



REPUBLIC OF TÜRKİYE
MINISTRY OF INDUSTRY
AND TECHNOLOGY



İZMİR
DEVELOPMENT
AGENCY

İZMİR SITUATIONAL ANALYSIS

DECEMBER 2023



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CONTENTS

LIST OF TABLES	6
LIST OF FIGURES	13
ABBREVIATIONS	16
1- OVERVIEW OF THE REGION	19
A. The Region's Position in the World and in Türkiye	19
B. Development Plan and National Strategies in İzmir	25
C. The Role of the Region within the Framework of National Developments	26
D. Urban and Rural Settlement Systems and Influence Areas	27
E. SEGE Rankings	38
F. Evaluation	40
2- ECONOMIC STRUCTURE	41
A. Income and Production	42
B. Sectoral Analyses	51
C. Public and Private Investments	68
D. Foreign Trade	71
E. Regional Productivity	92
F. Evaluation	93
3- COMPETITIVENESS AND INVESTMENT ENVIRONMENT	95
A. Sectoral Analysis	95
B. Clustering and LQ Analyses	98
C. Spatial Distribution of Dominant Sectors	123
D. Innovation and Entrepreneurship Ecosystem	145
E. Competence of Universities	150
F. R&D Infrastructure	153
G. Foreign Investments	156
H. Investment Incentives	158
I. Industrial Zones	162
J. Evaluation	166
4- POPULATION AND HUMAN CAPITAL	168
A. Population and Demographic Structure	168
B. Rural-Urban Population Analysis	175
C. Migration Analysis	181
D. Foreign and Temporarily Protected Population	185
E. Educational Indicators	187
F. Information on Universities	192
G. Vocational and Technical Education	195
H. Employment and Workforce	197
I. Evaluation	208
5- SOCIAL DEVELOPMENT	209
A. Income Distribution and Poverty	209
B. Civil Society Organizations	212
C. Disadvantaged Groups and Social Inclusion	215
D. Evaluation	219

6-	QUALITY OF LIFE AND INFRASTRUCTURE	221
A.	Transportation Infrastructure	221
B.	Healthcare Services Infrastructure	235
C.	Cultural Services Infrastructure	241
D.	Housing Market	244
E.	Urban Infrastructure	247
F.	Technological Infrastructure	249
G.	Evaluation	250
7-	TOURISM, NATURAL AND HISTORICAL ASSETS	252
A.	Tourism	252
B.	Protected Areas	255
C.	Historical Conservation Areas	256
D.	Cultural Routes	257
E.	Cultural and Tourism Conservation and Development Areas	258
F.	Evaluation	259
8-	ENVIRONMENT AND CLIMATE CHANGE	260
A.	Air Quality	260
B.	Renewable Energy Plants	263
C.	Energy Consumption	269
D.	Water, Wastewater and Waste Management	272
E.	Sensitive Areas	278
F.	MARINE AND COASTAL AREAS	281
G.	Urban Heat Island	282
H.	Evaluation	283
9-	DISASTER RISKS	284
A.	Seismicity, Fault Lines, Desertification, Forest Fires and Flooding	284
B.	Earthquake Building Inventory Classification	288
C.	Disaster Gathering Areas	291
D.	Evaluation	294
10-	RURAL DEVELOPMENT	295
A.	Rural Population	295
B.	Cooperatives	297
C.	Rural Infrastructure	299
D.	Rural Livelihoods	305
E.	Forest Villages	314
F.	Evaluation	317
11-	EVALUATION OF THE 2014-2023 İZMİR REGIONAL PLAN	318
A.	Structure and Preparation Process of the Regional Plan	318
B.	Development Axis 1: Strong Economy	320
C.	Development Axis 2: High Quality of Life	324
D.	Development Axis 3: Strong Society	327
12-	REFERENCES	329
13	ANNEXES	334

LIST OF TABLES

TABLE 1.1.	Large European Cities of the Future for Business-Friendly Aspects (2022/2023)	19
TABLE 1.2.	Large European Cities of the Future for Foreign Direct Investment Strategy (2022/2023)	19
TABLE 1.3.	Economic and Social Profile of Türkiye, the Aegean Region and İzmir Region	21
TABLE 1.4.	YER-SIS Settlement Hierarchy of İzmir and Other Provinces	28
TABLE 1.5.	Service Centers and Hierarchy of Component Categories in İzmir Districts	29
TABLE 1.6.	Number of Rural Settlements in İzmir Districts by Rural Hierarchy Tiers	36
TABLE 1.7.	Socio-Economic Development Rankings of İzmir's Districts (2004, 2017, and 2022)	39
TABLE 2.1.	Global MetroMonitor Economic Performance Indicators (2018)	41
TABLE 2.2.	GDP and Share by Region in 2021 (at Current Prices)	42
TABLE 2.3.	İzmir's GDP and Growth Rates by Year (Chain Volume Index, Base Year 2009)	42
TABLE 2.4.	İzmir Region's Share in Production Value (Chain Volume, Base Year 2009)	44
TABLE 2.5.	Regional GVA and National Share for 2021 (Current Prices)	45
TABLE 2.6.	İzmir GVA and Growth Rates by Year (Chained Volume, 2009 Base)	46
TABLE 2.7.	Weight of GVA Produced in İzmir Region (Chained Volume, Base Year 2009)	47
TABLE 2.8.	Per Capita GDP by Region/Province in 2021 (Current Prices, USD)	49
TABLE 2.9.	Per Capita GDP Values by Year (Current Prices, USD)	50
TABLE 2.10.	Share of Agricultural GDP in Total GDP (Current Prices, thousand TRY)	51
TABLE 2.11.	Annual Growth Rate of Agricultural GDP and Its Share in Total GDP in İzmir Region (Chained Volume, Base Year 2009)	51
TABLE 2.12.	Agricultural GDP and Shares in Türkiye, Aegean Region, and İzmir (Current Prices, million TRY)	52
TABLE 2.13.	Crop Production Values of Türkiye and Other NUTS II Regions (2004-2021) (billion TRY)	53
TABLE 2.14.	Animal Production Values in Türkiye and İzmir (2004-2020) (billion TRY)	54
TABLE 2.15.	Türkiye's Aquaculture Production by Year (2010-2022) (Tons)	55
TABLE 2.16.	Aquatic Products Production in İzmir by Year (2021-2022) (tons)	56
TABLE 2.17.	Marine and Inland Water Enterprises in İzmir Province (2020)	56
TABLE 2.18.	Organic Crop Production by Quantity, Area, and Number of Farmers (2022)	57
TABLE 2.19.	Organic Livestock Statistics in Türkiye, İzmir, and Other Regions (2021)	57
TABLE 2.20.	Unprocessed Timber Production in İzmir and Türkiye (2012-2022) (thousand m ³)	58
TABLE 2.21.	Distribution of Unprocessed Timber Production in İzmir Region (2012-2022) (thousand m ³)	58
TABLE 2.22.	Industrial GDP of Türkiye and NUTS II Regions (2004-2021) (Current Prices, billion TRY)	59
TABLE 2.23.	Regional Shares of Industrial GDP in Türkiye (2004-2021) (Current Prices)	60
TABLE 2.24.	Industrial GDP by Year (Chained Volume Index, Base Year 2009, thousand TRY)	61
TABLE 2.25.	Regional Shares in Türkiye's Industrial GDP (Chained Volume, %)	62
TABLE 2.26.	Services GDP of Türkiye and NUTS II Regions (2004-2021) (Current Prices, billion TRY)	64
TABLE 2.27.	Regional Shares in Türkiye's Overall Services GDP (Current Prices, %)	65
TABLE 2.28.	Services GDP by Years (Chained Volume, Base Year 2009, thousand TRY)	66

TABLE 2.29.	The Share of Regional Services Sector GDP in Türkiye (Chained Volume, Base Year 2009, %)	67
TABLE 2.30.	Public Investment Amounts by Years for Türkiye, İzmir and Other Provinces (Current Prices, billion TRY)	68
TABLE 2.31.	Public Investments in İzmir by Sector (2010–2022) (Current Prices, 100 million TRY)	69
TABLE 2.32.	Sectoral Shares in Public Investments in İzmir (2010–2022) (%)	70
TABLE 2.33.	Distribution of Investment Incentive Certificates by Provinces (2021)	70
TABLE 2.34.	Exports and Annual Change Rates in Türkiye and NUTS II Regions (2013–2022) (Current Prices, million USD) (%)	71
TABLE 2.35.	Export Shares of Türkiye and NUTS II Regions (2013–2022) (Current Prices, %)	72
TABLE 2.36.	Imports and Annual Change Rates in Türkiye and NUTS II Regions (2013–2022) (Current Prices, million USD) (%)	73
TABLE 2.37.	Import Shares of Regions (2013–2022) (Current Prices, %)	73
TABLE 2.38.	Export/Import Ratios of Türkiye and NUTS II Regions (2013–2022) (Current Prices)	74
TABLE 2.39.	Sectoral Export and Annual Change Rates in İzmir Region (2013–2021) (Current Prices, 100 million USD)	75
TABLE 2.40.	Sectoral Distribution of Exports in İzmir Region (2013–2021) (Current Prices, %)	76
TABLE 2.41.	Sectoral Imports and Annual Change Rates in İzmir Region (2013–2021) (Current Prices, 10 million USD)	77
TABLE 2.42.	Sectoral Distribution of Imports in İzmir Region (2013–2021) (%)	77
TABLE 2.43.	Sectoral Export/Import Ratios in İzmir Region (2013–2021)	78
TABLE 2.44.	İzmir Region Export Performance by Sector (2020–2022) (Current Prices, million \$)	79
TABLE 2.45.	Number of Companies from İzmir and Other Regions Included Among Türkiye's Top 1,000 Exporters (2012–2022)	80
TABLE 2.46.	Number of Companies from İzmir Included in Türkiye's Top 1,000 Exporters by Sector and Year (2012–2022)	81
TABLE 2.47.	Technology Levels of Exports in İzmir and Other Regions (2021) (million USD)	82
TABLE 2.48.	Technology Levels of İzmir Region Exports by Sectors (2021) (million USD)	83
TABLE 2.49.	Products with Relative Export Advantage in İzmir Region (2021) (ISIC 4-Digit, RCA > 1)	84
TABLE 2.50.	Products with Relative Import Advantage in İzmir Region (2021) (ISIC 4-Digit (RCA > 1))	86
TABLE 2.51.	Top 20 Regions with the Highest Export and Import Complexity (2021) (ISIC Rev 3 – 4 Digit)	90
TABLE 2.52.	Regional Productivity by Year (2010–2021) (GVA per Worker, Current Prices, thousand TRY)	92
TABLE 3.1.	İzmir's Relative Share in Türkiye's Sectoral Production (2017) (%)	95
TABLE 3.2.	İzmir's Relative Share in Türkiye's Sectoral Gross Value Added (2017) (%)	96
TABLE 3.3.	Employment and Annual Change Rates in İzmir and Other Regions by Year (2010–2021) (%)	98
TABLE 3.4.	Total Employment Numbers in İzmir Province by Years and Sectors (2010–2021)	100
TABLE 3.5.	İzmir Aliağa District LQ Analyses by NACE Codes (2010–2021)	102
TABLE 3.6.	İzmir Bayındır District LQ Analyses by NACE Codes (2010–2021)	103
TABLE 3.7.	İzmir Bergama District LQ Analyses by NACE Codes (2010–2021)	104
TABLE 3.8.	İzmir Beydağ District LQ Analyses by NACE Codes (2010–2021)	105

TABLE 3.9.	İzmir Çeşme District LQ Analyses by NACE Codes (2010-2021)	106
TABLE 3.10.	İzmir Dikili District LQ Analyses by NACE Codes (2010-2021)	107
TABLE 3.11.	İzmir Foça District LQ Analyses by NACE Codes (2010-2021)	108
TABLE 3.12.	İzmir Karaburun District LQ Analyses by NACE Codes (2010-2021)	109
TABLE 3.13.	İzmir Kemalpaşa District LQ Analyses by NACE Codes (2010-2021)	110
TABLE 3.14.	İzmir Kınık District LQ Analyses by NACE Codes (2010-2021)	111
TABLE 3.15.	İzmir Kiraz District LQ Analyses by NACE Codes (2010-2021)	112
TABLE 3.16.	İzmir Menderes District LQ Analyses by NACE Codes (2010-2021)	113
TABLE 3.17.	İzmir Center District LQ Analyses by NACE Codes (2021)	114
TABLE 3.18.	İzmir Ödemiş District LQ Analyses by NACE Codes (2010-2021)	116
TABLE 3.19.	İzmir Seferihisar District LQ Analyses by NACE Codes (2010-2021)	117
TABLE 3.20.	İzmir Selçuk District LQ Analyses by NACE Codes (2010-2021)	119
TABLE 3.21.	İzmir Tire District LQ Analyses by NACE Codes (2010-2021)	120
TABLE 3.22.	İzmir Torbalı District LQ Analyses by NACE Codes (2010-2021)	121
TABLE 3.23.	LQ Analyses According to NACE Codes of Urla District, İzmir (2010-2021)	122
TABLE 3.24.	Patent Applications in Türkiye, İzmir, and Other Regions by Year (2010–2022)	145
TABLE 3.25.	Patent Presence by IPC Classifications (2021)	145
TABLE 3.26.	İzmir Innovation Indicators I (Institutional Indicators) (2016-2021)	146
TABLE 3.27.	İzmir Innovation Indicators II (Academic Indicators and Industrial Indicators) (2016-2021)	147
TABLE 3.28.	Leading Universities in Patent Commercialization (2020)	151
TABLE 3.29.	Top 20 Universities Included in TÜBİTAK's Entrepreneurial and Innovative University Index (2022)	152
TABLE 3.30.	Newly Established R&D Centers by Province and Year (2008-2022)	153
TABLE 3.31.	Number of R&D Centers by Sectors in İzmir (2022)	154
TABLE 3.32.	Statistics on R&D Units (2021)	154
TABLE 3.33.	Gross Domestic R&D Expenditure (Million TRY) and Workforce (People)	155
TABLE 3.34.	Number of Foreign Direct Investments in İzmir by Year (1968–2021)	156
TABLE 3.35.	Distribution of Investment Incentive Certificates in İzmir Districts by NACE Codes (2021)	158
TABLE 3.36.	Number of Active Organized Industrial Zones (OIZs) in Provinces and Related Data (2023)	162
TABLE 3.37.	Operational OIZs in İzmir and Related Data (2023)	162
TABLE 3.38.	Planned OIZ Areas by Provinces (2023)	163
TABLE 3.39.	Ongoing OIZ Areas in İzmir and Related Data (2023)	163
TABLE 3.40.	Free Zone Employment Numbers (2019-2022)	164
TABLE 3.41.	Free Zone Trade Volume Statistics (2016-2022) (billion USD)	165
TABLE 4.1.	Population of Türkiye, the Aegean Region, and İzmir (2007–2022)	168
TABLE 4.2.	Population of İzmir Region by Gender (1965–2022)	169
TABLE 4.3.	Populations of the Districts of İzmir (2008-2022)	170
TABLE 4.4.	Districts' Shares in İzmir's Population (2008-2022)	172
TABLE 4.5.	Number of Urban and Rural Neighborhoods in İzmir Province (2021)	175
TABLE 4.6.	Rural Summer and Winter Populations of İzmir Districts According to YER-SİS (2019)	180
TABLE 4.7.	Migration Figures Over the Years (2008–2022)	181

TABLE 4.8.	Characteristics of Migration to and from İzmir Region by Education Level (2021) (+15 Years)	182
TABLE 4.9.	İzmir's In-Migration by Education Level (2010–2021) (+15 Years)	183
TABLE 4.10.	Shares of Education Levels in İzmir's In-Migration (2010-2021) (+15 Years) (%)	183
TABLE 4.11.	İzmir's Out-Migration by Education Level (2010-2021) (+15 Years)	184
TABLE 4.12.	Shares of Education Levels in İzmir's Out-Migration (2010-2021) (+15 Years) (%)	184
TABLE 4.13.	Distribution of Foreign Nationals with Residence Permits in İzmir and Other Provinces (2023)	185
TABLE 4.14.	Syrians Under Temporary Protection in İzmir and Other Provinces (2023)	185
TABLE 4.15.	Distribution of Syrians Under Temporary Protection in İzmir Districts (2019)	186
TABLE 4.16.	Population Ratios by Education Level (2010, 2022)	187
TABLE 4.17.	Educational Status of İzmir Region Over the Years (2010-2022) (+15 Years Old)	188
TABLE 4.18.	Educational Status Shares of İzmir Region Over the Years (2010-2022) (+15 Years Old) (%)	188
TABLE 4.19.	Preschool Enrollment Rates for İzmir Region and Other Regions by Age Groups (2021)	189
TABLE 4.20.	Enrollment Rates in İzmir Region and Other Regions (2021) (%)	189
TABLE 4.21.	Student-to-Teacher Ratios in İzmir Region (2021)	190
TABLE 4.22.	Student-to-Teacher Ratios in İzmir Region Over the Years (2012-2021)	190
TABLE 4.23.	Student-to-Classroom Ratios in İzmir Region (2021)	190
TABLE 4.24.	Student-to-Classroom Ratios in İzmir Region Over the Years (2012-2021)	191
TABLE 4.25.	Bussed Education Statistics in İzmir and Other Regions (2021)	191
TABLE 4.26.	Number of Universities and University Students in İzmir by Years (2009-2023)	192
TABLE 4.27.	Number of Students in İzmir Universities (2022/2023)	192
TABLE 4.28.	Number of Graduate Students per Academic Staff (2023)	193
TABLE 4.29.	Change in the Number of Secondary Education Institutions Over the Years	195
TABLE 4.30.	Number of Students in Secondary Education Institutions Over the Years	196
TABLE 4.31.	Vocational Training Centers in İzmir (2023)	196
TABLE 4.32.	Key Employment and Workforce Indicators (2022) (15+ Years Age)	197
TABLE 4.33.	Total Employment by Year in İzmir Region and Other Regions (Thousand)	199
TABLE 4.34.	Employment Rates by Year and Gender (%)	199
TABLE 4.35.	Male Employment in İzmir Region and Other Regions Over Years (Thousand)	200
TABLE 4.36.	Female Employment in İzmir Region and Other Regions Over Years (Thousand)	200
TABLE 4.37.	Employment and Shares in İzmir Region by Workplace Size (Thousand) (%)	201
TABLE 4.38.	Employment and Shares in İzmir Region by Educational Level (Thousand) (%)	201
TABLE 4.39.	Employment and Shares by Economic Activity in İzmir Region (Thousand) (%)	202
TABLE 4.40.	Workforce in İzmir and Other Regions by Year (Thousand)	202
TABLE 4.41.	Male Workforce in İzmir and Other Regions by Year (Thousand)	203
TABLE 4.42.	Female Workforce in İzmir and Other Regions by Year (Thousand)	203
TABLE 4.43.	Educational Levels of İzmir Workforce by Year (Thousand)	204
TABLE 4.44.	Unemployment Rates in İzmir and Other Regions by Year	204
TABLE 4.45.	Number of Unemployed in İzmir and Other Regions by Year (Thousand)	205
TABLE 4.46.	Unemployed Population by Education Level in İzmir Region by Year (Thousand)	206
TABLE 4.47.	Unemployed Population in İzmir Region by Last Employment Sector by Year (Thousand)	207

TABLE 5.1.	Gini Coefficient in İzmir and Other Regions (2014-2022)	209
TABLE 5.2.	P80/P20 Ratio Based on Household Disposable Income (2014-2022)	210
TABLE 5.3.	Poverty Threshold in İzmir and Other Regions (2014-2022) (TRY)	210
TABLE 5.4.	Number of Poor Individuals in Türkiye and Other Regions (2014-2022) (Thousand Persons)	211
TABLE 5.5.	Distribution of Household Consumption Expenditures in İzmir Region by Type	212
TABLE 5.6.	Distribution of Unions in İzmir Region by Activity (2023)	212
TABLE 5.7.	Distribution of Associations in İzmir Region by Field of Activity (2023)	213
TABLE 5.8.	Distribution of Associations and Foundations in İzmir Districts (2023)	214
TABLE 5.9.	Percentage of Population Aged 65 and Over in İzmir Region by Year	215
TABLE 5.10.	Elderly Dependency Ratios (2022)	215
TABLE 5.11.	Population Aged Three and Over with At Least One Disability (2011)	215
TABLE 5.12.	Number of Individuals Receiving Residential Services in İzmir Region by Gender and Age Group (2021)	216
TABLE 5.13.	Number of Nursing Homes and Elderly Residents in İzmir Region (2021)	216
TABLE 5.14.	Ratio of Individuals Receiving Home Care Assistance to Population (2021)	217
TABLE 5.15.	Disadvantaged Groups Placed in Employment by İŞKUR in İzmir Region (2019-2022)	217
TABLE 5.16.	Distribution of Social Assistance Beneficiaries Placed in Employment by İŞKUR (2020-2022)	218
TABLE 6.1.	İzmir Region Motorway Statistics (2022)	230
TABLE 6.2.	Passenger Numbers by Year at Airports (2010-2022)	231
TABLE 6.3.	Freight Traffic by Year at Airports (2010-2022) (Tons)	232
TABLE 6.4.	Cargo Handling by Port Authorities by Year (2011-2022) (Tons)	233
TABLE 6.5.	Container Handling by Port Authorities by Year (2011-2022)	234
TABLE 6.6.	Life Expectancy at Birth (2013-2020)	235
TABLE 6.7.	Infant Mortality Rate (2009-2022) (Per Thousand)	236
TABLE 6.8.	Number of Ministry of Health Hospitals (2010-2021)	236
TABLE 6.9.	Number of Private Hospitals (2010-2021)	237
TABLE 6.10.	Number of Hospital Beds in İzmir Region (2010-2021)	237
TABLE 6.11.	Number of Healthcare Personnel in İzmir Region (2010-2021)	238
TABLE 6.12.	Number of Physicians per Thousand People (2010-2021)	239
TABLE 6.13.	Number of Hospital Beds per Hundred Thousand People (2010-2021)	239
TABLE 6.14.	Number of Public Libraries (2012-2022)	241
TABLE 6.15.	Number of Museums Affiliated with the Ministry of Culture and Tourism (2014-2021)	241
TABLE 6.16.	Number of Private Museums (2014-2021)	242
TABLE 6.17.	Number of Public Library Users per Thousand People (2012-2022)	242
TABLE 6.18.	Number of Visitors to Museums Affiliated with the Ministry of Culture and Tourism (2014-2021)	243
TABLE 6.19.	Number of Visitors to Private Museums (2014-2021)	243
TABLE 6.20.	Distribution of Green and Large Open Spaces in the İzmir Metropolitan Area (2021)	244
TABLE 6.21.	Number of Housing Sales by Districts in İzmir (2015-2022)	244
TABLE 6.22.	Number of Initial and Second-Hand Housing Sales in İzmir Region by Year (2013-2022)	246
TABLE 6.23.	Total Housing Sales Values in Districts of İzmir (2021)	246

TABLE 6.24.	Telecommunications Statistics in İzmir Region by Year (2011–2022)	249
TABLE 7.1.	Distribution of Foreign Visitors to Türkiye by Provinces of Border Gates and Entry Routes	252
TABLE 7.2.	Distribution of Foreign Visitors to İzmir by Year and Month (2019–2022)	252
TABLE 7.3.	Distribution of Foreign Visitors to İzmir by Entry Mode and Year (2019–2022)	253
TABLE 7.4.	Number of Tourists Entering through Border Gates in İzmir Province (2019–2022)	253
TABLE 7.5.	Distribution of Foreign Tourists Visiting İzmir by Country (2019–2022)	254
TABLE 7.6.	Number of Facilities and Capacities in Türkiye, the Aegean Region, and İzmir Region (2023)	254
TABLE 7.7.	Accommodation Statistics for Tourism Operating and Municipality-Licensed Facilities in İzmir Region	254
TABLE 7.8.	Distribution of Historical Conservation Areas in the İzmir Region (2022)	256
TABLE 7.9.	Distribution of Immovable Cultural Assets Requiring Conservation in the İzmir Region (2022)	256
TABLE 7.10.	Cultural and Tourism Conservation and Development Areas and Tourism Centers (2022)	258
TABLE 8.1.	Descriptive Statistics of Air Quality Parameters in İzmir Stations – PM10 (2022) (µg/m ³)	260
TABLE 8.2.	Descriptive Statistics of Air Quality Parameters in İzmir Stations – PM2.5 (2022) (µg/m ³)	261
TABLE 8.3.	Descriptive Statistics of Air Quality Parameters in İzmir Stations – SO ₂ (2022) (µg/m ³)	261
TABLE 8.4.	Descriptive Statistics of Air Quality Parameters in İzmir Stations – CO (2022) (µg/m ³)	262
TABLE 8.5.	Number of Days with Daily Average PM10 Values Exceeding 50 µg/m ³ at İzmir Air Monitoring Stations by Year (2010–2022)	263
TABLE 8.6.	Installed Capacities of Solar Power Plants by Province (MW) (2022)	264
TABLE 8.7.	Installed Capacities of Wind Power Plants by Province (MW) (2021)	265
TABLE 8.8.	Geothermal Power Plants and Total Installed Capacities by Province – MW (2022)	268
TABLE 8.9.	Electricity Consumption in İzmir by Usage Category (1995–2021) (Ten Thousand MWh)	269
TABLE 8.10.	Shares of Electricity Consumption by Usage in İzmir Region (2002–2021)	270
TABLE 8.11.	Per Capita Electricity Consumption by Usage Area (2007–2021) (KWh)	271
TABLE 8.12.	Total Water Extracted by Municipalities for Drinking and Utility Water Networks in İzmir Region (2001–2020) (Thousand m ³ /year)	272
TABLE 8.13.	Per Capita Daily Water Drawn by Municipalities for Drinking and Utility Water Networks (2001–2020) (Liters/Person-Day)	273
TABLE 8.14.	Wastewater Discharged from the Network in İzmir Region by Treatment Status (2001–2021) (Thousand m ³ /year)	273
TABLE 8.15.	Volumes of Wastewater Treated in Wastewater Treatment Plants of İzmir (2001–2018) (Thousand m ³ /year)	274
TABLE 8.16.	Daily Per Capita Wastewater Discharged by Municipalities in İzmir Region (2001–2020) (Liters/Person-Day)	275
TABLE 8.17.	Distribution of Municipal Waste by Disposal Method in İzmir Region (2006–2020) (Tons/Year)	275
TABLE 8.18.	Average Per Capita Municipal Waste Amount in İzmir Region (2001–2020) (Kg/Person-Day)	276
TABLE 8.19.	Distribution of Hazardous Waste in İzmir Region by Treatment Method (2009–2020) (Excluding Mining Waste) (Ton/Year)	276
TABLE 8.20.	Environmental Expenditures of İzmir Municipalities by Expenditure Type (2003–2016) (Real Prices)	277
TABLE 8.21.	Agricultural Land in İzmir Region by Type (2021) (Hectares)	278
TABLE 8.22.	Shares of Agricultural Land by Type in the İzmir Region (2021) (%)	278
TABLE 8.23.	Distribution of Forest Areas in Türkiye, Aegean Region, and İzmir Region (2022) (Thousand Hectares)	280
TABLE 8.24.	Distribution Shares of Forest Areas (2022)	280

TABLE 9.1.	Number of Buildings in the İzmir Region by Structural System Codes (2021)	288
TABLE 9.2.	Number of Buildings in İzmir Region by Construction/Project Date Codes	289
TABLE 9.3.	Number of Buildings in İzmir Region by Quality Class Codes (2021)	289
TABLE 9.4.	Number of Buildings Surveyed in İzmir Region (2021)	290
TABLE 9.5.	Number and Capacity of Disaster Gathering Areas by District in İzmir Region (2021)	291
TABLE 9.6.	Temporary and Emergency Shelter Areas and Facilities in İzmir, and Their Capacities (2021)	292
TABLE 9.7.	Tent City and Container City Areas in İzmir and Their Capacities (2021)	293
TABLE 10.1.	Population of Rural Neighborhoods and Neighborhoods in Rural Settlement Hierarchies (2019)	295
TABLE 10.2.	Population in Rural Settlement Hierarchies by Districts (2019)	296
TABLE 10.3.	Cooperatives Affiliated with the Ministry of Agriculture and Forestry in İzmir and Their Number of Members	297
TABLE 10.4.	Cooperatives Related to Rural Development in İzmir (2021)	297
TABLE 10.5.	Number of Cooperatives Affiliated with the Ministry of Agriculture and Forestry, and Their Members by District (2021)	298
TABLE 10.6.	Communication Infrastructure in Rural Settlements in the Districts of İzmir (2019)	299
TABLE 10.7.	Economic Infrastructure in Rural Settlements in the Districts of İzmir (2019)	300
TABLE 10.8.	Social Infrastructure in Rural Settlements by District in İzmir (2019)	301
TABLE 10.9.	Technical Infrastructure in Rural Settlements by District in İzmir (2019)	302
TABLE 10.10.	Sources of Livelihood in Rural Settlements by District in İzmir I (2019)	305
TABLE 10.11.	Sources of Livelihood in Rural Settlements by District in İzmir II (2019)	306
TABLE 10.12.	Land Distribution in İzmir Region (2022)	307
TABLE 10.13.	Distribution of Arable Lands in İzmir Region (2022)	307
TABLE 10.14.	Distribution of Arable Lands in Türkiye and İzmir Region (2022)	307
TABLE 10.15.	Agricultural Production by Districts (2022)	308
TABLE 10.16.	Ratio of Population by Product Type in Rural Settlements I (2019)	309
TABLE 10.17.	Ratio of Population by Product Type in Rural Settlements II (2019)	310
TABLE 10.18.	Livestock Population by Districts in İzmir Region (2022)	311
TABLE 10.19.	Number of Forest Villages, Population of Forest Villages, and Their Shares (2013-2022)	314
TABLE 10.20.	Number of Forest Villages by Districts in İzmir (2020)	315
TABLE 10.21.	Distribution of Individual Support Provided to Forest Villagers (2022)	316
TABLE 11.1.	Performance Indicators for High Technology, Innovation, and Design Capacity	320
TABLE 11.2.	Performance Indicators for Advanced Entrepreneurship Ecosystem	321
TABLE 11.3.	Performance Indicators for Sustainable Production and Service Delivery	322
TABLE 11.4.	Performance Indicators for İzmir as The Centre of Attraction of the Mediterranean	323
TABLE 11.5.	Performance Indicators for Health for All	324
TABLE 11.6.	Performance Indicators for Sustainable Environment	325
TABLE 11.7.	Performance Indicators for Accessible İzmir	326
TABLE 11.8.	Performance Indicators for Quality Education for All	327
TABLE 11.9.	Performance Indicators for High Employment Capacity	328

LIST OF FIGURES

FIGURE 1.1.	Settlements within Türkiye's Central Hierarchy	31
FIGURE 1.2.	İzmir Region and Settlements within İzmir Region's Sphere of Influence in Türkiye's Central Hierarchy	32
FIGURE 1.3.	Service Areas of İzmir Districts	34
FIGURE 1.4.	Hierarchical Classification of Rural Service Centers	35
FIGURE 1.5.	Integrated Rural Service Centers and Their Influence Areas	37
FIGURE 2.1.	Growth Rates of NUTS II Regions in 2021 (Chain Volume Index)	43
FIGURE 2.2.	İzmir and Türkiye Growth Rates by Year (%)	43
FIGURE 2.3.	Share of NUTS II Regions in Total GDP for 2021 (Current Prices)	45
FIGURE 2.4.	GVA Growth Rates of NUTS II Regions in 2021 (%) (Chained Volume Index)	46
FIGURE 2.5.	GVA Growth Rates of İzmir and Türkiye by Year (%) (2009–2021)	47
FIGURE 2.6.	Share of NUTS II Regions in Total GDP in 2021 (%) (Current Prices)	48
FIGURE 2.7.	Per Capita GDP Values of NUTS Level II Regions in 2021 (Current Prices, USD)	49
FIGURE 2.8.	Per Capita GDP Values by Year (Current Prices, USD) (2009–2021)	50
FIGURE 2.9.	Relationship Between Agricultural and Total GDP Growth Rates in İzmir	52
FIGURE 2.10.	İzmir's Crop Production Volume and Its Share in Türkiye	53
FIGURE 2.11.	Share of Industrial GDP of İzmir Region in Türkiye by Years	61
FIGURE 2.12.	Share of İzmir Industrial GDP in Türkiye's Industrial GDP by Year	63
FIGURE 2.13.	Share of İzmir Services GDP in Türkiye's Overall Services GDP by Years	65
FIGURE 2.14.	The Share of İzmir Region in Türkiye's Services GDP by Years	68
FIGURE 2.15.	Annual Export Change Rates in İzmir Region (2013–2022)	72
FIGURE 2.16.	Percentage Share of İzmir Region in Türkiye's Exports by Years	72
FIGURE 2.17.	İzmir Region's Share in Türkiye's Imports (2013–2022)	74
FIGURE 2.18.	Export/Import Ratio in Türkiye and İzmir Region (2013–2022)	74
FIGURE 2.19.	Number of Companies from İzmir Included Among Türkiye's Top 1,000 Exporters (2012–2022)	80
FIGURE 2.20.	Technology Levels of İzmir Region Exports by Sectors (2021)	84
FIGURE 2.21.	Product Space by ISIC4 Export Product Groups (2021)	88
FIGURE 2.22.	Top 5 Provinces with the Highest Export Complexity (2021)	91
FIGURE 2.23.	Top 5 Provinces with the Highest Import Complexity (2021)	91
FIGURE 2.24.	Productivity in İzmir Region (2010–2021)	92
FIGURE 3.1.	Annual Employment Growth Rates in İzmir, Ankara and İstanbul Regions (2010–2021)	98
FIGURE 3.2.	Dominant Sectors in Aliağa District (2021)	102
FIGURE 3.3.	Dominant Sectors in Bayındır District (2021)	103
FIGURE 3.4.	Dominant Sectors in Bergama District (2021)	104
FIGURE 3.5.	Dominant Sectors in Beydağ District (2021)	105
FIGURE 3.6.	Dominant Sectors in Çeşme District (2021)	106
FIGURE 3.7.	Dominant Sectors in Dikili District (2021)	107
FIGURE 3.8.	Dominant Sectors in Foça District (2021)	108
FIGURE 3.9.	Dominant Sectors in Karaburun District (2021)	109
FIGURE 3.10.	Dominant Sectors in Kemalpaşa District (2021)	110
FIGURE 3.11.	Dominant Sectors in Kınık District (2021)	111

FIGURE 3.12.	Dominant Sectors in Kiraz District (2021)	112
FIGURE 3.13.	Dominant Sectors in Menderes District (2021)	113
FIGURE 3.14.	Dominant Sectors in İzmir Center District (2021)	115
FIGURE 3.15.	Dominant Sectors in Ödemiş District (2021)	116
FIGURE 3.16.	Dominant Sectors in Seferihisar District (2021)	118
FIGURE 3.17.	Dominant Sectors in Selçuk District (2021)	119
FIGURE 3.18.	Dominant Sectors in Tire District (2021)	120
FIGURE 3.19.	Dominant Sectors in Torbalı District (2021)	121
FIGURE 3.20.	Dominant Sectors in Urla District (2021)	122
FIGURE 3.22.	İzmir Innovation Ecosystem Network (2022)	149
FIGURE 3.23.	Leading 20 Universities in Patent and Utility Model	150
FIGURE 3.24.	Leading 20 Universities in Patent Applications in Europe, USA, Japan, China or South Korea (2021)	151
FIGURE 3.25.	Number of Newly Established R&D Centers in İzmir (2008-2022)	153
FIGURE 3.26.	Number of Foreign Direct Investments in İzmir by Year (1968-2021)	157
FIGURE 4.1.	Distribution of Türkiye's Population by Age Groups (2022)	174
FIGURE 4.2.	Distribution of İzmir's Population by Age Groups (2022)	174
FIGURE 4.3.	Distribution of İzmir Districts by Urbanization Level (2021)	176
FIGURE 4.4.	Urbanization Rate and City Typologies by Districts (2021)	177
FIGURE 4.5.	İzmir Province Population (2021)	178
FIGURE 4.6.	Distribution of Neighborhoods in İzmir Region by Rural and Urban Classification	179
FIGURE 4.7.	Migration Rates in İzmir and Aegean Regions Over the Years (Per Mille) (2008–2022)	181
FIGURE 4.8.	Distribution of Individuals Coming to İzmir for Education by Province (2017)	194
FIGURE 4.9.	Distribution of Individuals Traveling from İzmir for Education by Province (2017)	194
FIGURE 4.10.	Employment Rates by Year in Türkiye, Aegean Region, and İzmir Region (%)	198
FIGURE 4.11.	Unemployment Rates Over the Years in Türkiye, Aegean Region and İzmir Region (%)	205
FIGURE 4.12.	Unemployment Rates in İzmir Region by Gender and Age Group (2022) (%)	206
FIGURE 6.1.	The Position of İzmir Region Among Transportation Links	221
FIGURE 6.2.	İzmir Region Road Network	222
FIGURE 6.3.	Planned Motorways	223
FIGURE 6.4.	Planned Provincial and State Roads	223
FIGURE 6.5.	Major Ports Operating Along Türkiye's Coasts	224
FIGURE 6.6.	Ports Planned for Completion	224
FIGURE 6.7.	Türkiye National Railway Infrastructure Network	225
FIGURE 6.8.	Planned High-Speed Rail Network	225
FIGURE 6.9.	İzmir Maritime Transport Network	226
FIGURE 6.10.	İzmir Rail Transport Network	227
FIGURE 6.11.	Bicycle Paths and Parking Stations	228
FIGURE 6.12.	Highway Volume (2021)	229
FIGURE 6.13.	Incoming Bus Services to İzmir Region (2018)	230
FIGURE 6.14.	Outgoing Bus Services from İzmir Region (2018)	231
FIGURE 6.15.	Airports Served by Flights from İzmir Adnan Menderes Airport (2017)	233
FIGURE 6.16.	Cargo Handling by Port Authorities in 2022	234
FIGURE 6.17.	Container Handling by Port Authorities in 2022	235
FIGURE 6.18.	Patients Traveling to İzmir Region for Hospital Services (2019)	240
FIGURE 6.19.	Patients Traveling from İzmir Region for Hospital Services (2019)	240

