GRADUALLY SHIFTING THE NATIONAL PRODUCTION MODEL'S CENTER OF GRAVITY: INVESTING IN REGIONAL COMPARATIVE ADVANTAGES FOR DEMOGRAPHIC RESTRUCTURING

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Abstract

Greece records an extremely negative performance in terms of balance between birth and death rates while existing data highlight a clear imbalance regarding population outflow. The paper intends to portray the demographic trajectory both at an EU and at a national level, coupled with providing at a certain extend insights about relevant projections. Additionally, the paper emphasizes on the case of Fthiotida (a Regional Unity falling within the Region of Central Greece) and the depopulation recorded between 2011-2021, while it describes Central Greece's current tourism performance and its impact in terms of economic indicators. Taking those into consideration the paper's initial purpose is to provide various insights to promote current public discourse on the necessity of the effective utilization of the region's natural thermal resources as a mean that may result in attracting investments related to tourism industry, creating sustainable and well-paid health-related jobs, and subsequently build the foundations of curtailing demographic vaporization taking place in the forementioned area. The methodological approach adopted is related to the review and content analysis of current literature, subsequent inputs included in institutional reports, data derived by official documentation and high institutional level interventions taken place within the public discourse. The paper concludes to the well-founded assumption that exploiting Fthiotida's natural resources in terms of thermal/hot springs, as a complementary component, may contribute to the creation of an integrated tourism product, able to support regional economy, enforce the argument of gradual shifting the country's productive model center of gravity, starting from certain sectors which are able to thrive in Greek regions, and establish conditions that may put a curb on population bloodletting.

Keywords: demography, tourism, economic growth, Greece, Fthiotida

1. Introduction

A major challenge both many European Member States and Greece must deal with is the ongoing demographic crisis (Papadaki, 2012). Elaborating on recent demographic developments, current data show a clear differentiation regarding the population variations among EU countries (Eurostat, 2023). As regards Greece, recently, it was mentioned that "the demographic issue renders itself as an existential bet for our future", showcasing the issue's significance and severity (Primeminister.gr, 2023). Depicting the wider image of the country's productive model, tourism marks as one of the key drivers in the Greek economy (OECD, 2022), based on the long-lasting tourism-economic growth relationship throughout the years (Lolos et al., 2021).

According to recent data tourism contributes substantially to both domestic GDP and employment. For instance, tourism contribution to the Greek economy amounted to 28.5 billion euros in 2023, corresponding to 13% of the country's GDP, following an ascending trajectory reflected on 23.9 billion euros in 2022 (11.6% of the country's GDP), and on 23.1 billion euros (12.6% in terms of contribution to the domestic GDP) in 2019 (Ikkos and Koutsos, 2024). As regards employment, the Bank of Greece (2024) indicates that 116,649 new working positions have been created in 2023 contrary to 72,847 in 2022, a fact that mostly lies on tourism sector's contribution. By and large, available data underline that 810,000 working positions, both directly and indirectly linked to tourism industry have been created in total in 2023. This amount corresponds to 19.4% contribution to national employment (Institute of the Greek Tourism Confederation, n.d.). In the wider context, Dimopoulos et al. (2023) accentuate that five Greek Regions represent the 87% of tourism revenues recorded in 2020 placing emphasis on the strand of extended inequalities influencing Greek production role model. Those mentioned above are confirmed by recent analytic quantitative data following in Table 1 (Institute of the Greek Tourism Confederation, 2023; Ikkos and Koutsos, 2024).

Table 1. Allocation of tourism-related benefits across regions, 2022 – 2023

Region	Inbound tourism % revenue allocation		Ratio of direct tourism expenditure (in million euros)		Regional GDP (in million euros)		% of GDP corresponding to tourism expenditure		GDP per capita (in euros)	
	2022	2023	2022	2023	2022	2023	2022	2023	2020	2021
South Aegean	27%	27%	6.522	7.719	6.372	7.000	102%	110%	14.572	16.639
Crete	21%	26%	5.073	7.510	9.908	10.777	51%	70%	12.374	13.994
Attica	17%	19%	3.948	5.473	99.349	105.459	4%	5%	21.134	23.335
Ionian Islands	15%	10%	3.614	2.947	3.293	3.554	110%	83%	12.914	14.520
Central Macedonia	9%	8%	2.094	2.189	28.368	30.243	7%	7%	12.092	13.453
Peloponnese	3%	2%	628	554	9.659	9.920	6%	6%	13.456	14.407
Epirus	2%	2%	361	478	4.635	4.796	8%	10%	11.097	11.981
Eas. Mac. & Thrace	2%	2%	508	471	8.187	8.638	6%	5%	10.908	12.006
Thessaly	1%	1%	320	366	10.907	11.495	3%	3%	12.172	13.390
Western Greece	1%	1%	306	304	9.480	9.721	3%	3%	11.616	12.429
Central Greece	1%	1%	301	240	10.688	11.264	3%	2%	15.322	16.834
Northern Aegean	1%	1%	173	215	2.931	2.954	6%	7%	10.163	10.658
Western Macedonia	0%	0%	67	73	4.253	4.482	2%	2%	12.838	14.141
Country	100%	100%	23.914	28.539	208.030	220.303	11,5%	13%	15.461	17.058

Source: Institute of the Greek Tourism Confederation, 2023, Ikkos and Koutsos. (2024).

Exercising caution on the aspect of regional disparities, Psycharis et al. (2023) indicate that inequalities have widened during the economic crisis, with most municipalities outside the large metropolitan areas showing levels of declared income per capita below the country

average. OECD (2022a) stresses that territorial inequalities pose long-term risks for social cohesion, that can be ameliorated by future economic shocks. Thus, one of the main means to achieve wellbeing is investments, that can result in strengthening incomes, job creation and unlocking potential of regions and cities (Krabokoukis, et al., 2024, OECD, 2018). In his paper, Gunton (2003) points out that the development of natural resources has played a significant role in the expansion of many regional economies around the world. Provided that Greece possesses a considerable capacity in natural resources that amounts to 822 thermos-metallic springs in total, with 750 of them having the potential of becoming exploitable, and 348 of them are being used to a large or smaller degree (Dimopoulos et al., 2023), most of them located in many regions, it is assumed that there's concrete foundations onto wellness (and its derivative or similar products) can continue its steadily growing trajectory (Vakoula and Constantoglou, 2023). Taking into consideration of the fact that wellness policies will become far more prominent on the political agendas of national, regional and local governments[1], the paper intends to place emphasis on the need of exploitation of comparative advantages (e.g., existing natural resources) in the context of the shifting of the country's productive model center of gravity to certain sectors able to thrive in Greek regions, such that of wellness tourism, as a mean to gradually achieve demographic restoration.

2. Methodology

The methodological approach applied, placed emphasis on the better understanding of a complex phenomenon such as the one under the examination (Molina-Azorin, 2016; Battista and Torre, 2023). It consists in the review of current literature, inputs included in institutional reports and data derived by official documentation and high institutional level interventions. Trying to serve, in the best possible way, the purpose of strengthening the paper's conclusions, authors applied mix method research, using components of a bilateral nature, akin to the combination of targeted qualitative and quantitative data (Schoonenboom and Johnson, 2017). Concerning the demographic variables at a European level, the paper uses relevant official institutional sources (i.e., Eurostat) and reports (i.e., European Commission), entailing most of recent demographic quantitative and qualitative data. As regards, those at a domestic level, authors used data brought out by the official national authority (i.e., Hellenic Statistical Authority), and subsequent available literature based on data derived by it. As regards the description of the economic dimension and to the purpose of covering existing gaps regarding the depiction of the relevant projected impact in combination with providing sufficient justification for the intensification of efforts on the imminent effective use of extant natural thermal resources, the latest data of the Global Wellness Institute's reports have been used. Finally, the paper also consists of inputs regarding the latest relevant key legislative and operational developments that took place at a domestic level.

3. Brief description of EU demographic facts

According to a recent Eurostat (2023) on January 1st, 2023, the population increased to 448.4 million, from 446.7 million on January 1st, 2022. This amounts to an increase of 93.9 million compared to 354.5 million of 1960. Moreover, an increase in 20 countries has been observed, whereas a significant downward trend was recorded in 7 of them. Among those, recorded the highest rates of population decrease was Greece by -6.3%. To that extend, the European Commission (2023) indicated that a considerable number of EU Member States is assumed to experience a decline of its population by 2030 with countries such as Bulgaria, Latvia, Croatia, Italy, Lithuania, Hungary, Poland, Romania, and Greece shaping this deceleration course. Moreover, in 2021 there were more than 3 Europeans in a productive age per inhabitant of 65 years old and over, representing a dependence rate of 32.5%. It is indicated that by 2050 approximately 30% of Europe's population will age more than 65 years old. It is also assumed that less than 2 adults of a productive age will correspond to 1

[1] The trend articulated as above was recorded in the context of the Global Wellness Summit – GWS Wellness Master Class 2023 Trends Mid-year Update, organized on December 10th, 2023, uploaded on YouTube. https://surl.li/lahtqq

adult of 65 years old and on, amounting to dependence rate of 56.7%. Additional assumptions regarding the changing of the population at a European level speak about a plateau of about 449 million people before 2025 and then after 2030 a progressive slowdown to 424 million by 2070, equivalent to a 5% decrease in 50 years. (European Commission, 2020). In this respect, Eurostat (2023) provided sufficient data regarding the EU demographic balance and the evolution of population by country within Figure 1.

Figure 1. Population changes at national level

	Population, 1 January 2022	Live births	Deaths	Natural change (1)	Net migration and statistical adjustment (2)	Total change between 1 January 2022 and 2023	Population, 1 January 2023
EU (4)	446,735.3	3,885.6	5,148.6	-1,263.0	4,054.7	2,791.7	448,387.9
Belgium (3)	11,617.6	114.1	116.4	-2.3	138.7	136.4	11,754.0
Bulgaria (4)	6,838.9	56.6	118.8	-62.2	27.4	-34.8	6,447.7
Czechia	10,516.7	101.3	120.2	-18.9	329.7	310.8	10,827.5
Denmark	5,873.4	58.4	59.4	-1.0	60.2	59.2	5,932.7
Germany	83,237.1	738.9	1,066.3	-327.5	1,449.2	1,121.7	84,358.8
Estonia	1,331.8	11.6	17.3	-5.7	39.8	34.1	1,365.9
Ireland	5,060.0	57.6	35.1	22.5	111.8	134.3	5,194.3
Greece (3)(5)	10,459.8	75.9	140.0	-64.1	-1.7	-65.7	10,394.1
Spain (3)(4)	47,432.9	329.9	462.7	-132.8	695.7	562.9	48,059.8
France (3)	67,871.9	723.6	667.2	56.4	142.4	198.8	68,070.7
Croatia	3,862.3	33.9	57.0	-23.1	11.7	-11.4	3,850.9
Italy (3)(4)	59,030.1	392.6	713.5	-320.9	141.5	-179.4	58,850.7
Cyprus (3)	904.7	10.2	7.3	2.9	13.1	16.0	920.7
Latvia	1,875.8	16.0	30.7	-14.8	22.0	7.3	1,883.0
Lithuania	2,806.0	22.1	42.9	-20.8	72.1	51.3	2,857.3
Luxembourg	645.4	6.5	4.4	2.0	13.4	15.4	660.8
Hungary (4)	9,689.0	89.7	136.8	-47.2	36.6	-10.5	9,597.1
Malta (4)	521.0	4.3	4.2	0.1	21.8	21.9	542.1
Netherlands	17,590.7	167.5	170.1	-2.6	223.2	220.6	17,811.3
Austria	8,978.9	82.6	93.3	-10.7	136.5	125.8	9,104.8
Poland (4)	37,654.2	305.1	448.4	-143.3	7.3	-136.0	36,753.7
Portugal	10,352.0	83.7	124.3	-40.6	156.0	115.3	10,467.4
Romania (3)	19,042.5	183.6	272.0	-88.4	97.5	9.1	19,051.6
Slovenia	2,107.2	17.6	22.5	-4.9	14.5	9.6	2,116.8
Slovakia	5,434.7	52.7	59.6	-6.9	1.0	-5.9	5,428.8
Finland	5,548.2	45.0	63.2	-18.3	34.0	15.7	5,564.0
Sweden (3)	10,452.3	104.7	94.7	10.0	59.2	69.2	10,521.6
Iceland	376.2	4.4	2.7	1.7	9.8	11.5	387.8
Liechtenstein	39.3	0.4	0.3	0.1	0.3	0.4	39.7
Norway	5,425.3	51.5	45.8	5.7	58.0	63.7	5,489.0
Switzerland	8,738.8	82.4	74.4	7.9	66.0	73.9	8,812.7
Bosnia and Herzegovina	:	:	:	:	:	:	:
Montenegro	617.7	7.0	7.1	0.0	-0.9	-1.0	616.7
North Macedonia (4)	1,837.1	18.1	22.5	-4.4	-2.8	-7.2	1,830.0
Albania	2,793.6	24.7	24.0	0.7	-32.5	-31.8	2,761.8
Serbia	6,797.1	62.7	109.2	-46.5	-86.2	-132.7	6,664.4
Turkey	84,680.3	1,035.8	504.8	531.0	68.3	599.3	85,279.6
Ukraine	:	:	:	:	:	:	:
Georgia	:	:	:	:	:	:	3,736.4
Kosovo (*)	:	:	:	:	:	:	:
Moldova	:	:	:	:	:	:	2,512.8

