & Meng, F. (2015). Effect of tourism on balanced regional development: A dynamic panel data analysis in coastal and inland China. *Asia Pacific Journal of Tourism Research, 20*(6), 694–713. https://doi.org/10.1080/10941665.2014.930055

Liargovas, P., Giannias, D., & Kostandopoulos, C. (2007). An assessment of the Community Support Framework (CSF) funding towards the tourist sector: The case of Greece. *Regional and Sectoral Economic Studies, 7*(1), 47–66.

Murphy, P. E., & Andressen, B. (1988). Tourism development on Vancouver Island: An assessment of the core-periphery model. *The Professional Geographer, 40*(1), 32–42. https://doi.org/10.1111/j.0033-0124.1988.00032.x

Narayan, P. K. (2004). Economic impact of tourism on Fiji's economy: Empirical evidence from the computable general equilibrium model. *Tourism Economics, 10*(4), 419–433. https://doi.org/10.5367/0000000042430971

O'Hare, G., & Barrett, H. (1999). Regional inequalities in the Peruvian tourist industry. *The Geographical Journal, 165*(1), 47–61. https://doi.org/10.2307/3060510

Oppermann, M. (1992). International tourism and regional development in Malaysia. *Tijdschrift voor economische en sociale geografie, 83*(3), 226–233. https://doi.org/10.1111/j.1467-9663.1992.tb00782.x

Oppermann, M. (1993). Tourism space in developing countries. *Annals of Tourism Research, 20*(3), 535–556. https://doi.org/10.1016/0160-7383(93)90008-Q

Papatheodorou, A., & Arvanitis, P. (2014). Tourism and the economic crisis in Greece—Regional perspectives. *Région et Développement, 39*, 183–203.

Rogerson, C. M. (2002). Tourism-led local economic development: The South African experience. *Urban Forum, 13*(1), 95–119. https://doi.org/10.1007/s12132-002-0005-2

Rogerson, C. M. (2014). The uneven geography of tourism in South Africa. *African Journal of Hospitality, Tourism and Leisure*, *3*(1).

Saayman, M., & Saayman, A. (2006). Estimating the economic contribution of visitor spending in the Kruger National Park to the regional economy. *Journal of Sustainable Tourism, 14*(1), 67–81. https://doi.org/10.1080/09669580608668592

Seckelmann, A. (2002). Domestic tourism – A chance for regional development in Turkey? *Tourism Management, 23*(1), 85–92. https://doi.org/10.1016/S0261-5177(01)00066-8

Soukiazis, E., & Proença, S. (2008). Tourism as an alternative source of regional growth in Portugal: A panel data analysis at NUTS II and III levels. *Portuguese Economic Journal, 7*(1), 43–61. https://doi.org/10.1007/s10258-007-0022-0

Telfer, D. J. (2002). Tourism and regional development issues. In R. Sharpley & D. J. Telfer (Eds.), *Tourism and development: Concepts and issues* (pp. 112–148). Channel View Publications.

Tosun, C., Timothy, D. J., & Öztürk, Y. (2003). Tourism growth, national development and regional inequality in Turkey. *Journal of Sustainable Tourism, 11*(2–3), 133–161. https://doi.org/10.1080/09669580308667200

Wang, K., Yi, J., & Wang, Y. (2015). *Research note*: An analysis of the spatio-temporal disparities of inbound tourism development in China, 1991–2010. *Tourism Economics, 21*(4), 889–897. https://doi.org/10.5367/te.2014.0375

Wen, J. J. (2015). Spatial distribution of tourism in China: A time series analysis. *The Journal of MacroTrends in Social Science, 1*(1), 18–29.

Wen, J. J., & Sinha, C. (2009). The spatial distribution of tourism in China: Trends and impacts. *Asia Pacific Journal of Tourism Research, 14*(1), 93–104. https://doi.org/10.1080/10941660902756776

Wen, J. J., & Tisdell, C. (1996). Spatial distribution of tourism in China: Economic and other influences. *Tourism Economics, 2*(3), 235–250. https://doi.org/10.1177/135481669600200303

Williams, A. M., & Shaw, G. (1995). Tourism and regional development: Polarization and new forms of production in the United Kingdom. *Tijdschrift Voor Economische En Sociale Geografie, 86*(1), 50–63. https://doi.org/10.1111/j.1467-9663.1995.tb01828.x

WTTC (World Travel & Tourism Council). (2021). *Greece—2021 annual research: Key highlights* [Fact sheet]. https://wttc.org/Research/Economic-Impact

Zimmerman, F. (1998). Austria: Contrasting seasons and contrasting regions. In A. Williams & G. Shaw (Eds.), *Tourism economic development: European experiences* (3rd Ed., pp. 175–197). Wiley.