FIGURE 6.20.	Natural Gas Network in İzmir Region	247
FIGURE 6.21.	Water Distribution Network in İzmir Region	248
FIGURE 6.22.	Sewer Network in İzmir Region	248
FIGURE 7.1.	Nature Conservation Areas, National Parks, and Wetlands	255
FIGURE 7.2.	Protected Sites in İzmir	257
FIGURE 7.3.	İzmir Region Cultural and Tourism Conservation and Development Areas and Tourism Centers	258
FIGURE 8.1.	Distribution of Installed Solar Power Plant Capacities in Türkiye	264
FIGURE 8.2.	Installed Wind Power Capacity in İzmir Region	265
FIGURE 8.3.	İzmir Wind Energy Ecosystem	266
FIGURE 8.4.	Distribution of Geothermal Power Plants by Province (# of plants)	267
FIGURE 8.5.	Installed Capacity of Geothermal Power Plants by Province (MW)	267
FIGURE 8.6.	Groundwater Irrigation Areas, Dams and Ponds in İzmir Region	279
FIGURE 8.7.	Forest Resources in İzmir Region	280
FIGURE 8.8.	Annual Amount of Waste Collected in İzmir Bay (2002–2022) (Tons)	281
FIGURE 8.9.	Surface Temperatures in İzmir Region	282
FIGURE 9.1.	AFAD Earthquake Hazard Map	284
FIGURE 9.2.	Significant Earthquakes and Fault Lines in and Around İzmir	285
FIGURE 9.3.	Active Fault Lines in and Around İzmir	286
FIGURE 9.4.	Desertification Sensitivity Map of Türkiye	287
FIGURE 9.5.	Locations of Water Sources for Aerial and Ground Firefighting Vehicles	287
FIGURE 9.6.	Flood Risk in İzmir Region	288
FIGURE 10.1.	Infrastructure in Rural Settlements (2019)	303
FIGURE 10.2.	Rural Settlements in the İzmir Region	304
FIGURE 10.3.	General Overview of Primary Livelihoods in Rural Settlements (2019)	312
FIGURE 10.4.	Economic Activities in Rural Settlements in İzmir Region	313
FIGURE 11.1.	İzmir Regional Plan Vision, Development Axes, and Strategic Priorities	319

ABBREVIATIONS

EU	European Union
US	United States of America
ABPRS	Address-Based Population Registration System
AFAD	Disaster and Emergency Management Authority AFAD Earthquake Department
ARDEB	Directorate of Research Support Programs
BESTMER	Biomass Energy Systems and Technologies Center
BGUS	Regional Development Adaptation Strategy
BSS	Number of Dominant Sectors
ICTA	Information and Communication Technologies Authority
DHMI	State Airports Authority
SPO	State Planning Organization
E4TC	Aachen Technical University European 4.0 Transformation Center
EBSO	Aegean Region Chamber of Industry
EIA	U.S. Energy Information Administration
ENŚIA	Energy Industrialists and Businessmen Association
ESHOT	Electricity, Water, Gas, Bus and Trolleybus Administration
FDI	Foreign Direct Investment
GSKD	Gross Value Added
GSYH	Gross Domestic Product
GWh	Gigawatt-hour
HAVZA	Sustainable Development in Küçük Menderes Basin
IDNDR	International Decade for Natural Disaster Reduction
ISIC	International Standard Industrial Classification
İBB	İzmir Metropolitan Municipality
İDSDMP	İzmir Earthquake Scenario and Earthquake Master Plan
İGÇA	İzmir Input-Output Analysis
EIR	Export-Import Ratio
İRAP	İzmir Provincial Disaster Risk Reduction Plan
İSUB	İzmir Aquaculture Producers and Breeders Association
İZBAN	İzmir Suburban Rail System Administration
İZBP	İzmir Regional Plan
İZDENİZ	İzmir Deniz İşletmeciliği Nakliye ve Turizm Ticaret A.Ş.
İZKA	İzmir Development Agency
İZTO	İzmir Chamber of Commerce
KKYDP	Rural Development Support Program
KOERI	Kandilli Observatory and Earthquake Research Institute
PPP	Public-Private Partnership
CTPDZ	Cultural and Tourism Protection and Development Zones
MoNE	Ministry of National Education
NACE	Statistical Classification of Economic Activities in the European Community
OECD	Organization for Economic Co-operation and Development
OIZ	Organized Industrial Zone

SEPA	Special Environmental Protection Area
PwC	PricewaterhouseCoopers
RCA	Regional Comparative Advantage
SCI/SSCI	Science Citation Index / Social Science Citation Index
SEGE	Socio-Economic Development Ranking of Provinces and Regions
SGK	Social Security Institution (Sosyal Güvenlik Kurumu)
MoIT	Ministry of Industry and Technology
TBB	The Banks Association of Türkiye
TCDD	Turkish State Railways
TEKNOTEST	İzmir Scientific Research Application Test and System Development Laboratories
TEKSMER	Technical Textiles Research and Application Center
TEU	Twenty-Foot Equivalent Unit
TEYDEB	Directorate of Technology and Innovation Funding Programs
TDZ	Technology Development Zone
TİM	Turkish Exporters Assembly
TSKB	Industrial Development Bank of Türkiye
TSS	Türkiye Industrial Strategy
TTO	Technology Transfer Office
TÜBİTAK	Scientific and Technological Research Council of Türkiye
TÜBİTAK MAM	TÜBİTAK Marmara Research Center
TURKSTAT	Turkish Statistical Institute
TÜREB	Turkish Wind Energy Association
TÜRKPATENT	Turkish Patent and Trademark Office
UHKİA	National Air Quality Monitoring Network
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations Office for Disaster Risk Reduction
URAK	National Competitiveness Research Institute
USGS	United States Geological Survey
ÜSİMP	University-Industry Cooperation Centers Platform
YEPP	National Renewable Energy Action Plan
YER-SİS	Urban and Rural Settlement Systems Research in Türkiye
YHGS	Wildlife Development Area
YHT	High-Speed Train
BOT	Build-Operate-Transfer
YÖK	Council of Higher Education

1. OVERVIEW OF THE REGION

A. The Region's Position in the World and in Türkiye

Throughout its rich history, İzmir has had an economy predominantly oriented towards trade as a major trade center and port city in the Mediterranean Region. In its historical context, İzmir Region has played a significant role in facilitating the trade of surplus goods produced over a broader area (including provinces near the Aegean Region from Central Anatolia, Marmara and Mediterranean Regions) with other production centers. İzmir, as one of the major cities of the Mediterranean, continues to encompass tourist attractions, large industrial zones, major projects, and commercial investments. The region was recognized by FDI Intelligence as one of Europe's best, brightest, most cost-effective, business-friendly investment locations with a strong FDI strategy (Table 1.1 and 1.2) (FDI Intelligence, 2022). According to the 2018 Global Metro Monitor report published by the U.S. Brookings Institution, İzmir Region ranked 190th among the top 300 metropolises in terms of Economic Performance Index (Brookings Institution, 2018).

TABLE 1.1. Large European Cities of the Future for Business-Friendly Aspects (2022/2023)

Rank	City	Country
1	Krakow	Poland
2	Frankfurt am Main	Germany
3	Düsseldorf	Germany
4	Manchester	United Kingdom
5	Belgrade	Serbia
6	Antwerp	Belgium
7	Hamburg	Germany
8	Rotterdam	Netherlands
9	Glasgow	United Kingdom
10	İzmir	Türkiye

Source: FDI Intelligence, 2022

TABLE 1.2. Large European Cities of the Future for Foreign Direct Investment Strategy (2022/2023)

Rank	City	Country
1	Antwerp	Belgium
2	Düsseldorf	Germany
3	Leipzig	Germany
4	Frankfurt am Main	Germany
5	İzmir	Türkiye
6	Katowice	Poland
7	Hamburg	Germany
8	Kharkov	Ukraine
9	Krakow	Poland
10	Konya	Türkiye

Source: FDI Intelligence, 2022

This section presents data compiled in Table 1.3 to better explain the regional dynamics that contributed to İzmir Region being recognized as one of Europe's best and brightest investment locations. İzmir, Türkiye's third-largest city in terms of population and economic indicators (2022), has a population of 4,462,056, which accounts for 5.23% of Türkiye's population and 41% of the Aegean Region's population (Table 1.3).

The Ministry of Industry and Technology periodically publishes the results of the Socio-Economic Development Ranking of Provinces and Regions (SEGE). The SEGE study is a comprehensive index prepared using 52 variables, including demographic, education, health, employment, competitive and innovative variables, financial variables, accessibility, and quality of life. In the 2017 SEGE, İzmir Region ranked third among provinces in Türkiye with a SEGE score of 1.926. In the SEGE 2017 report, İstanbul ranked first with a score of 4.051, while Ankara ranked second with a score of 2.718 (Ministry of Industry and Technology,

2017). When examining the hierarchical structure of urban settlement service centers in Türkiye, İzmir is categorized one tier below İstanbul (7), the highest tier, alongside Ankara (6A). İzmir's settlement category is classified as 6B according to YER-SİS (General Directorate of Development Agencies, 2020).

In the Global Competitiveness Report 2021, Türkiye ranked 61st out of 141 countries (IMD, 2021). According to the 2018 Inter-Provincial Competitiveness Index study prepared by the National Competitiveness Research Institute (URAK), İzmir ranked third in Türkiye, consistent with its ranking in terms of population and socio-economic development. In this study, İzmir had an index value of 33.80, compared to 69.13 for İstanbul and 46.04 for Ankara. In terms of sub-indices, İzmir ranked fifth in the human capital and quality of life sub-index (44.75), third in the innovation sub-index (24.65), fourth in the production and trade sub-index (37.92), and fifth in the livability sub-index (30.42) (URAK, 2018).

In 2022, population density in Türkiye was calculated to be 111 persons/km², while in İzmir, it was 371 persons/km². İzmir exceeds the national average in population density. In 2022, the number of migrants arriving in İzmir exceeded those leaving by 25,114 people. In other words, İzmir has a positive net migration rate. While the net migration rate was 2.26‰ in 2011, this figure nearly doubled to 5.64‰ in 2022 (TURKSTAT, 2022a).

Literacy and schooling rates in İzmir exceed the national averages. İzmir is home to 10 universities, one of which is a vocational school (YÖK, 2023a). According to YÖK student statistics for the 2022-2023 academic year, İzmir ranked third in Türkiye in terms of total university student numbers, with 191,345 students (YÖK, 2023b).

In terms of healthcare services, İzmir also surpasses Türkiye's national average. As of 2021, there were 63 healthcare institutions, including 32 public and university hospitals and 31 private hospitals. The number of physicians per 1,000 people in 2021 was 2.8 in İzmir, compared to 2.2 in Türkiye. However, the hospital bed availability per 100,000 people in İzmir has shown a declining trend over the last decade, dropping to 279 in 2021, compared to the national average of 301. The İzmir City Hospital, planned to begin operations in 2023, is expected to further reduce the number of patients per physician and increase the hospital bed availability per 100,000 people (TURKSTAT, 2022b).

The workforce participation rate in İzmir was observed to be 54.4% in the year 2022. This rate surpasses the national average of 53.1% and the participation rate in Ankara (53.7%) but is lower than İstanbul's rate (56.1%). When examining employment, the number of employed persons in İzmir is seen to have increased by 9%, from 1,424,000 in 2012 to 1,731,000 in 2022 (TURKSTAT, 2022c). İzmir's employment growth rate has outpaced İstanbul and Ankara. However, during the 2012-2022 period, employment growth did not sufficiently meet workforce growth, leading to a high number of unemployed individuals in İzmir, with an unemployment rate of 13% for İzmir in 2022. This figure is seen to be significantly higher than the unemployment rates of both Ankara and İstanbul and the national average of 10.4% (TURKSTAT, 2022c).

In İzmir, more than half of the workforce is observed to be employed in the services sector. In 2022, the share of the services sector in İzmir's workforce was 60.2%. This ratio is lower than İstanbul's 68% and Ankara's 71.4%. The industrial sector, which accounts for 32.5% of İzmir's workforce and ranks second in employment, exceeds the figures for both İstanbul and Ankara. Consequently, the share of industrial sector employment in İzmir is also higher than the national average (27.7%). However, in terms of agricultural employment, İzmir falls significantly below the national average. Only one out of every 38 agricultural workers in Türkiye is employed in İzmir (TURKSTAT, 2022c).

When Gross Domestic Product is analyzed by economic activity, the services sector is observed with the highest share in İzmir in 2021, accounting for 49.1%. This figure is below the 52.8% share of the services sector in Türkiye's GDP. The industrial sector ranked second, contributing 36.5%, while the agricultural sector ranked last with 3.9%. The share of the industrial sector in İzmir's GDP is higher than its share in Türkiye's GDP, whereas the share of agriculture in İzmir's GDP is lower than its national counterpart. As

of 2021, the share of industry in İzmir's GDP is increasing, while the shares of agriculture and services are declining (TURKSTAT, 2022e).

According to 2021 business records statistics, İzmir had 30,653 local enterprises in the manufacturing industry sector, and while this number is significantly lower than İstanbul's 143,648, it is higher than Ankara's 30,325 (TURKSTAT, 2022f). According to the 2021 report published by the İstanbul Chamber of Industry on the top 500 industrial enterprises in Türkiye, 39 of the largest 500 industrial enterprises and 43 of the second-largest 500 industrial enterprises are located in İzmir. İzmir ranks as the second province, after İstanbul, with the highest number of enterprises among the top 1,000 industrial establishments.

İzmir, with its ancient agricultural production basins, ranked seventh among provinces in terms of the value of crop production in 2021, with a 3% share. Provinces with a higher share include Antalya, Konya, Mersin, Adana and Bursa, which are among Türkiye's other significant agricultural basins (TURKSTAT, 2022g).

Parallel to the digitalizing economy, provincial-level statistics published by the Information and Communication Technologies Authority (ICTA) indicate that İzmir ranked third in Türkiye in 2022, with 5.1 million broadband internet subscribers and 24,622 km of fiber-optic cable infrastructure (Table 1.3). With 5.5 meters of fiber-optic network per capita, İzmir exceeds İstanbul's 5.0 meters but lags behind Ankara's 6.1 meters (ICTA, 2022). Regions with strong internet infrastructure and high data transmission speeds are expected to gain a competitive edge in global economic competition by facilitating the transition to innovative technologies such as digital transformation, the Internet of Things, big data and Industry 4.0. İzmir's technological infrastructure has developed rapidly over the past decade, aligning with this transition.

TABLE 1.3. Economic and Social Profile of Türkiye, the Aegean Region and İzmir Region

GEOGRAPHY AND DEMOGRAPHICS	Türkiye	Aegean Region	İzmir
Land Area (Excluding Lakes) (km ²)	783.562	89.997	12.012
Population (2022 ABPRS)	85.279.553	10.886.803	4.462.056
Annual Average Population Growth Rate (%)	7,05	9,43	8,16
Population Density (2022) (persons/km ²)	111	122	371
INCOME	Türkiye	Aegean Region	İzmir
Per Capita GDP (2021, USD)	9.592	9.575	11.668
Gross Domestic Product (2021, billion TRY)	7.248	923	462
Gross Value Added (2021, billion TRY)	6.481	825	413
Industry Sector Gross Domestic Product Value (2021, billion TRY)	2.255	336	169
Share of Industry in GDP (2021) (%)	31,1	36,3	36,5
Agriculture Sector Gross Domestic Product Value (2021, billion TRY)	402	73	18
Share of Agriculture in GDP (2021) (%)	5,5	7,9	3,9
Services Sector Gross Domestic Product Value (2021, billion TRY)	3.824	417	227
Share of Services in GDP (2021) (%)	52,8	45,1	49,1

EDUCATION	Türkiye	Aegean Region	İzmir
Literacy Rate (2022, %)	97,59	98,60	98,81
Net Schooling Rate in Primary Education (2021, %)	94,34	94,46	94,67
Net Schooling Rate in Secondary Education (2021, %)	89,67	91,63	92,06
Net Schooling Rate in Preschool (Ages 3-5, 2021, %)	44,05	49,25	47,4
Rate of Higher Education Graduates (Ages 15+, 2022, %)	18,93	19,34	22,21
Male (%)	19,73	19,89	22,39
Female (%)	18,13	18,80	22,03

EMPLOYMENT (Ages 15+)	Türkiye	Aegean Region	İzmir
Workforce Participation Rate (2022, %)	53,1	54,4	54,4
Employment Rate (2022, %)	47,5	49,0	47,3
Unemployment Rate (2022, %)	10,4	10,1	13,0
Share of Agriculture in Employment (2022, %)	15,8	18,1	7,3
Share of Industry in Employment (2022, %)	27,7	28,9	32,5
Share of Services in Employment (2022, %)	56,5	53,0	60,2

SOCIAL SECURITY	Türkiye	Aegean Region	İzmir
Insured Population Rate (April 2023, %)	87,5	92,0	92,2
Active Insured Population/Total Population (April 2023, %)	29,25	30,79	32,29
Passive Insured Population/Total Population (April 2023, %)	15,77	21,31	22,45
Active/Passive Insured Ratio (April 2023)	1,85	1,45	1,44

HEALTHCARE			
Number of Hospitals (2021)	1.547	203	63
Number of Beds per 100,000 People (2021)	301	293	279
Number of Physicians per 1,000 People (2021)	2,17	2,25	2,76

INDUSTRY SECTOR	Türkiye	Aegean Region	İzmir
Number of Enterprises According to Registration Records: Total (2021)	4.384.672	640.661	263.875
Number of Enterprises According to Registration Records: Wholesale and Retail Trade (2021)	1.480.339	217.968	88.751
Number of Enterprises According to Registration Records: Manufacturing (2021)	493.909	71.526	30.653
Number of Enterprises According to Registration Records: Agriculture, Forestry, and Fisheries (2021)	39.983	6.557	1.745

AGRICULTURE SECTOR	Türkiye	Aegean Region	İzmir
Agricultural Land/Total Area (2021, %)	30,0	31,1	26,8
Crop Production Value (2021, billion TRY)	306,37	42,80	9,55
Livestock Production Value (2020, billion TRY)	108,60	9,49	2,79

TOURISM SECTOR	Türkiye	Aegean Region	İzmir
Number of Licensed Accommodation Facilities (June 2023)	4.969	961	278
Bed Capacity in Licensed Accommodation Facilities (June 2023)	1.100.139	205.071	42.968
Number of Environmentally Friendly Facilities (June 2023)	438	84	28
Bed Capacity in Environmentally Friendly Facilities (June 2023)	285.256	41.458	11.119

FOREIGN TRADE	Türkiye	Aegean Region	İzmir
Foreign Trade Volume (2021, million USD)	617.881	48.361	30.637
Foreign Trade Balance (2021, million USD)	-109.539	+6.761	+3.387
Exports (2021, million USD)	254.171	27.561	17.012
Exports per Capita (2021, USD)	2.980	2.532	3.813
Share of Exports in Türkiye's Total Exports (2021, %)	100	10,8	6,7
Imports (2021, million USD)	363.710	20.800	13.625
Share of Imports in Türkiye's Total Imports (2021, %)	100	5,7	3,7
Imports per Capita (2021, USD)	4.265	1.911	3.053
Import-Export Coverage Ratio (2021, %)	69,9	132,5	124,9

ENVIRONMENT	Türkiye	Aegean Region	İzmir
Average Municipal Waste per Capita (kg/person-day, 2020)	1,13	1,33	1,46
Daily Water Consumption per Capita (liters/person-day, 2020)	228	228	221
Daily Wastewater per Capita (liters/person-day, 2020)	189	166	174
Installed Wind Energy Capacity (MW, 2021)	11.102	3.718	1.887
Greenhouse Gas Emissions per Capita (Ton CO ₂ , 2018)	4,8	-	6,6

INNOVATION CAPACITY	Türkiye	Aegean Region	İzmir
Number of Patent Applications per 10,000 People (2021)	1,06	0,80	1,01
Number of Utility Model Applications per 10,000 People (2021)	0,65	0,70	0,80
Number of Trademark Registrations per 10,000 People (2021)	16,42	15,06	20,32
R&D Expenditures (2021, million TRY)	81.922	6.234	3.521
Share of R&D Workforce in Türkiye's Total R&D Workforce (2021, %)	100%	10,46%	6,02%

In respect to its geopolitical position and in line with its historical significance, İzmir is the region closest to the European Union (EU) zones, which are characterized by high capital and technology intensity in production and trade centers, providing the city with significant advantages. According to current data from TAV Airports, İzmir's international airport facilitates flights to 64 airports in 36 foreign countries and to 21 domestic airports within Türkiye (TAV, 2023).

There are 16 ports operating in İzmir (İZKA, 2021a). The ports in İzmir Region serve key hubs in its hinterland, including Manisa, Denizli, Aydın, Muğla, Bursa, Uşak and Kütahya, which are prominent for agriculture, industrial production, mineral resources and mineral processing capacities. The economic dynamics of İzmir Region and its hinterland establish İzmir as one of Türkiye's key logistics centers (İZKA, 2021a).

Due to its rich geographic and cultural heritage, favorable climate, and natural beauty, İzmir has historically been a consistent attraction center. As of June 2023, İzmir had 278 licensed accommodation facilities with 20,870 rooms and 42,968 beds. İzmir ranks fourth in the number of licensed accommodation facilities, following Antalya, İstanbul and Muğla. In terms of environmentally friendly establishments, İzmir hosts 28 facilities with 5,453 rooms and 11,349 beds, also ranking fourth after Antalya, İstanbul and Muğla (Ministry of Culture and Tourism, 2023).

According to the Turkish Banks Association (TBB), İzmir had 660 bank branches in 2022. In terms of indicators such as deposit volume, bank loans, savings deposit ratio, number of bank employees, and number of branches, İzmir follows İstanbul and Ankara. İzmir's share of Türkiye's total number of bank employees is 5.3%, compared to 8.8% in Ankara and 45.0% in İstanbul (TBB, 2022).

Exports, imports, and overall trade volume are effective variables for analyzing regional performance and understanding economic dynamics accurately. İzmir's proximity to the EU, combined with its high-capital transportation infrastructure, facilitates the integration of regional and national production into global markets, thereby providing the opportunity for increasing trade volume. In 2022, İzmir accounted for 6.5% of Türkiye's total exports, representing 61.7% of the Aegean Region's exports. Similarly, İzmir's share of Türkiye's total imports in 2022 was 3.75%, which accounted for 65.5% of the Aegean Region's imports (TURKSTAT, 2022h).

In the global economy, metropolitan regions where economic components such as population, capital and workforce accumulate and concentrate are defined as focal points of economic activity that enhance national welfare and enable competition with other countries. The roles that metropolitan areas like İzmir can assume in generating prosperity underscore their increasing importance in national development processes. In this context, economic organizations such as the OECD, World Bank and European Union conduct comparative studies on global cities and metropolitan regions.

In the most recent such study, the OECD's Regional Explorer dataset analyzed 461 metropolitan regions. In 2020, İzmir ranked 219th among these regions, with a per capita GDP of 32,956 USD¹. According to the growth index data published in the same database, İzmir achieved 142% growth in per capita GDP (USD), making it the 45th fastest-growing region. In terms of population size among the 461 regions, İzmir ranked 78th (OECD, 2022b).

1 The report uses "dollar" or "\$" to indicate currency throughout.

B. Development Plan and National Strategies in İzmir

Towards the aim of steering Türkiye's development and progress in becoming a high-income country with the highest level of human development, five-year development plans are prepared. The Eleventh Development Plan was drafted to guide Türkiye's development for the 2019-2023 period (Presidency of Strategy and Budget, 2019). Another strategic instrument influencing the economic and social levels of Türkiye's regions is sectoral strategy documents. These documents, prepared in alignment with development plans, serve to detail and diversify the general framework and axes outlined in the development plans.

The Eleventh Development Plan and sectoral strategy documents assign significant roles to İzmir, Türkiye's third most capital-intensive region, and include strategies aimed at enhancing the region's technological assets. Among these strategies (Article 371.2 of the Eleventh Development Plan) are the establishment of a Specialized Electronics and Communication Technology Development Zone (TDZ) in three major regions (either by transforming an existing TDZ or creating a new one), cluster development support, and the establishment of electronic test and analysis laboratories. Considering the global trend of regions developing Industry 4.0 and 5.0 adaptation strategies, it is critically important to harness the potential to bolster İzmir's technological assets and innovation capacities for the benefit of the region (Presidency of Strategy and Budget, 2019).

In line with the objectives set forth in the Eleventh Development Plan, the Türkiye Industrial Strategy document was prepared to direct the development of the industrial sector and its related components and ecosystems. The Türkiye Industrial Strategy (Türkiye Sanayi Stratejisi - TSS) document aims to increase the industrial sector's share in GDP to 21% by 2023, raise the value added per worker in the industrial sector to \$35,000, increase the share of medium-high and high-tech products in manufacturing industry exports to 44.2% and 5.8%, respectively, and raise R&D expenditures as a percentage of GDP to 1.8%. Additionally, it aims to increase the number of R&D personnel to over 300,000, the number of researchers to 200,000, and the number of software developers to 500,000. The Strategic Plan of the Ministry of Industry and Technology for 2020-2024 targets the establishment of "Innovation Centers" in İzmir Region, funded by public investment support and EU funds (Measure 322.4), and the creation of a support mechanism to replace inefficient electric motors used in the industrial sector with efficient ones.

An Informatics Valley was established in İzmir Region to unite technology firms under one umbrella.

Another strategic role emphasized in the Eleventh Development Plan and assigned to İzmir Region pertains to the role of human capital in regional growth processes. Regions with higher-quality human capital are better able to adopt and use new and advanced technologies, adapt to complex information more quickly, and gain relative advantages in competitive environments. Within this scope, the Eleventh Development Plan includes the objective of addressing the need for a skilled workforce in the automotive industry in İzmir Region by opening automotive industry vocational high schools and vocational colleges and enhancing the capacities of existing educational institutions (Article 383.2 of the Eleventh Development Plan) (Presidency of Strategy and Budget, 2019).

Currently, there are automotive associate degree programs in İzmir Region, but an automotive vocational high school has yet to be established.

Large-scale infrastructure projects are critical in regional development processes. These projects enable faster capital movement and transform regions into attraction points for domestic and foreign investments. Several infrastructure and superstructure projects were planned for completion during the Eleventh Development Plan period, through the public-private partnership (PPP) model (Presidency of Strategy and Budget, 2019).

In addition to completed projects such as the İstanbul-İzmir Motorway, Menemen-Aliğa-Çandarlı Motorway, and Aydın-Denizli Motorway, also the City Hospital and Çeşme Airport projects are planned to be completed within the Eleventh Development Plan period.

Towards the aim of guiding the tourism sector, the Türkiye Tourism Strategy was prepared in alignment with the Ninth Development Plan (State Planning Organization, 2006; Ministry of Culture and Tourism, 2007). The tourism sector is a significant and strategic sector in national development processes, contributing substantially to regional growth and development. Türkiye Tourism Strategy aims to rehabilitate marinas in İzmir Region and develop them to accommodate mega yachts, thereby increasing Türkiye's share in yacht tourism. The initiation of a city tourism project in İzmir Region has also been targeted. Another major transformation envisioned for İzmir Region under the Türkiye Tourism Strategy involves renovating and expanding cruise ship ports. Developing thermal tourism, congress tourism and exposition activities in İzmir Region are among the goals included under the Türkiye Tourism Strategy.

The National Strategy for Regional Development (BGUS) is being prepared to establish and strengthen the spatial building blocks of national development policies, enhance alignment between spatial development and socio-economic development policies, provide a holistic perspective to regional development efforts to increase their effectiveness, establish a general policy framework for sub-scale (regional and provincial) plans and strategies, and foster collaboration among institutions active in regional development, local administrations, universities, the private sector and civil society organizations while increasing participation in decision-making processes. In the BGUS study prepared within this framework covering the years 2024-2028, İzmir has been classified among "potential global cities." The document highlights İzmir's advanced production structures and its traditional role as a commercial hub. Furthermore, it aims to strengthen urban service quality, educational and social opportunities to attract qualified employment, urban infrastructure, disaster resilience, social inclusion and poverty alleviation, as well as access to quality industrial zones, investment competitiveness and entrepreneurial financing in İzmir and other potential global cities.

C. The Role of the Region within the Framework of National Developments

The analysis of the existing capacities of regions is crucial for the development of strategies and objectives that can guide regional development and growth processes with optimal efficiency. Thus, it is necessary to examine the sectoral portfolios and economic restructuring processes of regions with a dynamic (evolutionary) approach. Such an evolutionary and dynamic approach is solely possible by analyzing the investment decisions that shape the economic patterns of regions.

One of the significant components of Türkiye's rapid economic growth post-2000 has been large-scale and integrated infrastructure and energy projects realized through public-private partnerships, where the capital cycle is relatively fast. Although projects have been developed under three different approaches—build-operate-transfer (BOT), build-lease-transfer, and build-operate—the most common form of public-private partnerships has been and continues to be the BOT model. As one of the main instruments accelerating Türkiye's economic leap, this model has been employed for large-scale projects such as bridges, airports, city hospitals and undersea crossings connecting continents. The BOT model is preferred as it distributes factors such as risk and cost between public and private sectors. According to the report Emerging Real Estate Investment Areas in Türkiye by PricewaterhouseCoopers (PwC), 254 BOT projects with an estimated value of \$146.2 billion were initiated between 1990 and 2020 (PwC, 2022).

Projects implemented under the BOT model that are to accelerate national and

regional capital cycles, capital accumulation, and capital concentration, while stimulating the development and spread of new economic activities, include the 1915 Çanakkale Bridge, Canal İstanbul, İstanbul-İzmir Motorway, Osmangazi Bridge, Northern Aegean Motorway, Galataport İstanbul, İstanbul International Financial Center, Tersane İstanbul (Haliçport), İzmir Peninsula, İzmir Informatics Valley, İzmir-Ankara High-Speed Train Line, and city hospital projects in various provinces.

The infrastructure, superstructure and energy investments that dominate the country's economic growth also shape the economic future of İzmir Region. Major investments that are expected to increase the capital intensity of İzmir Region and activate local economic dynamics can be summarized as the Ankara-İzmir High-Speed Railway, Northern Aegean Motorway, İzmir Peninsula Project, İzmir City Hospital, İzmir Informatics Valley, Çeşme Tourism Project, Dikili Agriculture-Based Specialized Organized Industrial Zone, and wind and solar energy projects.

The Ankara-İzmir High-Speed Railway is a strategic national transportation project being developed to facilitate passenger, freight and capital flows between Ankara, Türkiye's capital, and İzmir, the country's third-largest metropolis by population. The project aims to increase both the volume and speed of passenger, product and capital flows within İzmir Region and its hinterland.

Another critical project shaping İzmir's future is the İzmir Technology Base within İzmir Informatics Valley (Informatics Valley, 2022). Established to foster collaboration among the public sector, universities, industry and civil society, İzmir Informatics Valley will span 180,000 square meters of open space and 63,000 square meters of covered space when completed. It is projected to employ 6,000 researchers and host firms specializing in mobility, advanced technologies, smart cities, cybersecurity, design and digital gaming.

The Northern Aegean Motorway, one of the large-scale infrastructure projects, is a 76-kilometer motorway with 2x3 lanes that connects Menemen, where İzmir's Ring Road terminates, to Bergama, located at İzmir's border with Balıkesir. It reduces the distance between Çeşme and Bergama, (216 kilometers), to an average journey of 90 minutes. The Northern Aegean Motorway features Türkiye's only archaeological site bridge. Another infrastructure project is the İstanbul-İzmir Motorway, referred to as Motorway 5. This motorway, which includes the mega-project Osmangazi Bridge, has reduced travel time between İzmir and İstanbul to an average of 3.5 hours. The length of the motorway up to Osmangazi Bridge is 407 kilometers.

Foreign investments in İzmir are increasing, as evidenced by its selection as the fifth city in Europe for foreign investment strategy by FDI Intelligence (2022). Investments are primarily concentrated in the energy, healthcare and technology sectors. In 2021, three of the 40 energy agreements executed in Türkiye involved energy facilities operating within İzmir (PwC, 2021). Another project shaping İzmir's future is the Urla-Karaburun Peninsula Project, which encompasses development strategies aimed at revitalizing the natural, cultural, and historical heritage of the Urla-Karaburun Peninsula, a region with significant potential.

D. Urban and Rural Settlement Systems and Influence Areas

D.1. Urban Settlement Hierarchy and Urban Influence Areas

The Urban and Rural Settlement Systems Research (YER-SİS) project conducted by the Ministry of Industry and Technology aimed to reveal the current structure of settlement systems in Türkiye. This project examined the socioeconomic relations among settlements nationwide, the service capacities of settlement centers, their impact zones, and the socioeconomic structures of rural areas. Surveys based on extensive datasets were conducted for each region as part of this study. Regions were evaluated in terms of education, healthcare, transportation and commerce, with scoring applied for each indicator to identify rural and urban service centers. These service centers were then graded based on service

scores to determine their regional impact zones. When the urban settlement hierarchy in Türkiye is examined, İzmir Region ranks third after İstanbul and Ankara, with a hierarchy score of 0.4383. According to the YER-SİS study, the settlement category of İzmir Region is classified as 6B (Figure 1.1-A, Table 1.4). In the YER-SİS study, a geographical unit is defined as a “settlement,” describing a physical “whole.” The physical counterpart of this whole is the city blot or the city macroform. In other words, the settlement of İzmir is considered as the entirety of district centers forming a spatial unity. Apart from Ankara and İzmir, there are no other settlements categorized as sixth-tier settlements in Türkiye. Following İzmir, the 5A tier settlements include Bursa, Adana, Konya and Antalya, while the 5B tier includes Kocaeli and Denizli (Table 1.4).

TABLE 1.4. YER-SİS Settlement Hierarchy of İzmir and Other Provinces

Region Code	Region Name	Hierarchy Level	Hierarchy Score
TR100	İstanbul	7	1
TR510	Ankara	6A	0.6592
TR310	İzmir	6B	0.4383
TR411	Bursa	5A	0.3362
TR621	Adana	5A	0.2923
TR521	Konya	5A	0.2882
TR611	Antalya	5A	0.288
TR421	Kocaeli	5B	0.2329
TR322	Denizli	5B	0.2235
TR331	Manisa	4A	0.1926
TR333	Kütahya	4B	0.1629
TR321	Aydın	4B	0.1597
TR221	Balıkesir	4B	0.151
TR334	Uşak	4B	0.1506
TR323	Muğla	4B	0.1262

Source: General Directorate of Development Agencies, 2020

When the upper-tier settlements to which the settlements are connected for services are analyzed, it is observed that three provincial centers—Manisa (4A), Aydın (4B) and Uşak (4B)—and a total of 20 district centers are directly connected to İzmir. Additionally, 36 settlements are indirectly connected to İzmir through intermediate-tier settlements. In total, including the three provincial centers, 56 settlements primarily receive services from İzmir as the upper-tier settlement (Figures 1.1-B, 1.1-C, and 1.2). This highlights İzmir’s role as a regional center of national significance. Notably, İzmir itself is connected to the top-tier settlement, İstanbul (Figure 1.1-B).

Within the boundaries of İzmir province, there are three third-tier settlements: Aliağa (3A), Kemalpaşa (3B), and Torbalı (3B), which, in addition to serving as employment and production centers, also provide commercial services to surrounding settlements (Table 1.5). However, their provision of education, healthcare, transportation and communication services to nearby settlements is quite limited. These services are primarily offered by İzmir, the 6B central settlement. Aliağa and Kemalpaşa are in the fourth tier for the “commerce” category but rank no higher than the second tier in higher education, secondary education, healthcare, cargo, transportation and communication categories. Torbalı, like Aliağa and Kemalpaşa, is

in the fourth tier for “commerce” but also ranks in the third tier for secondary education and healthcare, significantly serving surrounding settlements in these areas. Similarly, Çeşme and Tire are in the third tier for “secondary education” and provide educational services to nearby settlements (Table 1.5).

The settlements of Beydağ and Karaburun within İzmir province are classified as tier 1B, the lowest tier, in the YER-SIS hierarchy. This indicates that these two settlements serve surrounding areas only as a rural center in which they are ranked at high-tier. In fact, these settlements are in a “transition” tier between rural and urban areas according to the YER-SIS classification. Following these are Kınık and Kiraz settlements, classified as tier 1A. These two settlements also offer limited services to their surroundings (Table 1.5).

TABLE 1.5. Service Centers and Hierarchy of Component Categories in İzmir Districts

District	Urban Service Degree (.../7)	Urban Service Center Score	Higher Education (.../6)	Secondary Education (.../7)	Health-care (.../7)	Commerce between Workplaces (.../7)	Cargo (.../5)	Transportation (.../7)	Communication (.../6)
Aliağa	3A	0.1011	1	2	2	4	2	1	2
Bayındır	2B	0.0324	1	2	1	1	1	1	1
Bergama	2A	0.0633	2	2	2	2	1	1	2
Beydağ	1B	0.0065	-	1	1	1	-	1	1
Çeşme	2A	0.0483	1	3	2	2	1	1	2
Dikili	2B	0.0301	-	1	2	1	1	1	2
Foça	2B	0.0284	1	1	2	1	1	-	1
Karaburun	1B	0.0128	-	1	1	1	1	-	1
Kemalpaşa	3B	0.0757	-	2	2	4	2	-	2
Kınık	1A	0.0137	-	1	1	1	1	1	1
Kiraz	1A	0.0203	-	1	1	1	1	1	1
Menderes	2A	0.0477	-	2	1	2	2	1	2
Center	6B	0.4383	5	5	6	5	4	5	5
Ödemiş	2A	0.0548	1	2	2	2	2	1	2
Seferihisar	2B	0.0375	1	1	2	1	1	1	2
Selçuk	2A	0.0421	1	2	2	1	1	1	1
Tire	2A	0.0586	1	3	2	2	1	1	2
Torbalı	3A	0.1158	1	3	3	4	2	2	2
Urla	2A	0.0614	2	2	2	2	2	1	2

Source: General Directorate of Development Agencies, 2020

The database and interface developed for the YER-SIS study, incorporating data on goods and service flows in various areas, allow for examining the interrelations between urban and rural settlements. This enables the identification of service areas—or hinterlands—by applying constraints such as distance, proximity and/or minimum service reception thresholds where necessary. The service areas obtained for all settlements within İzmir province boundaries, without applying distance or proximity constraints, are shown in Figure 1.3. To be included in a settlement's service area, a settlement must receive at least 1% of its total services from the mentioned settlement, while for İzmir (central settlement), this threshold is set at 5%.

Figure 1.3-A depicts the service area of İzmir settlement. Although parts of Central Anatolian settlements like Niğde or Eastern and Southeastern Anatolian settlements such as Bingöl Kığı and Mardin Ömerli receive more than 5% of their total services from İzmir, thus appearing to place them within İzmir's service area, it is evident that İzmir's service area is largely limited to the western part of Türkiye. The boundaries of this area are defined by Çanakkale in the north, Fethiye in the south, and Dumluşınar in the east (Figure 1.3-A).