Source: Eurostat. (2023).

To the same extent, OECD (2022) highlights that there were regions in 29 out 36 countries belonging to the organization that have seen their population contracting. It is also underlined that by 2050, more than 50% of the Regions pertain to the forementioned institution will record a significant loss of population, with large cities growing, whereas the smaller ones will be shrinking. At the same time, the shrinking and the ageing of population will impact on the reduction of in-comes and subsequently will raise costs per capita as regards services' provision. As indicated, it is expected to result in fiscal challenges and pressure upon local and regional authorities. Finally, the same entity stresses that the population will be contracting in 14 countries by 2040 and in 18 by 2100, with the biggest losses being recorded in Eastern and Southern European countries (OECD, 2023).

4. Brief decoding of the domestic demographic profile and key projections

According to the outcomes of the recent population census conducted by the Hellenic Statistical Authority (2023) the total population has been estimated at 10,413,982 million on January 1st, 2023, showing a decrease compared to 10,461,627 million people on January 1st, 2022. Latest data issued on December 31st, 2024, indicate that the total population amounts to 10,400,720 people (5,096,893 men and 5,303,827 women). The natural decrease of the population amounted to 55,920 people (71,249 live births and 127,169 deaths of people inhabiting within the territory and the net migration was estimated at 42,658 people. The following figure (Figures 2) provides a more detailed view on current population status (Hellenic Statistical Authority, 2024).

Figure 2. Estimated Population on 1st January 2024 by sex, Region and Regional Unit

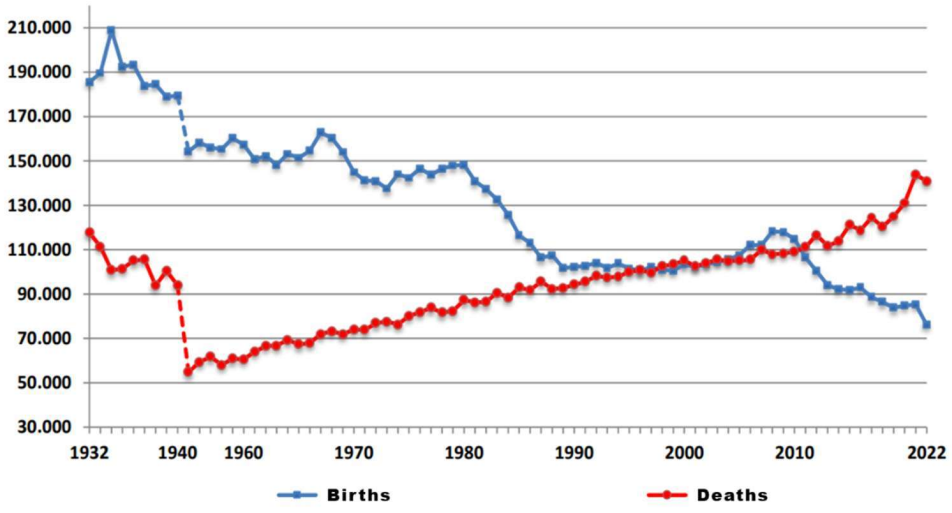
	MALES	FEMALES	TOTAL
TOTAL GREECE	5,096,893	5,303,827	10,400,720
Anatoliki Makedonia, Thraki	**278,915**	**282,919**	**561,834**
Drama	43,078	44,388	87,466
Evros	69,241	65,176	134,417
Kavala and Thasos*	61,261	65,036	126,297
Xanthi	53,706	54,254	107,960
Rodopi	51,629	54,065	105,694
Kentriki Makedonia	**859,703**	**919,193**	**1,778,896**
Imathia	63,921	65,604	129,525
Thessaloniki	517,564	569,363	1,086,927
Kilkis	34,616	34,976	69,592
Pella	60,186	62,391	122,577
Pieria	56,873	59,591	116,464
Serres	75,493	76,582	152,075
Chalkidiki	51,050	50,686	101,736
Dytiki Makedonia	**123,090**	**124,180**	**247,270**
Grevena	13,339	12,575	25,914
Kastoria	22,140	22,342	44,482
Kozani	66,267	67,028	133,295
Florina	21,344	22,235	43,579
Thessalia	**334,717**	**344,030**	**678,747**
Karditsa	51,388	52,552	103,940
Larisa	131,979	134,414	266,393
Magnisia and Sporades*	91,628	96,922	188,550
Trikala	59,722	60,142	119,864
Ipeiros	**159,124**	**161,984**	**321,108**
Arta	30,767	31,040	61,807
Thesprotia	20,107	20,208	40,315
Ioannina	81,571	83,383	164,954
Preveza	26,679	27,353	54,032
Ionia Nisia	**99,036**	**101,606**	**200,642**
Zakynthos	20,072	20,438	40,510
Kerkyra	48,570	50,585	99,155
Kefalonia and Ithaki*	19,136	19,435	38,571
Lefkada	11,258	11,148	22,406

	MALES	FEMALES	TOTAL
Dytiki Ellada	**322,365**	**317,878**	**640,243**
Aitoloakarnania	93,454	93,253	186,707
Achaia	148,441	153,742	302,183
Ilia	80,470	70,883	151,353
Sterea Ellada	**253,928**	**251,145**	**505,073**
Voiotia	54,749	51,928	106,677
Evvoia	105,740	104,726	210,466
Evrytania	8,844	8,564	17,408
Fthiotida	66,191	67,745	133,936
Fokida	18,404	18,182	36,586
Peloponnisos	**266,923**	**264,675**	**531,598**
Argolida	44,976	46,150	91,126
Arkadia	38,902	37,378	76,280
Korinthia	68,007	68,656	136,663
Lakonia	44,024	40,638	84,662
Messinia	71,014	71,853	142,867
Attiki	**1,821,687**	**1,962,878**	**3,784,565**
Voreio Aigaio	**104,423**	**96,584**	**201,007**
Lesvos and Limnos*	55,775	50,636	106,411
Samos and Ikaria*	22,465	20,238	42,703
Chios	26,183	25,710	51,893
Notio Aigaio	**165,462**	**161,784**	**327,246**
Kalymnos, Karpathos, Kos, Rodos (Dodekanisos*)	106,828	102,360	209,188
Andros, Thira, Kea-Kythnos, Milos, Mykonos, Naxos, Paros, Syros, Tinos (Kyklades*)	58,634	59,424	118,058
Kriti	**307,520**	**314,971**	**622,491**
Irakleio	148,586	154,586	303,172
Lasithi	38,857	38,481	77,338
Rethymno	41,914	43,461	85,375
Chania	78,163	78,443	156,606

Source: Hellenic Statistical Authority. (2024).

Prior to that, in his research findings, Kotzamanis (2022) highlighted that only 13 Regional Unities (former Prefectures) experienced an increase in the size of their population. The greater positive change recorded on the island of Kos (+10%). On the other hand, the greater negative change recorded in the mainland, and the Regional Unity of Grevena (-16%). The following figure (Figure 3) portrays the population's natural mobility trajectory in Greece as of 1932 to 2022 (Hellenic Statistical Authority, 2023).

Figure 3. Population's natural mobility (thousands), 1932-2022



Source: Hellenic Statistical Authority. (2023).

Considering the forementioned facts, prominent demographic policy expert, Kotzamanis provided a brief analysis of the basic reasons for the country's population collapse. He stated that "Greece's population is being reduced over the last 12-13 years, from 2011 for two reasons. Because, as of 2011 we have more deaths than births and many more outflows than inflows", while he focuses on high-skilled, mid-skilled and low-skilled Greeks flee. This is a fact that impacts adversely on the recruitment of the appropriate staff in several sectors, including tourism[2]. In this respect, Labrianidis and Georgopoulos (2022) indicate that highest decreases are being noted in regions such as Western Macedonia, Eastern Macedonia & Thrace, and Central Greece where tourism interest is limited. Giving the full spectrum of

[2] Forementioned facts and information were delivered by prominent Professor, Vyronas Kotzamanis in the context of an interview elaborated on the demographic problem, uploaded on the research institute's "Dianeosis" YouTube account on May 8, 2023. https://surl.li/zpkkph

national weaknesses, it has to be mentioned that the country has suffered from a major surge of brain-drain, as a consequence of the global financial crisis of 2007 – 2009, with the loss of valuable, human capital in terms of social and economic growth and development (Tsertekidis, 2023), as most of it corresponded to young, healthy, well-educated, skilled, highly mobile and employable personnel (Lazaretou, 2022) that resulted in 15,3 billion euros in terms of economic loss, according to research findings[3].

Predestinating basic national demographic developments, Kotzamanis et al. (2016) point out that in 2050 Greece's population is estimated to reach between 10 million (positive scenario) and 8.3 million (adverse scenario), having an ageing rate between 2.04 and 2.73, when in 1951 the same indicator was 0.24. Moreover, Greece underperforms in most key demographic rates. For instance, approximately 1 in 4 women states that she is not willing to have children. Each year 50.000 more deaths will be recorded than births, whereas in 2050 there will be almost 800.000 people aged 65 years old or more[4]. In line with those above, the Foundation for Economic & Industrial Research (IOBE) (2022) says that between 2011 and 2021 the country's population decreased by 441.000 people akin to an average rate of 4%.

It also takes into consideration of a base scenario of demographic projections, that corresponds to a decline to 8.1 million people by 2100, meaning a decline of 2.5 million people, or 24% relevant to 2021. In terms of age structure, the old-age dependency ratio is expected to exceed 0.60 points after 2050, from 0.35 points in 2020 and 0.29 points in 2010. In parallel, an increase of the population aged over 65 years old is assumed, wherein from 22.9% of 2022 (21.2% in EU27) is estimated to accede to 33.5% in 2060, exercising pressure upon the insurance system and healthcare expenditure. Finally, according to Kotzamanis and Pappas (2023) Greece is heading towards an era in which it will face an immense combination of ageing and senility at its highest degree in more than 1 out of 4 Regional Units, where those aged 65 years and over will exceed 1/3 of their population, while at the same time 1/4 of them will be numbered among the category of senility.