Upon examining Figure 1.3, it is noted that, apart from İzmir center, two other settlements—Aliağa and Kemalpaşa—extend their service areas beyond the provincial boundaries despite not being in close proximity to the borders (Figures 1.3-B and 1.3-J). This is a result of the production and trade activities associated with these settlements.

Other settlements within İzmir province whose service areas extend beyond provincial boundaries include Bergama (Figure 1.3-D), Dikili (Figure 1.3-G), Kınık (Figure 1.3-K), Kiraz (Figure 1.3-L), Selçuk (Figure 1.3-M), Ödemiş (Figure 1.3-N), and Tire (Figure 1.3-O). This can be attributed to their proximity to the provincial border and their interactions with neighboring settlements located within adjacent provinces.

Among the settlements within İzmir province, İzmir center (Figure 1.3-A), Çeşme (Figure 1.3-F), Dikili (Figure 1.3-G), Kemalpaşa (Figure 1.3-J) and Urla (Figure 1.3-R) include all neighboring settlements within their service areas. This indicates that these settlements meet at least 1% of the service needs of all neighboring settlements.

As expected, İzmir (center) is the settlement with the highest number of urban settlements within its service area, encompassing 68 urban settlements within the region (Figure 1.3-A). Following İzmir are Aliağa with 10 settlements (Figure 1.3-B), Bergama and Tire with seven settlements each (Figures 1.3-D and 1.3-O), Kemalpaşa with six settlements (Figure 1.3-J), and Selçuk and Ödemiş with five settlements each (Figures 1.3-M and 1.3-N).

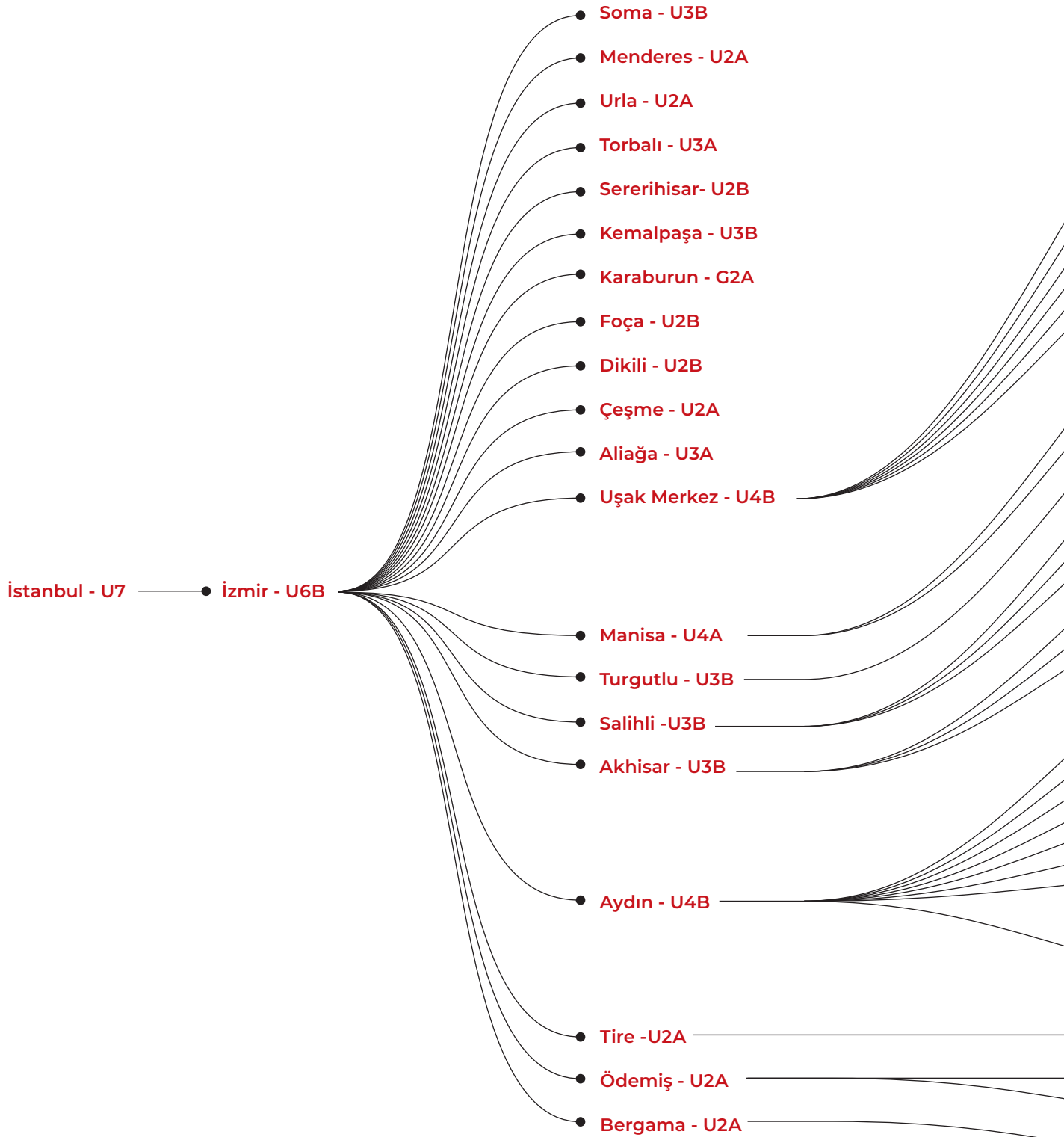
In terms of settlements within the region, Karaburun has the most limited service area, encompassing only one settlement (Figure 1.3-I). As classified in YER-SIS, Karaburun is in the 1B tier, corresponding to the urban-rural intermediate (transition) tier. Beydağ (Figure 1.3-E), Foça (Figure 1.3-H), and Kınık (Figure 1.3-K) each include two settlements within their urban service areas.

FIGURE 1.1. (A) İzmir Region and Settlements within İzmir Region's Sphere of Influence within Türkiye's Central Hierarchy, (B) Regions Based on Influence Areas in Türkiye's Urban Hierarchy – Settlements' Top Primary Relationships, (C) Regions Based on Influence Areas in Aegean Region's Urban Hierarchy – Settlements' Top Primary Relationships



Source: General Directorate of Development Agencies, 2020

FIGURE 1.2. İzmir Region and Settlements within İzmir Region's Sphere of Influence in Türkiye's Central Hierarchy



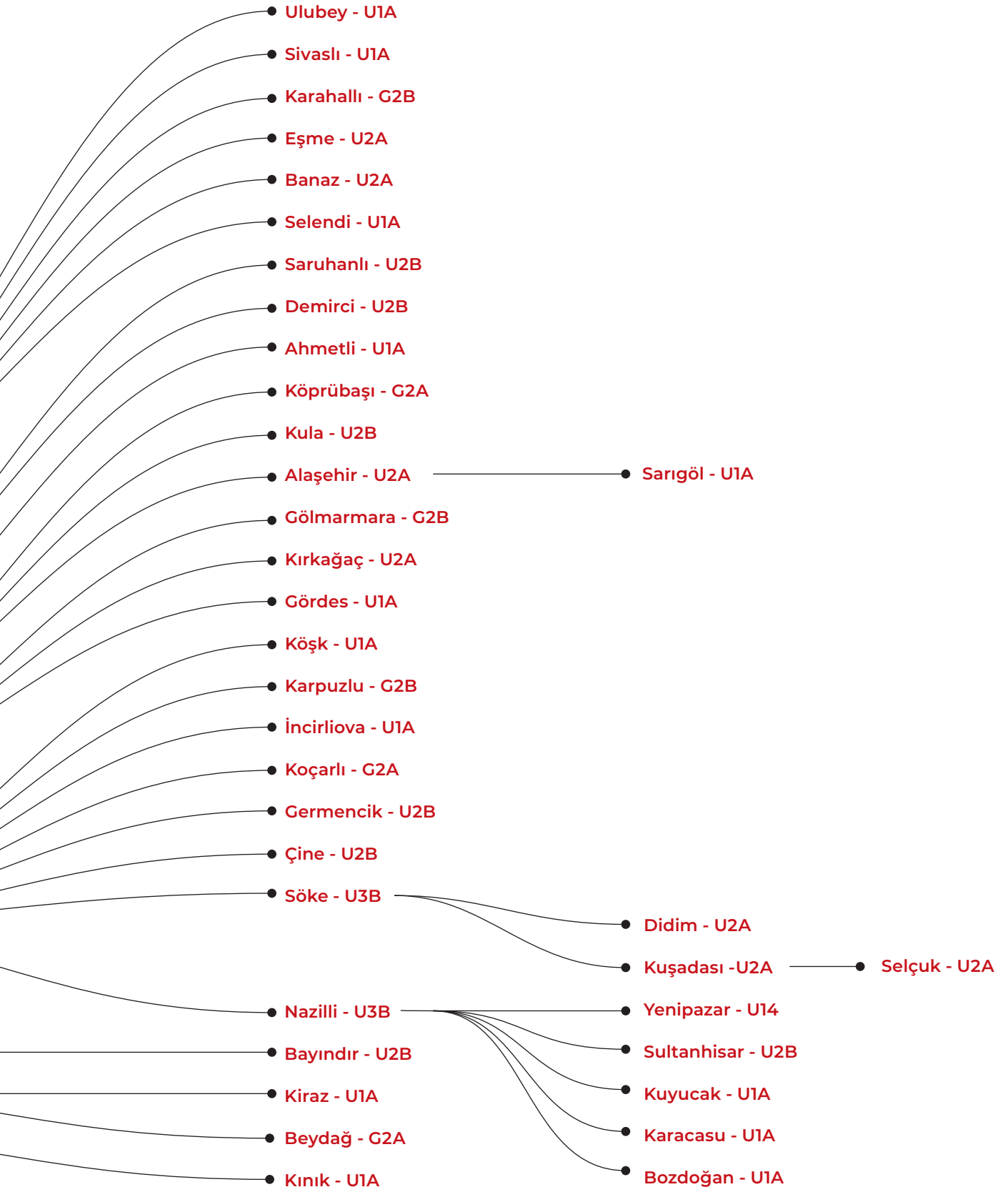
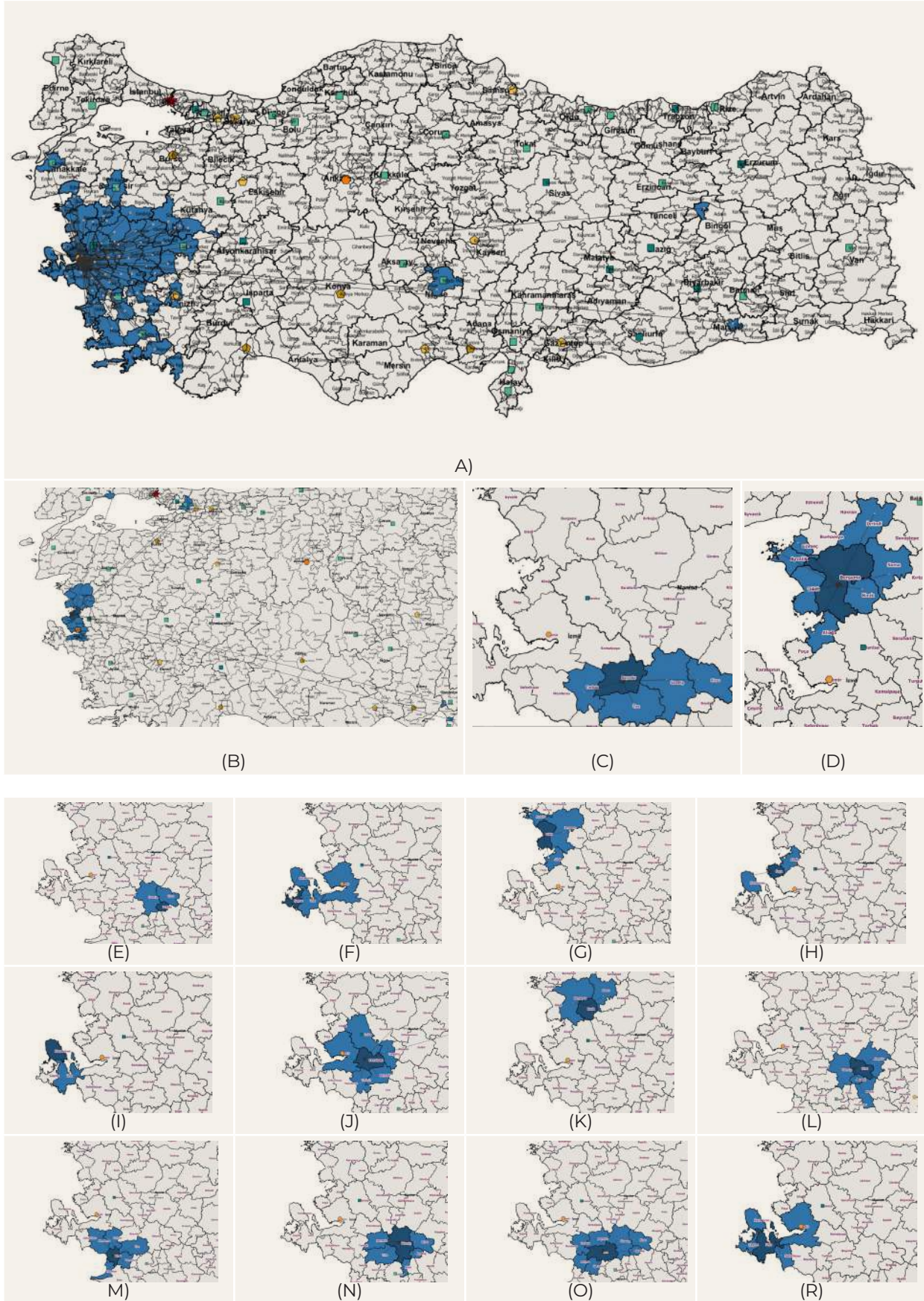


FIGURE 1.3. Service Areas of İzmir Districts

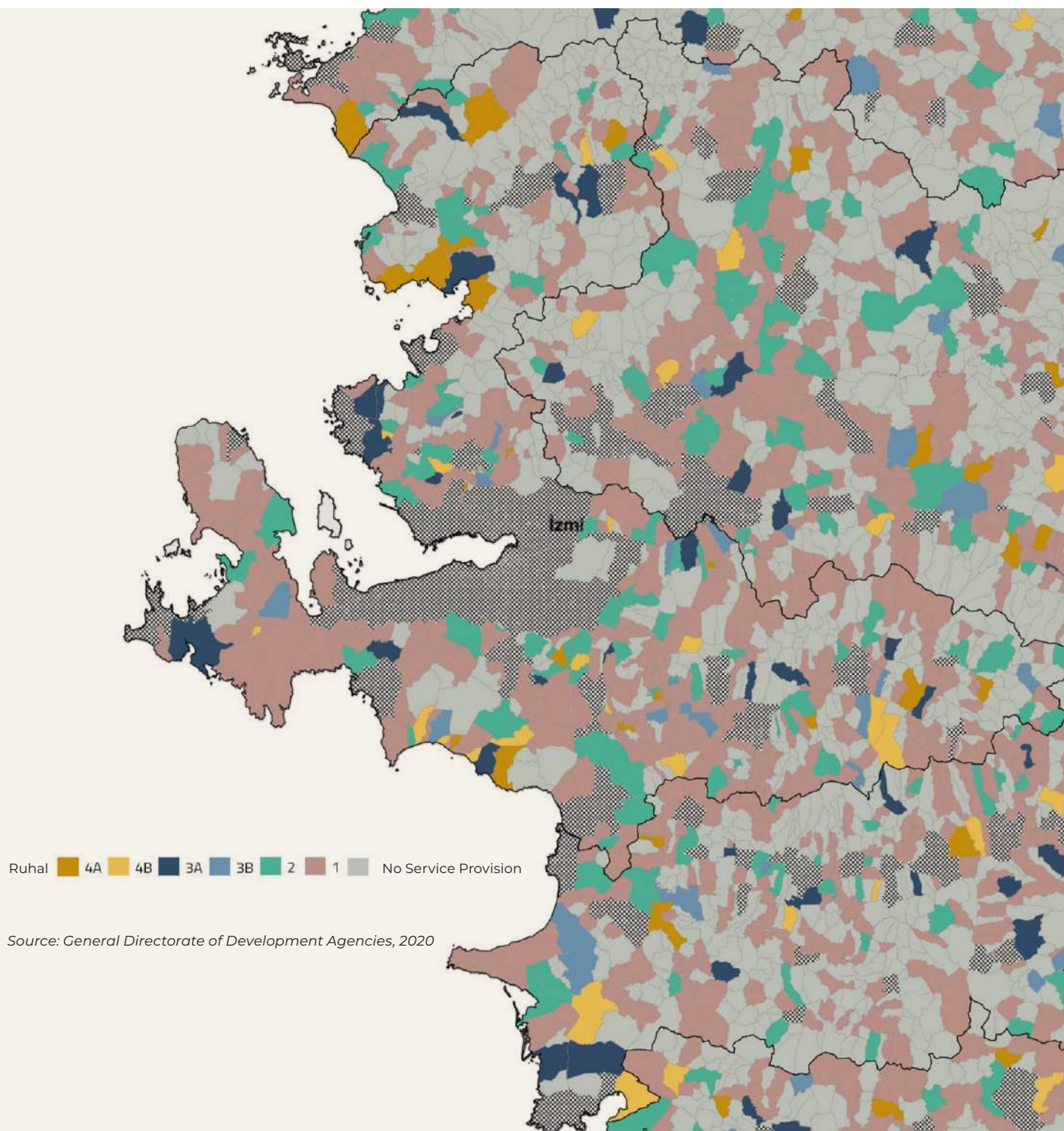
A – İzmir Center, B – Aliağa, C – Bayındır, D – Bergama, E – Beydağ, F – Çeşme, G – Dikili, H – Foça, I – Karaburun, J – Kemalpaşa, K – Kınık, L – Kiraz, M – Selçuk, N – Ödemiş, O – Tire, R – Urla

Source: General Directorate of Development Agencies, 2020

D.2. Rural Settlement Hierarchy and Influence Areas

According to the YER-SİS classification, which aims to define the current settlement system and inter-settlement relations in Türkiye within the framework of new dynamics, there are a total of 718 rural settlements within İzmir Region. Of these 718 settlements, 310 (43.2%) do not provide any services in education, health, commerce, workforce mobility or transportation to any other settlement apart from themselves (Table 1.6). These settlements are predominantly rural areas located in the north and east of İzmir province, where agricultural activities are heavily concentrated (Figure 1.4). Furthermore, 266 of these settlements (30%) provide very limited services to surrounding rural settlements and are classified under Tier 1 according to the YER-SİS rural hierarchy. Settlements classified as Tier 2 are generally located in the southern and western parts of İzmir province, where agricultural activities are also prominent, or where the natural environment is preserved (Figure 1.4).

FIGURE 1.4. Hierarchical Classification of Rural Service Centers



Source: General Directorate of Development Agencies, 2020

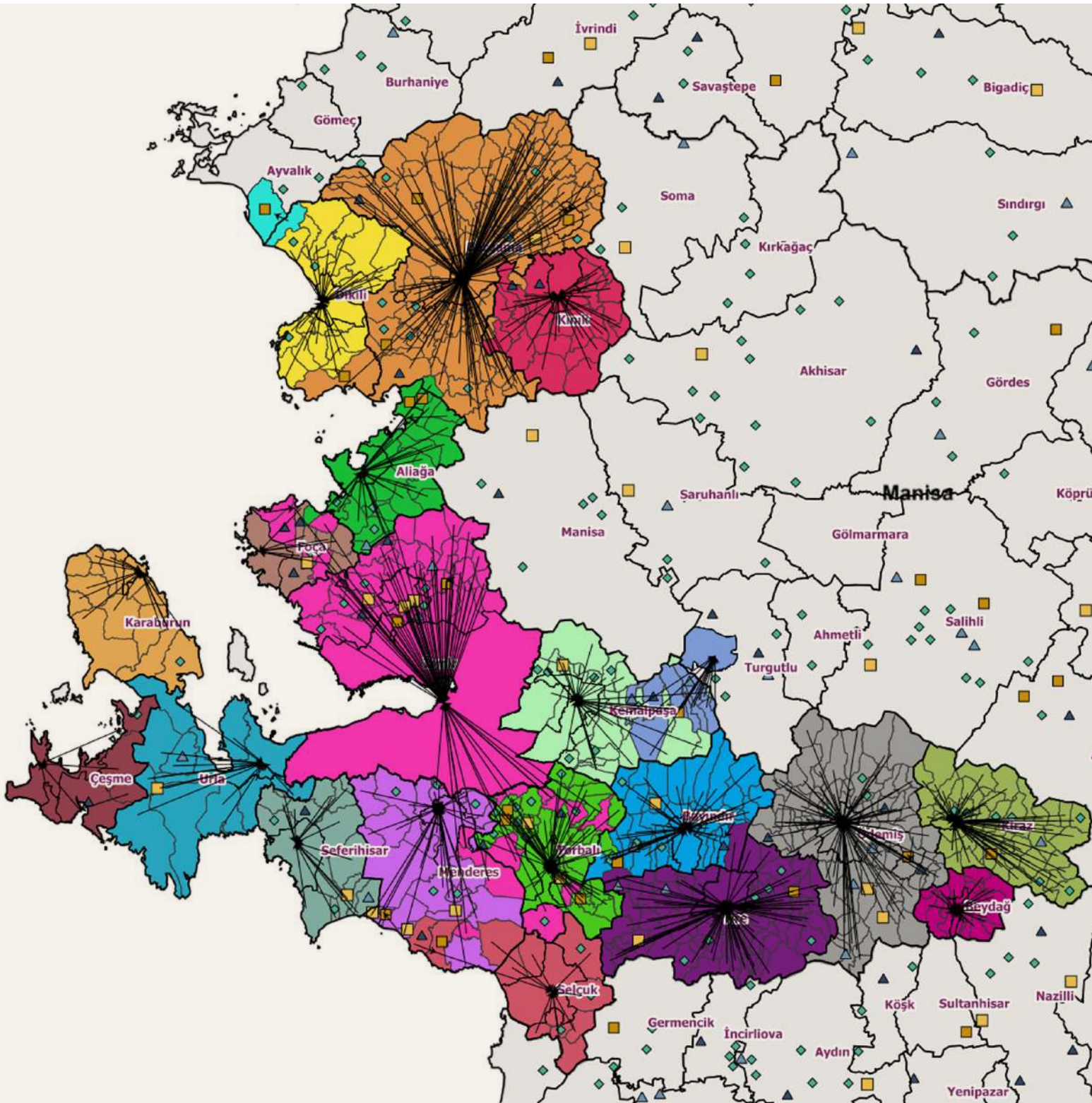
TABLE 1.6. Number of Rural Settlements in İzmir Districts by Rural Hierarchy Tiers

District	1	2	3A	3B	4A	4B	Non-Service Providing	Total
Aliağa	6	3	-	1	2	-	11	23
Bayındır	17	6	1	1	1	1	18	45
Bergama	31	9	2	-	3	1	73	119
Beydağ	10	-	-	-	-	-	11	21
Çeşme	2	1	1	-	-	-	1	5
Dikili	8	3	-	-	1	-	14	26
Foça	4	1	3	-	-	1	4	13
Karaburun	7	1	-	-	-	-	6	14
Kemalpaşa	15	8	1	2	1	1	17	45
Kınık	10	-	2	-	-	-	19	31
Kiraz	13	7	-	1	1	-	30	52
Menderes	12	5	1	-	2	3	11	34
Menemen	21	6	2	2	2	3	15	51
Ödemiş	29	3	3	3	1	2	42	83
Seferihisar	8	2	1	1	-	1	2	15
Selçuk	6	3	-	-	-	-	-	9
Tire	32	6	-	2	1	1	24	66
Torbalı	22	10	2	-	3	2	12	51
Urla	13	-	-	1	-	1	-	15
Total	266	74	19	14	18	17	310	718

Source: General Directorate of Development Agencies, 2020

Table 1.6 reveals that there are a total of 33 third-tier rural settlements within the İzmir province, of which 14 belong to the lower 3B tier, and 19 belong to the higher 3A tier. Among these, six third-tier rural settlements are located in the Ödemiş district. Ödemiş is followed by Menemen, which has four third-tier rural settlements, and Foça and Kemalpaşa, each with three third-tier settlements. It is observed that 3A and 3B tier settlements are evenly distributed across İzmir province (Figure 1.4).

There are a total of 35 fourth-tier rural settlements in İzmir province (Table 1.6). Considering that there are 480 fourth-tier rural settlement centers across Türkiye, İzmir is remarkably rich in high-tier rural settlements. In fact, 7.3% of Türkiye's fourth-tier rural settlements are located within İzmir province. This is attributed to the region's fertile agricultural lands and agricultural production activities that retain the rural population. Additionally, some of these rural settlements are primarily focused on tourism activities.

FIGURE 1.5. Integrated Rural Service Centers and Their Influence Areas

Source: General Directorate of Development Agencies, 2020

Among the 18 settlements categorized as 4A within İzmir province—defined as rural-to-urban transition categories under YER-SİS—İnönü (Torbalı) stands out as the settlement with the largest service capacity. Following İnönü are Emiralem Center (Menemen), Subaşı (Torbalı), Yenişakran (Aliğa), Gökçen (Tire), Çırpı Cami (Bayındır), Kaymakçı (Ödemiş), Göçbeyli (Bergama), Ayrancılar (Torbalı), Özdere Cumhuriyet

(Menderes), Aşağışakran (Aliağa), Yukarıbey (Bergama), 30 Ağustos (Menemen), Çandarlı (Dikili), Yenikent (Bergama), Haliller (Kiraz), Kazımpaşa (Kemalpaşa) and Gümüldür Fevzi Çakmak (Menderes).

It is notable that Torbalı and Bergama districts each host three 4A-tier rural settlements, while Aliağa, Kiraz, and Menemen each have two such settlements. When examining 4B-tier rural settlements, the districts of Menderes and Menemen are observed to have three each, while Ödemiş and Torbalı each have two (Table 1.6). The spatial distribution of 4A and 4B-tier settlement centers indicates a homogeneous distribution across the province except for the western parts, where Uzunkuyu (Urla) is the only settlement of this tier (Figure 1.4).

When examining the integrated rural service centers formed by weighted averages of services received by all rural settlements within İzmir province, it is evident that these rural centers are predominantly linked to the district centers to which they are administratively attached (Figure 1.5).

E. SEGE Rankings

When analyzing the socio-economic development index values of districts within İzmir Region, it is observed that in 2004 İzmir's districts ranked between 5th and 644th in the overall ranking. This range evolved to between 6th and 623rd in the 2017 SEGE study and further to between 11th and 715th in the 2022 SEGE study. It is noted that both the most developed districts and the relatively less developed districts within İzmir have experienced a decline in their levels of development. This finding reveals that although İzmir Region has consistently remained Türkiye's third most developed region over the years, some constituent parts of the region have seen regressions. Considering the increase in the number of districts in Türkiye, these findings underscore the importance of the regional plan developing strategies to stimulate the economic and social dynamics of the districts.

When examining changes in SEGE rankings among districts, it is observed that Aliağa ranked 5th in 2004 but fell to 54th in 2017 and further to 105th in 2022. Similarly, Çeşme, which ranked 19th in 2004, declined to 22nd in 2017 and to 45th in 2022. A downward trend in rankings during the 2017–2022 period is also observed in many districts of İzmir. Among the districts that improved their rankings are Karşıyaka, Urla, Narlıdere, and Güzelbahçe² (Table 1.7).

2 There are differences in the calculation methods used in SEGE studies.

TABLE 1.7. Socio-Economic Development Rankings of İzmir's Districts (2004, 2017, and 2022)

District	2004			2017				2022			
	Overall Ranking	Score	Tier	Overall Ranking	Provincial Ranking	Score	Tier	Overall Ranking	Provincial Ranking	Score	Tier
Balçova	-	-	-	12	2	2.781	1	18	3	2.902	1
Bayındır	392	-0.128	3	477	28	-0.18	4	503	28	-0.304	4
Bayraklı	-	-	-	92	11	1.306	2	92	11	1.322	2
Bergama	180	0.521	3	209	25	0.618	2	241	25	0.379	3
Beydağ	450	-0.222	3	562	29	-0.331	4	618	29	-0.481	4
Bornova	-	-	-	20	3	2.551	1	17	2	3.028	1
Buca	-	-	-	121	14	1.093	2	99	12	1.227	2
Çeşme	19	2.692	2	22	4	2.38	1	45	7	1.998	1
Çiğli	-	-	-	43	5	1.898	1	41	5	2.046	1
Dikili	130	0.878	2	182	23	0.765	2	200	23	0.609	2
Foça	79	1.273	2	115	13	1.13	2	154	19	0.844	2
Gazimür	-	-	-	45	7	1.894	1	43	6	2.031	1
Güzelbahçe	-	-	-	77	9	1.459	2	52	8	1.882	1
Karabağlar	-	-	-	133	16	0.996	2	120	14	1.078	2
Karaburun	-	-	-	172	20	0.844	2	186	22	0.676	2
Karşıyaka	-	-	-	44	6	1.896	1	37	4	2.222	1
Kemalpaşa	62	1.498	2	153	18	0.935	2	133	15	0.983	2
Kınık	418	-0.175	3	417	27	-0.086	3	493	27	-0.297	4
Kiraz	644	-0.585	4	623	30	-0.427	4	715	30	-0.599	5
Konak	-	-	-	6	1	3.582	1	11	1	3.465	1
Menderes	-	-	-	181	22	0.769	2	145	18	0.903	2
Menemen	142	0.764	2	178	21	0.815	2	156	20	0.838	2
Narlıdere	-	-	-	80	10	1.419	2	67	10	1.632	1
Ödemiş	199	0.445	3	236	26	0.477	3	250	26	0.336	3
Seferihisar	61	1.508	3	130	15	1.005	2	139	17	0.924	2
Selçuk	61	1.337	2	146	17	0.954	2	178	21	0.690	2
Tire	75	0.580	2	192	24	0.689	2	221	24	0.500	2
Torbalı	54	1.689	3	156	19	0.922	2	138	16	0.927	2
Urla	43	1.892	2	93	12	1.295	2	59	9	1.768	1

Source: SPO (State Planning Organization), 2004; Ministry of Industry and Technology, 2022a

F. Evaluation

Situated at the heart of Western Anatolia and the Aegean Region, İzmir, Türkiye's third-largest city, has been a focal point of production and commerce throughout the ages. When analyzing the upper-tier settlements to which settlements are connected for services and utilities, it is seen that İzmir serves as the upper-tier settlement for a total of 56 settlements, including three provincial centers (Manisa, Aydın and Uşak), 20 district centers directly, and 36 settlements indirectly. This solidifies İzmir's position as an indisputable regional center on a national scale. With the advantages of being a port city due to its physical geography, its diverse economic activities, highly skilled workforce, fertile agricultural lands, mild climate, proximity to transportation networks, cultural diversity, rich history, and its potential to attract and host a high-quality workforce, İzmir Region stands out as one of the most livable and investable metropolitan areas in the world.

Reports published by international ranking and rating organizations reveal that İzmir Region is often underrepresented. This is frequently attributed to the absence of the region or city of İzmir from the list of evaluated regions or cities. Ensuring that İzmir is included in more evaluations and achieving high rankings in these assessments would serve as a significant motivation for regional development. In the current global economic and cultural context, where quality surpasses size and value prevails over quantity, achieving higher development values in areas such as tourism, agriculture, education and technology—which directly contribute to development and employment—than the development rates of Türkiye and the world is both feasible and achievable for İzmir Region. However, this requires coordinated efforts by all institutions and organizations within a shared framework of goals.

The completion of investments currently under planning and/or construction in motorways, high-speed rail, air transport, and maritime transport, expected to be finalized in the short and medium term, will significantly contribute to maintaining this momentum. The completion of investments that will enhance R&D activities and university-industry collaboration in the region is also essential for this process. However, all growth processes bring intersectoral tensions. For instance, the rapid growth trend of the industrial sector exerts significant pressure on agricultural lands. Similarly, industrial areas with polluting characteristics and energy investments also have the potential to create intersectoral tensions due to their proximity to tourism and distinctive natural and historical areas.

Developing and resolutely implementing growth and development strategies that consider the priorities and vulnerabilities of all sectors, avoid assumptions of one sector's superiority over another, involve all institutions, organizations and local actors in the process, and uphold the principle of preserving and enriching cultural and historical values for future generations will ensure the achievement of set goals and elevate İzmir to higher rankings in Türkiye and the world in every field.

2. ECONOMIC STRUCTURE

In the 2011 Global MetroMonitor report, İzmir was identified as the fourth metropolitan region with the highest economic performance globally for the 2010–2011 period, based on an index calculated using per capita GDP and employment data. However, the rankings in the 2018 report show a decline. The table below presents the rankings and scores of metropolitan regions in Türkiye included in the 2018 report (Brookings, 2011; Brookings, 2018). In terms of per capita GDP growth rates, İzmir ranked 190th among 300 metropolitan regions, while it ranked 128th in employment growth rate (Table 2.1).

TABLE 2.1. Global MetroMonitor Economic Performance Indicators (2018)

Rank '14–'16	Metropolitan Region	Income Group	Employment, '14–'16		Per Capita GDP, '14–'16		Rank '00–'16
			Growth Rate (%)	Change (thousand)	Growth Rate (%)	Change (thousand)	
12	İstanbul	Emerging	4.4	459	3.9	1.6	78
131	Ankara	Emerging	3.5	128	2.2	0.7	140
190	İzmir	Emerging	2.1	62	2.2	0.6	154

Source: Brookings, 2018

İzmir Region is not only one of Türkiye's most developed regions due to its economic and social dynamics, but it is also among the most significant and advanced hubs in the Mediterranean Region. As international reports indicate, the economic performance of İzmir Region falls significantly below its potential (Brookings, 2011; Brookings, 2018). For this reason, it is critically important to identify key economic dynamics that will trigger the region's local potentials and to contribute to the preparation of a framework to guide this process. In this context, the economic dynamics of İzmir Region have been examined under subheadings.

A. Income and Production

I. Gross Domestic Product (GDP)

İzmir Region holds a significant position not only as one of Türkiye's largest provinces by population but also due to its production capacity. An analysis of 2021 data reveals that İzmir ranks as the third-largest province in terms of production volume, following İstanbul and Ankara. İzmir's GDP accounts for 6.4% of Türkiye's total GDP, while the region with the largest share is İstanbul, with 30.4% (Table 2.2).

TABLE 2.2. GDP and Share by Region in 2021 (at Current Prices)

Level	GDP (thousand TRY)	Share within Türkiye (%)
Türkiye	7,248,788,983	100.0
Aegean Region	923,285,257	12.7
İstanbul	2,202,155,938	30.4
Ankara	667,142,295	9.2
İzmir	462,151,823	6.4

Source: TURKSTAT, 2022e

The growth dynamics of İzmir Region demonstrate a consistent growth trend in the regional economy. Between 2009 and 2021, the regional economy doubled in size, with an average annual growth rate of 5.2%. The regional economy contracted only during the 2009 global financial crisis and the 2019 COVID-19 pandemic but displayed a rapid recovery potential from these crises. For instance, following a 1.8% contraction in 2019, the regional economy grew by 2.2% in 2020 and by 14.1% in 2021 (Table 2.3).

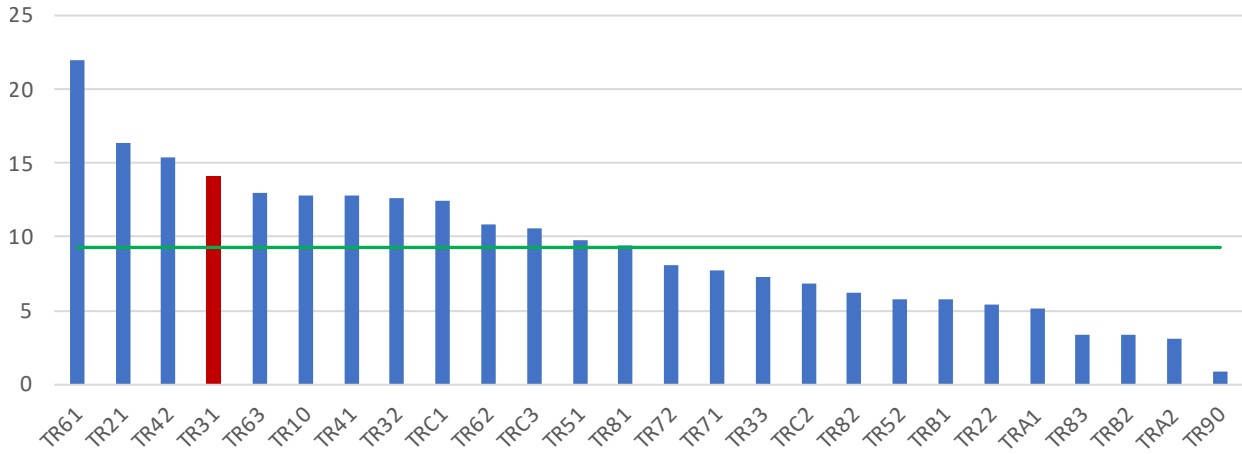
TABLE 2.3. İzmir's GDP and Growth Rates by Year (Chain Volume Index, Base Year 2009)

Year	GDP (thousand TRY)	Growth Rate (%)
2009	61,692,893	-5.6
2010	67,622,032	9.6
2011	75,517,655	11.7
2012	78,589,917	4.1
2013	83,716,413	6.5
2014	86,956,660	3.9
2015	91,118,490	4.8
2016	96,237,820	5.6
2017	104,117,422	8.2
2018	108,210,915	3.9
2019	106,283,981	-1.8
2020	108,574,198	2.2
2021	123,898,921	14.1

Source: TURKSTAT, 2022e

In 2021, the TR61 Region recorded the fastest growth among NUTS II regions, with İzmir Region ranking as the fourth fastest-growing region. Notably, among regions with the largest production volumes, İzmir had the highest growth rate in 2021 (Figure 2.1).

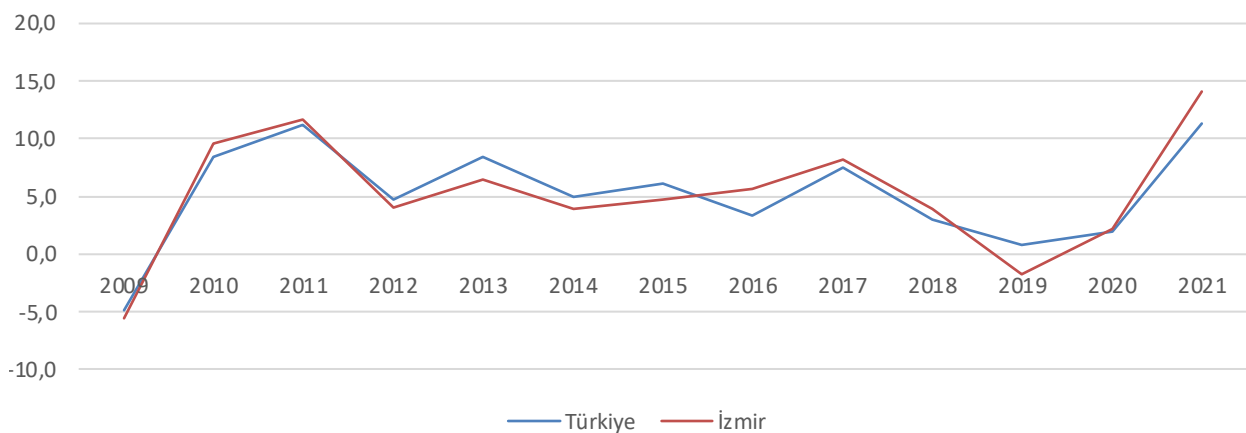
FIGURE 2.1. Growth Rates of NUTS II Regions in 2021 (Chain Volume Index)



Source: TURKSTAT, 2022e

A detailed analysis of İzmir Region's growth rates reveals significant year-to-year fluctuations. Compared to the national average, the region's growth rates generally align closely with the Türkiye average but exhibit higher volatility. For example, the region contracted more than the national average during economic downturns in 2009 and 2019 but recovered with higher growth rates, surpassing the national average. While this rapid recovery potential is positive, enhancing the resilience of the region's sectoral structure against adverse economic conditions is also deemed necessary. Identifying vulnerable points in the sectoral structure and developing short- and long-term policies will contribute significantly to the region's stable growth (Figure 2.2).

FIGURE 2.2. İzmir and Türkiye Growth Rates by Year (%)



Source: TURKSTAT, 2022e

Furthermore, conducting studies to determine the region's annual growth potential will serve as a critical reference for evaluating growth performance and monitoring capacity utilization. These efforts will also aid in developing plans and policies to ensure the efficient and effective use of the region's production capacity.

The share of İzmir Region's production value within Türkiye's total production has remained relatively stable over the years, consistently accounting for approximately 6% of the country's total. This stability confirms that İzmir grows in parallel with the national average. Similarly, there has been no significant change in its share within the Aegean Region, where İzmir's contribution has consistently hovered around 48.5%. Nearly half of the Aegean Region's production is carried out in İzmir. Optimizing İzmir's production potential and increasing the production of high-value-added technological products aligned with key national and regional sectors will elevate the region's share within Türkiye's economy (Table 2.4).

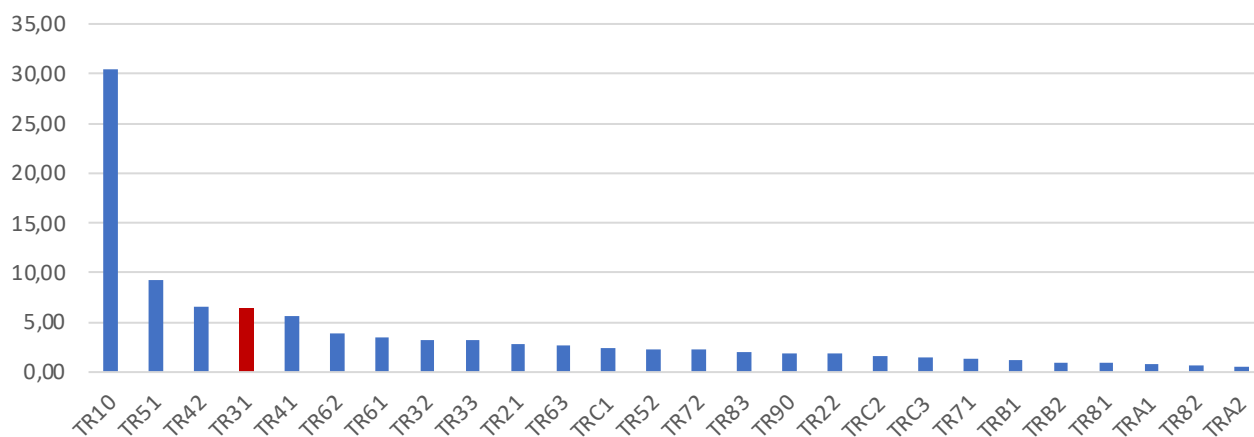
TABLE 2.4. İzmir Region's Share in Production Value (Chain Volume, Base Year 2009)

Year	İzmir GDP (thousand TRY)	Türkiye GDP (thousand TRY)	Aegean Region GDP (thousand TRY)	Share within Türkiye (%)	Share within Aegean Region (%)
2009	61,692,893	1,006,372,482	128,847,377	6.1	47.9
2010	67,622,032	1,091,180,541	140,926,521	6.2	48.0
2011	75,517,655	1,213,393,968	155,772,278	6.2	48.5
2012	78,589,917	1,271,497,249	161,338,937	6.2	48.7
2013	83,716,413	1,379,394,179	171,553,468	6.1	48.8
2014	86,956,660	1,447,532,323	180,267,864	6.0	48.2
2015	91,118,490	1,535,607,237	188,271,520	5.9	48.4
2016	96,237,820	1,586,636,759	198,634,452	6.1	48.4
2017	104,117,422	1,705,666,209	214,115,396	6.1	48.6
2018	108,210,915	1,756,493,104	223,206,699	6.2	48.5
2019	106,283,981	1,770,257,164	221,441,731	6.0	48.0
2020	108,574,198	1,804,600,723	224,568,157	6.0	48.3
2021	123,898,921	2,009,486,002	251,383,315	6.2	49.3

Source: TURKSTAT, 2022e

At NUTS II regional level, İstanbul and Ankara continue to hold the top two positions, while İzmir Region ranks fourth, following the TR42 Region. Until 2020, TR42 Region lagged behind İzmir Region in terms of production volume but surpassed it starting that year (Figure 2.3).

FIGURE 2.3. Share of NUTS II Regions in Total GDP for 2021 (Current Prices)



Source: TURKSTAT, 2022e

II. Gross Value Added (GVA)

As the quality of production improves, the resulting value added increases, generating greater income. Value-added production is critically important for economic development because it enables higher income levels with the same amount of input. Therefore, examining Gross Value Added (GVA) data provides significant insight into the quality and sectoral structure of production in a region.

In 2021, the total GVA in Türkiye, at current prices, amounted to approximately 6.5 trillion TRY. Similar to production value, İzmir ranks third in GVA among provinces, following İstanbul and Ankara. İzmir's GVA in 2021 stood at 413.2 billion TRY (Table 2.5).

TABLE 2.5. Regional GVA and National Share for 2021 (Current Prices)

Level	GVA (thousand TRY)	National Share (%)
Türkiye	6,481,191,958	100.0
Aegean Region	825,515,683	12.7
İstanbul	1,968,962,731	30.4
Ankara	596,496,503	9.2
İzmir	413,213,115	6.4

Source: TURKSTAT, 2022e

The GVA statistics of İzmir Region over the years indicate a growth trend similar to that observed in GDP. Between 2009 and 2021, the GVA doubled, with an average annual growth rate of 5.2%, consistent with GDP growth. Except for 2009 and 2019, which were influenced by global conditions, GVA experienced positive growth throughout the period. However, in 2021, a 1% discrepancy between GVA and GDP growth rates was observed. Promoting processes and technologies that increase the value-added production in the region is critically important for sustainable growth (Table 2.6).

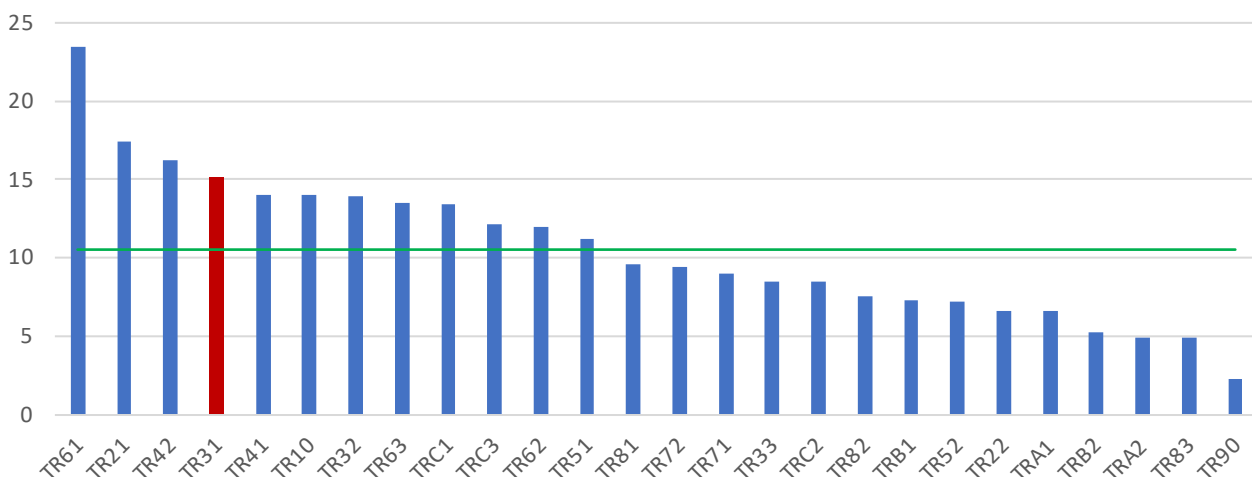
TABLE 2.6. İzmir GVA and Growth Rates by Year (Chained Volume, 2009 Base)

Year	GVA (thousand TRY)	GVA Growth Rate (%)	GDP Growth Rate (%)
2009	55,065,543	-5.2	-5.6
2010	59,641,530	8.3	9.6
2011	66,676,919	11.8	11.7
2012	69,667,814	4.5	4.1
2013	73,844,957	6	6.5
2014	77,006,701	4.3	3.9
2015	80,379,513	4.4	4.8
2016	84,848,508	5.6	5.6
2017	92,082,439	8.5	8.2
2018	95,849,677	4.1	3.9
2019	94,257,275	-1.7	-1.8
2020	95,417,855	1.2	2.2
2021	109,811,391	15.1	14.1

Source: TURKSTAT, 2022e

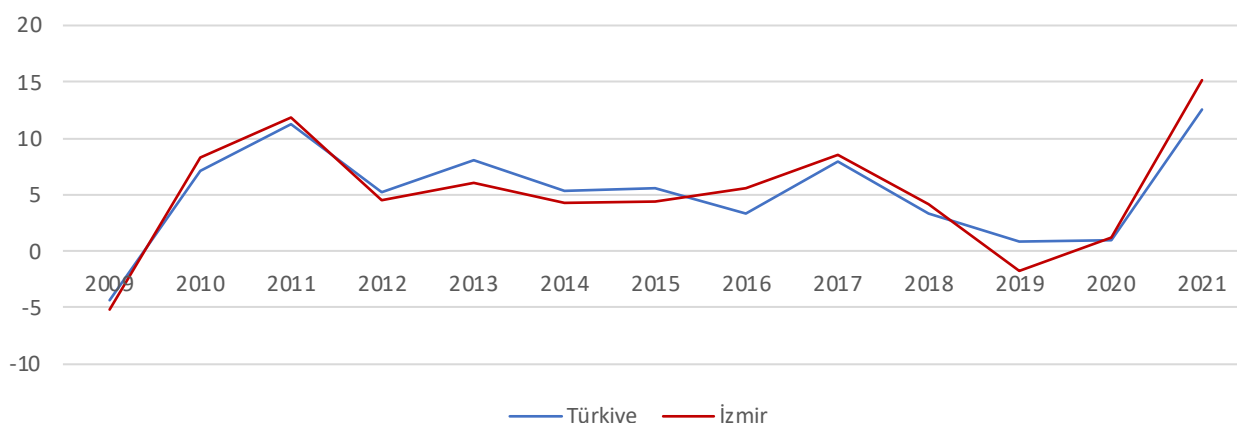
In 2021, the fastest-growing NUTS II region in terms of GVA was observed to be TR61 Region. While İzmir Region ranks third among provinces, it ranks fourth among NUTS II regions. Notably, İzmir recorded the highest GVA growth rate among regions with the largest production volumes in 2021 (Figure 2.4).

FIGURE 2.4. GVA Growth Rates of NUTS II Regions in 2021 (%) (Chained Volume Index)



When the GVA growth rates of İzmir Region are examined in greater detail, it is observed that growth rates can vary significantly from year to year. Moreover, while the growth rate sometimes falls below the GDP growth rate in certain years, it exceeds it in others. Comparing İzmir Region with the national average, it may be stated that the GVA growth rates in the region are generally close to the national average, although with greater fluctuations. In 2009, as in 2019, GVA contracted more than the national average, parallel to GDP. However, it subsequently rebounded with a faster growth rate exceeding the national average (Figure 2.5).

FIGURE 2.5. GVA Growth Rates of İzmir and Türkiye by Year (%) (2009–2021)



Source: TURKSTAT, 2022e

When the weight of İzmir Region's production value within Türkiye and the Aegean Region over the years is examined, no significant changes are observed. The GVA produced in the region consistently constitutes approximately 6% of the national total. This confirms that İzmir Region generates value-added production at the same average level as the national total. Similarly, no notable change is observed in the weight of İzmir Region within the TR3 Aegean Region. While a slight increase has been noted over the past three years, İzmir Region's weight within the Aegean Region has generally remained at 48.5%. Notably, approximately half of the production in the Aegean Region occurs in İzmir (Table 2.7).

TABLE 2.7. Weight of GVA Produced in İzmir Region (Chained Volume, Base Year 2009)

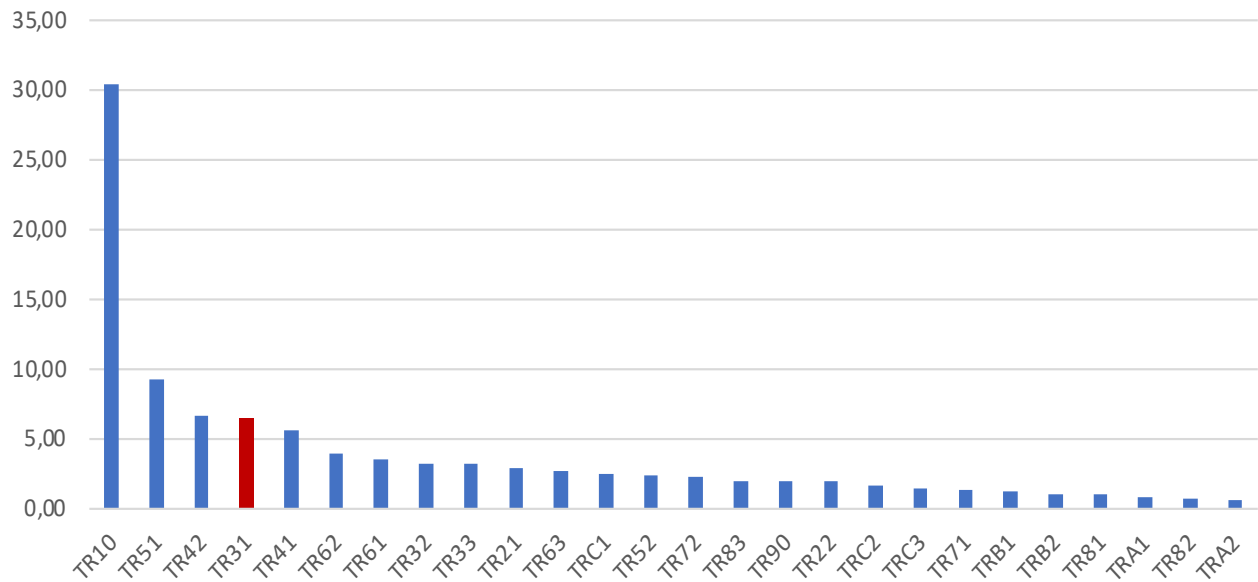
Year	İzmir GVA (thousand TRY)	Türkiye GVA (thousand TRY)	Aegean Region GVA (thousand TRY)	Weight in TR (%)	Weight in Aegean Region (%)
2009	55,065,543	898,263,064	115,005,966	6.1	47.9
2010	59,641,530	962,308,739	124,192,132	6.2	48.0
2011	66,676,919	1,071,500,013	137,436,257	6.2	48.5
2012	69,667,814	1,127,408,019	142,970,535	6.2	48.7
2013	73,844,957	1,217,108,580	151,340,081	6.1	48.8
2014	77,006,701	1,282,082,304	159,609,105	6.0	48.2
2015	80,379,513	1,354,233,218	165,949,993	5.9	48.4
2016	84,848,508	1,398,417,794	175,087,869	6.1	48.5
2017	92,082,439	1,509,484,041	189,463,733	6.1	48.6
2018	95,849,677	1,559,626,562	198,035,257	6.1	48.4

Year	İzmir GVA (thousand TRY)	Türkiye GVA (thousand TRY)	Aegean Region GVA (thousand TRY)	Weight in TR (%)	Weight in Aegean Region (%)
2019	94,257,275	1,572,790,128	196,598,797	6.0	47.9
2020	95,417,855	1,588,468,263	197,513,027	6.0	48.3
2021	109,811,391	1,788,226,752	223,310,268	6.1	49.2

Source: TURKSTAT, 2022e

At the NUTS Level II regions, İstanbul and Ankara continue to hold the first two positions, while İzmir Region ranks fourth after the TR42 Region. Until 2020, İzmir Region surpassed the TR42 Region in terms of GVA production value, but since 2020, the TR42 Region has taken the lead (Figure 2.6).

FIGURE 2.6. Share of NUTS II Regions in Total GDP in 2021 (%) (Current Prices)



Source: TURKSTAT, 2022e

III. Per Capita Income

The level of gross domestic product in a country or region alone is not sufficient to understand the level of socioeconomic development. Additional data are required to evaluate development levels. One of the most commonly used indicators globally is the per capita gross domestic product (GDP) value. Per capita GDP provides important insights into regional average welfare levels, disparities, and trends in these disparities.

According to 2021 data, the per capita GDP value in İzmir Region is \$11,668. This value is approximately 22% higher than Türkiye's average per capita GDP of \$9,592. İzmir Region ranks sixth among provinces (Table 2.8).

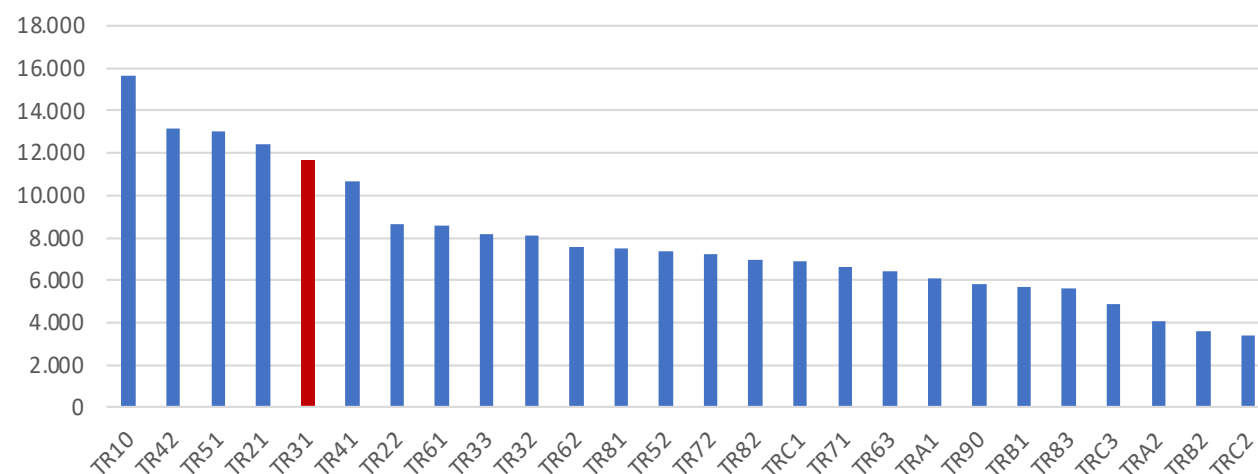
TABLE 2.8. Per Capita GDP by Region/Province in 2021 (Current Prices, USD)

Region / Province	Per Capita GDP
Türkiye	9.592
Aegean Region	9.575
Kocaeli	17.089
İstanbul	15.666
Tekirdağ	14.787
Ankara	13.020
Bilecik	11.713
İzmir	11.668

Source: TURKSTAT, 2022e

Examining the per capita GDP values of NUTS Level II regions, İzmir Region ranks fifth among 26 regions. TR10 İstanbul Region holds the highest value at \$15,666, while TRC2 Şanlıurfa-Diyarbakır Region has the lowest at \$3,414 (Figure 2.7).

FIGURE 2.7. Per Capita GDP Values of NUTS Level II Regions in 2021 (Current Prices, USD)



Source: TURKSTAT, 2022e

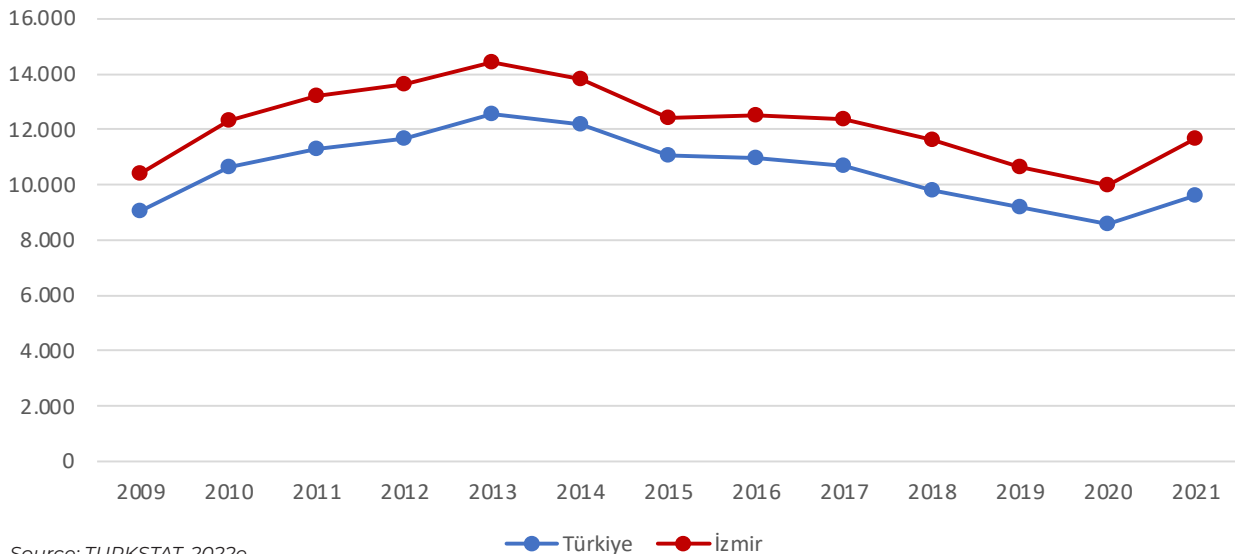
When examining the İzmir Region's per capita GDP values over the years, it is seen that while the values have consistently been above the Aegean and national averages, they have followed a similar trend. The per capita GDP increased steadily from \$10,423 in 2009 to \$14,450 in 2013. However, it began to decline after that, dropping to \$9,967 in 2020, even falling below the 2009 level due to the global pandemic. In 2021, with accelerated production, the per capita GDP value rebounded (Table 2.9, Figure 2.8).

TABLE 2.9. Per Capita GDP Values by Year (Current Prices, USD)

Year	İzmir	Aegean Region	Türkiye
2009	10,423	8,826	9,044
2010	12,318	10,510	10,629
2011	13,193	11,173	11,289
2012	13,635	11,492	11,675
2013	14,450	12,130	12,582
2014	13,830	11,782	12,178
2015	12,399	10,585	11,085
2016	12,536	10,659	10,964
2017	12,397	10,456	10,696
2018	11,645	9,756	9,793
2019	10,640	9,069	9,195
2020	9,967	8,456	8,600
2021	11,668	9,575	9,592

Source: TURKSTAT, 2022e

FIGURE 2.8. Per Capita GDP Values by Year (Current Prices, USD) (2009–2021)



Source: TURKSTAT, 2022e

As in Türkiye overall, no consistent increase in per capita gross domestic product has been achieved in İzmir Region. Per capita values are critical for ensuring that production in the region translates into societal welfare. Therefore, local and national policies must aim to ensure a stable and sustained growth in per capita income.

B. Sectoral Analyses

I. Agriculture Sector

Analyzing GDP by sectors provides more explanatory insights into inter-regional variations. As of 2021, Türkiye's agricultural GDP stands at 402 billion TRY, while the Aegean Region's agricultural GDP amounts to 73 billion TRY, and the İzmir Region's is 18 billion TRY. The weight of the agriculture sector in total production is higher in the Aegean Region compared to other regions. In the İzmir Region, the share of agriculture in total production is 3.85%, which is below the national and Aegean Region averages but higher than major regions such as Ankara and İstanbul (Table 2.10).

TABLE 2.10. Share of Agricultural GDP in Total GDP (Current Prices, thousand TRY)

Indicator	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
Agricultural GDP	401,805,954	73,160,497	17,800,841	2,293,855	9,961,933
Total GDP	7,248,788,983	923,285,257	462,151,823	2,202,155,938	667,142,295
Share of Agriculture (%)	5.54	7.92	3.85	0.10	1.49

Source: TURKSTAT, 2022e

Examining the real growth in agricultural production in the İzmir Region, it is observed that agricultural production grew by 60% from 2009 to 2021. Considering that total GDP doubled during the same period, the agriculture sector exhibited slower growth. The share of agricultural revenue within the region's total GDP also declined, dropping from 5% in 2009 to 4% in 2021 (Table 2.11).

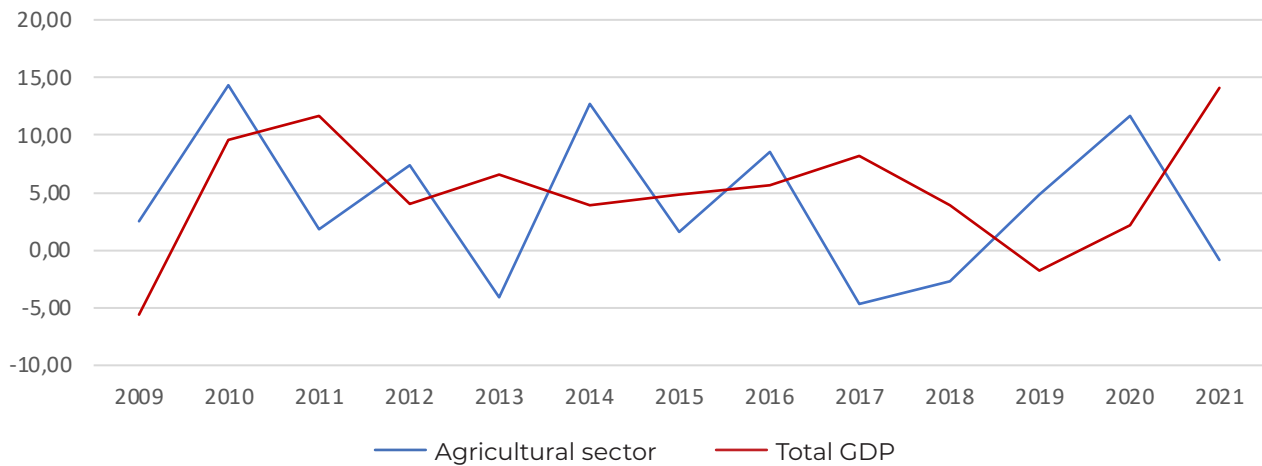
TABLE 2.11. Annual Growth Rate of Agricultural GDP and Its Share in Total GDP in İzmir Region (Chained Volume, Base Year 2009)

Year	Agricultural GDP (thousand TRY)	Growth Rate (%)	Total GDP (thousand TRY)	Growth Rate (%)	Share of Agriculture (%)
2009	3,164,307	2.47	61,692,893	-5.61	5.13
2010	3,617,947	14.34	67,622,032	9.61	5.35
2011	3,682,036	1.77	75,517,655	11.68	4.88
2012	3,954,608	7.40	78,589,917	4.07	5.03
2013	3,791,231	-4.13	83,716,413	6.52	4.53
2014	4,274,076	12.74	86,956,660	3.87	4.92
2015	4,343,923	1.63	91,118,490	4.79	4.77
2016	4,715,916	8.56	96,237,820	5.62	4.90
2017	4,497,327	-4.64	104,117,422	8.19	4.32
2018	4,374,219	-2.74	108,210,915	3.93	4.04
2019	4,584,325	4.80	106,283,981	-1.78	4.31
2020	5,118,415	11.65	108,574,198	2.15	4.71
2021	5,073,208	-0.88	123,898,921	14.11	4.09

Source: TURKSTAT, 2022e

A noteworthy aspect of agricultural production in İzmir Region is the lack of correlation between the growth rate of agricultural GDP and total GDP. While total GDP in the region may grow, the agriculture sector may contract or grow at a much slower rate. Conversely, the agriculture sector may expand while total GDP declines. Additionally, the agriculture sector exhibits higher volatility. Ensuring more stable growth in the agriculture sector is crucial to avoid supply disruptions in the prominent food industry in İzmir Region and to maintain the value-added it generates (Figure 2.9).

FIGURE 2.9. Relationship Between Agricultural and Total GDP Growth Rates in İzmir (%) (Chained Volume, Base Year 2009)



Source: TURKSTAT, 2022e

Another significant outcome of the trends in agricultural GDP values is the increase in İzmir Region's share in Türkiye's agricultural GDP during the 2009-2021 period. İzmir's share rose from 3.9% in 2009 to 4.4% in 2021. During the same period, İzmir's share in the Aegean Region's agricultural GDP also increased.

TABLE 2.12. Agricultural GDP and Shares in Türkiye, Aegean Region, and İzmir (Current Prices, million TRY)

Year	Türkiye	Aegean Region	İzmir	İzmir/Aegean (%)	İzmir/Türkiye (%)
2009	81,234	14,968	3,164	21.14	3.90
2010	104,704	20,264	4,294	21.19	4.10
2011	114,838	21,972	4,643	21.13	4.04
2012	121,693	23,943	5,200	21.72	4.27
2013	121,734	23,131	4,950	21.40	4.07
2014	134,745	27,245	6,175	22.66	4.58
2015	161,472	29,732	6,948	23.37	4.30
2016	161,331	31,794	7,747	24.37	4.80
2017	189,233	35,775	8,241	23.04	4.35
2018	217,107	39,091	9,053	23.16	4.17
2019	276,372	50,492	11,421	22.62	4.13
2020	337,160	59,950	14,166	23.63	4.20
2021	401,806	73,161	17,801	24.33	4.43

Source: TURKSTAT, 2022e

I.1. Crop Production Values

Between 2004 and 2021, the value of crop production in Türkiye increased approximately sixfold. Although İzmir Region also experienced growth in crop production values, its share in Türkiye's crop production values declined (Figure 2.10). The same trend applies to its share within the Aegean Region.

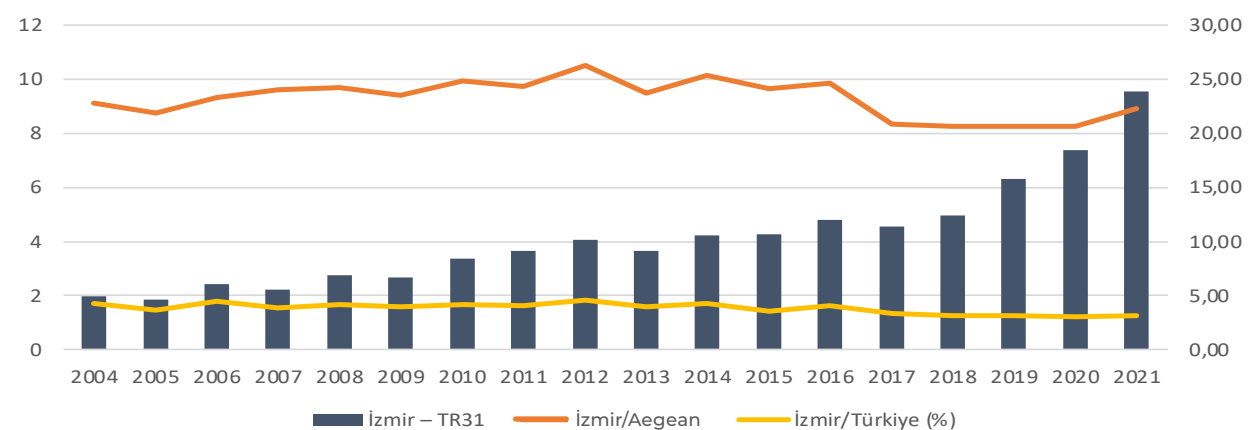
During the 2004-2012 period, İzmir Region's crop production value grew at a higher rate than both Türkiye and the Aegean Region. However, during the 2012-2021 period, this trend reversed, and İzmir Region's growth rate fell behind both Türkiye and the Aegean Region (Table 2.13).

TABLE 2.13. Crop Production Values of Türkiye, Aegean Region, and İzmir (2004-2021) (billion TRY)

Year	Türkiye	Aegean Region	İzmir	İzmir / Aegean (%)	İzmir / Türkiye (%)
2004	45.68	8.61	1.96	22.77	4.29
2005	50.94	8.54	1.87	21.90	3.67
2006	54.52	10.44	2.43	23.28	4.46
2007	56.79	9.22	2.21	23.97	3.89
2008	66.01	11.45	2.77	24.18	4.20
2009	68.27	11.38	2.68	23.55	3.93
2010	80.04	13.59	3.38	24.87	4.22
2011	88.98	14.99	3.65	24.34	4.10
2012	87.95	15.47	4.07	26.31	4.63
2013	92.45	15.42	3.65	23.67	3.95
2014	98.12	16.76	4.24	25.31	4.32
2015	120.15	17.74	4.28	24.13	3.56
2016	119.24	19.53	4.82	24.68	4.04
2017	135.89	21.91	4.57	20.86	3.36
2018	159.14	24.01	4.95	20.62	3.11
2019	197.46	30.70	6.33	20.62	3.21
2020	246,02	35,72	7,39	20,69	3,00
2021	306,37	42,80	9,55	22,31	3,12
2004-2012 (%)	92,54	79,75	107,65		
2012-2021 (%)	248,35	176,68	134,64		
2004-2021 (%)	570,69	397,34	387,24		

Source: TURKSTAT, 2022g

FIGURE 2.10. İzmir's Crop Production Volume and Its Share in Türkiye (billion TRY) (%) (2004-2021)



Source: TURKSTAT, 2022g

1.2. Animal Production Values

When examining animal production values at NUTS II regions, as of 2004, it is seen that Türkiye's total animal production value was 15.57 billion TRY, increasing to 108.6 billion TRY by 2020. During the 2004–2020 period, the change in animal production in İzmir Region significantly lagged behind Türkiye's overall performance (Table 2.14). When analyzed in sub-periods, animal production in Türkiye increased by 217% between 2004 and 2012, while in İzmir Region, the change in animal production was negative. However, between 2012 and 2020, İzmir demonstrated positive performance, achieving an increase rate significantly higher than the animal production values of both Aegean Region and Türkiye. Over the entire period from 2004 to 2020, İzmir Region's animal production value increased by 220.7%, compared to Türkiye's 597.5% (Table 2.14).

While animal production increased in İzmir Region between 2004 and 2020, its share within Türkiye declined between 2009 and 2011 and did not exhibit a notable increase after this year. The region's share decreased from 5.6% in 2004 to 2.6% in 2020 (Table 2.14).

TABLE 2.14. Animal Production Values in Türkiye and İzmir (2004–2020) (billion TRY)

Year	Türkiye	Aegean Region	İzmir	İzmir / Aegean (%)	İzmir / Türkiye (%)
2004	15.57	2.70	0.87	32.22	5.57
2005	16.51	3.03	0.89	29.34	5.42
2006	18.9	3.30	0.86	26.03	4.56
2007	22.92	4.54	1.42	31.25	6.18
2008	23.82	4.59	1.31	28.54	5.5
2009	26.61	5.33	1.79	33.61	6.74
2010	38.13	7.04	2.04	28.97	5.35
2011	42.57	2.37	0.52	21.97	1.23
2012	49.32	2.81	0.66	23.45	1.35
2013	40.46	3.01	0.77	25.58	1.89
2014	44.33	5.16	1.25	24.24	2.82
2015	55.67	4.18	1.18	28.20	2.13
2016	62.17	4.09	1.12	27.37	1.81
2017	69.93	4.87	1.42	29.14	2.03
2018	79.15	6.43	1.84	28.61	2.32
2019	93.92	7.92	2.24	28.30	2.38
2020	108.6	9.49	2.79	29.39	2.57
2004-2012 (%)	216.76	4.07	-24.14		
2012-2020 (%)	120.19	237.72	322.73		
2004-2020 (%)	597.50	251.48	220.69		

Source: TURKSTAT, 2022p

I.3. Fisheries

The fisheries sector is one of the critical sources of input for the Turkish economy. Türkiye's geographical advantage, with three sides surrounded by seas and its extensive network of rivers and lakes, highlights the high potential of the fisheries sector. According to the İzmir Aquaculture Producers and Breeders Association (İSUB) 2014 report, Türkiye has an 8,333 km-long coastline and 177,714 km of rivers. The surface area of marine and inland waters is approximately 25 million hectares (İSUB, 2014).

Examining the aquaculture production data published by TURKSTAT, Türkiye's total fishery production—both from fishing and aquaculture—is observed to have increased from 653,000 tons in 2010 to 850,000 tons in 2022. In terms of production types, production through fishing has declined, while aquaculture-based production tripled during the 2010–2022 period (Table 2.15).

Although fisheries production in Türkiye has observably increased, the growth has primarily been driven by marine aquaculture. Marine aquaculture requires substantial capital, and it is possible to achieve significant production volumes following investment. During the 2010–2022 period, the production volume of aquatic products through aquaculture in marine areas has increased significantly. Marine aquaculture production showed substantial growth during the 2010–2022 period, while inland aquaculture production nearly doubled. However, this increase in inland aquaculture production lags considerably behind that of marine aquaculture. On the other hand, production through fishing decreased in both marine and inland waters. This situation necessitates sectoral measures within the Regional Plan to support small-scale fishermen reliant on fishing for their livelihood (Table 2.15).