4.1. Key demographic data in Central Greece and the Regional Unity of Fthiotida

Focusing on the Region of Central Greece, its 2021 permanent population was calculated in 508,254 inhabitants (254,511 of them are men and 253,743 of them are women) relevant to 547,390 of 2011 (277,475 were men and 269,915 of them were women), recording a decline of 7.1%. (Hellenic Statistical Authority, 2023a; 2023b). In the context of an average of -2.7% per 1,000 people in terms of crude rate of natural population change in 2021, Central Greece which represents 4.9% of total population records a -87.1 per 1,000 people concerning population change, while its Regional Unities contracted by; Fokida, -7.6 per 1000 people, Evrytania, -9.5 per 1000 people, Evoia, -6.5 per 1000 people, Voiotia, -7.1 per 1000 people, with Fthiotida toping the relevant scale by -10.0 per 1000 people (Eurostat, 2023).

According to the Hellenic Statistical Authority (2023) 3,270 people were born in Central Greece whereas 7,640 deaths have been recorded in 2022. OECD (2020) stressed that ageing has been an important challenge for Central Greece, as its share of population over 70 years old is higher than the Greek or EU scales, being increased on average by 2.9% within the period of economic crisis. In this respect, it is indicated that the elderly dependency ratio in 2019 amounted to 37.4%, while according to the Foundation for Economic and Industrial Research (2024) the ratio between the oldest age group relevant to people of working age (15 to 64 years old) is almost 42%. Fthiotida marks as one Central Greece's Regional Units (former Prefectures) that records the second most adverse rate of population decline by 12.9% behind neighboring Evrytania with a downturn of 13.2%, according to available official data (Hellenic Statistical Authority, 2023a). Table 2 lays out numeric data on population changes between 2011 – 2021.

[3] The forementioned figure and research information was showcased within Apostolos Lakasas piece in www.kathimerini.gr published on February 5th, 2018. https://surl.li/rgtujx

[4] Information above is included in Vasilis Kostoulas piece in www.kathimerini.gr, published on April 17th, 2023. The topic is entitled as "Greece has 2.7 million pairs of unused working hands" [Η Ελλάδα έχει αναξιοποίητα 2,7 εκατομμύρια ζευγάρια εργατικά χέρια]. https://surl.li/qxaoju

Table 2. Population of the Regional Unity of Fthiotida and changes between 2011-2021

Municipality	Population			
	2011	2021	change	% change
Lamia	75,315	66,657	-8,658	-11.50%
Amfikleia – Elateia	10,922	8,376	-2,546	-23.31%
Domokos	11,495	9,159	-2,336	-20.32%
Lokron	19,623	17,788	-1,835	-9.35%
Makrakomis	16,036	13,500	-2,536	-15.81%
Kamena Vourla	12,090	10,924	-1,166	-9.64%
Stylida	12,750	11,389	-1,361	-10.67%
Total	158,231	137,793	-20,438	-12.92%

Source: Hellenic Statistical Authority (ELSTAT). (2023a)

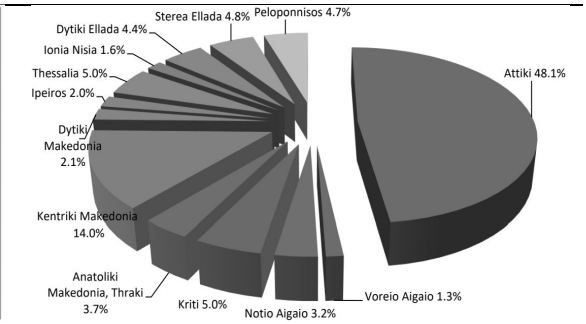
4.2. Socioeconomic aspects of the current regional demographic status

Giving an indicative picture of the concentration of economic activity in urban regions, OECD (2020) underlined that "Attica concentrates almost half (47%) of the country's GDP, above its share of the population (35%) and employment (36%). In contrast, the second largest region, Central Macedonia, concentrates a larger share of the population (17%) relative to GDP (14%) and about the same share of employment (17%)." (p. 52). Latest data brought out by the Hellenic Statistical Authority (ELSTAT) (2025) issued on January 31st, 2025, manifests the spectrum of disparities in terms of both total Gross Value Added per region and the contribution of each region to that (Figures 4-5), confirming extant research findings (Ladias and Stamatiou, 2006) and highlighting regional inequalities (Xanthos et al., 2012).

Figure 4. Total Gross Value Added per Region (in million euros)

Regions	2020	2021	2022*	Change (%) 2021/2020	Change (%) 2022/2021
Attiki	71,484	78,311	88,223	9.6%	12.7%
Voreio Aigaio	1,999	2,135	2,402	6.8%	12.5%
Notio Aigaio	4,378	4,968	5,842	13.5%	17.6%
Kriti	6,980	7,813	9,250	11.9%	18.4%
Anatoliki Makedonia, Thraki	5,508	6,031	6,763	9.5%	12.1%
Kentriki Makedonia	20,414	22,087	25,635	8.2%	16.1%
Dytiki Makedonia	3,093	3,317	3,776	7.3%	13.8%
Ipeiros	3,045	3,284	3,660	7.9%	11.5%
Thessalia	7,657	8,557	9,240	11.8%	8.0%
Ionia Nisia	2,268	2,556	2,990	12.7%	17.0%
Dytiki Ellada	6,499	6,997	8,066	7.7%	15.3%
Sterea Ellada	7,140	7,701	8,890	7.8%	15.4%
Peloponnisos	6,773	7,259	8,672	7.2%	19.5%
ELLADA	**147,236**	**161,015**	**183,409**	**9.4%**	**13.9%**

Figure 5. Regions contribution to total Gross Value Added (2022)



Source: Hellenic Statistical Authority (ELSTAT). (2025).

Approaching more demographic-related parameters in coordination with economic growth it is being indicated that adverse demographic projections possess an unpropitious impact on economy, with research data highlighting that a potential 10% increase of population over 60 years old will result in a downturn of GDP per capita enhancement pace by 5,5% (Pierrakakis, 2016). In the same context, the Foundation for Economic & Industrial Research (IOBE) (2022) macroeconomic emulations assume that "the real GDP in 2100 will be less than 58 billion euros (or 31%) relevant to 2019, employment by 2.1 million people (or 48%), financial revenue by 14 billion euros (or 19%) and GDP per capita by approximately 1,740 euros (or 10%) at 2019 constant prices" (p. 14).

Respectively, a pessimistic assessment by the same entity points out a downturn in terms of real GDP by 95 billion euros or 52% by 2100 compared to 2019, and about a decline by up to 4,000 euros in terms of GDP per capita. The magnitude of GDP per capita is an important factor that seems to affect fertility levels. To date relevant research out-comes show that new demographic transition is not linear and that it depends on extant social and economic circumstances, while at the same time policies implemented impact on it at a certain degree (Balourdos et al., 2019). Argirou (2018) also stresses that GDP marks as a parameter that is

being affected by demographic trends, and it is being consigned by the level of employment that in turn impacts on the level of productivity. Thus, the adoption of a new productive model for Greek economy is required, which besides others, will promote the national economy's extroversion and competitiveness. Moreover, Moody's chief analyst for Greece indicated that the country's current demographic situations is one of the aspects that prevented them from upgrading Greece to investment status[5]. As regards the strand of Central Greece's competitiveness (according to the relevant index[6]), the region is being ranked as portrayed bellow (Tables 3-4).

Table 3. Regional Competitiveness Index (domestically)

Region	2019	2022	2023
Attica	87,2	92,6	92,3
Central Macedonia	60,9	70,4	69,8
Thessaly	61,1	66,4	65,9
Central Greece	**57,8**	**53,4**	**53,2**
Crete	62,6	64,0	63,8
Peloponnese	54,8	61,1	61,4
Western Macedonia	57,0	60,3	60,9
Western Greece	58,9	59,2	59,4
Southern Aegean	55,9	56,6	57,4
Epirus	65,4	60,5	61,6
Northern Aegean	59,8	59,4	60,5
Ionian Islands	62,1	58,9	60,3
Eastern Macedonia –	57,5	55,8	56,2

Table 4. Regional Competitiveness Index (EU) – 10 bottom regions

Country	Region	Index (RCI 2.0-2022)	Ranking (among 234 EU Regions)
Greece	Eastern	56,2	225
Romania	Nord-Vest	56,0	226
Bulgaria	Yugoiztochen	53,4	227
Greece	**Central Greece**	**53,2**	**228**
Romania	Centru	52,5	229
Romania	Sud-Muntenia	52,1	230
Romania	Sud-Vest Oltenia	50,2	231
Bulgaria	Severozapaden	49,0	232
Romania	Nord-Est	47,0	233
Romania	Sud-Est	46,1	234

Source: European Commission. (2023a).

On behalf of the scientific community is ascertained that there is a percentage of 20% of non-used working human capital compared to other EU countries, which means that there are 2.7 million people of productive age that are being excluded by working environments[7]. On the other hand, according to Eurostat (2023) Central Greece suffered from a high rate of youth (aged between 15-29 years old) unemployment (36.5% in 2022), when at the same time it bottoms EU Regions as regards the threshold of high-skilled working staff (21.8% in 2022 and 20.9% in 2023) (Eurostat, 2023, 2024). This constitutes a crucial aspect, since Krupavičius et al. (2024) stress that high-educated people prefer to be integrated in socially equal perceived types of society. Another feature of the region's social profile is that there is a gap of 31.4% in employment between two genders, while at the same time there has been an increase of over 5% on material deprivation and social exclusion in 2023 relevant to 2019 (Eurostat, 2023).

The high employment gap between genders remains still high at 29.3% in the Region of Central Greece which is the highest in the EU (Eurostat, 2024). This negative point is also mentioned by the Foundation for Economic and Industrial Research (IOBE) (2024), pointing out that the region is ranked at the bottom of the relevant category. The same institution highlights the fact it also lags in terms of health system capacity coupled with its low performance with respect to tourism, which mostly concerns inbound tourists rather than those coming from abroad (Foundation for Economic and Industrial Research, 2024a). At this

[5] Information regarding the Greece's investment status is incorporated within Eleftheria Kourtali's piece, entitled as "Why Moody's kept its rating" and published in www.ekathimerini.com on March 20th, 2024. https://surl.li/wntace

[6] The Regional Competitive Index assesses a region's ability to offer an attractive environment for businesses and people to be able to live and work.

[7] Information above is included in Vasilis Kostoulas piece in www.kathimerini.gr, published on April 17th, 2023. The topic is entitled as "Greece has 2.7 million pairs of unused working hands" [Η Ελλάδα έχει αναξιοποίητα 2,7 εκατομμύρια ζευγάρια εργατικά χέρια]. https://surl.li/qxaoju

crucial juncture, all the above indicatively laid out stress the need for intensification of relevant endeavors towards the exploitation of stagnant or non-exploited natural resources related to the creation of a cohesive and complete tourism product (Roman, et al. 2023).