TABLE 2.15. Türkiye's Aquaculture Production by Year (2010–2022) (Tons)

Year	Fishing			Aquaculture			Total
	Marine	Inland	Total	Marine	Inland	Total	
2010	445,680	40,259	485,939	88,573	78,568	167,141	653,080
2011	477,658	37,097	514,755	88,344	100,446	188,790	703,545
2012	396,322	36,120	432,442	100,853	111,557	212,410	644,852
2013	339,047	35,074	374,121	110,375	123,019	233,394	607,515
2014	266,078	36,134	302,212	126,894	108,239	235,133	537,345
2015	397,731	34,176	431,907	138,879	101,455	240,334	672,241
2016	301,464	33,856	335,320	151,794	101,601	253,395	588,715
2017	322,173	32,145	354,318	172,492	104,010	276,502	630,820
2018	283,955	30,139	314,094	209,370	105,167	314,537	628,631
2019	431,572	31,596	463,168	256,930	116,426	373,356	836,524
2020	331,281	33,119	364,400	293,175	128,236	421,411	785,811
2021	295,018	33,140	328,158	335,644	136,042	471,686	799,844
2022	301,747	33,256	335,003	368,742	146,063	514,805	849,808

Source: TURKSTAT, 2022r

In the year 2022, the share of aquatic products production in İzmir Region within Türkiye decreased. Examining the data from 2021 and 2022 reveals that the share of total aquatic products produced in İzmir Province within Türkiye fell from 14.2% to 12.7%. It is observed that more than 95% of the production in İzmir Province was realized through marine aquaculture (Table 2.16).

TABLE 2.16. Aquatic Products Production in İzmir by Year (2021-2022) (tons)

Year	Type		Production
2021	Fishing	Inland	10.7
		Marine	3,817
		Total	3,827.7
	Aquaculture	Inland	140
		Marine	109,860
		Total	110,000
	Grand Total		113,827.7
2022	Fishing	Inland	8
		Marine	2,588
		Total	2,596
	Aquaculture	Inland	165
		Marine	104,900
		Total	105,065
	Grand Total		107,661

Source: İzmir Provincial Directorate of Agriculture and Forestry Briefing Report, 2022

There are 80 operational aquatic product facilities in İzmir Province. Among these 80 facilities, 67 are marine enterprises, 5 are inland water enterprises, and 1 is a hatchery. Of the 67 marine enterprises, 60 are engaged in the cultivation of seabream, seabass and other species, 6 in tuna farming, and 1 in mussel farming (Table 2.17).

TABLE 2.17. Marine and Inland Water Enterprises in İzmir Province (2020)

Activity Field	Number	Capacity (tons/year)
Inland	5	552.5
Marine	67	82,490

Source: İSUB, 2020

I.4. Organic Crop Production

According to the analyses, as of 2022, there are 36,093 farmers engaged in organic crop production in Türkiye, cultivating a total area of 194,000 hectares and producing 1,153,161 tons of organic crops. In the Aegean Region, 11,060 farmers cultivate 70,000 hectares, yielding 389,000 tons of crops. In İzmir Region, 1,552 farmers produce 35,000 tons of organic crops on 13,000 hectares (Table 2.18).

TABLE 2.18. Organic Crop Production by Quantity, Area, and Number of Farmers (2022)

Indicator	Türkiye	Aegean Region	İzmir	İzmir / Aegean (%)	İzmir / Türkiye (%)
Number of Farmers	36,093	11,060	1,552	14.03	4.30
Production Area (ha)	193,989	69,578	13,486	19.38	6.95
Fallow Area (ha)	4,108	144	14	9.72	0.34
Total Area (ha)	214,102	69,744	13,499	19.36	6.30
Production Quantity (Ton)	1,153,161	389,127	34,868	8.96	3.02

Source: Ministry of Agriculture and Forestry, 2022

As of 2022, 4.3% of farmers engaged in organic crop production in Türkiye are located in İzmir Region. Within the Aegean Region, Aydın Province has the highest number of farmers engaged in organic crop production, totaling 6,606, which corresponds to 18% of the national figure. Another significant organic production center in the Aegean Region is Manisa Province, with 168 tons of production. Examining the total area allocated to organic crop production, İzmir Region accounts for 6.3% of Türkiye's total area and 19.4% of the Aegean Region's area (Table 2.18).

I.5. Organic Animal Production

There are 127 farmers engaged in organic animal production in Türkiye. In İzmir Region, there are 8 farmers involved in organic animal production, with a total livestock population of 171,559. İzmir Region accounts for 6.3% of the farmers and 21.5% of the livestock engaged in organic animal production in Türkiye. In the Aegean Region, Manisa Province is the second most prominent center for organic animal production after İzmir Region. As of 2021, there are 5 farmers engaged in organic animal production in Manisa Province, with a total livestock population of 57,467 (Table 2.19). Regarding the number of poultry and apiculture activities in İzmir Region, it is seen that there are 8 farmers engaged in poultry production and 13 farmers in apiculture. In 2021, 32.4 million eggs and 22,245 tons of honey in 2,096 beehives were produced.

TABLE 2.19. Organic Livestock Statistics in Türkiye, İzmir, and Other Regions (2021)

Province	Number of Farmers	Share in Türkiye (%)	Number of Livestock	Share in Türkiye (%)
Türkiye	127	100	797,017	100
İzmir	8	6.30	171,559	21.53
Manisa	5	3.94	57,467	7.21

Source: Ministry of Agriculture and Forestry, 2022

I.6. Forestry

Examining forestry statistics in Türkiye reveals that 14.4 million m³ of unprocessed timber was produced in the year 2012. This figure increased to 27.5 million m³ as of the year 2022. In İzmir Region, the production of unprocessed timber amounted to 0.40 million m³ in 2012. Although this figure nearly doubled by 2019 and 2020, it decreased to 0.37 million m³ in 2022. Over the last decade, the total production in Türkiye has shown a consistent increase, nearly doubling. Regarding the share of regions in Türkiye's total unprocessed timber production, İzmir Region's share decreased from 2.79% in 2012 to 1.46% in 2022 (Table 2.20).

TABLE 2.20. Unprocessed Timber Production in İzmir and Türkiye (2012-2022) (thousand m³)

Year	Türkiye	İzmir	İzmir / Türkiye (%)
2012	14,424	402	2.79
2013	13,668	397	2.90
2014	14,923	385	2.58
2015	16,638	575	3.46
2016	17,010	461	2.71
2017	15,522	422	2.72
2018	19,080	469	2.46
2019	22,113	761	3.44
2020	24,751	730	2.95
2021	27,735	424	1.53
2022	25,481	372	1.46

Source: General Directorate of Forestry, 2023

In 2022, the largest share of timber production in İzmir Region consisted of fiber-chip wood. Examining the types of timber production in İzmir Region during the 2012-2022 period reveals that while the production of logs and mine props increased, the production of other types decreased (Table 2.21).

TABLE 2.21. Distribution of Unprocessed Timber Production in İzmir Region (2012-2022) (thousand m³)

Year	Total	Logs	Firewood	Fiber-Chip Wood	Pulpwood	Industrial Wood	Mine Props
2012	402.43	83.71	122.87	180.37	67.54	66.13	4.67
2013	396.87	83.95	62.10	197.85	52.88	57.79	4.40
2014	384.69	84.34	50.60	198.71	40.91	57.07	3.68
2015	574.98	193.98	77.69	231.00	56.36	75.89	17.76
2016	460.78	123.19	84.74	215.67	52.90	63.29	5.74
2017	421.63	112.09	87.03	180.33	70.46	54.02	4.73
2018	468.90	122.49	80.20	181.34	101.35	59.32	4.41
2019	761.11	179.67	105.36	314.02	166.41	98.09	2.93
2020	730.17	139.62	53.63	398.20	126.73	60.08	5.54
2021	423.92	141.29	82.21	177.64	54.99	43.96	6.04
2022	372.33	130.45	85.73	133.35	59.01	43.55	5.98
2012-2022	-7.48%	55.84%	-30.23%	-26.07%	-12.63%	-34.14%	28.05%

Source: General Directorate of Forestry, 2023

In terms of the share of unprocessed timber types within İzmir Region's production, fiber-chip wood had the highest production in 2012, followed by firewood. Despite a 26% decrease in production over the last decade, fiber-chip wood remains the most produced timber type in İzmir Region, with logs being the second highest with a value close to chip wood. (Table 2.21).

II. Industry Sector

The regional distribution and annual trends of industrial GDP provide important insights into the future economic levels of regions. Similar to the distribution and trends of agricultural GDP, the regional industrial GDP figures were also examined in terms of current and real values.

The current industrial GDP of İzmir Region occurred to be 10.6 billion TRY in 2004, rising to 168.6 billion TRY in 2021. The İstanbul, Ankara, TR41 (Bursa, Eskişehir, Bilecik), and TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova) Regions have higher industrial GDP values than İzmir Region. In 2021, the industrial GDP of TR42 Region was 235.8 billion TRY, while that of TR41 Region was 192.5 billion TRY.

As of 2021, the industrial GDP of İstanbul Region was 3.1 times that of İzmir Region, while the ratio between Ankara and İzmir was observed as 1.01. In terms of income generated by industry, İstanbul Region stands apart from the other regions (Table 2.22).

TABLE 2.22. Industrial GDP of Türkiye and NUTS II Regions (2004-2021) (Current Prices, billion TRY)

Year	Türkiye	İzmir	TR41	TR42	Ankara	İstanbul
2004	146.34	10.62	12.33	11.54	12.72	46.58
2005	171.68	12.23	14.80	14.02	15.33	53.47
2006	207.17	14.55	17.86	17.55	19.12	64.20
2007	234.13	15.95	20.34	20.18	22.24	70.87
2008	262.20	17.59	22.78	22.97	25.43	77.09
2009	241.77	16.35	20.52	21.26	23.43	70.55
2010	285.96	19.78	24.09	24.23	27.95	80.87
2011	377.05	26.86	32.32	32.69	36.25	105.05
2012	421.45	28.84	35.55	35.89	38.60	120.33
2013	504.73	34.46	41.70	42.66	48.84	143.89
2014	577.77	38.26	47.45	49.31	52.39	168.15
2015	654.37	42.20	54.95	57.49	56.97	191.87
2016	737.62	48.99	60.80	63.02	65.53	214.41
2017	912.90	61.83	75.11	82.28	79.66	255.14
2018	1,105.25	79.31	95.73	106.91	92.01	295.33
2019	1,175.99	81.73	103.20	109.36	102.74	310.42
2020	1,414.08	96.54	118.67	135.35	118.15	358.76
2021	2,255.37	168.62	192.49	235.83	170.59	522.16
2004-2012 (%)	187.99	171.56	188.43	210.99	203.46	158.33
2012-2021 (%)	435.15	484.67	441.41	557.01	341.94	333.94
2004-2021 (%)	1,441.18	1,487.76	1,461.62	1,943.26	1,241.12	1,021.00

Source: TURKSTAT, 2022e

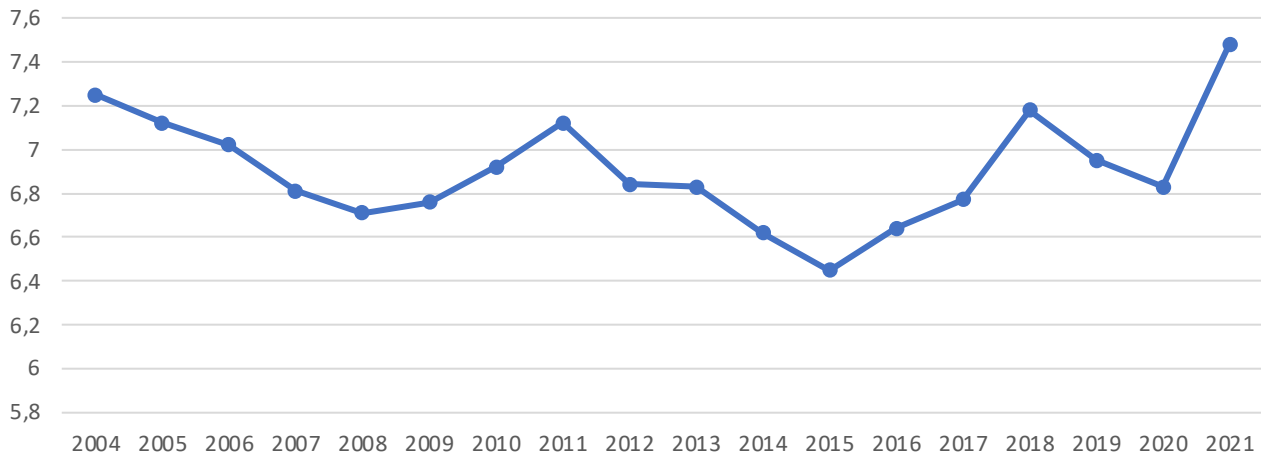
Between 2004 and 2021, İzmir Region's industrial GDP growth rate exceeded that of İstanbul and Ankara but lagged behind TR42 Region. When examined in sub-periods, during the 2004-2012 period, İzmir Region's growth rate was observed to be higher than that of İstanbul but lower compared to Ankara, TR41 and TR42 Regions. In the 2012-2021 period, İzmir Region's industrial GDP growth surpassed that of İstanbul, Ankara and Türkiye overall. However, its growth rate remained behind that of TR42 Region.

Examining the share of industrial GDP in Türkiye's total industrial GDP, it is revealed that İzmir Region accounted for 7.3% in 2004, rising to 7.5% in 2021. Conversely, the shares of İstanbul and Ankara Regions in Türkiye's industrial GDP declined during the 2004-2021 period. While the shares of major regions decreased, the shares of provinces referred to as the "New Industrial Hubs" or "Anatolian Tigers" increased. This trend is expected to contribute to reducing regional inequalities in Türkiye (Table 2.23).

TABLE 2.23. Regional Shares of Industrial GDP in Türkiye (2004-2021) (Current Prices)

Year	İzmir (%)	TR41 (%)	TR42 (%)	Ankara (%)	İstanbul (%)
2004	7.25	8.42	7.89	8.69	31.83
2005	7.12	8.62	8.17	8.93	31.14
2006	7.02	8.62	8.47	9.23	30.99
2007	6.81	8.69	8.62	9.50	30.27
2008	6.71	8.69	8.76	9.70	29.40
2009	6.76	8.49	8.79	9.69	29.18
2010	6.92	8.43	8.47	9.77	28.28
2011	7.12	8.57	8.67	9.61	27.86
2012	6.84	8.44	8.52	9.16	28.55
2013	6.83	8.26	8.45	9.68	28.51
2014	6.62	8.21	8.53	9.07	29.10
2015	6.45	8.40	8.79	8.71	29.32
2016	6.64	8.24	8.54	8.88	29.07
2017	6.77	8.23	9.01	8.73	27.95
2018	7.18	8.66	9.67	8.32	26.72
2019	6.95	8.78	9.30	8.74	26.40
2020	6.83	8.39	9.57	8.36	25.37
2021	7.48	8.53	10.46	7.56	23.15

Source: TURKSTAT, 2022e

FIGURE 2.11. Share of Industrial GDP of İzmir Region in Türkiye by Years (%) (Current Prices)

Source: TURKSTAT,c2022e

Examining inflation-adjusted real values using the chained volume index, İzmir Region's industrial GDP is observed to be 37.8 billion TRY in 2021, compared to Türkiye's total of 523.6 billion TRY. Regionally, İzmir ranked fifth in industrial GDP, following İstanbul, Ankara, TR41 and TR42 Regions. İstanbul and Ankara's industrial GDPs were 133.3 billion TRY and 44.6 billion TRY, respectively, while TR41 and TR42 Regions recorded 42.9 billion TRY and 49.8 billion TRY, respectively.

In 2004, Türkiye's industrial GDP was 202.9 billion TRY, increasing by 158% to reach 523.6 billion TRY in 2021. During the same period, İzmir Region's industrial GDP grew by 161%, rising from 14.4 billion TRY in 2004 to 37.8 billion TRY in 2021. While İstanbul and Ankara grew by 110% and 144%, respectively, TR41 and TR42 Regions grew by 155% and 219%. İzmir Region's growth rate surpassed Türkiye's average and those of İstanbul and Ankara. However, TR42 Region exhibited the highest growth rate in the aforementioned period.

During the 2004-2012 sub-period, İzmir Region's industrial GDP growth exceeded that of İstanbul but lagged behind Ankara, TR41 and TR42 Regions. In the 2012-2021 sub-period, İzmir Region's industrial GDP growth surpassed that of İstanbul, Ankara, and overall national value. Notably, while the growth rates of İstanbul, Ankara, and Türkiye decreased in the 2012-2021 period compared to 2004-2012, İzmir's growth rate increased (Table 2.24).

TABLE 2.24. Industrial GDP by Year (Chained Volume Index, Base Year 2009, thousand TRY)

Year	Türkiye	İzmir	TR41	TR42	İstanbul	Ankara
2004	202,868,128	14,443,875	16,820,600	15,588,273	63,527,138	18,281,158
2005	224,433,910	15,734,543	19,003,956	17,872,675	69,022,563	20,812,056
2006	253,106,113	17,494,054	21,373,958	20,876,110	77,602,808	24,325,832
2007	272,004,903	18,346,223	23,348,600	23,025,506	81,586,434	26,479,099
2008	270,145,642	18,149,486	23,510,879	23,655,174	78,923,528	26,194,418
2009	241,769,379	16,350,450	20,521,156	21,260,804	70,550,407	23,428,869
2010	269,411,105	18,449,368	23,068,375	22,977,722	77,055,387	26,591,663
2011	321,462,803	22,672,947	28,196,719	28,081,245	91,579,036	31,545,255
2012	336,455,533	22,676,063	29,024,067	28,635,532	98,701,568	31,369,554
2013	372,568,295	25,331,157	31,341,471	31,743,560	108,542,141	36,495,887

Year	Türkiye	İzmir	TR41	TR42	İstanbul	Ankara
2014	391,496,381	26,021,610	32,361,187	33,380,724	116,062,438	36,136,541
2015	411,216,816	26,865,897	34,872,355	36,757,882	122,684,481	36,392,819
2016	430,059,529	28,940,363	35,818,925	37,748,337	126,408,273	38,904,823
2017	470,132,876	31,749,311	39,066,238	42,376,040	134,085,583	42,678,705
2018	472,577,139	32,912,341	39,847,560	42,894,399	131,988,825	42,701,009
2019	458,476,179	31,065,382	38,314,521	39,629,626	128,088,361	44,497,703
2020	463,339,094	31,072,518	36,471,959	41,257,384	123,374,617	42,740,882
2021	523,598,491	37,768,688	42,885,633	49,756,063	133,287,277	44,589,094
2004-2012 (%)	66	57	73	84	55	72
2012-2021 (%)	56	67	48	74	35	42
2004-2021 (%)	158	161	155	219	110	144

Source: TURKSTAT, 2022e

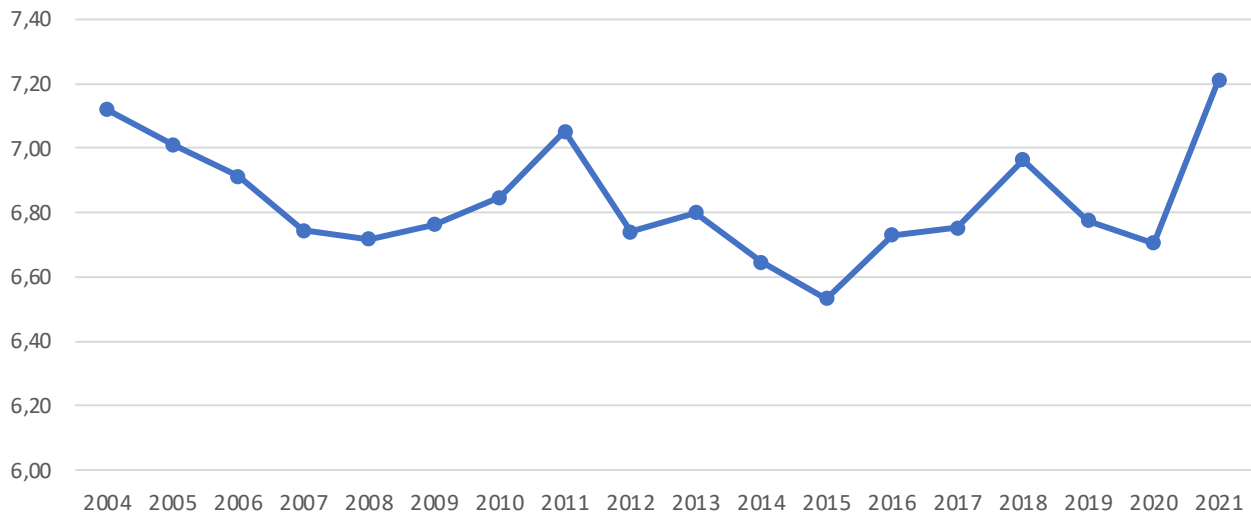
The share of İzmir Region in Türkiye's industrial GDP was 7.12% in 2004, increasing to 7.21% in 2021. Throughout the analyzed period, the share of İzmir Region in Türkiye's industrial GDP did not follow a linear trend. Conversely, the shares of the Ankara and İstanbul Regions in Türkiye's industrial GDP declined during the 2004–2021 period. Following İstanbul, the TR42 Region has the second-highest share of industrial GDP, at 9.5% (Table 2.25).

TABLE 2.25. Regional Shares in Türkiye's Industrial GDP (Chained Volume, %)

Year	İzmir	TR41	TR42	İstanbul	Ankara
2004	7.12	8.29	7.68	31.31	9.01
2005	7.01	8.47	7.96	30.75	9.27
2006	6.91	8.44	8.25	30.66	9.61
2007	6.74	8.58	8.47	29.99	9.73
2008	6.72	8.70	8.76	29.22	9.70
2009	6.76	8.49	8.79	29.18	9.69
2010	6.85	8.56	8.53	28.60	9.87
2011	7.05	8.77	8.74	28.49	9.81
2012	6.74	8.63	8.51	29.34	9.32
2013	6.80	8.41	8.52	29.13	9.80
2014	6.65	8.27	8.53	29.65	9.23
2015	6.53	8.48	8.94	29.83	8.85
2016	6.73	8.33	8.78	29.39	9.05
2017	6.75	8.31	9.01	28.52	9.08
2018	6.96	8.43	9.08	27.93	9.04
2019	6.78	8.36	8.64	27.94	9.71
2020	6.71	7.87	8.90	26.63	9.22
2021	7.21	8.19	9.50	25.46	8.52

Source: TURKSTAT, 2022e

FIGURE 2.12. Share of İzmir Industrial GDP in Türkiye's Industrial GDP by Year (%) (Chained Volume, Base Year 2009)



Source: TURKSTAT, 2022e

The declining share of major regions in industrial GDP provides important insights. The economic transformations experienced by significant industrial zones, such as Germany's Ruhr Region or Detroit in the United States, underscore the necessity for regions like İzmir to shift from traditional specialization strategies to smart specialization strategies in order to restructure their economic dynamics.

III. Services Sector

The services sector, encompassing numerous sub-sectors, is an industry with an increasing share in Türkiye's total GDP. As of 2021, the services sector held the largest share of Türkiye's total GDP. In terms of current prices, Türkiye's total services GDP increased from 309 billion TRY in 2004 to 3 trillion 824 billion TRY in 2021. During the same period, the services GDP of İzmir Region rose from 20 billion TRY to 227 billion TRY. In comparison, the services GDP of the İstanbul Region grew from 106 billion TRY to 1 trillion 435 billion TRY, while that of the Ankara Region increased from 32 billion TRY to 416 billion TRY.

As of 2021, the services GDP of the İstanbul Region was 6.3 times larger than that of the İzmir Region, while the ratio between Ankara and İzmir was 1.8. Compared to industrial GDP, the differences in services GDP among these three major regions are more pronounced.

When analyzing the growth rates of services sector GDP for the 2004–2021 period, it is seen that İzmir Region's growth rate lagged behind the overall growth rate of Türkiye and those of İstanbul and Ankara Regions. This trend persisted during the 2004–2012 and 2012–2021 sub-periods. Overall, İzmir Region's growth rate in the services sector fell behind that of Türkiye, İstanbul and Ankara during the 2004–2021 period (Table 2.26).

TABLE 2.26. Services GDP of Türkiye and NUTS II Regions (2004–2021) (Current Prices, billion TRY)

Year	Türkiye	İzmir	Ankara	İstanbul
2004	309	20	32	106
2005	361	23	37	123
2006	425	27	43	144
2007	487	31	51	166
2008	557	35	58	190
2009	575	36	61	197
2010	637	40	66	218
2011	745	46	77	259
2012	854	52	88	298
2013	973	58	101	344
2014	1,106	65	114	390
2015	1,257	74	130	448
2016	1,418	83	151	500
2017	1,678	100	170	608
2018	2,047	123	201	741
2019	2,430	143	247	880
2020	2,736	162	299	990
2021	3,824	227	416	1,435
2004-2012 (%)	176	166	178	182
2012-2021 (%)	348	332	372	381
2004-2021 (%)	1,136	1,050	1,211	1,256

Source: TURKSTAT, 2022e

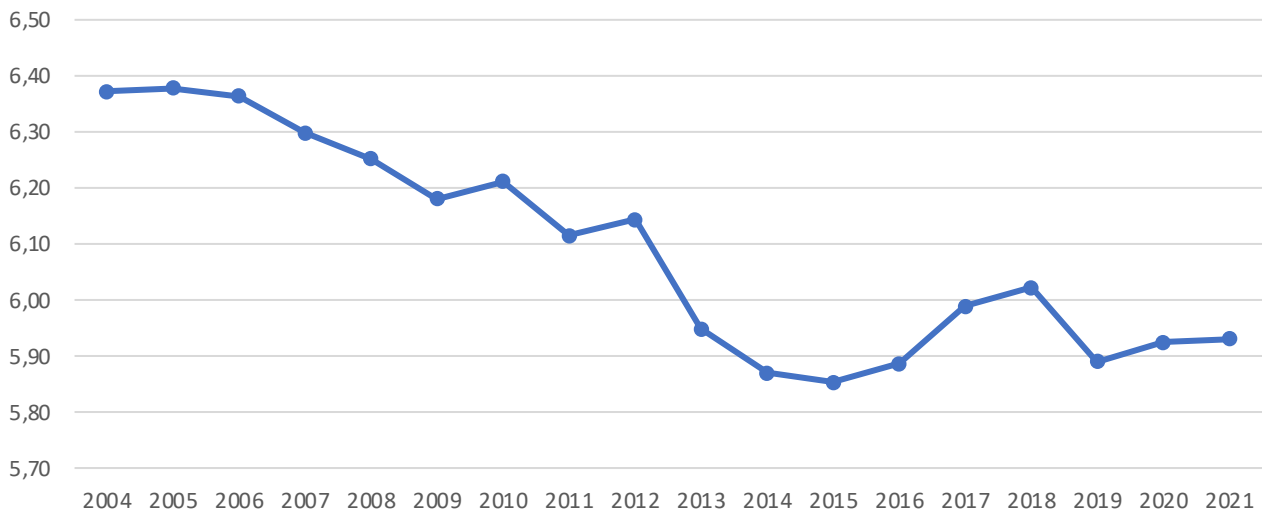
When the shares of the service GDP values of İzmir, Ankara, and İstanbul Regions within Türkiye's total service GDP are evaluated, it is observed that the service GDP of İzmir Region constituted 6.4% of Türkiye's total service GDP in 2004, whereas this share decreased to 5.9% in 2021. As seen in Table 2.27, the decline in the share of İzmir Region's service GDP within Türkiye's total service GDP demonstrates a continuous and almost linear trend. In contrast, the shares of Ankara and İstanbul Regions have increased.

The loss of the İzmir Region's share in high-value-added and capital-intensive sectors like the services sector is a critical finding. Developing policies within the Regional Plan towards increasing the share of İzmir Region's service sector GDP within Türkiye's total GDP will support enhancing the potential welfare that the region can generate (Table 2.27).

TABLE 2.27. Regional Shares in Türkiye's Overall Services GDP (Current Prices, %)

Year	İzmir	Ankara	İstanbul
2004	6.37	10.26	34.18
2005	6.38	10.29	34.20
2006	6.36	10.23	33.76
2007	6.30	10.38	33.99
2008	6.25	10.39	34.20
2009	6.18	10.58	34.26
2010	6.21	10.41	34.27
2011	6.12	10.28	34.76
2012	6.14	10.31	34.91
2013	5.95	10.44	35.33
2014	5.87	10.30	35.25
2015	5.85	10.37	35.67
2016	5.89	10.66	35.30
2017	5.99	10.15	36.22
2018	6.02	9.83	36.21
2019	5.89	10.16	36.23
2020	5.92	10.93	36.19
2021	5.93	10.88	37.51

Source: TURKSTAT, 2022e

FIGURE 2.13. Share of İzmir Services GDP in Türkiye's Overall Services GDP by Years (Current Prices, %)

Source: TURKSTAT, 2022e

The values related to the growth of sectors are more accurately calculated using the inflation-adjusted chained volume index. An examination of chained volume index values reveals that the size of the services sector in Türkiye reached 1.147 trillion TRY in 2021. In İzmir Region, this figure stood at 67 billion TRY, while in İstanbul and Ankara Regions, it was 431 billion TRY and 123 billion TRY, respectively. The services sector GDP of İzmir Region lags significantly behind that of İstanbul and Ankara Regions.

From 2004 to 2021, Türkiye's services sector achieved real growth of 134%, increasing from 491 billion TRY to 1.147 trillion TRY. In İzmir Region, the growth rate was recorded at 111%, with the sector's size rising from 32 billion TRY in 2004 to 67 billion TRY in 2021. Growth rates in İstanbul and Ankara Regions during this period were 165% and 145%, respectively. It is evident that the growth rate of İzmir Region also falls behind that of İstanbul and Ankara Regions, and Türkiye.

When the 2004-2021 period is divided into two sub-periods, 2004-2012 and 2012-2021, it is observed that İzmir Region experienced an increase in growth rate during the second sub-period, similar to other regions. However, in both sub-periods, the growth rate of İzmir Region remained lower than that of the other regions (Table 2.28).

TABLE 2.28. Services GDP by Years (Chained Volume, Base Year 2009, thousand TRY)

Year	Türkiye	İzmir	Ankara	İstanbul
2004	490,916,754	31,573,802	50,406,380	162,688,058
2005	526,813,319	33,826,115	54,208,447	176,158,962
2006	552,574,887	35,208,390	56,798,103	184,016,163
2007	581,064,620	36,584,172	60,423,712	196,685,811
2008	589,050,286	36,707,205	61,678,475	200,654,078
2009	575,259,411	35,550,785	60,833,925	197,112,413
2010	605,476,933	37,576,045	62,993,187	209,790,621
2011	659,981,605	40,313,352	67,614,494	232,394,354
2012	698,925,530	43,022,754	71,179,500	247,334,720
2013	750,992,301	44,697,405	77,829,651	269,060,331
2014	796,691,808	46,704,699	81,357,200	285,959,702
2015	841,607,584	49,181,210	86,398,696	305,622,737
2016	870,283,954	51,155,600	91,646,585	313,401,027
2017	936,130,493	55,893,103	93,857,468	344,443,839
2018	980,881,024	58,527,945	95,538,099	360,601,379
2019	1,005,861,873	58,791,558	100,302,871	371,730,878
2020	1,014,262,878	59,514,305	108,865,172	374,300,470
2021	1,146,958,999	66,588,796	123,313,776	430,899,729
2004-2012 (%)	42.4	36.3	41.2	52.0
2012-2021 (%)	64.1	54.8	73.2	74.2
2004-2021 (%)	133.6	110.9	144.6	164.9

Source: TURKSTAT, 2022e

Inspection of the share of regions in Türkiye's total services sector GDP indicates that İzmir Region accounted for 5.8% as of 2021. The shares of İstanbul and Ankara Regions were 37.6% and 10.8%, respectively.

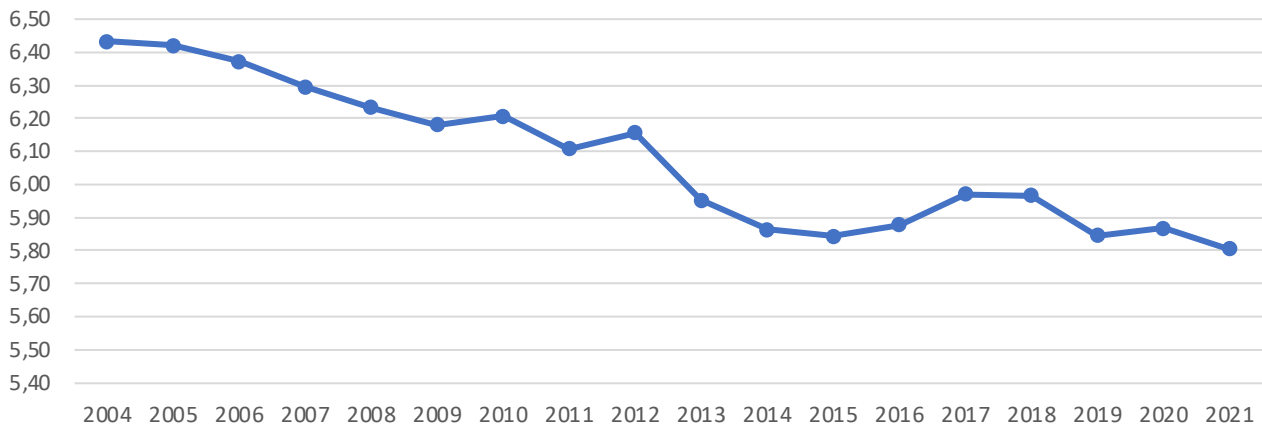
It is observed that, over the years, İzmir Region's share in Türkiye has steadily declined. It dropped from 6.4% in 2004 to 5.8% in 2021. While there was no significant change in Ankara Region, the share of İstanbul Region rose from 33.1% to 37.6%. İzmir Region, with its large population, extensive production infrastructure, tourism potential, geographical location, and transportation facilities, has highly favorable conditions for the development of the services sector. Utilizing these assets more efficiently and effectively will enable faster growth in the region's services sector and increase its weight within the country. Analyzing the sub-sectors within the region's services sector and developing policies to support their growth is essential for ensuring stable regional growth (Table 2.29).

TABLE 2.29. The Share of Regional Services Sector GDP in Türkiye (Chained Volume, Base Year 2009, %)

Year	İzmir	Ankara	İstanbul
2004	6.43	10.27	33.14
2005	6.42	10.29	33.44
2006	6.37	10.28	33.30
2007	6.30	10.40	33.85
2008	6.23	10.47	34.06
2009	6.18	10.58	34.26
2010	6.21	10.40	34.65
2011	6.11	10.24	35.21
2012	6.16	10.18	35.39
2013	5.95	10.36	35.83
2014	5.86	10.21	35.89
2015	5.84	10.27	36.31
2016	5.88	10.53	36.01
2017	5.97	10.03	36.79
2018	5.97	9.74	36.76
2019	5.84	9.97	36.96
2020	5.87	10.73	36.90
2021	5.81	10.75	37.57

Source: TURKSTAT, 2022e

FIGURE 2.14. The Share of İzmir Region in Türkiye's Services GDP by Years (%) (Chained Volume, Base Year 2009)



Source: TURKSTAT, 2022e

C. Public and Private Investments

An examination of public investments reveals that Türkiye's public investments amounted to 36.7 billion TRY in 2010, increasing to 292.9 billion TRY in 2022. During the 2010-2022 period, annual changes in public investments indicate an expansion across Türkiye, with annual change rates in public investments falling below 5% only during 2014-2015 and a 32.0% contraction observed between 2017-2018. This contraction manifested in the annual change rates of public investments across all regions.

The contraction in public investment amounts in İzmir Region was more pronounced than in İstanbul and Ankara Regions but remained below the level observed for Türkiye between 2017-2018. In contrast, the contraction in the Aegean Region significantly exceeded that of Türkiye. Within the Aegean Region, the contraction rates in other provinces are observed to have exceeded 50%. Public investments in İzmir Region amounted to 457 million TRY in 2010, rising to 9.354 billion TRY in 2020. In terms of investment amounts, İzmir Region ranks third after İstanbul and Ankara Regions. The annual change rate of public investments in İzmir Region exceeded 120% between 2020-2021, while this rate was over 100% for Aydın Province (Table 2.30).

TABLE 2.30. Public Investment Amounts by Years for Türkiye, İzmir and Other Provinces (Current Prices, billion TRY)

Year	Türkiye	Aegean	İzmir	Ankara	İstanbul	Manisa	Aydın	Denizli	Kütahya
2010	36.666	1.565	0.457	1.353	4.080	0.159	0.194	0.157	0.183
2011	38.840	1.902	0.609	1.700	2.820	0.276	0.178	0.124	0.207
2012	45.527	2.145	0.705	3.553	2.559	0.260	0.184	0.143	0.266
2013	54.076	2.732	1.210	3.665	2.246	0.247	0.190	0.194	0.355
2014	67.440	3.517	1.476	4.509	5.452	0.400	0.254	0.206	0.393
2015	70.048	3.572	1.639	4.255	6.393	0.324	0.227	0.331	0.426
2016	80.850	3.860	1.763	4.534	8.220	0.307	0.288	0.467	0.314
2017	106.125	5.757	2.751	5.840	12.023	0.507	0.402	0.389	0.431

Year	Türkiye	Aegean	İzmir	Ankara	İstanbul	Manisa	Aydın	Denizli	Kütahya
2018	72.120	3.592	2.083	5.112	10.258	0.155	0.174	0.268	0.205
2019	86.409	4.153	2.278	7.113	10.674	0.359	0.221	0.327	0.233
2020	117.913	5.600	2.849	8.945	14.144	0.537	0.409	0.470	0.341
2021	213.589	10.493	6.275	14.066	25.974	0.804	0.845	0.822	0.504
2022	292.911	15.499	9.354	17.660	35.803	0.550	1.655	1.370	0.656

Source: Strategy and Budget Presidency, 2022

Between 2010 and 2022, the regions with the highest growth rates in public investments were Kocaeli, İzmir, Ankara and Adana regions. In terms of the growth rate of public investments, İzmir Region surpassed both İstanbul and Ankara Regions. However, by 2022, public investments in the Aegean and İzmir Regions lagged behind those in İstanbul and Ankara Regions. The volume of public investments in İzmir Region increased steadily between 2010 and 2022.

When examining public investments across various sectors in İzmir Region, the highest investment volume in 2022 was observed in the transportation and communication sector. Other areas where public investments increased include education, other public services and healthcare (Table 2.31).