4.3. The broader concept of wellness and its economic impact

According to World Tourism Organization and European Travel Commission (2018) "health tourism covers those types of tourism which have as a primary motivation, the contribution to physical, mental and/or spiritual health through medical and wellness-based activities which increase the capacity of individuals to satisfy their own needs and function better as individuals in their environment and society" (p. 9), whereas it operates as an umbrella term for the subtypes: wellness tourism and medical tourism. The same institutes define wellness tourism as "a type of tourism activity which aims to improve and balance all the main domains of human life including physical, mental, emotional, occupational, intellectual and spiritual. The primary motivation for the wellness tourist is to engage in preventive, proactive, life-style enhancing activities such as fitness, healthy eating, relaxation, pampering and healing treatments" (p. 10). Mueller and Kaufmann (2001) made mention on the American doctor Halbert Dunn's notion articulated back in 1959, wrote about a special state of health comprising an overall sense of well-being which sees person as consisting of body, spirit and mind and being dependent on his environment.

Smith and Puczko (2009) as cited in Medina-Munoz, D. and Medina-Munoz, R. (2014) indicate that wellness includes components related to lifestyle, physical, mental, and spiritual well-being, being perceived as a type of health tourism. Referring to spas, in the context of their paper, Mak et al. (2009) incorporated the International Spa Association's definitional approach to overall well-being through the provision of a host of professional services that encourage the renewal of mind, body and spirit. They also point out that it is key for decision makers to understand motivations that trigger consuming interest. Čeperković and Čerović (2023) point to the Short Dictionary of Tourism approach that correlates spa tourism with accordingly monitored health-preventive and therapeutic interventions in the context of a leisure period, while at the same time they highlight the ascending trajectory of this sub-sector in countries such as Serbia, Hungary, Slovenia, and Croatia, over the years 2010-2019. Huang et al. (2022) say that hot springs is a category of wellness tourism, while at the same time it is being rendered as a form of health-related tourism, developing in locations with cultural elements and historical background. The wellness concept seems to be among the broader spectrum of choices that may meet modern people's needs regarding health (Lakićević et al., 2023).

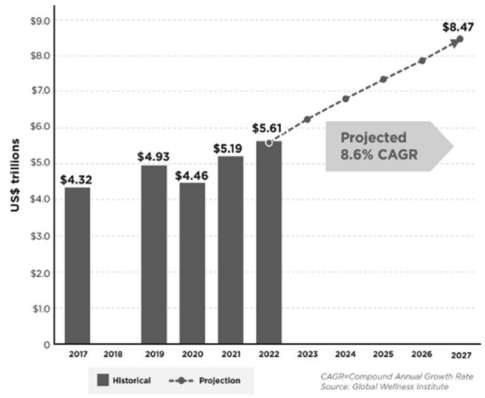
Smith and Puczko (2008) proceeded to a distinction within the wider framework of health tourism, placing the disease-related rehabilitation closer to medical tourism, whereas lifestyle-related rehabilitation between wellness tourism and medical tourism. The scientific community also stresses the importance of the potential positive impact through the utilization of thermal springs on a broad range of health issues coupled with the contribution to the gradual limitation of pharmaceutical interventions (Mao et al., 2023, Iosub et al., 2024). By and large, Pashkov et al. (2017) is believed to showcase the wider conceptual framework of this sensitive aspect, at a quite representative manner, highlighting that rehabilitation is the process that may facilitate people with disabilities and patients with chronic diseases physical, psychological and social functionality at the highest possible degree. The purpose of a considerable number of travelers is the pursuit of rehabilitation services, the improvement of their functionality, and the alleviation of negative implications derived by diseases or injuries in combination of an adequate wellbeing level.

Focusing on the dimension of wellness economy and its derivative impact Johnston et al. (2024) issued the standard Global Wellness report, providing the latest relevant economic data and indicators. According to those data it reached a new peak of 6.3 trillion dollars in 2023 (representing 6.03% of global GDP), which ascended from 5.6 trillion dollars in 2022 (Johnston et al., 2023). According to the latest projections the global wellness economy will develop at a robust rate of 7.3% on an annual basis during 2023-2028, following previous similar estimates of 8.6% annual growth rate till 2027 (Figure 6). The previous report states that certain sectors that constitute the broader wellness economy showcased their resilience,

having recovered from the shock that COVID-19 brought up. Wellness economy reached 125.7% of its corresponding market size as a share of 2019 level. Among others, physical activity grew by 4.1% annually during 2019-2023 and it reached 117% of its 2019 level. Prior to that, it declined by 14.6% during the first year of the pandemic crisis. Respectively, wellness tourism ascended by 4.5% annual growth 2019-2023 and in 2023 reached 119% of its 2019 level. It must be underlined that the wellness sector was the most adversely affected by COVID-19, reduced by 50.8% in 2020.

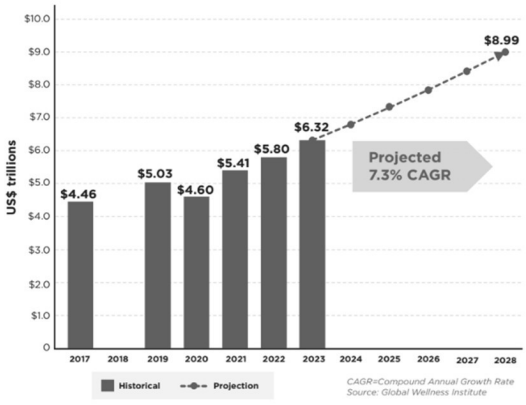
Figure 6. Global Wellness Economy Market Size and Growth Projections, 2017-2027 and 2017-2028

2017-2027



Source: Johnston et al. (2023).

2017-2028



Source: Johnston et al. (2024).

Spas and subsequently the relevant form of tourism has developed by 4.1% annually during 2019-2023. During the pandemic crisis this crucial sub-sector of the broader wellness economy was heavily battered by travel restrictions, business shutdowns, and instructions with respect to social isolation. This led to a significant drop of 38.2% in terms of revenues and a loss of 4,700 business in 2020. However, as of 2023, global relevant revenues have fully recovered, reaching 118% of their pre-pandemic level. Conversely, thermal/mineral springs recorded a negative 1.2% annual pace within 2019-2023. It must be stressed that the sub-sector's performance contracted by 40.3% in 2020, because of the restrictive measures applied. However, the sub-sector in 2023 reached 95.4% of its 2019 level. Following those mentioned above with respect to the robust growth rate of the wider wellness economy, the previously laid out sub-sectors demonstrate a promising trend. Specifically, wellness tourism is projected to grow by 10.2%, thermal/mineral springs by 9.2%, spas by 6.1% and physical activity by 5.8% (Johnston et al., 2024).

Global Wellness Institute's research staff provides specific data regarding wellness tourists' affordability and ability to spend for relevant purposes. For instance, it is said that wellness travelers spend more per trip than the average tourist, which marks as an ascertainment that refers to both international and domestic wellness tourists. As indicated, in 2022, international wellness tourists spent 1,764 dollars per trip on average, which is 41% more than the typical international tourist. Additionally, the premium for domestic wellness tourists is much higher, reaching 175% more than the typical domestic tourist (or 668 dollars per trip) (Johnston et al., 2023). Latest similar data show a slight downward trend, manifesting that in 2023, international wellness tourists spent on average 1,668 dollars per trip (96 dollars less than those of the previous year or -5.44% lower), which is 36% more than the typical international tourist. Respectively, domestic wellness tourists' spending capacity remains higher, at 163% more than the typical domestic tourist (or 673 dollars per trip, slightly more than the previous year's corresponding figure) (Johnston et al., 2024).

Delving into more data on wellness consumers spending abilities, the same institute's research outcomes show that per capita spending on wellness amounts to 788 dollars which is slightly higher than the average consumer out-of-pocket spending on health goods/medical services (746 dollars). As regards Europe, wellness-related spending per capita is estimated at 1,794 dollars in 2023, growing by 9.7% compared to the previous year. This is the second highest per capita spending on wellness behind that of North America (5,768 dollars). Exercising caution on the case of Greece, the country ranks 42nd as regards its wellness

economy size according to the relevant criteria and 45th regarding its wellness economy per capita performance (1,756 dollars). As regards the wellness economy percentage as share of GDP, Greece lies 27th by 7.65% according to the relevant table (Johnston, et al., 2025). Prior to the extraction of the latest data, the same institute indicated that as more consumers incorporate wellness-related choices into their lifestyles, an array of opportunities may rise for all businesses to infuse wellness into their set of offerings, providing the ability to capture spending by wellness travelers (Yeung and Johnston, 2018).

In the light of those above, opportunities for micro/small enterprises, entrepreneurship, and new business models coupled with boosting employment correspond to a sound anticipation (Yeung et al, 2019). Respectively, in terms of employability, indicatively laid out data coming from the US market offer sufficient justification on the need of intensifying efforts and derivative front-loaded initiatives in the broader sector. For instance, according to the International Spa Association – ISPA the total number of industry employees also continued on its upward trajectory in 2022, increasing by 4.6% to 360,700 workers from 345,000 (Spa Business, 2023), while the US wellness services industry unveils its intention to offer incentives to address existing workforce shortages through financial incentives, such as higher wages (61%), signing-on bonus (38%), along with flexible work schedules (66%) in combination with targeting those unemployed (28%) (Spa Business, 2023a). Finally, relevant assumptions were recorded within the national context. According to Tountas et al. (2019, 2021) additional 25,6 thousand working positions could be created on thermal tourism, while wellness tourism could contribute to 171,000 thousand jobs provided that 13,5 billion euros would be added to the national GDP.

4.4. Regional Unity of Fthiotida's comparative advantage

Greece prides itself for its significant wealth of natural resources including excellent quality waters, amounting to 822 health springs out of those 752 can be utilized (Georgakopoulou & Delitheou, 2020). However, there are some arguments on that, as it has been said that a notable amount of them should be perceived as just spots of thermal water gushing (Danas, 2023). According to the Ministry of Tourism there are 84 thermal/hot springs accredited through issuing a Government Gazette to date (February 11, 2025).[8] Apart from giving an updated picture of the regional infrastructure's latest situation and of the recent legislative developments and institutional intentions, Dimopoulos et al. (2023) grouped Fthiotida's natural capital in terms of thermal/hot springs in the following Figure 13. A considerable part of natural thermal resources included in this figure pertains to Hellenic Republic Asset Development Fund S.A. (HRADF). An entity that was established in 2011 according to its founding Law 3986/2011 with an initial mandate to leverage the State's private property assigned to it by the Hellenic Republic (Government Gazette, 2011). Its mission is to act as a strategic partner for the Greek State to attract investments, enhance the national economy's growth potential, strengthen its international credibility, and produce wealth (Hellenic Republic Asset Development Fund S.A., n.d.). Following those included in Figure 13, a brief review of the most significant developments related to the natural thermal resources' future utilization, that have happened so far, are taking place.

[8] Information and data are included into the Ministry of Tourism website that contains the Government Gazette Papers (FEK) of Accredited Thermal Springs [Φύλλα Εφημερίδας της Κυβερνήσεως (ΦΕΚ) των Αναγνωρισμένων Ιαματικών Πηγών]. Retrieved February 11st, 2025. https://surl.li/psmvsv

Figure 13. Hot/thermal springs of the Regional Unity of Fthiotida

Municipality	Accredited thermal springs	Thermal springs in process of accreditation
Lamia	Ypati's thermal waters, Thermopyles thermal waters	Kallidromo, Thermopyles
Kamena Vourla	former Molos Municipality borehole thermal waters, Koniaviti (Kallyntika) thermal spring, Georgala thermal springs	Borehole thermal waters GP1, GP4, GP8, Alamani/ Vourvoulaki, Mylos Koniaviti, Molos, Agios Konstantinos (school units), Elpiniki thermal spring (Ministry of Tourism, 2022), Thermal waters of Nova, Vasileiadi and Vlassi (Hellenic Public Properties Co. [HPPC], 2022a).
Makrakomi	Palaiovracha thermal spring, Klouvio thermal spring, Spring of "Thermal borehole" Platystomo waters (Ministry of Tourism, n.d.)	Omorfoneri/Morfoneri, Thermal (FREAR)[a,b]
Domokos		Ekkara Kolovo, Dranista – Kaitsa thermal waters (Loutradranistas-kaitsas.gr, n.d.; Ministry of Tourism, 2020a)[c]

[a]Entailed into an existing reference.
[b]Within the website of Municipality of Makrakomi https://dimosmakrakomis.gov.gr/ there is also the thermal spring of Archani which is not clearly articulated into the relevant official documents. As the website underlines this spring lies among a small group of five (5) unique thermal springs worldwide, including two (2) in California USA, one (1) in Oregon USA and one (1) in Kulasi, Bosnia Herzegovina.
[c]There is also the thermal spring of Gerakli.