TABLE 2.31. Public Investments in İzmir by Sector (2010–2022) (Current Prices, 100 million TRY)

Sector	2010	2012	2014	2016	2018	2020	2022
Other Public Services	1.09	1.73	3.31	3.45	3.12	7.95	26.5
Education	0.86	1.07	1.87	2.65	0.84	2.63	6.34
Energy	0	0.43	0.14	0.98	0.32	0.8	0.96
Manufacturing	0.01	0.01	0	0	0.2	0.06	0.17
Housing	0.01	0	0	0	0	0	0.02
Mining	0.05	0.03	0	0	0	0	0
Healthcare	0.38	0.44	0.56	1.43	1.88	2.18	4.77
Agriculture	0.33	0.7	1.17	1.05	0.77	0.5	0.54
Tourism	0.05	0.07	0.04	0.03	0.03	0.01	0
Transportation & Communication	1.77	2.58	7.65	8.04	13.67	14.36	54.25
Total	4.57	7.05	14.76	17.63	20.83	28.49	93.54

Source: Strategy and Budget Presidency, 2022

When examining the distribution of shares in public investments, the transportation and communication sector is observed to have the highest share at 38.7% in 2010. This share increased to 58% in 2022. Meanwhile, the share of other public services rose from 23.9% in 2010 to 28.3% in 2022. However, the education sector, which held a significant share of 18.8% in 2010, decreased to 6.78% as of the year 2022 (Table 2.32).

TABLE 2.32. Sectoral Shares in Public Investments in İzmir (2010–2022) (%)

Sector	2010	2012	2014	2016	2018	2020	2022
Other Public Services	23.85	24.54	22.43	19.57	14.98	27.90	28.33
Education	18.82	15.18	12.67	15.03	4.03	9.23	6.78
Energy	0.00	6.10	0.95	5.56	1.54	2.81	1.03
Manufacturing	0.22	0.14	0.00	0.00	0.96	0.21	0.18
Housing	0.22	0.00	0.00	0.00	0.00	0.00	0.02
Mining	1.09	0.43	0.00	0.00	0.00	0.00	0.00
Healthcare	8.32	6.24	3.79	8.11	9.03	7.65	5.10
Agriculture	7.22	9.93	7.93	5.96	3.70	1.76	0.58
Tourism	1.09	0.99	0.27	0.17	0.14	0.04	0.00
Transportation & Communication	38.73	36.60	51.83	45.60	65.63	50.40	58.00
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

As of 2021, the total number of investment incentive certificates issued in Türkiye was 10,586. The number of investment incentive certificates issued in İzmir Region was 541 (Table 2.33), corresponding to 5.1% of Türkiye's total. İstanbul Region had the highest share of investment incentive certificates at 15.0%. The number of certificates issued in Ankara Region is quite close to the number in İzmir Region; however, the number issued in İstanbul Region is significantly higher than that in İzmir Region. In Ankara Region, 545 certificates were issued, representing 5.2% of the total investment incentive certificates issued in Türkiye.

When examining total investment amounts, it is seen that although Ankara Region ranks higher in the number of certificates issued, İzmir Region is ahead in terms of investment amounts. Regarding completed certificates, 635 certificates were issued in Türkiye, of which 1.3% belong to İzmir Region, 3.8% to İstanbul Region, and 3.0% to Ankara Region. When the regional shares of total investment amounts are considered, İzmir Region accounts for 5.4%, İstanbul Region 11.9%, and Ankara Region 4.4% (Table 2.33).

TABLE 2.33. Distribution of Investment Incentive Certificates by Provinces (2021)

Investment Incentive Certificates	Türkiye	İzmir	İstanbul	Ankara
Number of Certificates Issued (including cancellations)	10,586	541	1,585	545
Percentage of Certificates Issued (including cancellations) (%)	100.0	5.11	14.97	5.15
Number of Certificates Issued (excluding cancellations)	10,408	531	1,568	537
Number of Cancelled Certificates	178	10	17	8
Number of Completed Certificates	635	8	24	19
Percentage of Completed Certificates (%)	100.0	1.26	3.78	2.99
Total Investment Amount (Million TRY)	208,133	1,145	24,684	9,063
Percentage of Total Investment Amount (%)	100.0	5.35	11.86	4.35
Total Completed Investment Amount (Million TRY)	6,532	412	596	145
Total Completed Investment Amount (Million TRY) (final)	3,293	393	341	147
Percentage of Final Total Completed Investment Amount (%)	100.0	11.93	10.36	4.46
Average Investment Amount (Million TRY)	20	21	16	17

Source: Strategy and Budget Presidency, 2022

D. Foreign Trade

I. Exports and Imports

To better understand and analyze the economic dynamics of İzmir, Türkiye, and other regions, their export and import performances were examined. Exports and imports are critical economic dynamics for regional development and growth trends. Especially in the post-1980 period, under the influence of liberalization policies, export and import volumes in Türkiye increased exponentially, and İzmir Region benefited from this growth.

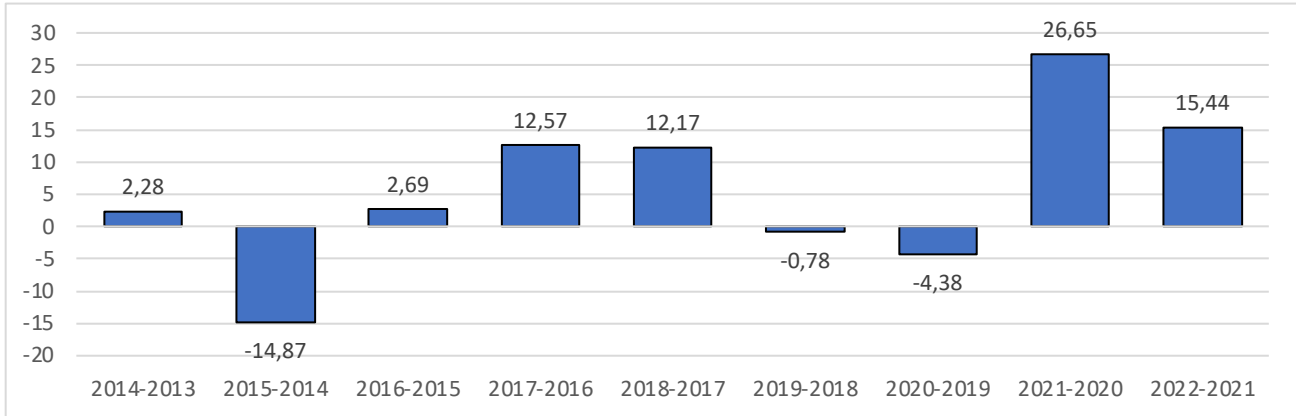
In Türkiye, export values increased from 161 billion USD in 2013 to 254 billion USD in 2022. Exports from İstanbul Region are significantly higher than those from İzmir and Ankara Regions. İzmir Region's exports, which were 10 billion USD in 2013, rose to 17.0 billion USD in 2022. However, when analyzing the annual rate of change in exports in Türkiye, it is observed that the changes were negative, especially between 2014–2015 and 2019–2020. Exports expanded during the periods of 2016–2017 and 2020–2022, with a notable 32.8% change in exports between 2020 and 2021. Annual changes in İzmir Region's exports are presented in Figure 2.15.

The share of İzmir Region in Türkiye's total exports decreased from 6.73% in 2013 to 6.69% in 2022. Although the export volume of İzmir Region increased in absolute terms, its share in Türkiye's total exports did not reach the desired level (Tables 2.34 and 2.35). Annual change rates indicate that İzmir's exports contracted by 14.9% between 2014 and 2015, a decline greater than that of Türkiye and İstanbul. Another critical period, 2019–2020, saw export contractions in both Türkiye and other regions. The main cause of this decline is considered to be the economic impacts of the COVID-19 pandemic. However, İzmir experienced a lower contraction rate compared to other regions during this period, indicating that İzmir's economy has become more resilient over time. In the periods following 2020, exports in Türkiye as well as in İzmir, Ankara and İstanbul Regions increased significantly.

TABLE 2.34. Exports and Annual Change Rates in Türkiye and NUTS II Regions (2013–2022) (Current Prices, million USD) (%)

Year	Türkiye	Change	İzmir	Change	Ankara	Change	İstanbul	Change
2013	161.481	-	10,863	-	7,922	-	81,577	-
2014	166.505	3.11	11,111	2.28	8,495	7.23	84,832	3.99
2015	150.982	-9.32	9,459	-14.87	7,181	-15.47	79,275	-6.55
2016	149.247	-1.15	9,713	2.69	6,679	-6.99	77,767	-1.90
2017	164.495	10.22	10,934	12.57	6,93	3.76	83,448	7.31
2018	177.169	7.70	12,265	12.17	7,828	12.96	88,203	5.70
2019	180.833	2.07	12,169	-0.78	8,464	8.12	88,828	0.71
2020	169.638	-6.19	11,636	-4.38	7,96	-5.95	82,815	-6.77
2021	225.214	32.76	14,737	26.65	9,496	19.30	108,666	31.22
2022	254.280	12.91	17,012	15.44	12,001	26.38	124,657	14.72

Source: TURKSTAT, 2022h

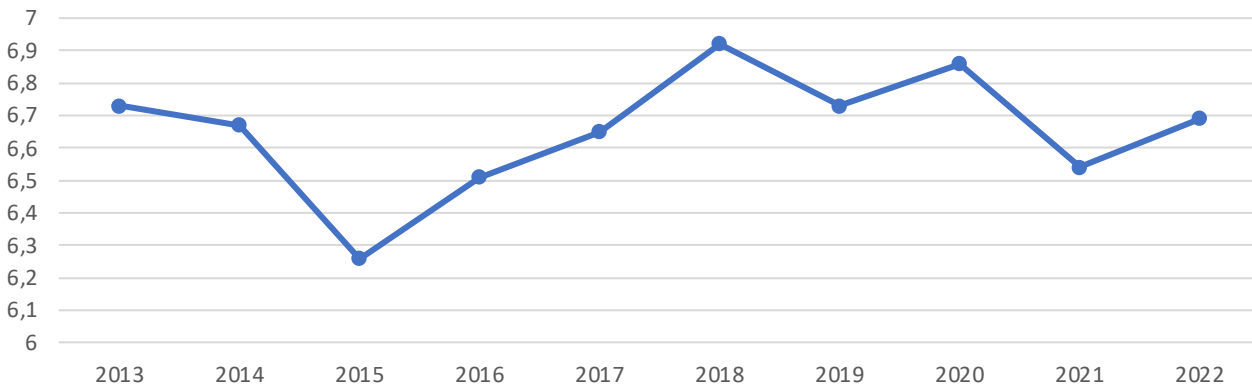
FIGURE 2.15. Annual Export Change Rates in İzmir Region (2013–2022)

Source: TURKSTAT, 2022h

The share of İzmir Region in Türkiye's exports decreased until 2015, followed by an upward trend between 2016–2020 and after 2021. In 2012, İstanbul Region accounted for approximately 50.5% of Türkiye's exports, a figure that declined steadily to 49% by 2022. Similarly, Ankara Region experienced a 0.2 percentage point decrease over the last decade. During this period, İzmir Region maintained its share of around 6.7% in Türkiye's exports.

TABLE 2.35. Export Shares of Türkiye and NUTS II Regions (2013–2022) (Current Prices, %)

Region	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Türkiye	100	100	100	100	100	100	100	100	100	100
İzmir	6.73	6.67	6.26	6.51	6.65	6.92	6.73	6.86	6.54	6.69
Ankara	4.91	5.10	4.76	4.48	4.21	4.42	4.68	4.69	4.22	4.72
İstanbul	50.52	50.95	52.51	52.11	50.73	49.79	49.12	48.82	48.25	49.04

FIGURE 2.16. Percentage Share of İzmir Region in Türkiye's Exports by Years (2013–2022) (Current Prices)

Source: TURKSTAT, 2022h

Imports in Türkiye increased from \$260.8 billion in 2013 to \$363.7 billion in 2022. Imports in İzmir Region, which stood at \$11.8 billion in 2013, reached \$13.6 billion by 2022. An analysis of annual changes reveals that imports contracted in Türkiye between 2013–2016, with the sharpest decline occurring between 2014–2015. During this period, imports in İzmir, Ankara and İstanbul Regions also contracted. Another period of contraction in imports for both Türkiye and these regions occurred between 2018–2019. While Türkiye's imports shrank by 9% during this period, the contraction rate for İzmir Region was 18%, significantly exceeding the national average.

Between 2019–2020, imports in Türkiye grew by 4.4%, while the change for İzmir Region was negative. In contrast, İstanbul Region experienced a much higher growth rate in imports during the same period. Between 2020–2021 and 2021–2022, imports expanded significantly in Türkiye as well as in İzmir, Ankara and İstanbul Regions.

TABLE 2.36. Imports and Annual Change Rates in Türkiye and NUTS II Regions (2013–2022) (Current Prices, million USD) (%)

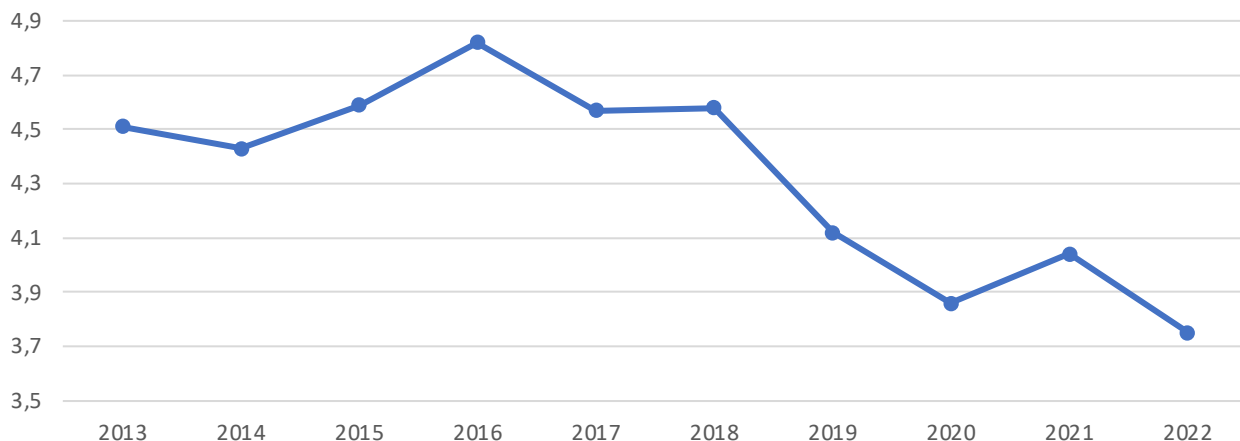
Year	Türkiye	Change	İzmir	Change	Ankara	Change	İstanbul	Change
2013	260,823	-	11,769	-	10,669	-	146,056	-
2014	251,142	-3.71	11,115	-5.56	11,077	3.82	139,891	-4.22
2015	213,619	-14.94	9,809	-11.75	9,677	-12.64	121,178	-13.38
2016	202,189	-5.35	9,744	-0.66	10,756	11.15	117,093	-3.37
2017	238,715	18.07	10,913	12.00	12,178	13.22	135,792	15.97
2018	231,152	-3.17	10,586	-3.00	13,410	10.12	125,176	-7.82
2019	210,345	-9.00	8,676	-18.04	11,028	-17.76	109,281	-12.70
2020	219,517	4.36	8,476	-2.31	11,458	3.90	126,858	16.08
2021	271,426	23.65	10,957	29.27	14,602	27.44	138,123	8.88
2022	363,710	34.00	13,625	24.35	14,501	-0.69	178,782	29.44

Source: TURKSTAT, 2022h

The share of İzmir Region in Türkiye's imports decreased from 4.5% in 2013 to 3.75% in 2022 (Table 2.37). The year 2022 marked the lowest share of İzmir in Türkiye's imports over the past decade (Figure 2.17). An analysis of İzmir's share of Türkiye's imports over the years reveals a sharp decline beginning in 2016, which accelerated after 2018.

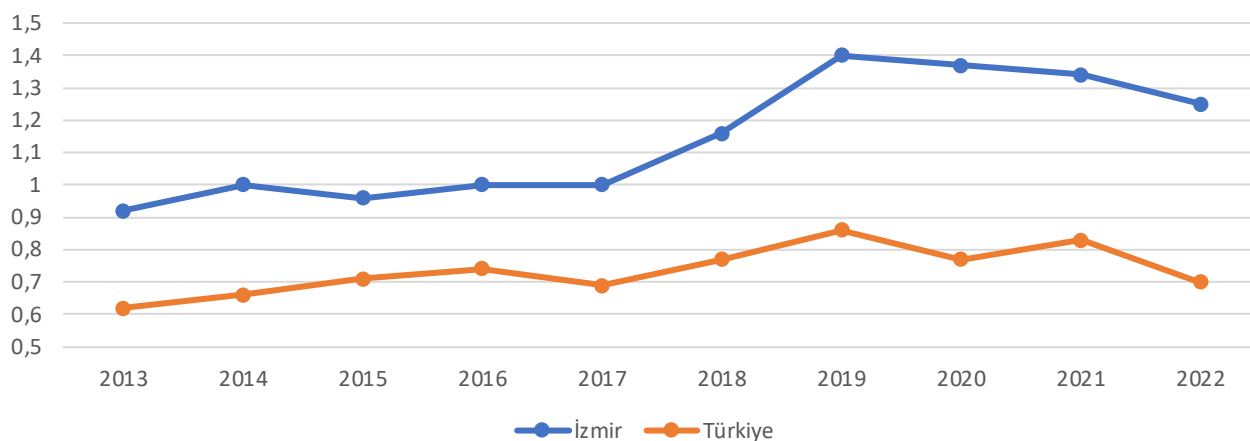
TABLE 2.37. Import Shares of Regions (2013–2022) (Current Prices, %)

Region	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Türkiye	100	100	100	100	100	100	100	100	100	100
İzmir	4.51	4.43	4.59	4.82	4.57	4.58	4.12	3.86	4.04	3.75
Ankara	4.09	4.41	4.53	5.32	5.10	5.80	5.24	5.22	5.38	3.99
İstanbul	56.00	55.70	56.73	57.91	56.88	54.15	51.95	57.79	50.89	49.14

FIGURE 2.17. İzmir Region's Share in Türkiye's Imports (2013–2022) (Current Prices)

Source: TURKSTAT, 2022h

The export/import ratio (EIR) over the years is presented in Table 2.38 and Figure 2.18. In 2013, Türkiye's EIR was 0.6, which increased to 0.7 by 2022. Despite some declines after 2019, Türkiye has generally increased its exports relative to imports. As of 2022, İzmir Region's EIR was 1.25, indicating that İzmir exports significantly more than it imports. Notably, İzmir Region's EIR rose to 1.4 in 2019 before showing a slight downward trend. Similarly, İstanbul Region's EIR exhibited an upward trend. While EIR levels in Ankara and İstanbul Regions are comparable, both remain well below that of İzmir Region.

FIGURE 2.18. Export/Import Ratio in Türkiye and İzmir Region (2013–2022) (Current Prices)

Source: TURKSTAT, 2022h

TABLE 2.38. Export/Import Ratios of Türkiye and NUTS II Regions (2013–2022) (Current Prices)

Region	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Türkiye	0.62	0.66	0.71	0.74	0.69	0.77	0.86	0.77	0.83	0.70
İzmir	0.92	1.00	0.96	1.00	1.00	1.16	1.40	1.37	1.34	1.25
Ankara	0.74	0.77	0.74	0.62	0.57	0.58	0.77	0.69	0.65	0.83
İstanbul	0.56	0.61	0.65	0.66	0.61	0.70	0.81	0.65	0.79	0.70

Source: TURKSTAT, 2022h

II. Sectoral Distribution

Exports and imports have also been analyzed by sectoral breakdowns in order to better understand the dynamics of export and import changes. When examining the sectoral export values specific to the İzmir Region, it is observed that the manufacturing industry sector accounted for the largest share in 2013. In the manufacturing sector, exports amounted to 9.49 billion USD in 2013. This figure increased to 13.42 billion USD in 2021, maintaining its position as the leading sector. During the contraction period of 2014–2015, which impacted Türkiye, İzmir and other regions, the manufacturing sector experienced the lowest contraction in the İzmir Region. Additionally, in the 2020–2021 period, the manufacturing sector demonstrated the highest expansion. It would not be incorrect to state that the manufacturing sector is a less vulnerable and key sector in the İzmir Region.

Although not as prominent as the manufacturing sector, another sector achieving significant export values is agriculture, forestry and fishing. In 2013, exports in the agriculture, forestry and fishing sector amounted to approximately 1 billion USD. This figure rose to 1.1 billion USD by 2021. As highlighted in the section on agricultural GDP, the trend of increasing agricultural production values underlines that the agriculture, forestry and fishing sector continues to be both strategically important and a key sector for the İzmir Region. The sector's exports contracted during the periods of 2014–2015, 2016–2017, and 2018–2019. However, in the 2020–2021 period, agriculture, forestry and fishing was the sector with the second-highest export growth after manufacturing.

In the mining and quarrying sector, exports from İzmir Region amounted to 231 million USD in 2013 but decreased to 125 million USD by 2021. When examining the annual change rates in mining and quarrying sector exports, it is observed that exports expanded only during the 2016–2017 period, while contracting in all other periods. The most significant contractions occurred in the 2014–2015 and 2019–2020 periods. Another sector with declining export volumes is water supply; sewerage, waste management and remediation activities. Exports in this sector fell from 96 million USD in 2013 to 42 million USD in 2021 (Table 2.39).

TABLE 2.39. Sectoral Export and Annual Change Rates in İzmir Region (2013–2021) (Current Prices, 100 million USD)

Year	Agriculture, Forestry and Fishing	Mining and Quarrying	Manufacturing	Water Supply; Sewerage, Waste Management, and Remediation Activities	Information and Communication	Culture, Arts, Entertainment, Recreation and Sports
2013	10.41	2.31	94.94	0.96	0.01	0
2014	11.94	2.03	96.31	0.81	0.02	0
2015	9.46	1.5	83.13	0.49	0.01	0
2016	9.98	1.39	85.21	0.51	0.01	0.03
2017	8.75	1.58	98.41	0.59	0.01	0.01
2018	9.71	1.58	110.6	0.69	0.06	0.01
2019	8.62	1.64	110.49	0.53	0.37	0.03
2020	9.07	1.26	105.05	0.52	0.43	0.04
2021	11.03	1.25	134.22	0.42	0.45	0.01
2014-2013 (%)	14.70	-12.12	1.44	-15.63	100	0
2015-2014 (%)	-20.77	-26.11	-13.68	-39.51	-50.00	0
2016-2015 (%)	5.50	-7.33	2.50	4.08	0.00	0
2017-2016 (%)	-12.32	13.67	15.49	15.69	0.00	-66.67
2018-2017 (%)	10.97	0.00	12.39	16.95	500	0.00
2019-2018 (%)	-11.23	3.80	-0.10	-23.19	516.67	200
2020-2019 (%)	5.22	-23.17	-4.92	-1.89	16.22	33.33
2021-2020 (%)	21.61	-0.79	27.77	-19.23	4.65	-75.00

Source: TURKSTAT, 2022h

When examining the sectoral shares of İzmir exports, it is seen that the manufacturing sector maintained the highest share during the 2013–2021 period. The share of the manufacturing sector in İzmir exports increased from 87.4% in 2013 to 91.1% in 2021. Although the export volume of the agriculture, forestry and fishing sector increased during the 2013–2021 period, its share in İzmir exports declined from 9.6% in 2013 to 7.5% in 2021. A similar situation applies to the mining and quarrying sector (Table 2.40).

TABLE 2.40. Sectoral Distribution of Exports in İzmir Region (2013–2021) (Current Prices, %)

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021
Agriculture, Forestry and Fishing	9.58	10.75	10.00	10.28	8.00	7.92	7.08	7.80	7.48
Mining and Quarrying	2.13	1.83	1.58	1.43	1.44	1.29	1.35	1.08	0.85
Manufacturing	87.40	86.68	87.88	87.72	90.00	90.18	90.80	90.28	91.07
Water Supply; Sewerage, Waste Management and Remediation Activities	0.89	0.73	0.52	0.52	0.54	0.56	0.44	0.44	0.28
Information and Communication	0.01	0.02	0.01	0.01	0.01	0.05	0.31	0.37	0.31
Culture, Arts, Entertainment, Recreation and Sports	0.00	0.00	0.00	0.03	0.01	0.01	0.03	0.03	0.00
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: TURKSTAT, 2022h

When imports in İzmir are analyzed by sector, the manufacturing sector emerges as the sector with the highest import values, similar to exports. Imports in the manufacturing sector decreased from 10.5 billion USD in 2013 to 7.1 billion USD in 2020 but increased by 24.5% in 2021, reaching 8.9 billion USD. Apart from this 2020–2021 period and the 2016–2017 period, the annual change rate of manufacturing sector imports in İzmir remained negative. The highest contraction occurred during the 2018–2019 period. The manufacturing sector was the sector with the highest import volume also in 2021.

In agriculture, forestry and fishing, imports increased from 360 million USD in 2013 to 663 million USD in 2021. During the 2013–2014 period, imports in this sector grew by 50%, followed by a 25% contraction in the next period. Except for the 2018–2019 period, imports in agriculture, forestry and fishing expanded in all other periods. In the mining and quarrying sector, imports increased from 119.5 million USD in 2013 to 170 million USD in 2021. Additionally, imports in water supply; sewerage, waste management and remediation activities increased from 698 million USD in 2013 to 1.18 billion USD in 2021 (Table 2.41).

TABLE 2.41. Sectoral Imports and Annual Change Rates in İzmir Region (2013–2021) (Current Prices, 10 million USD)

Year	Agriculture, Forestry and Fishing	Mining and Quarrying	Manufacturing	Water Supply; Sewerage, Waste Management, and Remediation Activities	Information and Communication	Culture, Arts, Entertainment, Recreation and Sports
2013	36.04	11.95	1.057.20	69.85	0.57	1.31
2014	53.90	17.86	977.55	60.01	0.63	1.52
2015	40.69	17.68	879.16	41.19	0.58	1.59
2016	41.63	15.24	877.58	38.24	0.41	1.27
2017	51.69	19.84	954.41	62.69	0.61	2.03
2018	53.06	18.72	935.30	49.32	0.70	1.45
2019	50.66	12.08	750.86	53.10	0.81	0.10
2020	60.75	11.43	717.57	57.05	0.74	0.09
2021	66.30	17.03	893.44	118.10	0.60	0.19
2014-2013 (%)	49.56	49.46	-7.53	-14.09	10.53	16.03
2015-2014 (%)	-24.51	-1.01	-10.06	-31.36	-7.94	4.61
2016-2015 (%)	2.31	-13.80	-0.18	-7.16	-29.31	-20.13
2017-2016 (%)	24.17	30.18	8.75	63.94	48.78	59.84
2018-2017 (%)	2.65	-5.65	-2.00	-21.33	14.75	-28.57
2019-2018 (%)	-4.52	-35.47	-19.72	7.66	15.71	-93.10
2020-2019 (%)	19.92	-5.38	-4.43	7.44	-8.64	-10.00
2021-2020 (%)	9.14	48.99	24.51	107.01	-18.92	111.11

Source: TURKSTAT, 2022h

When examining the sectoral shares within İzmir Region imports for the 2013-2021 period, the manufacturing sector is seen to be holding the highest share. However, the share of the manufacturing sector notably declines during the 2016-2021 period. Following the manufacturing sector, the sector with the second-highest share in İzmir Region imports is the water supply; sewerage, waste management and remediation activities sector, with a share slightly exceeding 5%. In 2021, the share of the water supply; sewerage, waste management and remediation activities sector rose to approximately 10%. Another sector with an increasing share during the 2013-2021 period occurred to be the agriculture, forestry and fisheries sector (Table 2.42).

TABLE 2.42. Sectoral Distribution of Imports in İzmir Region (2013-2021) (%)

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021
Agriculture, Forestry and Fishing	3.06	4.85	4.15	4.27	4.74	5.01	5.84	7.17	6.05
Mining and Quarrying	1.02	1.61	1.80	1.56	1.82	1.77	1.39	1.35	1.55
Manufacturing	89.83	87.95	89.63	90.07	87.46	88.36	86.54	84.66	81.54
Water Supply; Sewerage, Waste Management and Remediation Activities	5.93	5.40	4.20	3.92	5.74	4.66	6.12	6.73	10.78
Information and Communication	0.05	0.06	0.06	0.04	0.06	0.07	0.09	0.09	0.06
Culture, Arts, Entertainment, Recreation and Sports	0.11	0.14	0.16	0.13	0.19	0.14	0.01	0.01	0.02
Total	100	100	100	100	100	100	100	100	100

Source: TURKSTAT, 2022h

To better analyze the trends in sectoral exports and imports within İzmir Region, the export/import ratio (EIR) was calculated. During the 2013-2021 period, the EIR of the agriculture, forestry and fisheries sector, which holds the highest EIR among İzmir Region sectors, decreased continuously from 2.9 to 1.7. The EIR for the mining and quarrying sector also declined during this period. Between 2013 and 2018, the EIR for mining and quarrying fell from 1.9 to 0.8, then rose to 1.4 in 2019, and subsequently dropped to 0.7. In the information and communication sector, the EIR increased from 0.2 to 7.5 between 2013 and 2021 (Table 2.43). For the year 2021, the highest EIR was calculated for the information and communication sector.

TABLE 2.43. Sectoral Export/Import Ratios in İzmir Region (2013-2021)

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021
Agriculture, Forestry and Fishing	2.89	2.22	2.33	2.40	1.69	1.83	1.70	1.49	1.66
Mining and Quarrying	1.93	1.14	0.85	0.91	0.80	0.84	1.36	1.10	0.73
Manufacturing	0.90	0.99	0.95	0.97	1.03	1.18	1.47	1.46	1.50
Water Supply; Sewerage, Waste Management and Remediation Activities	0.14	0.14	0.12	0.13	0.09	0.14	0.10	0.09	0.04
Information and Communication	0.18	0.32	0.17	0.24	0.16	0.86	4.57	5.81	7.50
Culture, Arts, Entertainment, Recreation and Sports	0.00	0.00	0.00	0.24	0.05	0.07	3.00	4.44	0.53
Total	0.92	1.00	0.96	1.00	1.00	1.16	1.40	1.37	1.35

Source: TURKSTAT, 2022h

In order to delve deeper into the dynamics of exports by sectors in İzmir Region, data published by the Turkish Exporters Assembly, encompassing 26 sectoral breakdowns, were examined in the analyses (Table 2.44). As of 2020, the sectors with the highest shares in the total export value achieved by İzmir Region were observed to be the ready-to-wear and apparel at 14.16%, and chemicals and chemical products at 14.26%. Sectors that, while not holding such high shares, still performed relatively well in exports included steel (5.6%), machinery and components (5.6%), furniture, paper and forestry products (6.2%), the automotive industry (5.8%), and tobacco (6.2%).

For 2021, it was observed that the export performance of the sectors differed among the firms ranked in the top 1,000. While the share of the ready-to-wear and apparel, and chemicals and chemical products sectors was high, the share of the ready-to-wear and apparel sector declined compared to the previous year. On the other hand, the share of the chemicals and chemical products sector increased. Similarly, the share of the steel sector rose, the machinery and components sector remained unchanged, and the furniture, paper and forestry products sector experienced a decline. The share of the automotive industry within İzmir Region increased, while decreases were observed in fresh and dried fruits sectors. For 2022, it is notable that the shares of ready-to-wear and apparel, and textile and raw materials sectors declined, while the shares of steel, ship and yacht services, and electrical and electronics sectors increased.

When sectors are examined in terms of export volumes between 2020 and 2022, it is observed that all sectors, except for hazelnuts and products and the tobacco sector, have expanded. The sectors with the highest proportional growth include ship, yacht, and services; olives and olive oil; steel; carpets; cereals and products; chemicals and chemical products; electrical and electronics; and the automotive industry.

TABLE 2.44. İzmir Region Export Performance by Sector (2020-2022) (Current Prices, million \$)

Sector	2020	2020 Distribution (%)	2021	2021 Distribution (%)	2022	2022 Distribution (%)	2020-2022 Change Ratio (%)
Steel	541.97	5.68	984.11	8.05	1.177.7	8.46	117.30
Cement, Glass, Ceramics and Earth	369.71	3.88	416.02	3.40	466.78	3.35	26.26
Non-Ferrous Metals	290.06	3.04	399.77	3.27	478.79	3.44	65.07
Leather and Leather Products	115.31	1.21	150.48	1.23	162.49	1.17	40.92
Other Industrial Products	11.48	0.12	15.00	0.12	11.85	0.09	3.22
Electrical and Electronics	444.88	4.66	541.72	4.43	801.35	5.76	80.13
Hazelnuts and Products	60.33	0.63	69.75	0.57	49.96	0.36	-17.19
Ship, Yacht and Services	41.12	0.43	63.39	0.52	129.22	0.93	214.25
Carpet	2.15	0.02	3.63	0.03	4.60	0.03	113.95
Ready-to-Wear and Apparel	1.350.64	14.16	1.469.27	12.01	1.447.73	10.40	7.19
Grains, Pulses, Oilseeds and Products	346.71	3.64	464.33	3.80	688.89	4.95	98.69
HVAC Systems	372.77	3.91	478.09	3.91	544.89	3.91	46.17
Chemicals and Products	1.359.72	14.26	2.160.65	17.67	2.473.86	17.77	81.94
Dried Fruits and Products	447.44	4.69	484.18	3.96	481.59	3.46	7.63
Mining Products	205.26	2.15	224.02	1.83	287.25	2.06	39.94
Machinery and Components	533.53	5.59	695.65	5.69	727.60	5.23	36.37
Fruit and Vegetable Products	401.88	4.21	456.29	3.73	480.27	3.45	19.51
Furniture, Paper and Forestry Products	592.70	6.21	663.30	5.42	779.72	5.60	31.55
Jewelry	2.87	0.03	3.56	0.03	4.53	0.03	57.84
Automotive Industry	549.49	5.76	756.16	6.18	922.67	6.63	67.91
Aquaculture and Animal Products	386.52	4.05	491.13	4.02	521.42	3.75	34.90
Ornamental Plants and Products	12.90	0.14	16.60	0.14	18.75	0.13	45.35
Textiles and Raw Materials	178.70	1.87	326.67	2.67	257.60	1.85	44.15
Tobacco	586.88	6.15	494.87	4.05	521.42	3.75	-11.15
Fresh Fruits and Vegetables	193.77	2.03	212.44	1.74	220.03	1.58	13.55
Olives and Olive Oil	63.67	0.67	88.37	0.72	172.55	1.24	171.01
Total	9.537.38	100.0	12.230.58	100.0	13.918.81	100.0	45.94

Source: TIM, 2022

III. Analysis of the Top 1,000 Exporter Companies

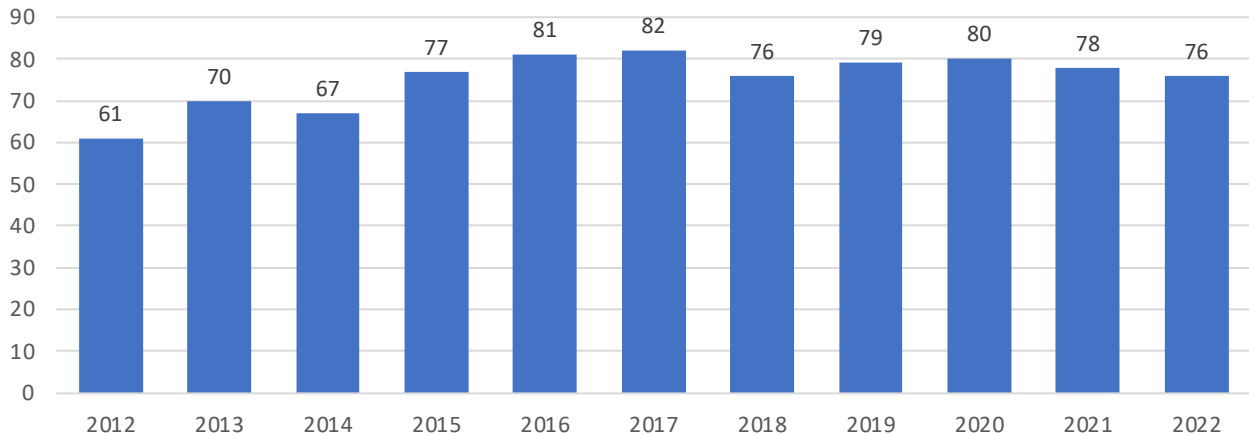
When examining the data published by the Türkiye Exporters Assembly regarding the regional distribution of the top 1,000 exporter companies, it is observed that in 2012, there were 61 companies from the İzmir Region, and this number increased to 76 in 2022 (Figure 2.19). Meanwhile, during the 2012–2022 period, the highest number of companies from İzmir Region included among the top 1,000 reached 82. In İstanbul, the number of companies was 464 in 2012, which decreased to 448 in 2022. In the Ankara Region, the number of companies increased from 46 in 2012 to 48 in 2022. The fact that the shares of the İzmir and İstanbul Regions in Türkiye's total exports have decreased while the number of exporter companies from these regions included among the top 1,000 has increased is a finding that requires more detailed analysis (Table 2.45). Another significant finding is that, during the 2014–2015 period, when Türkiye's exports contracted by -9.3%, the number of companies from İzmir Region included in the top 1,000 increased by 10, while the numbers in the İstanbul and Ankara Regions showed almost no change.

TABLE 2.45. Number of Companies from İzmir and Other Regions Included Among Türkiye's Top 1,000 Exporters (2012–2022)

Year	Türkiye	İzmir	İstanbul	Ankara
2012	1000	61	464	50
2013	1000	70	452	46
2014	1000	67	443	46
2015	1000	77	442	47
2016	1000	81	434	42
2017	1000	82	426	41
2018	1000	76	439	44
2019	1000	79	430	47
2020	1000	80	426	49
2021	1000	78	429	46
2022	1000	76	448	48

Source: TIM, 2022

FIGURE 2.19. Number of Companies from İzmir Included Among Türkiye's Top 1,000 Exporters (2012–2022)



Source: TIM, 2022

When the companies from İzmir included among the top 1,000 exporter companies are analyzed sectorally, it is seen that, in 2022, firms from İzmir were represented in 19 of the 27 sectors listed.

The number of companies included among the top 1,000 exporter companies increased in sectors such as steel, cement, glass, ceramics and earth products, electrical and electronics, ready-to-wear and apparel, and chemicals and chemical products. Additionally, the sectoral diversity of companies from İzmir included among the top 1,000 exporters has also increased. In recent years, firms from İzmir dealing in sectors such as leather and leather products, hazelnuts and hazelnut products, services, shipbuilding and yachts, and olives and olive oil have also been included in the top 1,000 exporter companies (Table 2.46).