Source: Dimopoulos et al. (2023).

4.4.1. Thermal Spring of Kamena Vourla

In the context of a brief description with respect to the Thermal Spring of Kamena Vourla this is a total area of 474,524 square meters. According to the press release issued on January 5th, 2023, an improved financial offer (highest bidder) has been submitted by the association of companies Galini Hotel Tourism and Commercial Enterprises S.A. and Staritem Investment PLC, for the development through a long-term lease of 40 years of the property "Loutropolis Kamena Vourla". The offer includes a one-off payment of 1,050,000 euros and an annual rent of 380,000 euros. The joint venture will undertake through the lease agreement to implement mandatory investments to upgrade and modernize the property (Hellenic Republic Asset Development Fund S.A., 2023).

4.4.2. Ypati Thermal Spring

Elaborating on the case of Loutra Ypatis, the whole range where the relevant asset is located upon is 700,722 square meters (Hellenic Republic Asset Development Fund S.A., 2022). According to available data, the area of interest contains an operating hydrotherapy unit of 82 baths of an exterior pool of 186 square meters and a laid-out refreshment booth, three non-operating/abandoned hotel units and other supporting facilities (Hellenic Republic Asset Development Fund S.A., n.d.-a). On December 19, 2022, the Municipal Authority of Lamia announced that local stakeholders related to tourism, accommodation industry and entrepreneurship submitted a report with respect to health and wellness tourism sustainable development, in accordance with provisions of the Law 4875/2021.[9] Deploying a different approach on the property's potential exploitation a Hellenic Republic Asset Development Fund S.A. (HRADF) representative made known (March 11, 2023) that the entity's intention is to proceed to a tender while one year later (March 9, 2024) unveiled that additional regulations are needed to concisely define what can be done within the relevant area.[10] Those

[9] Information presented as above is included into an official press release issued by the Municipality of Lamia (2022, December 19), being entitled as "Submission of proposal to the Ministry of Tourism on the designation of the Municipal Unity of Ypati, Municipality of Lamia, as a Prototype Tourism Destination of Integrated Management" [Υποβολή πρότασης, στο Υπουργείο Τουρισμού, χαρακτηρισμού Πρότυπου Τουριστικού Προορισμού Ολοκληρωμένης Διαχείρισης της περιοχής «Λουτρά Υπάτης - Υπάτη» της Δημοτικής Ενότητας Υπάτης του Δήμου Λαμιέων]. https://surl.li/aztsvn
[10] The forementioned information correspond to insights provided by the Hellenic Republic Asset Development Fund S.A. (HRADF) representative in the context of his address in Thermopylae Forum (2023, March 11st) https://surl.li/udfrox and respectively Thermopylae Forum. (2024, March 9th) https://surl.li/cjasgj

intentions are also being confirmed by recent domestic media insights with regard to the "Growthfund's" efforts to attract investors.[11]

4.4.3. Platystomo Thermal Spring

According to the Hellenic Republic Asset Development Fund S.A. (2022, n.d.-b) the shape of the property is cyclical with a 500m radius, at an altitude of 250 m, and is level in the center with hill-like peripheral protrusions. Within the range of the property, which accounts for 785,398.00 square meters there have been operating two hotel units coupled with a thermal spring and wellness-related facility. Another thing that needs to be considered is that a hotel facility has been operating for years next to a non-accredited thermal/hot spring, having an illegally located construction upon the existing water stream, which still has no relevant license, according to an official statement by the former Minister of Finance[12]. The relevant facilities are derelict and neglected. It was said that "neither central administration, neither local government, nor private initiatives managed to exploit this natural wealth to the benefit of the area and of the local economy"[13]. The managing body's expressed intention is to turn the wider asset into a spa tourism center, a rehabilitation center, and a unit facilitating sports (Hellenic Republic Asset Development Fund S.A., 2022).

4.4.4. "Koniavitis" Thermal Spring

The asset that contains the "Koniavitis" Thermal Spring & Camping extends upon a range of 783,320.90 square meters out of 523,000.00 can be used in the future (Hellenic Republic Asset Development Fund S.A., 2022). The relevant area consists of two parts. Part A' corresponds to a plot outside the urban planning zone which covers 520,515.75 square meters with a seacoast of about 1,200 meters. Respectively, part B' represents a plot outside the urban planning zone with an area of 37,211.37 square meters, that includes two hot/thermal springs, those of "Mylos Koniavitis" and "Kallyntikon", with the second one officially being accredited (Hellenic Republic Asset Development Fund S.A., 2023c). There are also abandoned camping facilities constituting an infrastructure for 250 caravans, receptions building, 50 huts, 5 stores, staff buildings, etc. (Hellenic Republic Asset Development Fund S.A., n.d.-c). The managing entity announced that it has received one financial offer for the exploitation of the asset above by INMO PARCK INVEST FOREIGN BRANCH S.A. (Hellenic Republic Asset Development Fund S.A., 2023a). The previous mentioned company declared as preferred investor for the development of the whole property, submitting an offer of 9,338,842.98 euros for area A' and 1,679,341.76 euros for area B', pledging its intention to proceed to an investment of at least 200 million euros (Hellenic Republic Asset Development Fund S.A., 2024).

4.4.5. Thermopylae Thermal Spring

One of the most emblematic and of great cultural significance, historic landmark is Thermopylae (Kalotas and Metaxas, 2024). The archaeological area of Thermopylae contains an accredited hot/thermal spring, an abandoned hydrotherapy center and two hotels (Hellenic Republic Asset Development Fund S.A., n.d.-d.), incorporated into the national policy, as a temporary reception of migrants and refugees (Ministry of Migration & Asylum, n.d.) in accordance with the Law 4375/2016 (Government Gazette, 2016). Government-related officials mentioned that interventions towards the improvement of the archeological area of

[11] The "Growthfund" is a holding company established in 2016 with the Greek State. One of its core missions is maximize the value of public assets. That being said, Antiopi Schina in www.liberal.gr (2025, March, 12nd), recently mentioned that assets including thermal/hot springs located in the Regional Unity of Fthiotida (Thermopylae, Platystomo, Ypati), are among those being promoted to real estate exhibitions worldwide in order to attract investing interest. https://ln.run/Ne5ti

[12] The forementioned information were part of the former Minister of Finance and currently Minister of Transport & Infrastructure speech in Thermopylae Forum (2023, March 11st) https://surl.li/udfrox

[13] Articulation shown as above is included into Katsonis, P. and Chachopoulou, L. (2019, October 19) autopsy in the asset of Platystomo. The piece issued is entitled as "Platystomo: How thermal gold turned into charcoal/Long lasting responsibilities, abandonment, those "occupied" and the "saviours" [Πλατύστομο: Πώς το χρυσάφι των ιαματικών έγινε κάρβουνο/Οι διαχρονικές ευθύνες, η εγκατάλειψη, τα "κατεχόμενα" και οι "σωτήρες"] and it was published on Lamianow.gr. https://surl.li/ytckft

Thermopylae, funded by the Recovery and Resilience Facility (RRF), are a part of a broader integrated plan to deal with the demographic problem[14]. More extensively, the Ministry of Finance and the Ministry of Culture made known that the exploitation of this area, including the thermal/hot spring, will be accomplished through targeted interventions of a budget that amounts to 1.7 million euros (Hellenic Government, 2023). It was also clarified that only 115 acres out of approximately 800 of them can be substantially utilized in a very moderate way, which makes it a very difficult proposition[15]. The development scenario includes the construction of tourism, leisure facilities, a health and wellness center and a historic thermal resort (Hellenic Republic Asset Development Fund S.A., 2022). Currently, the thermal spring's utilization brings no direct profit to the wider area's economy[16].

4.4.6. Rest of the Regional Unity's thermal/hot springs

Intending to establish a functional mechanism that would draw a pathway towards thermal/hot springs' long-term exploitation, current administration put in place Law 4875/2021. An entity named "Greek Thermal Springs S.A." was established following the forementioned legal framework (Government Gazette, 2021), yet that initiative ended abruptly, in the context of the Law 5061/2023 as the organization above was repealed (Government Gazette, 2023). This marks an obvious diversification of plans. The main justification of this legislative action was that the "Greek Thermal Springs S.A." operational costs did not bring outcomes anticipated, and that services of the main administrational mechanism of the Ministry of Tourism can deliver effectively on their own.[17]

Reflecting on some additional key local-level developments about the rest of the Regional Unity's thermal/hot springs, it is worth mentioning that in the case of Kallidromo natural thermal resource, the Hellenic Public Properties Co. (HPPC) (2022) indicated that through a collaboration with the Municipal authority responsible are trying to co-shape a scheme that will result in tangible benefits for the local community, because the 25year convention signed in 2014 was never actually put in place. Moreover, the official accreditation of the forementioned natural thermal resource is pending, whereas the Municipal Authority of Lamia acknowledged that it submitted a proposal with respect to the concession of its utilization.[18] Natural thermal/hot resources of boreholes GP8, GP4, GP1, Vourvoulaki – Alamani, Milos Koniaviti, Frear Thermi – Omorfoneri lacking the necessary accreditation, with the relevant process ongoing. As regards the cases of Elpiniki (Kamena Vourla), Molos thermal spring (school facilities), Agios Konstantinos of the Municipality of Kamena Vourla, Kolovo Ekkara of the Municipality of Domokos there is a need for further supporting documentation to the purpose of their accreditation.[19] Exercising more caution to the Municipality of Domokos, it contains three (3) natural aquatic resources. The forementioned,

[14] The reference with respect to the existence of a broader integrated plan that embeds prescience on the demographic issue is included in a press release of the former Government Spokesman and Member of the Hellenic Parliament, elected in Fthiotida, issued on 2022, November 11st. https://surl.gd/ntmmgx

[15] The forementioned information correspond to insights provided by the Hellenic Republic Asset Development Fund S.A. (HRADF) representative in the context of his address in Thermopylae Forum. (2024, March 9th) https://surl.li/cjasgj

[16] Information laid out above was extracted from a recent Maria Tsatzali's piece which was based on an in-person news story, and it was published on www.tvstar.gr on February 16th, 2025. The piece is entitled as "French, Germans, Chinese for bathing in the thermal spring of Thermopylae cost free and without profits for the region" [Γάλλοι, Γερμανοί, Κινέζοι στην Ιαματική Πηγή των Θερμοπυλών για μπάνιο με μηδέν κόστος και μηδέν όφελος για την περιοχή!]. https://ln.run/-TAxl

[17] This constitutes an official justification within the Explanatory Report that accompanies the relevant provisions of the Law 5061/2023 on the strengthening of sustainable tourism development. This report has been excerpted by the official website of the Hellenic Parliament, www.hellenicparliament.gr. https://surl.li/cgcwhu

[18] A reference on the submission of proposal on behalf of Municipality of Lamia, regarding the accreditation of the thermal/hot spring, has been acknowledged in the context of a press release published on 2024, October 16. https://surl.li/miabiw

[19] Information and data laid out as above were extracted by official documentation issued by the Ministry of Tourism in the context of the Parliamentary monitoring process (Documents with protocol number 671/06-05-2021 https://surl.li/xzmtxe and 4035/21-03-2022 https://surl.li/squcdq).