In the wood and forestry products sector, the number of companies included in the top 1,000 was between 3 and 5 until 2014, but in subsequent years, no company from İzmir Region has been included in the top 1,000 in this sector. During the 2012–2022 period, no firm from İzmir Region was included in the top 1,000 exporter companies in the ornamental plants and products sector. When the sectoral distributions of 2017, the year with the highest number of companies included in the top 1,000 from İzmir, are examined, it is seen that the automotive industry, chemicals and chemical products, ready-to-wear and apparel, dried fruits and products, and tobacco sectors stand out. In 2022, the prominent sectors included chemicals and chemical products, electrical and electronics, tobacco, dried fruits and products, and steel.

TABLE 2.46. Number of Companies from İzmir Included in Türkiye's Top 1,000 Exporters by Sector and Year (2012–2022)

Sector	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Wood and Forestry Products	4	3	5	0	0	0	0	0	0	0	0
Steel	4	4	4	3	3	3	4	4	4	6	6
Cement, Glass, Ceramics, Earth	3	2	2	3	2	2	3	3	7	4	4
Non-Ferrous Metals	1	2	1	0	1	1	2	1	1	2	2
Leather and Leather Products	0	0	0	0	0	1	1	0	0	0	0
Electrical and Electronics	3	2	1	3	2	3	4	5	6	6	8
Hazelnuts and Products	0	0	0	0	0	0	0	0	1	1	0
Ship and Yacht	0	0	0	0	0	0	0	2	0	0	1
Ready-to-Wear and Apparel	3	3	6	9	9	8	5	7	7	6	4
Services	0	0	0	0	0	0	0	0	0	0	3
Grains, Pulses, Oilseeds, Products	2	5	2	2	5	3	3	4	3	4	5
HVAC Systems	3	5	5	2	4	3	5	3	2	1	1
Chemicals and Chemical Products	7	7	6	7	10	10	7	9	8	10	11
Dried Fruits and Products	7	8	8	9	8	7	8	6	7	6	6
Mining Products	2	3	2	3	1	2	1	1	0	0	0
Machinery and Components	2	2	3	3	3	2	2	3	2	1	0
Processed Fruits and Vegetables	1	2	1	2	4	5	4	5	5	4	3
Furniture, Paper and Forestry Products	0	0	0	5	4	6	4	4	4	4	4
Jewelry	0	0	0	0	0	0	0	0	0	0	0
Automotive Industry	7	7	7	8	8	10	9	8	7	5	4
Defense and Aerospace	1	1	2	2	2	1	1	1	2	2	1
Aquaculture and Animal Products	2	3	3	5	5	4	4	4	5	4	3
Ornamental Plants	0	0	0	0	0	0	0	0	0	0	0
Textiles and Raw Materials	1	1	1	0	1	1	0	0	1	2	0
Tobacco	7	7	8	9	7	6	7	8	7	8	8
Fresh Fruits and Vegetables	1	1	0	2	2	1	1	1	1	1	1
Olives and Olive Oil	0	2	0	0	0	3	1	0	0	1	1
Total	61	70	67	77	81	82	76	79	80	78	76

Source: TIM, 2022

It may be stated that İzmir Region holds a significant position in Türkiye's economy in the aforementioned sectors. Identifying the number of companies from other regions included in the top 1,000 exporters in these sectors is also crucial for determining the scope and objectives of the regional policies to be developed. Deciding whether to prioritize policies aimed at increasing the number of companies in sectors where İzmir Region already has a high representation among the top 1,000 exporters, or encouraging companies from the eight sectors in which İzmir has no representation in the top 1,000 will be critical for shaping the region's strategic planning.

IV. Export Technology Levels

In addition to the export volumes of regions, the technology levels of exported products are of critical importance. The export of high-tech products is acknowledged to contribute to regional prosperity and accelerate the formation of ecosystems capable of producing and developing advanced, high-tech products in the regions.

Products exported from İzmir Region were reclassified into four technology levels based on the OECD technology classification³, and export values were calculated accordingly (OECD, 2011). While this analysis was conducted solely for 2021, monitoring the technology levels of exported products over time is essential. According to 2021 data, İzmir Region achieved \$305.12 million in exports from high-tech industries (Table 2.47). This figure is behind that of İstanbul Region, which exported 53 times more high-tech industry products than İzmir, while in the case of comparison with Ankara Region, this ratio stands at 14 times.

İzmir Region exported \$3.5 billion from medium-high-tech industries. Compared to İstanbul and Ankara Regions, İstanbul exports 9 times more from medium-high-tech industries than İzmir, whereas the ratio between Ankara and İzmir Regions is 1.24.

In medium-low-tech industries, İzmir's export value is \$1.519 billion, which is 5% of İstanbul Region's exports in medium-low-tech industries and 60% of Ankara Region's exports in the same category.

In low-tech exports, İzmir surpasses both İstanbul and Ankara Regions. The low-tech export value of İzmir is \$1.820 billion. While İstanbul's low-tech export value is close to İzmir's, İzmir's low-tech exports are approximately three times higher than those of Ankara. İzmir's high share of low-tech exports is a finding that should be addressed while forming regional development policies. To enhance the prosperity of the İzmir Region, it is essential to develop sectors that will enable high-tech exports in the region.

TABLE 2.47. Technology Levels of Exports in İzmir and Other Regions (2021) (million USD)

Region	High-Tech Industries	Medium-High-Tech Industries	Medium-Low-Tech Industries	Low-Tech Industries
İzmir	305	3,512	1,519	1,820
İstanbul	16,185	33,573	31,240	1,726
Ankara	4,935	4,374	2,511	667

Source: TURKSTAT, 2022h

When examining İzmir's exports in 2021 by technology levels and industries, it is observed that the highest share, 30.8% belonged to the chemical industry excluding pharmaceuticals. This industry is classified by the OECD as a medium-high-tech industry, with an export value of \$2.2 billion. Other prominent

³ The OECD technology level classification and product codes by technology levels are provided in the document available at <https://www.oecd.org/sti/ind/48350231.pdf>.

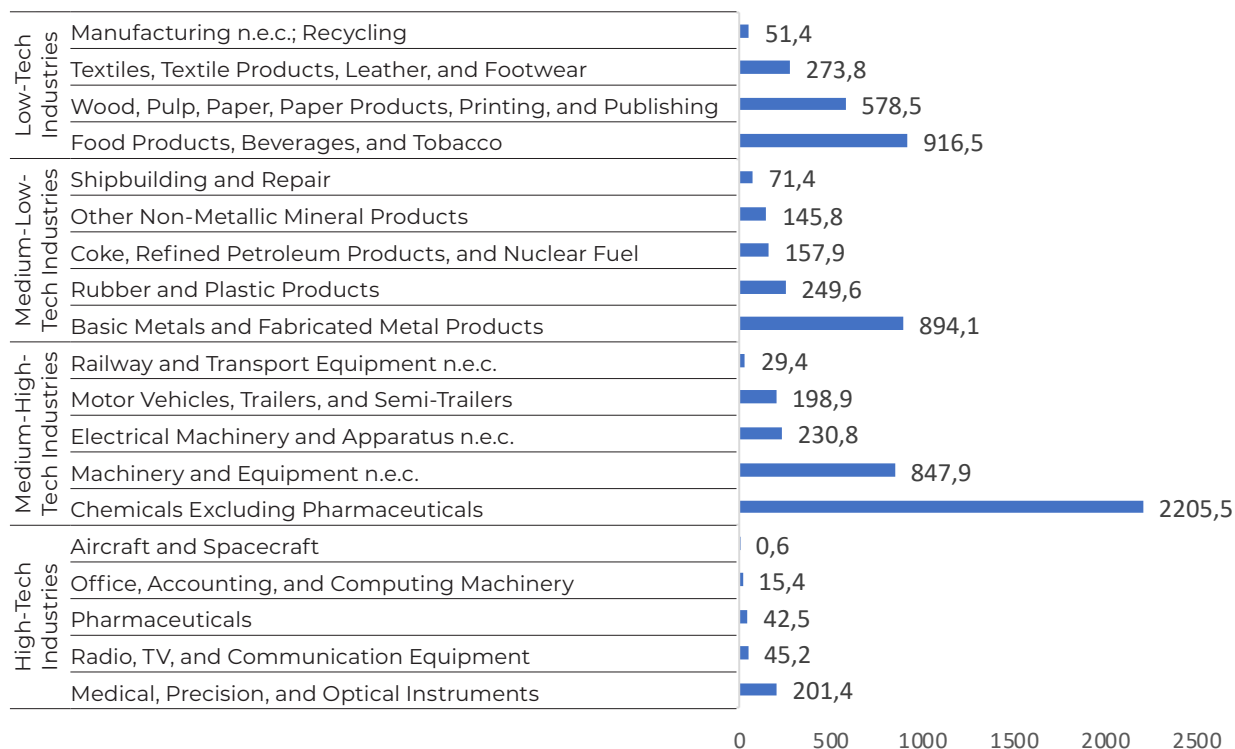
industries include machinery and equipment and other industries n.e.c. (Figure 2.20). Similar to the chemical industry excluding pharmaceuticals, machinery and equipment and industries n.e.c. also falls under the medium-high-tech category (Table 2.48).

Another prominent industry is the basic metals and fabricated metal products industry, with a share of 12.4%. This industry, which achieved exports of \$894.1 million, is classified under medium-low-tech industries. The food products, beverages, and tobacco industry, classified as low-tech, also stands out among the industries in the İzmir Region.

TABLE 2.48. Technology Levels of İzmir Region Exports by Sectors (2021) (million USD)

Technology Levels	Sectors	Export Value	Distribution (%)
High-Tech Industries	Aircraft and Spacecraft	0.6	0.01
	Pharmaceuticals	42.5	0.59
	Office, Accounting, and Computing Machinery	15.4	0.21
	Radio, TV, and Communication Equipment	45.2	0.63
	Medical, Precision, and Optical Instruments	201.4	2.81
Medium-High-Tech Industries	Electrical Machinery and Apparatus n.e.c.	230.8	3.23
	Motor Vehicles, Trailers, and Semi-Trailers	198.9	2.78
	Chemicals Excluding Pharmaceuticals	2,205.5	30.82
	Railway and Transport Equipment n.e.c.	29.4	0.41
	Machinery and Equipment n.e.c.	847.9	11.85
Medium-Low-Tech Industries	Shipbuilding and Repair	71.4	1.00
	Rubber and Plastic Products	249.6	3.49
	Coke, Refined Petroleum Products, and Nuclear Fuel	157.9	2.21
	Other Non-Metallic Mineral Products	145.8	2.04
	Basic Metals and Fabricated Metal Products	894.1	12.49
Low-Tech Industries	Manufacturing n.e.c.; Recycling	51.4	0.72
	Wood, Pulp, Paper, Paper Products, Printing, and Publishing	578.5	8.08
	Food Products, Beverages, and Tobacco	916.5	12.81
	Textiles, Textile Products, Leather, and Footwear	273.8	3.83
Total		7,156.4	100

Source: TURKSTAT, 2022h

FIGURE 2.20. Technology Levels of İzmir Region Exports by Sectors (2021) (million USD)

Source: TURKSTAT, 2022h

V. Dominance Based on ISIC Codes

Regions possess relatively advantageous capacities and specialization tendencies in the export and import of certain products due to their inherent dynamics. Therefore, identifying the products in which regions are more advantageous provides insights into their economic patterns. Using TURKSTAT foreign trade statistics, the products for which İzmir Region has a relative advantage in exports and imports have been identified (TURKSTAT, 2022h). Values indicating a product's advantage in İzmir Province's exports and imports, as well as its comparison to the total exports and imports of all provinces, are presented as regional relative advantage values in Tables 2.49 and 2.50.

İzmir Region has a relative advantage in the export of 66 products. The top five products for which İzmir Region has an advantage in exports are tobacco products; architectural, engineering and related technical activities; printing-related services; cereals and other plant products n.e.c.; and fishing and fish products. Products from sectors that hold a significant share in the İzmir Region's exports are also seen to be ranked high in the table of products with a relative export advantage. The relative advantage scores for the 66 products for which İzmir Region holds an advantage are shown in Table 2.49.

TABLE 2.49. Products with Relative Export Advantage in İzmir Region (2021) (ISIC 4-Digit, RCA > 1)

Rank	Code	Sector	RCA
1	ISIC_1600	Tobacco products	9.8
2	ISIC_7421	Architectural, engineering, and related technical activities	8.597
3	ISIC_2222	Printing-related services	6.42
4	ISIC_1111	Cereals and other plant products n.e.c.	5.055
5	ISIC_500	Fishing	4.632
6	ISIC_1512	Fish products	4.196
7	ISIC_1513	Processed vegetables and fruits	3.888

Rank	Code	Sector	RCA
8	ISIC_2101	Pulp, paper, and cardboard	3.808
9	ISIC_3591	Motorcycles	3.695
10	ISIC_2102	Corrugated paper and cardboard packaging	3.563
11	ISIC_3311	Medical and surgical equipment and orthopedic appliances	3.497
12	ISIC_2693	Non-refractory clay and ceramic construction materials	3.414
13	ISIC_2421	Pesticides and other agro-chemicals	3.411
14	ISIC_1533	Prepared animal feeds	3.389
15	ISIC_1514	Vegetable and animal oils and fats	3.09
16	ISIC_1911	Tanned leather	2.548
17	ISIC_3110	Electric motors, generators, and transformers	2.236
18	ISIC_1553	Beer and malt	2.191
19	ISIC_3312	Instruments and devices for measurement, control, testing, navigation, etc.	2.161
20	ISIC_3693	Sporting goods	2.156
21	ISIC_2422	Paints, varnishes, printing ink, and mastics	2.133
22	ISIC_2413	Synthetic rubber and plastic raw materials	2.054
23	ISIC_1422	Salt	2.041
24	ISIC_2923	Metallurgical machinery	2.032
25	ISIC_1030	Peat	1.99
26	ISIC_3130	Insulated wires and cables	1.965
27	ISIC_122	Animals and animal products n.e.c.	1.933
28	ISIC_2411	Basic chemical substances (excluding fertilizers and nitrogen compounds)	1.924
29	ISIC_1552	Wine	1.901
30	ISIC_2912	Pumps, compressors, taps, and valves	1.806
31	ISIC_2520	Plastic products	1.727
32	ISIC_2913	Bearings, gears, gearboxes, and drive components	1.708
33	ISIC_2914	Industrial furnaces, ovens, and incinerators	1.702
34	ISIC_3420	Bodies and trailers for motor vehicles	1.699
35	ISIC_2429	Other chemical products n.e.c.	1.698
36	ISIC_1520	Dairy products	1.65
37	ISIC_2023	Wooden packaging materials	1.607
38	ISIC_3694	Toys and games	1.606
39	ISIC_2811	Metal building materials	1.593
40	ISIC_1511	Slaughterhouse products	1.572
41	ISIC_2696	Stone	1.505
42	ISIC_1810	Clothing (excluding fur)	1.496
43	ISIC_2926	Textile, clothing, and leather-processing machinery	1.391
44	ISIC_113	Fruits, nuts, beverages, and spice crops	1.389
45	ISIC_2694	Cement, lime, and plaster	1.358
46	ISIC_3430	Parts and accessories for motor vehicle engines	1.357
47	ISIC_3699	Other products n.e.c.	1.352
48	ISIC_1551	Ethyl alcohol from fermented materials	1.339
49	ISIC_2919	Other general-purpose machinery	1.335
50	ISIC_2915	Lifting and handling equipment	1.332
51	ISIC_2925	Machinery for food, beverage, and tobacco processing	1.318
52	ISIC_1912	Luggage, handbags, and similar items	1.315
53	ISIC_2899	Other metal goods n.e.c.	1.31
54	ISIC_2924	Mining, quarrying, and construction machinery	1.309

Rank	Code	Sector	RCA
55	ISIC_2929	Other special-purpose machinery	1.278
56	ISIC_2695	Cement and gypsum-based hardened materials	1.26
57	ISIC_1723	Rope, cord, and netting	1.236
58	ISIC_2911	Internal combustion engines and turbines (excluding engines for aircraft, motor vehicles, and motorcycles)	1.219
59	ISIC_3313	Parts of automatic control and adjustment devices	1.219
60	ISIC_3592	Bicycles and invalid carriages	1.177
61	ISIC_2922	Machine tools	1.157
62	ISIC_1920	Footwear	1.125
63	ISIC_2927	Weapons and ammunition	1.111
64	ISIC_3599	Other transportation equipment n.e.c.	1.076
65	ISIC_3210	Electronic valves and tubes and other electronic components	1.041
66	ISIC_2221	Printing	1.008

Source: TURKSTAT, 2022h

An analysis of the products for which İzmir Region holds a relative advantage was also conducted for imported goods. İzmir Region has a relative advantage in the import of 62 products. Among the top five products with the highest relative advantage are beer and malt; tobacco products; printing-related services; pesticides and other agro-chemicals; and fish products. The values for the 62 products are presented in Table 2.50. Examining the trends, technological levels, and multiplier effects of imported products over time provides important inputs for developing region-specific smart specialization strategies.

TABLE 2.50. Products with Relative Import Advantage in İzmir Region (2021) (ISIC 4-Digit (RCA > 1))

Rank	Code	Sector	RCA
1	ISIC_1553	Beer and malt	18.237
2	ISIC_1600	Tobacco products	17.73
3	ISIC_2222	Printing-related services	6.656
4	ISIC_2421	Pesticides (insecticides) and other agrochemicals	6.252
5	ISIC_1512	Fish products	5.701
6	ISIC_3692	Musical instruments	5.596
7	ISIC_1723	Cordage, rope, twine, and netting	5.553
8	ISIC_1533	Prepared animal feeds	5.271
9	ISIC_1532	Starch and starch-based products	4.945
10	ISIC_2925	Machinery for processing food, beverages, and tobacco	4.432
11	ISIC_1511	Slaughtering	4.241
12	ISIC_1911	Tanned leather	4.174
13	ISIC_1514	Vegetable and animal oils and fats	4.009
14	ISIC_1030	Peat	3.905
15	ISIC_2219	Other publishing services	3.706
16	ISIC_2101	Pulp, paper, and cardboard	3.675
17	ISIC_3420	Bodies (coachwork) for motor vehicles; trailers and semi-trailers	3.535
18	ISIC_2699	Other non-metallic minerals n.e.c.	3.328
19	ISIC_9214	Dramatic arts, music, and other arts activities	3.151
20	ISIC_2693	Non-refractory clay construction materials and ceramic building materials	2.879
21	ISIC_3592	Bicycles and invalid carriages	2.794

Rank	Code	Sector	RCA
22	ISIC_112	Vegetables, horticultural, and floricultural products	2.767
23	ISIC_3320	Optical instruments and photographic equipment	2.673
24	ISIC_2102	Corrugated cardboard and paperboard and packaging of paper and cardboard	2.508
25	ISIC_1513	Processed vegetables and fruits	2.361
26	ISIC_5149	Waste and scrap	2.31
27	ISIC_1422	Salt	2.157
28	ISIC_3512	Boats and ships for recreational or sporting purposes	2.057
29	ISIC_2023	Packaging materials made of wood	1.97
30	ISIC_2022	Construction timber	1.963
31	ISIC_1552	Wine	1.94
32	ISIC_2422	Paints, varnishes, and similar coatings, printing ink, and mastics	1.897
33	ISIC_2221	Printing	1.896
34	ISIC_111	Cereals and other vegetable products n.e.c.	1.822
35	ISIC_1729	Other textiles n.e.c.	1.771
36	ISIC_2109	Other articles of paper and cardboard	1.768
37	ISIC_200	Forestry and logging	1.734
38	ISIC_1421	Minerals used in the chemical and fertilizer industries	1.731
39	ISIC_2811	Metal construction materials	1.703
40	ISIC_2411	Basic chemical substances (excluding chemical fertilizers and nitrogen compounds)	1.667
41	ISIC_1549	Other food products n.e.c.	1.633
42	ISIC_2913	Bearings, gears, gearing, and driving elements	1.628
43	ISIC_2429	Other chemical products n.e.c.	1.481
44	ISIC_3330	Watches	1.466
45	ISIC_2520	Plastic products	1.461
46	ISIC_2696	Stone	1.447
47	ISIC_3511	Ships	1.418
48	ISIC_2413	Synthetic rubber and plastic raw materials	1.354
49	ISIC_2021	Wood panels, plywood, particle board, fiberboard, and other boards	1.339
50	ISIC_2914	Industrial ovens, furnaces, and furnace burners	1.294
51	ISIC_2915	Lifting and handling equipment	1.276
52	ISIC_2922	Machine tools	1.268
53	ISIC_2610	Glass and glass products	1.252
54	ISIC_1520	Dairy products	1.23
55	ISIC_2893	Cutlery, hand tools, and hardware	1.222
56	ISIC_2899	Other metal goods n.e.c.	1.151
57	ISIC_1711	Yarn and woven textiles of textile fibers	1.145
58	ISIC_113	Fruits, nuts, beverages, and spice crops	1.134
59	ISIC_3313	Parts and accessories for instruments and appliances for automatic control	1.111
60	ISIC_2919	Other general-purpose machinery	1.052
61	ISIC_2692	Refractory ceramic products	1.048
62	ISIC_2929	Other special-purpose machinery	1.027

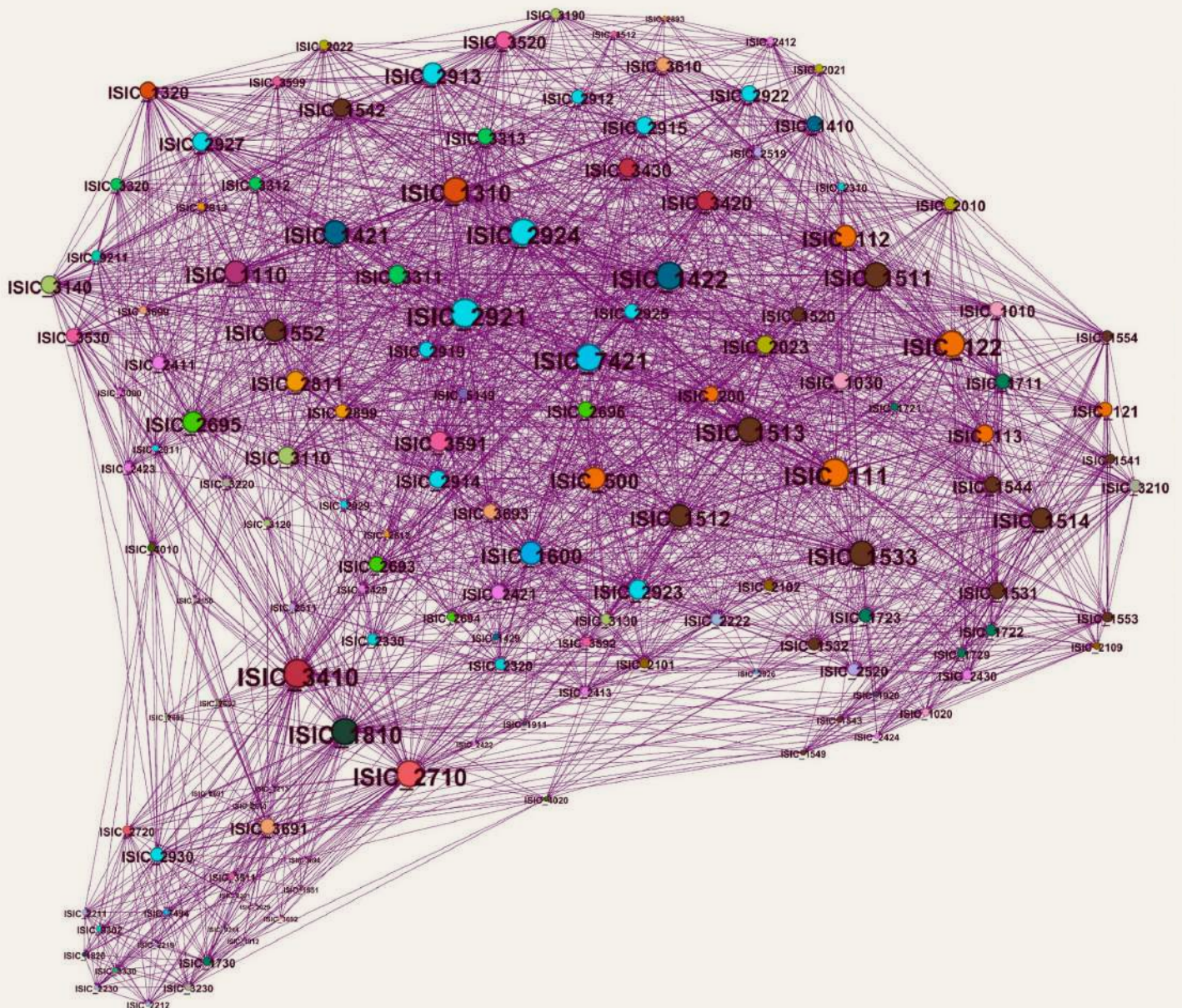
Source: TURKSTAT, 2022h

VI. Product Space and Relatedness

Relatedness, which describes the frequency of product pairs being dominant and co-existing in regions, is a tool developed to measure how interconnected a product is with other products. The analysis measures the tendencies of product pairs, which are dominant in regional exports, to co-exist dominantly in the respective regions. Using foreign trade statistics published by TURKSTAT (Special Trade System) and employing the most detailed product grouping classification, ISIC4, a product space has been created. To facilitate the differentiation of products, the product space analysis conducted using ISIC4 codes has been grouped according to the ISIC2 classification, and Figure 2.21 has been prepared.

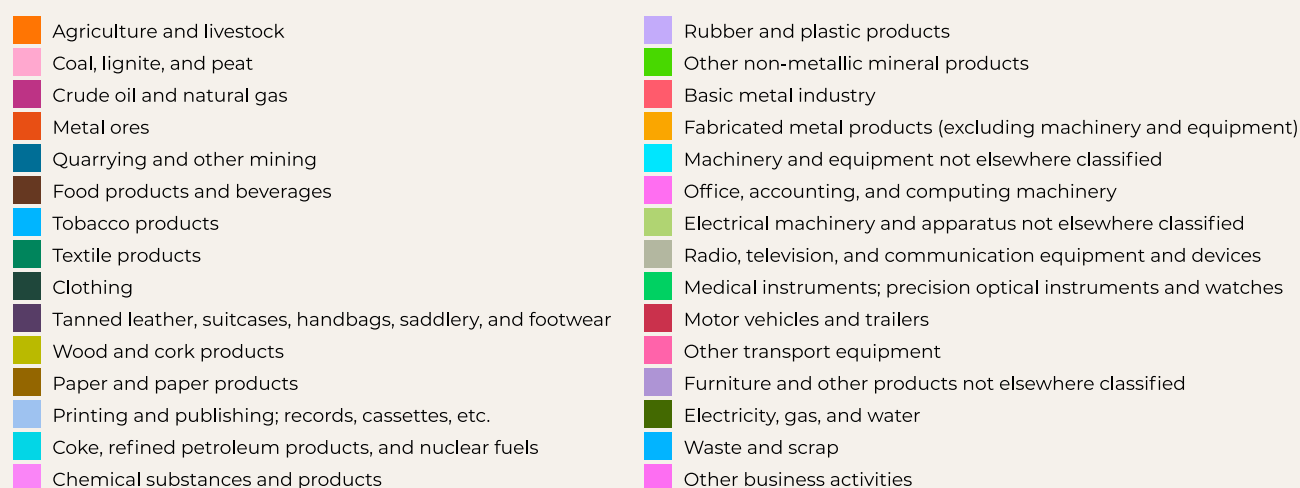
Figure 2.21, with its complex network of relationships, provides detailed insights to policymakers and decision-makers who guide and shape regional development processes. For instance, in the product space analysis, strong relatedness is evident among the products within the agricultural and livestock product group, including ISIC111, ISIC112, ISIC122, and ISIC500. It can be observed in Table 2.49 that İzmir Region has a relative advantage ($RCA = 5.055$) in the ISIC111 product group, which corresponds to cereals and other vegetable products n.e.c. Furthermore, İzmir Region has specialized in the ISIC500 code, corresponding

FIGURE 2.21. Product Space by ISIC4 Export Product Groups (2021)



to fishing (RCA = 4.632), and the ISIC122 code, corresponding to animals and animal products n.e.c. (RCA = 1.933). However, İzmir Region has not specialized in the ISIC112 product group, corresponding to vegetables, horticultural, and floricultural products within the agricultural and livestock product group. Another example is the machinery and equipment group. The major nodes include ISIC2921 and ISIC2924; medium-sized nodes include ISIC2923, ISIC2913, and ISIC2927; and smaller nodes include ISIC2914, ISIC2012, and ISIC2922 codes. İzmir Region has not specialized in ISIC2921, corresponding to agricultural and forestry machinery. The other codes, such as ISIC2924 for mining, quarrying, and construction machinery, ISIC2923 for metallurgy machinery, ISIC2913 for bearings, gears, gearing, and driving elements, ISIC2927 for weapons and ammunition, and smaller nodes ISIC2914 for industrial ovens, furnaces, and furnace burners, ISIC2012 for pumps, compressors, taps, and valves, and ISIC2922 for machine tools, have RCA values between 1 and 2 (Table 2.49).

Policies to increase exports in the ISIC112 product group of vegetables, horticultural, and floricultural products in İzmir Region could be developed. Similarly, policies aimed at achieving specialization in ISIC2921, corresponding to agricultural and forestry machinery, could also be pursued. In addition, policymakers may develop policies to deepen specialization in the codes where İzmir Region already has a relative advantage. The determining factor here is the region's priorities and the development strategies of decision-makers.



VII. Export and Import Complexity

Economic complexity is an advanced statistical tool developed to measure the level of knowledge and skills embedded in a country's products or the products a country produces (Hausmann and Hidalgo, 2007). Economic complexity is based on the premise that the knowledge and innovations embedded in products are complex and relatively difficult to replicate, and that the rarer (produced by fewer countries) a product is in terms of the countries where it is manufactured, and the greater the relative advantage countries have in producing a variety of products, the more these countries possess complex knowledge and the capacity to organize systems that enable the generation of such complex knowledge. The model developed by Ricardo Hausmann and César Hidalgo measures the complexity embedded in products and the topological distances between products based on the products exported and imported by countries (Erdem, 2022).

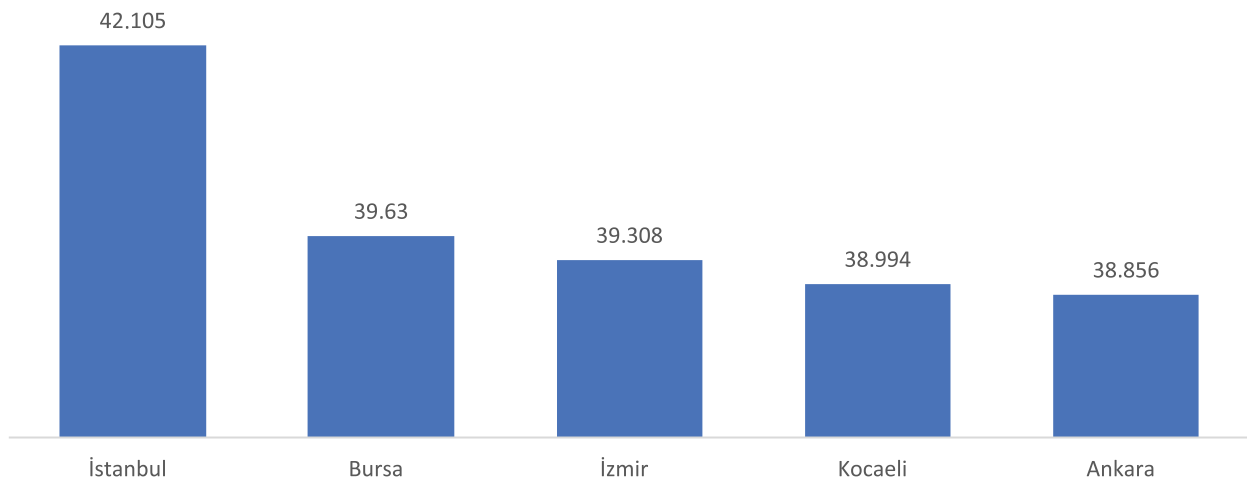
An analysis of the complexity formed by the product groups where İzmir Region has a high relative advantage has been conducted using the export and import values of İzmir Region. The most detailed product grouping classification, ISIC4, published by TURKSTAT in Foreign Trade Statistics (Special Trade System), has been selected for the analysis (TURKSTAT, 2022h).

TABLE 2.51. Top 20 Regions with the Highest Export and Import Complexity (2021) (ISIC Rev 3 – 4 Digit)⁴

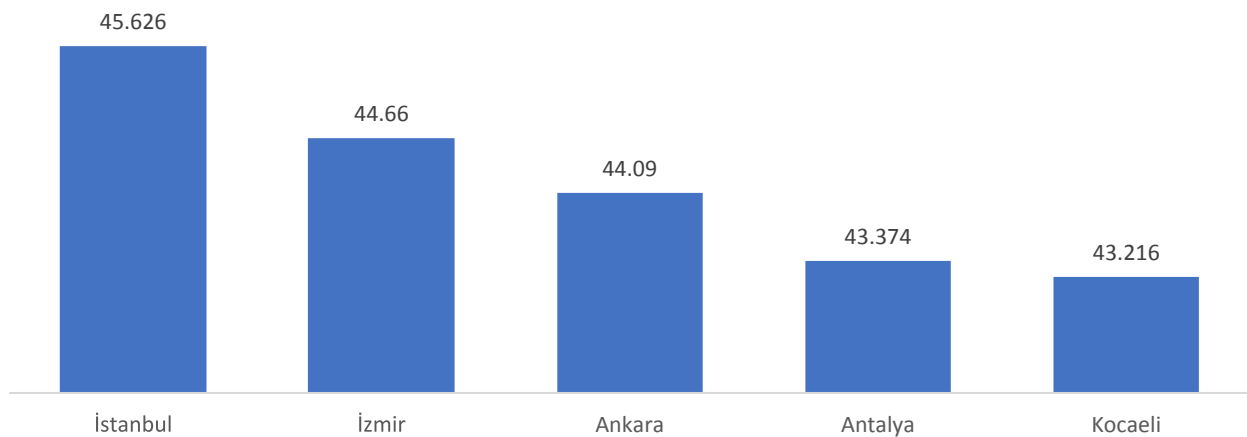
Exports			Imports		
Rank	Region	Complexity	Rank	Region	Complexity
1	İstanbul	42.105	1	İstanbul	45.626
2	Bursa	39.63	2	İzmir	44.66
3	İzmir	39.308	3	Ankara	44.09
4	Kocaeli	38.994	4	Antalya	43.374
5	Ankara	38.856	5	Kocaeli	43.216
6	Ağrı	38.516	6	Bursa	43.104
7	Tekirdağ	38.088	7	Manisa	42.856
8	Kayseri	37.76	8	Eskişehir	42.515
9	Eskişehir	37.578	9	Konya	41.564
10	Iğdır	37.437	10	Sakarya	41.463
11	Samsun	37.309	11	Gaziantep	41.403
12	Sakarya	37.132	12	Tekirdağ	41.298
13	Konya	37.073	13	Yalova	41.262
14	Manisa	36.603	14	Mersin	41.048
15	Adana	36.531	15	Kayseri	40.786
16	Erzurum	36.173	16	Balıkesir	40.719
17	Denizli	36.137	17	Adana	40.679
18	Düzce	35.97	18	Denizli	39.731
19	Antalya	35.851	19	Samsun	39.522
20	Van	35.538	20	Karaman	39.034

Source: TURKSTAT, 2022h

⁴ Calculated using TURKSTAT 2021 Foreign Trade Special Trade System Statistics.

FIGURE 2.22. Top 5 Provinces with the Highest Export Complexity (2021)

Source: TURKSTAT, 2022h

FIGURE 2.23. Top 5 Provinces with the Highest Import Complexity (2021)

Source: TURKSTAT, 2022h

Based on complexity analyses conducted using the export and import values of products at the ISIC4 level in İzmir Region, the complexity score of İzmir Region in 2021 is calculated to be 39.61, making it the third most complex region in exports (Table 2.51). Regarding import complexity, İzmir Region ranks as the second most complex region in Türkiye with a score of 44.66. For both exports and imports, İstanbul emerges as the region with the highest complexity scores. Bursa Region has the second-most complex export portfolio in export complexity scores. Determining which product groups Bursa Region, like İstanbul and Ankara Regions, has a relative advantage over İzmir Region in exports, and developing strategies to increase the complexity of İzmir Region's export portfolio, is crucial as it holds the potential to enhance İzmir Region's share in the wealth generated within Türkiye. The fact that İzmir Region is a region with a high level of complexity is a finding that should be emphasized during the regional policy formulation process.

E. Regional Productivity

Productivity is highly significant in ensuring the economic continuity of regions. Regions with more productive sectors and workforces create greater added value compared to other regions with similar economic capacities. This added value accelerates economic growth in the form of prosperity and fosters a cycle of greater value creation and increased wealth, thereby growing regional economies. Regional productivity is measured by gross value added (GVA) per worker. This metric was calculated by dividing TURKSTAT's regional gross domestic product (GDP) figures by Social Security Institution (SGK) employment data.

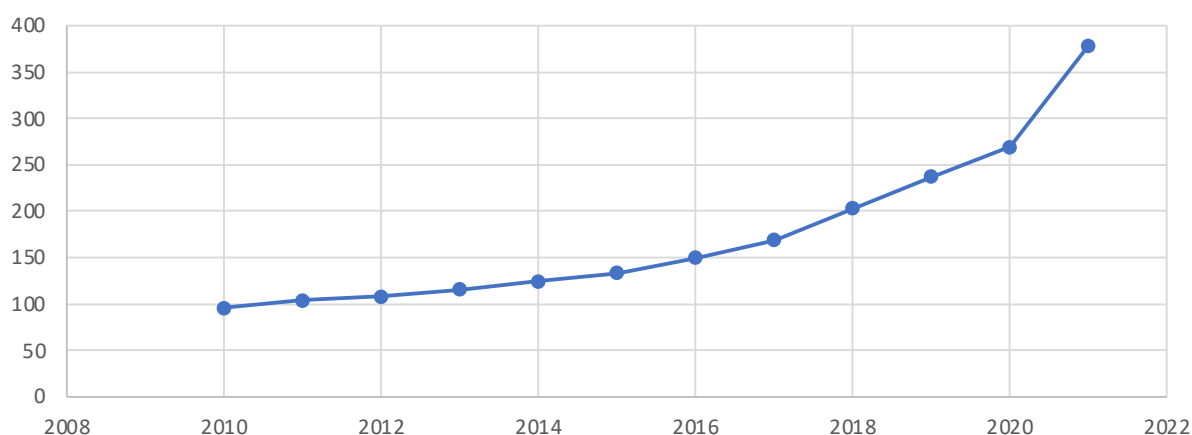
In İzmir Region, productivity was calculated as 95.5 thousand TRY per worker in 2010, which rose to 296 thousand TRY per worker by 2021. As seen in Figure 2.24, productivity in İzmir Region exhibits a steady upward trend. In 2010, productivity in İzmir Region was lower than that of İstanbul and Ankara Regions. Productivity in Ankara Region was higher than in İstanbul Region, a trend that persisted until 2020. However, following the increase in 2021, İzmir converged significantly with the productivity values of the other two regions. While İstanbul Region was 1.04 times more productive than İzmir Region in 2010, this ratio dropped to 1.02 in 2020. Similarly, Ankara Region was 1.12 times more productive than İzmir Region in 2010, but this ratio decreased to 1.03 in 2021 (Figure 2.24).