Ekkara spring constitutes a promising but at the same time stagnant natural resource. The second resource of Dranista - Kaitsa is located on the junction of the Municipality of Domokos, Regional Unity of Fthiotida, Region of Central Greece and the Municipality of Sofades, Regional Unity of Karditsa, Region of Thessaly and operates under the authority of a bilateral managing scheme. It is considered that it can strengthen local economy coupled with attracting foreign visitors.[20]

However, according to existing official documentation no proposal on the exploitation of the natural aquatic resources located in the Municipality of Domokos, and particularly those of Kaitsa – Dranista, Ekkara, and Gerakli (3rd resource, also mentioned in Figure 13) has submitted so far[21] without prejudice to the existence of more recent, relevant initiatives. Finally, the natural thermal resource of Palaiovracha, located in the Municipality of Makrakomi is fully utilized during late spring and summer in the context of a private initiative,[22] while the respective spring of Archani (also mentioned in Figure 13) remains underutilized and non-accredited.[23]

5. Discussion

According to Institute of the Greek Tourism Confederation (SETE) Greek Action Plans with a timescale towards 2030, say that wellness and tourism engage elderly, and it is forecasted to present significant growth due to global demographic developments, even though it is being rendered as a secondary tourism product (Institute of the Greek Tourism Confederation, 2021). This argument is being grounded due to projections articulated, recording that between 2021 and 2050, the share of the population aged 80 years old and over is foreseen to double on average across OECD member countries, from 4.8% to 9.8% (OECD, 2023a). Wellness industry experts expect that the sector's future is going to be totally different, as by 2050 spa and wellness will be absorbed or merged with public health, under the wider umbrella of prevention (Spa Business, 2023a).

Economou et al. (2023), expect that overall economic growth will be substantially and positively affected by the contribution of wellness tourism. In this regard current State initiatives count on the exploitation of EU resources coming from the Recovery and Resilience Fund. A total budget of approximately 28,458,000 euros foresees to renovate and upgrade a notable part of thermal tourism facilities or even fuel the creation of new ones.[24] However, according to a mandate of the Central Union of Municipalities (411/14-11-2024), municipal authorities raised concerns as regards delays on the evaluation of proposals about projects dealing with the upgrading of current thermal/hot spring facilities, requesting the intensification and the acceleration of efforts, given that available funding absorption in combination with submitted projects implementation must end till December 31st, 2025.[25]

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[20] Relevant information is embedded within the Operational Program of the Municipality of Domokos 2024 – 2028. https://surl.li/ajxbmh

[21] This is indicated within an official document issued by Ministry of Development & Investments, in the context of its response to the Parliamentary Question with protocol number 7957/03-07-2020, (91320/02-09-2020). https://surl.li/wdawjp

[22] The nature of the relevant thermal facility's operation is mentioned in Efthymios Kakos's piece in www.kathimerini.gr, published on April 24th, 2019. Its title is "Fthiotida: In the spring" [Φθιώτιδα: Στην πηγή]. https://surl.li/ptxsgj

[23] Description entailed as above is included within a piece published on regional media, and specifically on Lamianow.gr. (2025, February 11). The piece is based on an in-person autopsy, and it is entitled as "Baths of Archani: Tens of visitors in a non-utilized thermal spring that pends accrediting (Photos, Video, Audio)" [Λουτρά Αρχανίου: Δεκάδες Επισκέπτες σε Μια Ανεκμετάλλευτη Ιαματική Πηγή που περιμένει πιστοποίηση (Φώτο, Video, Audio)]. https://surl.li/dflizg

[24] This is entailed into an official Ministry of Finance mandate, issued on 2021, December 8th on the accession mandate of the project "Health & Wellness Tourism through thermal spring utilization" – Action 16931 (Code: OPS TA 5153454) [Απόφαση Ένταξης του Έργου «SUB3: Τουρισμός υγείας και ευεξίας με την αξιοποίηση ιαματικών πηγών– Δράση 16931» (Κωδικός ΟΠΣ ΤΑ 5153454)]. https://surl.li/pcyexx

[25] Information laid out as above is included into the Central Union of Municipalities records of the Convention of the Board of Directors published on November 14th, 2024. https://surl.li/qqkdym

Investments' promotion counts on the effective implementation of Law 4487/2022, as it marks a recent key legislative tool that intends to facilitate the attraction of investments in this sector (Dimopoulos et al., 2023), coupled with subsequent inputs, reflected for instance to the provisions of article 54 of the Law 4688/2020. They have set the initial theoretical foundation akin to a first, small step of telemedicine operation within thermal therapy units and thermal tourism – thalassotherapy centers (Government Gazette, 2020), which seems to comply with a request articulated on July 25th, 2024, by the Hellenic Association of Municipalities with Thermal Springs. Still, the prescribed secondary legislation is pending coupled with the abolishment of the provisions of paragraph 1, article 22 of Law 4582/2018, as it has also been requested.[26]

Delineating the future of the domestic economy, the Governor of the Bank of Greece, called on the reduction of the investment gap through boosting public and private investment, through the efficient and prompt exploitation of the European Union's Structural Funds and the Recovery and Resilience Facility (Stournaras, 2023). However, a Greek thermal tourism expert unveiled that only 11 investment proposals were submitted, based on both the Recovery and Resilience Facility funding (15,887,096 euros) and the Public Investments Program (3,812,903 euros) since there was little time between the day of the relevant call issuance (July 26th, 2024) and the closing date (September 15th, 2024)[27]. This is thought to be key for the Regional Unity of Fthiotida, given Government officials' statements about the potential development of modern university-related facilities with focus on rehabilitation[28] and it complies with recent insights laid out by scientific human capital. For instance, according to Nöbauer et al. (2025) regional centers, and the physical services and centers they provide will remain vital to supporting the quality of life of some residents, stressing that though someone might feel comfortable with digital services still needs physical access for things like physiotherapy. The competitive environment deployed in neighboring regions that pride themselves on the existence of an extended healthcare and rehabilitation ecosystem must also be taken into consideration (Giannake, G. et al., 2023)[29].

Approaching the aspect of institutional instruments that may facilitate the indicated necessity of the sustainable promotion of destinations and subsequently their tourism products (Amoiradis, et, al, 2021), destination management organizations (DMOs) play an important role, as they can integrate therapeutic programs and hot/thermal springs as an inextricable component of its wellness capacity (Yao et al., 2023). Therefore, the Greek State, in the context of the Law 4875/2021 has established that instrument coupled with the launching of the subsequent project named "Destination Management and Marketing Organizations" financed with over 14,000,000 euros by the Recovery and Resilience Fund (Hellenic Republic, 2022). By and large, the whole concept elaborated as above should be embedded

[26] This is a part of the set of proposals acknowledged by the Hellenic Association of Municipalities with Thermal Springs, in the context of a press release issued on 2024, July 25th [Οι προτάσεις του ΣΔΙΠΕ για την ανάπτυξη του Ελληνικού Ιαματικού Τουρισμού]. https://surl.li/ukzzgg

[27] Information showcased above is included into an interview of the General Secretary of the Hellenic Association of Municipalities with Thermal Springs in Naftemporiki.gr. The interview was undertaken by A. Angelopoulou on February 10, 2025. https://surl.li/ukzzgg

[28] Two elected Members of the Hellenic Parliament, belonging to the constituency of the Regional Unity of Fthiotida, and former Ministers of the current Administration highlighted the perspective of the existence of a Rehabilitation Center, operating in collaboration or under the jurisdiction of the existing Department of Physiotherapy of the University. According to Tyligada, R. piece on www.tvstar.gr published on March 10th, 2021, a teleconference between a Member of the Hellenic Parliament for the forementioned constituency and Lamia academic community's representatives elaborated on the possibility of a rehabilitation center creation https://surl.li/lnrcam, while on May 5th, 2023, another elected representative of the Regional Unity of Fthiotida, in the context of an interview, made mention on the Department of Physiotherapy's ability to support the promotion of rehabilitation. https://surl.li/eumqgc

[29] Besides relevant research insights, targeted references with respect to the Region of Thessaly future developmental perspectives on health tourism are being included in Giannis Papadimitriou piece in www.kathimerini.gr on February 18, 2025, entitled as "Can Larisa be evolved into a health tourism national hub?" [Μπορεί η Λάρισα να εξελιχθεί σε εθνικό κόμβο για τον τουρισμό υγείας;]. https://surl.li/tmjqqz

into a tailored mix of policies addressing specific challenges faced by each region, targeting among others demographic issues, economic productivity, sectorial specialization, and infrastructure upgrading (Tsiotas and Tselios, 2023).

6. Conclusions

Through an extensive set of facts and data derived by the review of research data, official documentation and institutional public interventions, ought to be embodied into existing literature, authors provide initially, a representative description of demographic situation and trends at a European, national, regional, and intra-regional level (with focus on the Regional Unity of Fthiotida). The deployment of key qualitative and quantitative data foresees to affect future initiatives ought to be undertaken on behalf of those being responsible. They also aspire to shape a framework which includes all recent developments with respect to wellness tourism and its related products, by providing the most recent trends in terms of economic potential that may provenly result in strengthening employment. Especially, provided the necessity of curtailing brain-drain through repatriating high-skilled personnel, that is missing from the wider Region of Central Greece and subsequently maintaining the existing one within the region.

Authors also showcase the notable diversification of current domestic policy, that has recently been reflected on the partial modification of plans in terms of recent legislative initiatives related to the sector under investigation, highlighting at the same time the structural problem of the fragmentary manner of legislating. The paper does also describe the level of maturity in terms of mid-term or long-term utilization of each natural thermal resource in the Regional Unity of Fthiotida. It is believed that this varies due to a set of priorities established by the forementioned managing body that are correlated with each area's tourism potential, coupled with the fact that a lack of consensus, inadequacy and inefficiency are among those being ascertained at a local level.

By and large, the paper's strategic intention is to stimulate and/or contribute to the current public discourse that is being elaborated on the topic of demographic crisis and depopulation diminution, by highlighting at the same time the need of diverting the current productive and economic model towards the regional level, through exercising caution on existing natural resources substantial and sustainable utilization. Thus, through highlighting indicators laid out as above, coupled with portraying a considerable amount of Fthiotida's high-valued natural thermal resources, it is believed that they provide sufficient justification on the necessity of placing emphasis on the exploitation of the area's comparative advantage, with its hot/thermal springs being a predominant part of that. This marks as a process that may impact positively on the gradual and long-term alleviation of demographic bloodletting through raising benefits in terms of economic enhancement, creation of modern tourism-related or health and research-related facilities and infrastructure with focus on rehabilitation, jobs' creation, and consequently to enforce arguments related to the necessity of shifting the center of gravity of the country's production model towards the country's regions in a balanced, targeted and calibrated manner.

7. References

1. Amoiradis, C., Stankova, M., Velissariou, E, & Ladias, C. (2021). Sustainability Analysis of Greece's Promotion as A Tourism Destination. Regional Science Inquiry, Hellenic Association of Regional Scientists, 0(2), 227-238. https://surl.li/soalxa
2. Argirou, M. (2018). Demographic Developments: The economic dimension. Dianeosis. https://surl.li/lamwvr
3. Bank of Greece. (2024). Monetary Policy 2023 – 2024 [Νομισματική Πολιτική 2023 – 2024]. https://doi.org/10.52903/monpol.gr202406
4. Balourdos, D., Demertzis, N., Pierrakos, G., & Kikilias, I. (2019). Η χαμηλή γονιμότητα στην Ελλάδα, δημογραφική κρίση και πολιτικές ενίσχυσης της οικογένειας [Low fertility in Greece, demographic crisis, and family support policies]. Dianeosis. https://surl.li/vuofes
5. Battista, A., & Torre, D. (2023). Mixed methods research designs. Medical Teacher, 45(6), 585–587. https://doi.org/10.1080/0142159X.2023.2200118

6. Čeperković, J., & Čerović, S. (2023). Dynamics of spa tourism statistics in selected countries of Central and Eastern Europe. Ekonomika poljoprivrede, 70(1), 217–236. https://doi.org/10.59267/ekoPolj2301217C
7. Danas, M. (2023, May 4-5). Investment opportunities in thermal tourism [Video on demand]. In the 1st Health Travel International Conference; Mindview. https://surl.li/qjcjds
8. Dimopoulos, T., Genitsaropoulos, C., Menegaki, A., Xanthos, G., & Strimpakos, N. (2023). The challenge of balanced regional development: health tourism in the Regional Unity of Fthiotida – a potential instrument of regional and intra-regional inequalities alleviation? International Journal of Spa and Wellness, 6(2), 263–295. https://doi.org/10.1080/24721735.2023.2221140
9. Ekonomou, G., Kallioras, D., Menegaki, A. N., & Alvarez, S. (2023). Tourist Preferences for Revitalizing Wellness Products and Reversing Depopulation in Rural Destinations. Sustainability, 15(24), 16736. https://doi.org/10.3390/su152416736
10. European Commission. (2020). European Commission Report on the Impact of Demographic Change. https://surl.li/uczubk
11. European Commission. (2023). The impact of demographic change – in a changing environment. SWD 2023 21 final. https://surl.li/fcnaqg
12. European Commission. (2023a). EU Regional Competitiveness Index 2.0 - 2022 edition. https://surl.li/lwajpj
13. Eurostat. (2023). Eurostat regional yearbook 2023 edition. Flagship publication. https://surl.li/aalpwx
14. Foundation for Economic & Industrial Research (IOBE). (2022). The demographic issue in Greece: Challenges and policy proposals [Δημογραφικό πρόβλημα στην Ελλάδα: Προκλήσεις και προτάσεις πολιτικής]. https://surl.li/usbucv
15. Foundation for Economic & Industrial Research (IOBE). (2024). Social and Economic Trends in Greek Regions Report, Vol 1, March 2024 [Έκθεση Κοινωνικών και Οικονομικών Τάσεων στις Ελληνικές Περιφέρειες, Τεύχος 1, Μάρτιος 2024]. https://surl.li/zkamgd
16. Foundation for Economic & Industrial Research (IOBE). (2024a). Social and Economic Trends in Greek Regions Report, Vol 2, November 2024 [Έκθεση Κοινωνικών και Οικονομικών Τάσεων στις Ελληνικές Περιφέρειες, Τεύχος 2, Νοέμβριος 2024]. https://surl.li/xqtbzz
17. Georgakopoulou, S., & Delitheou, V. (2020). Alternative forms of sustainable development: the case of thermal tourism. International Journal of Environment and Sustainable Development, 19(4), 367-377. https://doi.org/10.1504/IJESD.2020.110637
18. Giannake, G., Economou, A., Metaxas, T., & Geitona, M. (2023). Medical Tourism in the Region of Thessaly, Greece: Opinions and Perspectives from Healthcare Providers. Sustainability, 15(10), 7864. https://doi.org/10.3390/su15107864
19. Government Gazette. (2011). Urgent Measures Implementation Medium Term Fiscal Strategy 2012-2015 [Επείγοντα Μέτρα Εφαρμογής Μεσοπρόθεσμου Πλαισίου Δημοσιονομικής Στρατηγικής 2012−2015]. Hellenic Republic. https://surl.li/qifiwi
20. Government Gazette. (2016). Οργάνωση και λειτουργία υπηρεσίας ασύλου, Αρχής Προσφύγων, Υπηρεσίας Υποδοχής και Ταυτοποίησης, σύσταση Γενικής Γραμματείας Υποδοχής, προσαρμογή της Ελληνικής Νομοθεσίας προς τις διατάξεις της Οδηγίας 2013/32/ΕΕ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου «σχετικά με τις κοινές διαδικασίες για τη χορήγηση και ανάκληση του καθεστώτος διεθνούς προστασίας (αναδιατύπωση)» (L 180/29.6.2013), διατάξεις για την εργασία δικαιούχων διεθνούς προστασίας και άλλες διατάξεις [Organization and operation of Asylum Services, Refugee Authority, Reception and Identification Services, Establishment of a General Secretariat of refugee/migrants reception, adaptation of the Greek Legislation to the provisions of Directive 2013/32/EU of the European Parliament and of the Council “regarding the common procedures for granting and withdrawing status of international protection (rearticulation)” (L 180/29.6.2013), provisions for the work of beneficiaries of international protection and other provisions]. Hellenic Republic. https://surl.li/dcdkjh
21. Government Gazette. (2020). N. 4668/2020. Ειδικές μορφές τουρισμού, διατάξεις για την τουριστική ανάπτυξη και άλλες διατάξεις [Special forms of tourism, provisions for tourism growth and other provisions]. Kodiko.gr. https://surl.li/rfridf
22. Government Gazette. (2021). N. 4875/2021 Πρότυποι Τουριστικοί Προορισμοί Ολοκληρωμένης Διαχείρισης, Οργανισμοί Διαχείρισης και Προώθησης Προορισμού, Ιαματικές Πηγές Ελλάδας και άλλες ρυθμίσεις για την ενίσχυση της τουριστικής ανάπτυξης [Law 4875/2021 Complete management tourism and promotion destinations models, thermal springs, and other regulations for the strengthening of tourism development]. Kodiko.gr. https://surl.li/wzzxqx
23. Government Gazette. (2023). N. 5061/2023 Διατάξεις για την ενίσχυση της βιώσιμης τουριστικής ανάπτυξης [Law 5061/2023 Provisions on the strengthening of sustainable tourism development]. Kodiko.gr. https://surl.li/tidylt

24. Gunton, T. (2003). Natural Resources and Regional Development: An Assessment of Dependency and Comparative Advantage Paradigms. Economic Geography, 79(1), 67–94. http://www.jstor.org/stable/30032910
25. Hellenic Government. (2022). Ενοποιημένο Σχέδιο Κυβερνητικής Πολιτικής 2023 [Integrated Government Policy Plan 2023]. Government.gov.gr. https://surl.li/pbmced
26. Hellenic Government. (2023). 540 έργα για τη Στερεά Ελλάδα του 2030 [540 projects for Central Greece of 2030]. Government.gov.gr. https://surl.li/ygrxas
27. Hellenic Public Properties Co. (HPPC). (2022). Response to the Parliamentary Question of the Independent Member of the Hellenic Parliament of Athens, A' Constituency, Aggeliki Adamopoulou [Απάντηση στη με α.π. 4035/21.03.2022 ερώτηση της Ανεξάρτητης Βουλευτού Α' Αθηνών κα Αγγελική Αδαμοπούλου]. Hellenic Parliament.gr. https://surl.li/nmjksu
28. Hellenic Republic Asset Development Fund S.A. (n.d.). Mission and Vision. Hradf.com. Retrieved February 11, 2025. https://surl.li/amnpmc
29. Hellenic Republic Asset Development Fund S.A. (n.d.-a.). Thermal Spring of Loutropoli Kamena Vourla. Hradf.com. Retrieved February 11, 2025. https://surl.li/dfymvy
30. Hellenic Republic Asset Development Fund S.A. (n.d.-b.). Platystomo Thermal Spring. Hradf.com. Retrieved February 11, 2025. https://surl.li/qqqguh
31. Hellenic Republic Asset Development Fund S.A. (n.d.-c.). Koniavitis Thermal Spring & Camping. Hradf.com. https://surl.li/yioktx
32. Hellenic Republic Asset Development Fund S.A. (n.d.-d.). Thermal Spring of Thermopylae. Hradf.com. https://surl.li/yxihiy
33. Hellenic Republic Asset Development Fund S.A. (2022). Χαρτοφυλάκιο Ακινήτων 2022 – 2023 [Portfolio of assets 2022 – 2023]. Hradf.com. https://surl.li/abcnpf
34. Hellenic Republic Asset Development Fund S.A. (2023, January 5). HRADF: Declaration of the Highest Bidder in the tender for the development of the property "Loutropolis Kamena Vourla". Hradf.com. https://surl.li/ulvwhn
35. Hellenic Republic Asset Development Fund S.A. (2023, September 29a). HRADF: Submission of one (1) financial offer for the development of the property "Koniavitis Thermal Spring & Camping". Hradf.com. https://surl.li/zuvmzn
36. Hellenic Republic Asset Development Fund S.A. (2024, February 29). HRADF: Declaration of "INMO PARCK INVEST S.A." as Preferred Investor for the development of the property "Koniavitis Thermal Spring & Camping" and Declaration of the tender for the development of the property in "Ververonta", Porto Heli, as unsuccessful. Hradf.com. https://surl.li/nwnset
37. Hellenic Statistical Authority (ELSTAT). (2023). Στοιχεία Υπολογιζόμενου Πληθυσμού (1.1.2023) και Μεταναστευτικών Ροών της Χώρας (2022) [Data on estimated population (1.1.2023) and the country's migrant flows (2022)]. https://surl.li/nakeok
38. Hellenic Statistical Authority (ELSTAT). (2023a). Αποτελέσματα απογραφής πληθυσμού κατοικιών 2021, 17.03.2023 [Results of the population census 2021, 17.03.2023]. https://surl.li/cfcwtk
39. Hellenic Statistical Authority (ELSTAT). (2023b). Αποτελέσματα απογραφής πληθυσμού κατοικιών 2021, 31.08.2023 [Results of the population census 2021, 31.08.2023]. https://surl.li/dzvdnn
40. Hellenic Statistical Authority (ELSTAT). (2024). Στοιχεία Εκτιμώμενου Πληθυσμού (1.1.2024) και Μεταναστευτικών Ροών της Χώρας (2023) [Data on estimated population (1.1.2024) and the country's migrant flows (2023)]. https://surl.li/rntqug
41. Hellenic Statistical Authority (ELSTAT) (2025). Regional accounts: Gross Value-Added data for year 2022 and revised data for years 2000-2021. https://surl.li/hupazo
42. Huang, X., Zhang, Y., & Li, C. (2022). Assessing the Compensatory Potentiality of Hot Spring Tourism in the COVID-19 Post-Pandemic Environment. Sustainability, 14(14), 8579. https://doi.org/10.3390/su14148579
43. Ikkos, A., & Koutsos, S. (2024). The contribution of tourism to the Greek economy in 2023, Part A', 1st estimate (temporary data) – April 2024 [Η συμβολή του τουρισμού στην ελληνική οικονομία το 2023, Α' Μέρος, 1η εκτίμηση (προσωρινά στοιχεία) – Απρίλιος 2024]. Institute of the Greek Tourism Confederation (SETE). https://surl.li/semucu
44. Institute of the Greek Tourism Confederation. (n.d.). Basic Figures of Greek Tourism 2023. https://surl.li/qfmqae
45. Institute of the Greek Tourism Confederation. (2021). Greek Tourism Action Plans 2030 – Products and Markets [Ελληνικός Τουρισμός Σχέδια Δράσης 2030 – Προϊόντα και Αγορές]. https://surl.li/rptdtf
46. Institute of the Greek Tourism Confederation. (2023). Region of Central Greece – Annual Competitiveness and Structural Adaptation on Tourism Sector in 2022 Report [Περιφέρεια Στερεάς

Ελλάδας – Ετήσια έκθεση ανταγωνιστικότητας και διαρθρωτικής προσαρμογής στον τομέα του τουρισμού για το έτος 2022]. https://surl.li/tspxlm
47. Iosub, M. E., Ianc, D., Tirla, S., Yaran, M., &, & Lazăr, L. (2024). The Change with Thermal Water Therapy in Pain, Depression, and Self-Esteem in Patients with Lumbar Disc Herniation: Study from a Single Center Database. Chronic Pain and Management Journal, 8(1), 1-8. https://doi.org/10.29011/2576-957X.100056
48. Johnston, K., Yeung, O., & Callender, T. (2023). Global Wellness Economy Monitor 2023. Global Wellness Institute. https://surl.li/ygrvus
49. Johnston, K., Yeung, O., Callender, T., & Hopkins, J. (2024). Global Wellness Economy Monitor 2024. Global Wellness Institute. https://surl.li/naszdm
50. Johnston, K., Yeung, O., Callender, T., & Hopkins, J. (2025). The Global Wellness Economy: Country Rankings (2019-2023). Global Wellness Institute. https://surl.li/czithu
51. Kalotas, V., & Metaxas, T. (2024). Thermopyles: The Possibilities of a Global Brand Name Place in Forming a Strong Competitive Identity and Sustainable Development. Journal of Sustainability Research, 6(2). https://doi.org/https://doi.org/10.20900/jsr20240019
52. Kotzamanis, B., Kostaki, A., Bergouignan, C., Zafiris, K., & Baltas, P. (2016). The Greek population's evolution (2015-2050) [Η Πληθυσμιακή Εξέλιξη της Ελλάδας (2015-2050)]. Demographic and Social Analysis Laboratory, University of Thessaly, Dianeosis. https://surl.li/mfjwdf
53. Kotzamanis, B. (2022). The census of 2021. Dianeosis. https://surl.li/xmhvrn
54. Kotzamanis, B., & Pappas, V. (2023). Demographic inequalities in Greece and National Action Plan. Demo News 46, Journal contribution. https://doi.org/10.6084/m9.figshare.24530443.v2
55. Krabokoukis, T., Tsiotas, D., & Polyzos, S. (2024). Assessing the effectiveness of regional development planning in Greece through the detection of changes in recent developmental laws. Planning Practice & Research, 1–21. https://doi.org/10.1080/02697459.2024.2318898
56. Krupavicius, A., Sarkute, L., Krasniqi, A., & LADIAS, C. (2024). Perceived And Desired Images Of Society: How (Un)Equal Is Society?. Regional Science Inquiry, 0(1), 55-70. https://surl.li/zwvtnm
57. Labrianidis, L., & Georgopoulos, D. (2022). Demographic crisis, regional inequalities, and shortages in the labor market: Policy proposals for resolution and the role of migration [Δημογραφική κρίση, περιφερειακές ανισότητες και ελλείψεις στην αγορά εργασίας: Προτάσεις πολιτικής για την αντιμετώπισή τους και ο ρόλος της μετανάστευσης]. Institute of Alternative Policies (ENA). https://surl.li/vidixg
58. Ladias, Christos. & Stamatiou, E. (2006). Regional Policy in Greece of Tomorrow. The Perspectives of the Broader Regions. ERSA conference papers. https://surl.li/tklmso
59. Lakićević, M., Pantović, D., & Fedajev, A. (2021). Investigating Factors of Customer Loyalty Formation for Wellness Spa. Management. Journal of Sustainable Business and Management Solutions in Emerging Economies, 29(1), 53–62. https://doi.org/10.7595/management.fon.2021.0031
60. Lazaretou, S. (2022). The Greek Brain Drain: The New Pattern of Greek Emigration During the Recent Crisis. Bank of Greece Economic Bulletin, 43(3). https://ssrn.com/abstract=4169615
61. Lolos, S., Palaios, P., & Papapetrou, E. (2021). The Greek tourism-led growth revisited: insights and prospects. Bank of Greece, Working Paper. https://surl.li/gwxvkb
62. Mak, A.H.N., Wong, K.K.F., & Chang, R.C.Y. (2009). Health or self-indulgence? The motivations and characteristics of spa-goers. Int. J. Tourism Res., 11, 185-199. https://doi.org/10.1002/jtr.703
63. Mao, S., Xiao, K., Zhou, W., Xu, H., &, & Zhang, S. (2023). The Impact of Hot Spring Hydrotherapy on Pain Perception and Dysfunction Severity in Patients with Chronic Low Back Pain: A Systematic Review and Meta-Analysis. Journal of pain research, 16, 3925-3944. https://doi.org/10.2147/JPR.S438744
64. Medina-Muñoz D. R. & Medina-Muñoz R. D. (2014). The Attractiveness of Wellness Destinations: An Importance–Performance–Satisfaction Approach, International Journal of Tourism Research, 16, 521–533. https://doi.org/10.1002/jtr.1944
65. Molina-Azorín, J.F. (2016). Mixed methods research: An opportunity to improve our studies and our research skills. European journal of management, 25(2), 37-38. https://doi.org/10.1016/j.redeen.2016.05.001
66. Mueller, H., & Kaufmann, E. L. (2001). Wellness tourism: Market analysis of a special health tourism segment and implications for the hotel industry. Journal of Vacation Marketing, 7(1), 5-17. https://doi.org/10.1177/135676670100700101
67. Nöbauer, B., Moreno-Monroy, A., & Bournisien de Valmont, M. (2025, February 3). Can services stop places shrinking?. Oecdcogito. https://surl.li/ulognc
68. OECD. (2018). Rethinking Regional Development Policy-making, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264293014-en

69. OECD. (2020). Regional Policy for Greece Post-2020, OECD Territorial Reviews, OECD Publishing, Paris, https://doi.org/10.1787/cedf09a5-en
70. OECD. (2022). OECD Tourism Trends and Policies 2022. OECD Publishing. https://doi.org/10.1787/a8dd3019-en
71. OECD. (2022a). Making the most of public investment to address regional inequalities, megatrends and future shocks, OECD Regional Development Papers, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/8a1fb523-en
72. OECD. (2023). OECD Regional Outlook 2023: The Longstanding Geography of Inequalities, OECD Publishing, Paris, https://doi.org/10.1787/92cd40a0-en
73. OECD. (2023a). Health at a Glance 2023: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/7a7afb35-en
74. Papadaki – Gioti, O. (2012). European environmental policy and the strategy "Europe 2020". Regional Science Inquiry Journal, 4(1), 151-158. https://surl.li/cnfdwi
75. Pashkov, V., Harkusha, A., &, & Gnedyk, Y. (2017). Rehabilitation Tourism as a part of medical Tourism. Acta Balneol, 60(1), 48-53. https://surl.li/nokalz
76. Pierrakakis, K. (2016). Why is population important for economic growth? Dianeosis. https://surl.li/tasszs
77. Primeminister.gr. (2023). Ομιλία του Πρωθυπουργού Κυριάκου Μητσοτάκη στο συνέδριο «Δημογραφικό 2023 – Ώρα για δράση» [Kyriakos Mitsotakis Speech, in the Conference "Demographic 2023 – Time for action"]. https://www.primeminister.gr/2023/10/17/32797
78. Psycharis, Y., Tselios, V., & Pantazis, P. (2023). The geographical dimension of income inequality in Greece: evolution and the 'turning point' after the economic crisis. Regional Studies, Regional Science, 10(1), 798–819. https://doi.org/10.1080/21681376.2023.2261523
79. Schoonenboom, J., & Johnson, R.B. (2017). How to Construct a Mixed Methods Research Design. Kolner Zeitschrift fur Soziologie und Sozialpsychologie, 69(2), 107–131. https://doi.org/10.1007/s11577-017-0454-1
80. Smith, M., &, & Puczko, L. (2008). Health and Wellness Tourism (1st Edition ed.). Routledge. https://doi.org/10.4324/9780080942032
81. Spa Business. (2023). Milestone Moment – Revenue in the US spa industry has exceeded the US$20bn mark according to ISPA's latest stats. Rep. 78: 32-34. https://surl.li/acavlh
82. Spa Business. (2023a). Getting Personnel. Rep. 79: 104-106. https://surl.li/foiumj
83. Stournaras, G. (2023). Greek economy: The next day. Trade with Greece – Annual Business, Economic and Political Review. https://surl.li/ehsfxf
84. Tsertekidis, G. (2023). Brain Drain: Greece's Open Wound. HAPSc Policy Briefs Series, 4(1), 42–47. https://doi.org/10.12681/hapscpbs.35181
85. Tountas, G., Doxiadis, A., Katsapi, A., Kolovou, V., Papachristos, S., Petroulia, I., Prouskas, K., Rizos, F., Toupou, I., Tsartsara, S., Christidou, A. (2019). Η ανάπτυξη του τουρισμού τρίτης ηλικίας στην Ελλάδα και η συμβολή του τουρισμού υγείας [The development of elderly tourism in Greece and the contribution of health tourism]. Dianeosis, Institute of Social and Preventive Medicine (ISPM). https://surl.li/hnqmit
86. Tountas, G., Doxiadis, A., Katsapi, A. (2021). Η ανάπτυξη του τουρισμού τρίτης ηλικίας και ο ρόλος του τουρισμού υγείας στη μετά Covid-19 εποχή [The development of elderly tourism and the role of health tourism in the post-COVID19 era]. Dianeosis. https://surl.li/fgvego
87. Tsiotas, D. & Tselios, V. (2023). Understanding peripherality in a multidimensional geographical, socioeconomic, and institutional context: Evidence from Greece, Regional Science Policy & Practice, 15(7), 1424-1458, https://doi.org/10.1111/rsp3.12712
88. Vakoula, E., & Constantoglou, M. (2023). Wellness Tourism in the Post COVID-19 Era in Blue Zones and Insular Areas. The Case of the Island of Ikaria, Springer Proceedings in Business and Economics, in: Vicky Katsoni (ed.), Tourism, Travel, and Hospitality in a Smart and Sustainable World, pages 685-706, Springer. https://doi.org/10.1007/978-3-031-26829-8_43
89. World Tourism Organization & European Travel Commission. (2018). Exploring Health Tourism – Executive Summary. UNWTO. https://doi.org/10.18111/9789284420308
90. Xanthos, G., Ladias, C., & Genitsaropoulos, C. (2012). Regional inequalities in Greece a proposition for their depiction. Regional Science Inquiry Journal, 4(2), 191-196. https://surl.li/qdqpnu
91. Yao, Y., Wang, G., Ren, L., & Qiu, H. (2023). Exploring tourist citizenship behavior in wellness tourism destinations: The role of recovery perception and psychological ownership, Journal of Hospitality and Tourism Management, 55, 209-219. https://doi.org/10.1016/j.jhtm.2023.03.008
92. Yeung, O., & Johnston, K. (2018). Global Wellness Economy Monitor: Thermal/Mineral Springs. Global Wellness Institute. https://surl.li/fwzuww

93. Yeung, O., Johnston, K., & Bodeker, G. (2019). Understanding Wellness: Opportunities & Impacts of the Wellness Economy for Regional Development. Global Wellness Institute. https://surl.li/qpkovq