TABLE 2.52. Regional Productivity by Year (2010-2021) (GVA per Worker, Current Prices, thousand TRY)

Year	İzmir	İstanbul	Ankara	İstanbul/İzmir	Ankara/İzmir
2010	95.45	99.6	107.27	1.04	1.12
2011	104.07	109.32	118.65	1.05	1.14
2012	107.85	115.34	122.97	1.07	1.14
2013	115.47	125.53	136.8	1.09	1.18
2014	124.5	136.09	144.45	1.09	1.16
2015	133.54	149.62	149.89	1.12	1.12
2016	149.69	164.43	163.00	1.10	1.09
2017	168.98	189.9	180.08	1.12	1.07
2018	203.07	226.70	207.7	1.12	1.02
2019	237.42	267.64	251.79	1.13	1.06
2020	268.99	293.83	305.37	1.09	1.14
2021	378.26	385.37	388.80	1.02	1.03
2010-2021 (%)	296.29	195.01	184.67	-	-

Source: TURKSTAT, 2022e

FIGURE 2.24. Productivity in İzmir Region (2010-2021) (GVA per Worker, Current Prices, thousand TRY)



Source: TURKSTAT, 2022e

Between 2010 and 2020, İzmir Region's productivity growth lagged behind the other two regions. It is observed that İstanbul Region increased its productivity more than İzmir and Ankara Regions (Table 2.52). In İzmir Region, not only producing high-value-added products but also encouraging the specialization of high-productivity sectors should be a key focus during the regional policy formulation process.

F. Evaluation

One of the key issues to be addressed for İzmir Region within the framework of its economic structure is the declining tendency of İzmir's GDP share within the national GDP. Although an increase was observed in the 2021 current data, an examination of the data between 2011 and 2020 reveals that this decline has generally become consistent. However, between 2009 and 2021, the İzmir Region's economy doubled in real terms. In particular, it achieved a record growth of 14.1% in 2021. It has been observed that İzmir Region, which quickly overcame economic contraction, has growth rates over the years that resemble those of Türkiye. Identifying sectoral vulnerabilities and developing corresponding policies to ensure the continuation of stable growth in the region and to increase İzmir's share within the national GDP is deemed significant.

The investigation of how and in what way İzmir, which has received a significantly smaller share of public investments compared to İstanbul and Ankara between 2010 and 2022, has been affected in terms of production and value is also of utmost importance. Indeed, the positive effects of appropriate public investments on growth and income generation are evident. During the said period, public investments made in the İstanbul Region were approximately 4.5 times, and those made in the Ankara Region approximately 2.5 times, higher than those in the İzmir Region.

Another issue to consider within the framework of the economic structure is that İzmir's per capita GDP has lagged behind that of Ankara and İstanbul. Although the per capita GDP of İzmir Region in 2021 was 1.22 times higher than Türkiye's per capita GDP, the fact that this indicator fluctuated in the range of 1.12–1.15 for an extended period between 2010 and 2020 highlights another crucial issue for the region. Undoubtedly, the region's sectoral labor structure and its role as a center of attraction for the post-retirement population at the national level contribute to this situation. Since the 2020s, a significant portion of the migration to İzmir from major cities has consisted of skilled retired workers. The mild climate, rich cultural and natural assets, relatively lower land prices in rural areas, and the heterogeneous cultural geography of the region have sustained this migration trend, albeit at varying levels. This situation can also be interpreted as a population increase that does not significantly contribute to production processes. On the other hand, this trend presents a substantial potential for the İzmir Region. Policies and strategies can be developed to create an environment conducive to the participation of skilled and experienced labor in post-retirement economic activities. In this way, the contribution of skilled labor and accumulated expertise to the region's economic and income growth can be ensured.

Globally, population growth, infectious diseases and wars have made agricultural activities more critical and valuable than ever. Although agriculture in İzmir Region has grown more slowly compared to İzmir's total GDP, the regular increase in the share of İzmir's agriculture sector within the national economy between 2009 and 2021 is important and should be maintained. However, despite favorable climate and geography, high accessibility, and existing know-how, the limited growth in livestock and the continuous decline in its national share since 2004 necessitate a reassessment of existing regional policies regarding this matter. Particularly, the widespread practice of converting pasturelands for construction purposes must be reconsidered within this framework. In addition to organic farming, organic livestock farming also holds significant potential for the region.

Although İzmir Region experienced significant growth of 22% in industrial GDP in 2021, the continuous

decline in İzmir's share within Türkiye between 2004 and 2020 can be explained by the increased production capacities of other regions with suitable land for industrial activities. A similar situation applies to İstanbul and Ankara. Over time, the scarcity of land suitable for industrial production in major cities and the increase in transportation opportunities at the national level have led to a decrease in the share of industrial production in major cities. This contributes to reducing national income inequality. However, the continuous decline in İzmir Region's share in Türkiye's service GDP between 2004 and 2021 is unexpected. The loss of İzmir Region's share in high value-added and capital-intensive sectors in Türkiye, despite being home to İzmir, the country's third-largest city, is an issue requiring immediate attention and policies to reverse this trend. İzmir Region, with its potential to attract and retain skilled labor, has the capacity to increase its share in the national services GDP.

One of the most significant findings for İzmir Region's economic structure is that between 2013 and 2022, the export-to-import ratio increased from 0.92 to 1.25 in terms of total value produced. This development and change were significantly contributed to by the manufacturing; culture, arts, entertainment, recreation and sports; and agriculture, forestry and fisheries sectors. The high export complexity and complex export portfolio of İzmir Region make the region more resilient to global crises. However, despite the export-to-import ratio in agriculture, forestry and fisheries being above 1 since 2013, and plant products, fisheries and fish products being identified as İzmir Region's relatively advantageous products in exports, the decline in this ratio from 2.89 in 2013 to 1.66 highlights the necessity of identifying the reasons for the steady decrease in this sector's export-to-import ratio and conducting studies to reverse this trend. Furthermore, until 2014, three firms from the wood and forest products sector in İzmir Region ranked among the top 1,000 firms, but no firms from this sector have made the list in subsequent years, necessitating a detailed analysis and evaluation of the sector.

Another issue concerning İzmir Region's export pattern is the high share of low-tech industries in the export portfolio, according to the OECD classification. İzmir Region has a low share of exports in high-tech and medium-high-tech industries. To make progress in this area, policies must be developed to strengthen industry-university collaboration, encourage R&D activities, increase productive, creative and skilled labor, and accelerate efforts to address infrastructure and superstructure deficiencies promptly.

3. COMPETITIVENESS AND INVESTMENT ENVIRONMENT

A. Sectoral Analysis

Sectoral analysis is highly significant for understanding the economic and sectoral structure of regions and identifying the prominent main activities in the area. Determining the axes of growth, development and specialization for regions, as well as identifying areas where competitive advantage can be gained and areas to be prioritized for investment and incentives, is possible through sectoral analysis. One of the most important resources that can be utilized for sectoral analysis is regional input-output analyses.

According to the İzmir Input-Output Analysis published by the İzmir Development Agency in 2021, the sector in which İzmir has the highest relative share in Türkiye's sectoral production is observed to be the water transport services sector. Production in water transport services in İzmir constitutes 27.8% of the total production in this sector in Türkiye. Production in the manufacture of coke, refined petroleum products, and nuclear fuel also accounts for one-quarter of the national production in this sector, making it the second sector with the highest relative share. Additionally, with approximately 15% shares, these sectors are followed by "the manufacture of paper and paper products"; "fishing, aquaculture, and services related to fisheries"; and the reprocessing sector (Table 3.1).

TABLE 3.1. İzmir's Relative Share in Türkiye's Sectoral Production (2017) (%)

Sector	(%)
Water transport services	27.8
Manufacture of coke, refined petroleum products, and nuclear fuel	25.0
Manufacture of paper and paper products	16.0
Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	15.1
Recycling	14.7
Manufacture of chemicals and chemical products	14.5
Manufacture of food products, beverages, and tobacco products	12.3
Storage and support services for transportation; postal and courier services	11.1
Printing and publishing; reproduction of recorded media (records, cassettes, etc.)	9.3
Manufacture of rubber and plastic products	9.2
Manufacture of computer, electronic and optical products, and other electrical equipment	9.1
Education services	7.8
Manufacture of fabricated metal products, except machinery and equipment	7.3
Wholesale trade, except motor vehicles and motorcycles	6.7
Manufacture of other non-metallic mineral products	6.5
Installation and repair of machinery and equipment	6.3
Wholesale and retail trade and repair of motor vehicles and motorcycles	6.2
Retail trade (except motor vehicles and motorcycles)	5.9
Agriculture, forestry, and hunting	5.9
Manufacture of furniture; other manufacturing	5.8
Manufacture of textiles, wearing apparel, leather, and related products	5.6

Sector	(%)
Manufacture of motor vehicles, trailers, and semi-trailers	5.3
Mining, quarrying, and extraction of crude petroleum and natural gas	5.2
Land transport and transport via pipelines	5.1
Hotels and restaurants	5.1
Financial services, including insurance and pension funds	5.0
Human health and social work services	4.8
Construction	4.6
Other services	4.1
Manufacture of basic metals	4.0
Collection, purification, and distribution of water	3.9
Manufacture of other transport equipment	3.9
Manufacture of wood and products of wood and cork (except furniture); manufacture of articles of straw and plaiting materials	3.8
Production and distribution of electricity, gas, steam, and hot water	3.2
Computer programming, consultancy, and related activities; information service activities	3.0
Manufacture of machinery and equipment not elsewhere classified	2.4
Telecommunications services	1.2
Travel agency, tour operator, other reservation services, and related activities	0.8
Air transport services	0.6

Source: İZKA, 2021b

In the İzmir Input-Output Analysis, İzmir Region's relative shares in Türkiye's sectoral gross value-added have also been calculated. It is observed that the sectors with the largest share in sectoral production also rank first in value-added. Accordingly, the water transport services sector (27.9%), the manufacture of coke, refined petroleum products, and nuclear fuel (25%), and the manufacture of paper and paper products (16%) are prominent within the national gross value-added. Other leading sectors in gross value-added are listed in Table 3.2.

TABLE 3.2. İzmir's Relative Share in Türkiye's Sectoral Gross Value Added (2017) (%)

Sector	(%)
Water transport services	27.9
Manufacture of coke, refined petroleum products, and nuclear fuel	25.0
Manufacture of paper and paper products	16.0
Manufacture of chemicals and chemical products	15.2
Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	14.6
Recycling	14.4
Manufacture of food products, beverages, and tobacco products	11.4
Storage and support services for transportation; postal and courier services	10.4
Manufacture of computer, electronic and optical products, and other electrical equipment	9.5
Printing and publishing; reproduction of recorded media (records, cassettes, etc.)	9.4
Manufacture of rubber and plastic products	9.4
Manufacture of other non-metallic mineral products	7.9
Manufacture of fabricated metal products, except machinery and equipment	7.2

Sector	(%)
Education services	7.2
Mining, quarrying, and extraction of crude petroleum and natural gas	6.5
Manufacture of textiles, wearing apparel, leather, and related products	6.3
Wholesale trade, except motor vehicles and motorcycles	6.2
Installation and repair of machinery and equipment	6.1
Wholesale and retail trade and repair of motor vehicles and motorcycles	5.8
Manufacture of other transport equipment	5.7
Manufacture of furniture; other manufacturing	5.7
Agriculture, forestry, and hunting	5.6
Retail trade (except motor vehicles and motorcycles)	5.5
Manufacture of motor vehicles, trailers, and semi-trailers	5.4
Land transport and transport via pipelines	5.3
Manufacture of wood and products of wood and cork (except furniture); manufacture of articles of straw and plaiting materials	5.2
Construction	5.2
Human health and social work services	5.0
Hotels and restaurants	5.0
Financial services, including insurance and pension funds	4.9
Production and distribution of electricity, gas, steam, and hot water	4.9
Other services	4.3
Manufacture of basic metals	4.2
Collection, purification, and distribution of water	3.7
Manufacture of machinery and equipment not elsewhere classified	3.4
Computer programming, consultancy, and related activities; information service activities	3.1
Travel agency, tour operator, other reservation services, and related activities	1.6
Telecommunications services	1.5
Air transport services	0.8

Source: İZKA, 2021b

Within the framework of the İzmir Input-Output Analysis, sectors in which İzmir Region's share exceeds 10% are considered as sectors with high competitiveness. Sectors with development potential, on the other hand, are evaluated as those with a share exceeding 7% but not classified among the highly competitive sectors. These sectors, in terms of İzmir's relative share in Türkiye's sectoral production, include printing and publishing; reproduction of recorded media such as records and cassettes; manufacture of plastic and rubber products; manufacture of computer equipment and other electrical machinery and devices; education services; and fabricated metal products except machinery and equipment. When viewed from the perspective of İzmir's relative share in Türkiye's sectoral gross value added, it is observed that the same sectors also possess potential. Additionally, the manufacture of other non-metallic mineral products is identified as one of the sectors with development potential.

B. Clustering and LQ Analyses

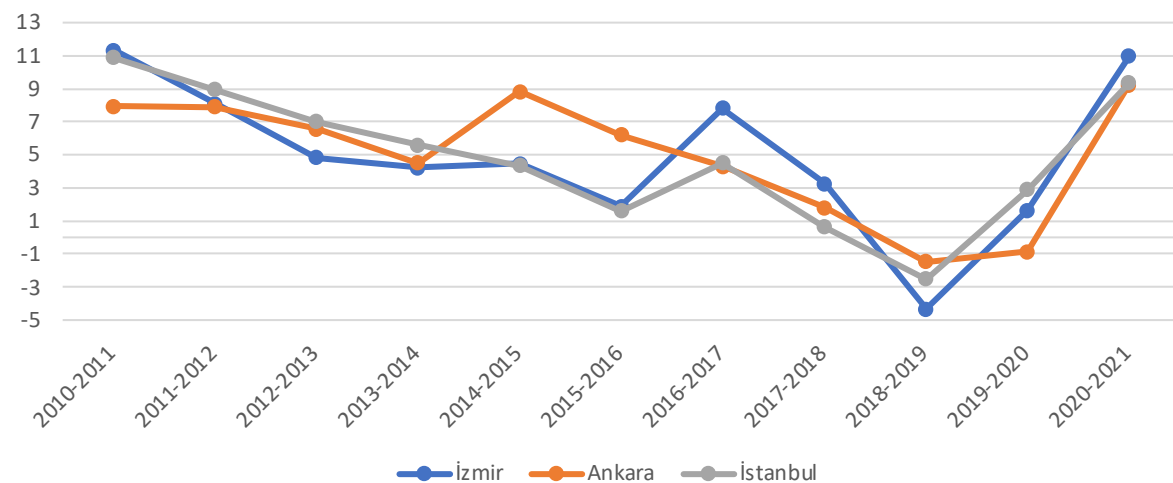
To determine concentrated or clustered sectors, employment distribution by sector at the provincial and district levels and dominant (base) sectors were analyzed by NACE codes using annual employment data obtained from the Social Security Institution (SGK) for the period 2010–2021. The number of employees in the İzmir Region, which was 670,000 in 2010, almost doubled by 2021, reaching 1,126,000. When examining the annual rates of change across the three largest regions, it is observed that the number of employees increased between 2010 and 2021 but decreased during 2018–2019. Over the past decade, the number of employees in İzmir Region increased by 68% (Table 3.3).

TABLE 3.3. Employment⁵ and Annual Change Rates in İzmir and Other Regions by Year (2010–2021) (%)

Years	İzmir	Change	Ankara	Change	İstanbul	Change
2010	670,284	-	903,337	-	3,009,150	-
2011	746,132	11.32	975,118	7.95	3,336,166	10.87
2012	806,406	8.08	1,052,295	7.91	3,634,476	8.94
2013	845,386	4.83	1,121,361	6.56	3,889,118	7.01
2014	880,972	4.21	1,172,000	4.52	4,106,899	5.60
2015	920,477	4.48	1,275,577	8.84	4,286,137	4.36
2016	937,876	1.89	1,354,581	6.19	4,353,852	1.58
2017	1,011,025	7.80	1,412,668	4.29	4,549,262	4.49
2018	1,043,692	3.23	1,438,160	1.80	4,577,887	0.63
2019	998,272	-4.35	1,417,043	-1.47	4,462,318	-2.52
2020	1,014,665	1.64	1,404,869	-0.86	4,590,743	2.88
2021	1,125,795	10.95	1,534,201	9.21	5,019,230	9.33
2010–2021 (%)	67.96		69.84		66.80	

Source: SGK, 2022

FIGURE 3.1. Annual Employment Growth Rates in İzmir, Ankara and İstanbul Regions (2010–2021)



Source: SGK, 2022

⁵ As employment data by year is obtained on a monthly basis from SGK, the average of 12 months for each year has been calculated.

When examining the number of employees by sector in the İzmir Region, it is observed that the most prominent sector is manufacturing. In 2021, 29% of the region's employees (326,000 individuals) were employed in manufacturing. In 2010, 32.4% of the region's employees (217,000 individuals) worked in manufacturing, indicating a decrease in the sector's share of employment.

The second-largest sector in the İzmir Region, in terms of employment share, is wholesale and retail trade, as well as the repair of motor vehicles and motorcycles, with a share of 15.5%. Employment in this sector increased from 113,000 in 2010 to 175,000 in 2021. As with manufacturing, although the number of employees in this sector increased, its share of total employment in İzmir Region decreased from 17% to 15.5%. Other significant sectors for employment include construction, education, transportation, and accommodation services. In 2010, the sectors with employment shares above 5% in İzmir Region were construction (9.9%), transportation and storage (7.7%), accommodation and food service activities (5.1%), and administrative and support service activities (8.1%). As of 2021, the share of the construction sector increased to 10.2%, the share of the transportation and storage sector decreased to 6.8%, the share of accommodation and food service activities increased to 6%, and the share of administrative and support service activities decreased to 7.7%.

Sectors with relatively high employment shares in İzmir Region demonstrate varied trends over time. Sectors with lower relative shares but increasing shares during the 2010–2021 period include mining and quarrying, water supply; sewerage, waste management, and remediation activities; information and communication; real estate activities; education; arts, entertainment, and recreation; and human health and social work activities.

In terms of growth rates during the 2010–2021 period, the sector with the highest growth was public administration and defense, including compulsory social security, with a growth rate of 496%. This was followed by the human health and social work activities sector, which grew by 221%. Other sectors with growth rates exceeding 100% were education (184%), mining and quarrying (150%), and information and communication (132%). The only sector with negative growth during this period was the activities of international organizations and bodies, which declined by 18%.

TABLE 3.4. Total Employment Numbers in İzmir Province by Years and Sectors⁶ (2010-2021)

	2010	2011	2012	2013	
A - Agriculture, Forestry and Fishing	7.371	8.052	8.819	9.494	
B - Mining and Quarrying	2.954	3.244	3.789	3.958	
C - Manufacturing	216.973	240.832	253.916	257.169	
D - Electricity, Gas, Steam and Air Conditioning Production and Distribution	3.115	3.255	3.056	2.964	
E - Water Supply; Sewerage, Waste Management and Remediation Activities	5.071	6.208	5.864	7.030	
F - Construction	66.582	80.104	90.561	99.581	
G - Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	113.225	126.804	138.141	141.249	
H - Transportation and Storage	51.687	57.672	62.518	67.083	
I - Accommodation and Food Service Activities	34.213	38.600	43.400	47.075	
J - Information and Communication	5.350	6.275	7.204	8.583	
K - Finance and Insurance Activities	7.585	8.001	8.349	8.823	
L - Real Estate Activities	5.645	6.209	6.751	7.187	
M - Professional, Scientific and Technical Activities	32.564	34.382	35.498	36.507	
N - Administrative and Support Services Activities	54.481	58.857	66.021	70.256	
O - Public Administration and Defense; Compulsory Social Security	1.507	1.850	1.700	1.694	
P - Education	30.817	32.991	35.130	38.322	
Q - Human Health and Social Services Activities	14.272	15.543	16.890	18.734	
R - Culture, Arts, Entertainment, Recreation and Sports	2.731	2.952	3.324	3.633	
S - Other Service Activities	13.236	13.359	14.281	14.210	
T - Activities of Households as Employers	827	863	1.116	1.758	
U - Activities of International Organizations and Representations	79	80	79	77	
Total	670.284	746.132	806.406	845.386	

Source: SGK, 2022

The dominant sectors at the district level in the region have been analyzed, including the districts of Manisa, Balıkesir, Kütahya, Denizli, Aydın and Muğla, which are part of the Aegean Region and constitute the service hinterland of the İzmir Region. Dominant sectors and their trends over the years were identified by evaluating the districts of these provinces. Additionally, the number of sectors in which districts were dominant over the years (Dominant Sector Count - DSC) was determined and presented in the relevant tables.

The regional comparative advantage coefficient is widely used in economic geography to determine how dominant a sector is in a region compared to others (Regional Comparative Advantage, RCA). The

⁶ As employment data by year is obtained on a monthly basis from SGK, the average of 12 months for each year has been calculated.

	2014	2015	2016	2017	2018	2019	2020	2021	Eğilim	2010-2021 %
	10.765	12.806	11.579	11.889	11.989	11.876	12.752	12.653		71,64
	4.044	3.854	4.109	4.464	4.989	5.490	6.041	7.381		149,90
	263.979	267.236	267.003	278.607	288.357	285.099	297.697	325.905		50,21
	2.899	3.165	3.403	3.270	3.815	4.141	4.272	4.486		43,99
	7.858	10.408	10.412	10.650	10.085	9.431	9.983	11.157		120,03
	99.361	105.031	117.696	133.240	133.705	94.193	88.611	114.906		72,58
	146.867	152.291	151.761	156.193	159.263	156.126	161.616	174.652		54,25
	69.026	68.264	67.751	68.419	70.828	70.838	71.548	76.847		48,68
	51.412	55.150	55.933	60.428	65.114	67.488	63.151	67.516		97,34
	8.909	9.848	9.861	9.565	10.503	11.456	12.173	12.380		131,40
	9.010	9.017	8.847	8.710	8.945	8.833	8.909	9.138		20,47
	7.839	8.247	8.665	9.213	9.672	9.744	10.540	11.471		103,23
	36.403	38.538	38.717	41.224	42.050	41.021	40.673	46.279		42,12
	76.928	83.707	86.363	92.509	92.104	88.028	88.357	87.545		60,69
	1.410	1.686	1.936	2.399	4.501	5.875	7.541	8.990		496,37
	42.227	46.875	51.298	75.757	78.181	77.436	74.376	87.432		183,71
	19.931	21.328	21.306	23.195	28.677	30.211	36.059	45.817		221,02
	3.877	4.419	4.568	4.921	4.945	5.306	5.035	4.892		79,11
	14.873	14.836	13.656	13.975	14.025	14.074	14.126	14.978		13,16
	3.281	3.702	2.896	2.311	1.871	1.545	1.144	1.307		58,07
	72	70	117	87	74	64	61	64		-18,20
	880.972	920.477	937.876	1.011.025	1.043.692	998.272	1.014.665	1.125.795		67,96

regional advantage coefficient is calculated as follows:

$$RCA = \frac{\text{istihdam}_{r,i}^t / \sum_i \text{istihdam}_{r,i}^t}{\sum_r \text{istihdam}_{r,i}^t / \sum_r \sum_i \text{istihdam}_{r,i}^t} \geq 1$$

If the share of sector i in the technological portfolio of İzmir Region (r region) is higher than the share of sector i in the total analyzed region, then region r has an RCA in sector i at time t .

Within this framework, dominant sectors and their values over the years for each district in İzmir Region have been presented in tables for each district. The districts surrounding and adjacent to the bay forming İzmir's metropolitan settlement center are consolidated and explained under İzmir Center.

ALIAĞA

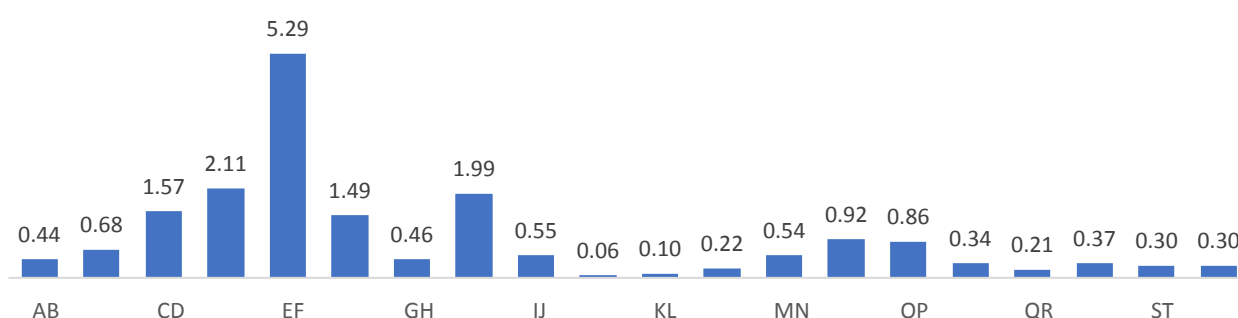
The number of dominant sectors in the Aliağa district ranged from 4 to 6 during the 2010–2021 period (Table 3.5). In 2010, the dominant sectors in Aliağa were as follows: E - water supply, sewerage, waste management, and remediation activities; D - electricity, gas, steam, and air conditioning supply; C - manufacturing; F - construction; and H - transportation and storage. By 2021, the dominant sectors in Aliağa had not changed compared to 2010 (Figure 3.2). Over the eleven-year period, it is seen that the dominance of sectors C - manufacturing and E - water supply, sewerage, waste management, and remediation activities increased, while dominance in sector D - electricity, gas, steam, and air conditioning supply decreased.

TABLE 3.5. İzmir Aliağa District LQ Analyses by NACE Codes (2010–2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	0.528	0.561	0.516	0.584	0.597	0.453	0.507	0.516	0.512	0.526	0.458	0.444
B	0.86	0.884	0.813	1.315	1.404	1.461	1.27	1.001	0.903	0.809	0.71	0.677
C	1.464	1.506	1.506	1.407	1.416	1.478	1.503	1.588	1.585	1.615	1.581	1.566
D	2.482	2.634	2.582	2.485	2.615	3.509	2.895	2.592	2.498	2.539	2.276	2.112
E	3.714	5.406	6.534	6.813	4.947	3.562	3.333	3.633	3.991	4.014	4.567	5.286
F	1.499	1.348	1.32	1.471	1.583	1.369	1.373	1.238	1.347	1.5	1.384	1.492
G	0.436	0.43	0.44	0.44	0.441	0.471	0.456	0.462	0.438	0.449	0.478	0.464
H	1.947	1.882	1.725	1.66	1.731	1.874	1.801	1.935	2.043	2.093	2.038	1.992
I	0.383	0.454	0.485	0.476	0.506	0.595	0.743	0.815	0.74	0.609	0.584	0.549
J	0.229	0.221	0.189	0.17	0.095	0.114	0.063	0.047	0.106	0.143	0.141	0.064
K	0.309	0.292	0.275	0.29	0.278	0.257	0.225	0.222	0.228	0.229	0.142	0.102
L	0.088	0.089	0.107	0.122	0.165	0.206	0.171	0.174	0.177	0.173	0.189	0.217
M	0.685	0.6	0.531	0.493	0.535	0.57	0.45	0.455	0.517	0.518	0.508	0.537
N	0.564	0.455	0.628	0.699	0.59	0.647	0.751	0.881	0.822	0.802	0.897	0.918
O	0.09	0.054	0.036	0.025	0.043	0.063	0.489	0.664	0.725	0.855	0.878	0.863
P	0.242	0.245	0.223	0.259	0.278	0.337	0.325	0.288	0.271	0.262	0.31	0.342
Q	0.115	0.288	0.159	0.233	0.282	0.303	0.321	0.32	0.262	0.224	0.208	0.212
R	0.309	0.295	0.322	0.269	0.28	0.267	0.314	0.257	0.228	0.292	0.342	0.368
S	0.308	0.303	0.523	0.518	0.319	0.338	0.287	0.29	0.279	0.307	0.328	0.304
T	0.718	0.662	0.556	0.297	0.224	0.181	0.13	0.183	0.167	0.18	0.275	0.297
DSC	5	5	4	5	6	6	5	6	5	4	5	5

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.2. Dominant Sectors in Aliağa District (2021)



Source: SGK, 2022

BAYINDIR

The number of dominant sectors in Bayındır district ranged from 4 to 8 during the 2010–2021 period (Table 3.6). When examining the dominant sectors in Bayındır over the years, the most dominant sector in 2010 was observed to be A - agriculture, forestry, and fishing, with a notably high value. Although not as dominant as this sector, other dominant sectors included E - water supply; sewerage, waste management, and remediation activities; S - other service activities; B - mining and quarrying; H - transportation and storage; and P - education.

For 2021, when the regional comparative advantage in Bayındır was examined based on the number of employees, the dominant sectors were again A - agriculture, forestry, and fishing with a high value; B - mining and quarrying; G - wholesale and retail trade, repair of motor vehicles and motorcycles; N - administrative and support service activities; S - other service activities; and P - education.

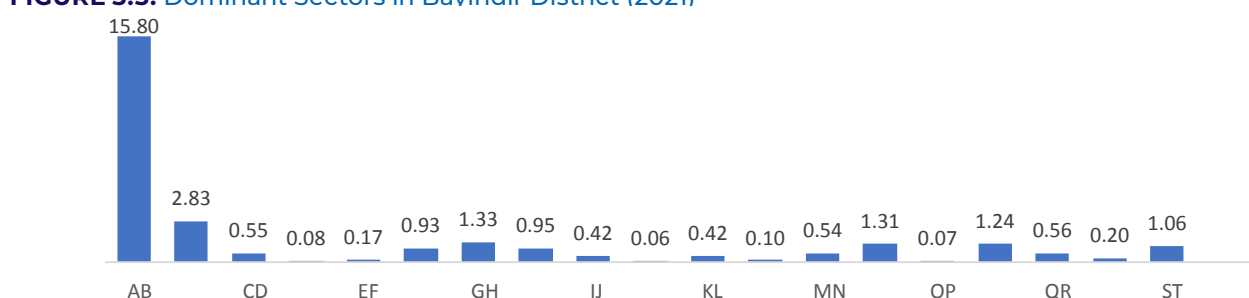
Sectoral trends in Bayındır revealed noteworthy results. The value of the agriculture sector decreased during the 2010–2021 period. On the other hand, the value of the mining and quarrying sector increased. The wholesale and retail trade sector, which was not previously dominant, exceeded a value of 1 as of 2014 and maintained its dominance until 2021. Additionally, the N - administrative and support service activities sector became dominant in Bayındır after 2018 (Figure 3.3).

TABLE 3.6. İzmir Bayındır District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	16.910	13.745	14.360	13.716	13.898	20.317	17.488	19.213	17.570	15.566	16.025	15.796
B	1.987	2.003	2.501	2.307	2.079	0.971	1.367	1.453	1.622	6.658	0.856	2.829
C	0.385	0.373	0.466	0.581	0.586	0.484	0.616	0.639	0.655	0.621	0.595	0.545
D	0.324	0.324	0.334	0.294	0.276	0.449	0.180	0.084	0.084	0.079	0.082	0.080
E	3.127	5.686	5.252	4.522	4.720	2.878	3.493	3.058	1.374	0.700	0.690	0.174
F	0.977	1.238	1.174	1.501	1.326	1.160	0.964	0.917	0.680	0.720	0.992	0.934
G	0.920	1.003	0.962	0.991	1.003	0.897	1.125	1.124	1.236	1.135	1.255	1.326
H	1.160	0.947	0.871	0.711	0.840	0.766	0.917	0.844	0.953	0.912	0.937	0.947
I	0.759	0.859	0.822	0.648	0.652	0.525	0.679	0.608	0.643	0.466	0.501	0.423
J	0.064	0.921	0.809	0.678	0.201	0.120	0.080	0.021	0.460	0.519	0.476	0.062
K	0.788	0.721	0.671	0.664	1.005	0.863	1.047	1.123	1.132	0.959	0.554	0.417
L			0.064	0.060	0.064			0.026	0.054	0.057	0.054	0.096
M	0.796	0.630	0.457	0.371	0.441	0.440	0.444	0.443	0.489	0.530	0.619	0.540
N	0.951	0.817	0.879	0.657	0.787	0.747	0.830	0.775	1.087	1.148	1.165	1.305
O	0.789	1.038	0.242	0.543	0.137	0.093	0.126	0.064	0.106	0.113	0.073	0.066
P	1.561	1.391	1.192	1.137	1.267	0.904	0.935	1.146	1.110	1.181	1.280	1.238
Q	0.407	0.435	0.771	0.375	0.333	0.280	0.309	0.275	0.254	0.241	0.385	0.560
R	0.674	0.454	0.104	0.076	0.072	0.057	0.067	0.064	0.106	0.053	0.121	0.203
S	2.056	1.911	1.782	1.543	1.375	1.025	1.203	1.045	1.127	0.884	1.047	1.059
T				0.131	0.135	0.107	0.094					
DSC	6	8	6	6	8	4	6	7	8	5	5	6

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.3. Dominant Sectors in Bayındır District (2021)



BERGAMA

The number of dominant sectors in Bergama district ranged from 5 to 8 during the 2010–2021 period (Table 3.7). When examining the values by year and sector for Bergama in 2010, the dominant sectors were A - agriculture, forestry, and fishing; B - mining and quarrying; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; J - information and communication; P - education; S - other service activities; and T - activities of households as employers.

For 2021, the dominant sectors in Bergama were observed to be, respectively, A - agriculture, forestry, and fishing; B - mining and quarrying; D - electricity, gas, steam, and air conditioning supply; E - water supply; sewerage, waste management, and remediation activities; G - wholesale and retail trade, repair of motor vehicles and motorcycles; F - construction; O - public administration and defense, compulsory social security; P - education; and T - activities of households as employers.

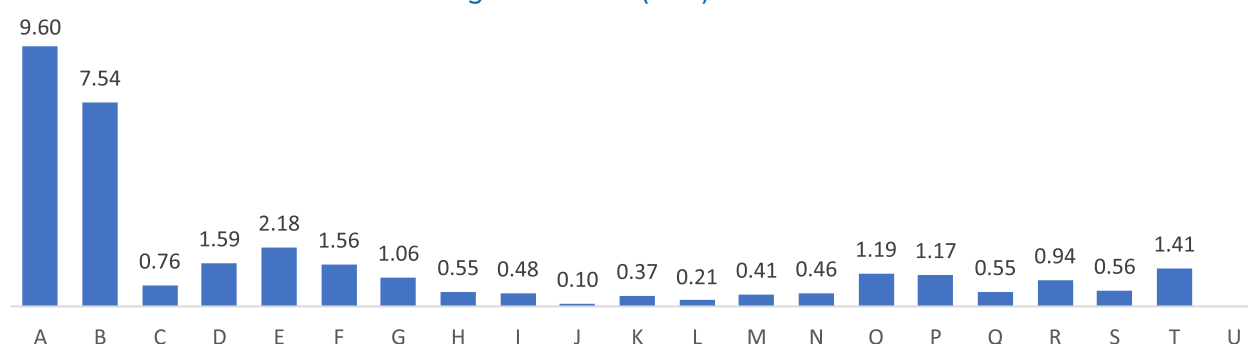
Sectors that were not dominant in 2010, such as D - electricity, gas, steam, and air conditioning supply; E - water supply; sewerage, waste management, and remediation activities; and O - public administration and defense, compulsory social security, became dominant sectors as of the year 2021 (Figure 3.4).

TABLE 3.7. İzmir Bergama District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	8.403	8.753	9.109	11.169	12.955	13.009	11.917	9.805	9.486	9.343	9.707	9.598
B	8.497	8.597	8.892	9.044	9.060	8.455	8.331	8.196	7.897	7.865	8.096	7.541
C	0.495	0.499	0.557	0.594	0.577	0.540	0.566	0.661	0.688	0.767	0.766	0.763
D	0.959	1.258	1.052	1.029	0.930	0.960	0.980	0.934	1.183	1.232	1.444	1.594
E	0.378	2.042	1.613	0.607	2.298	1.702	2.580	1.652	1.695	1.660	1.582	2.176
F	1.132	1.173	1.135	1.014	0.988	0.908	1.162	1.379	1.394	1.596	1.509	1.557
G	1.163	1.180	1.164	1.147	1.155	1.191	1.229	1.164	1.147	1.137	1.102	1.061
H	0.701	0.639	0.682	0.820	0.682	0.675	0.680	0.638	0.590	0.580	0.518	0.548
I	0.597	0.584	0.659	0.674	0.638	0.594	0.600	0.539	0.563	0.526	0.563	0.478
J	1.951	1.425	0.597	0.974	0.421	0.278	0.254	0.184	0.150	0.119	0.125	0.095
K	0.818	0.850	0.881	0.885	0.990	1.027	1.002	0.952	0.912	0.803	0.523	0.368
L	0.110	0.137	0.092	0.113	0.112	0.160	0.120	0.157	0.184	0.215	0.174	0.214
M	0.445	0.425	0.454	0.447	0.544	0.537	0.548	0.594	0.637	0.493	0.461	0.413
N	0.561	0.539	0.519	0.499	0.439	0.523	0.466	0.477	0.490	0.539	0.528	0.456
O	0.577	0.591	0.472	0.450	0.180	0.102	0.128	0.293	0.150	0.083	0.694	1.185
P	1.665	1.476	1.250	1.247	1.302	1.092	1.012	1.055	1.030	0.970	1.127	1.166
Q	0.459	0.448	0.403	0.438	0.582	0.523	0.468	0.412	0.772	0.836	0.664	0.550
R	0.287	0.358	0.528	0.836	0.799	0.913	1.114	0.893	0.720	0.661	0.667	0.944
S	1.445	1.410	1.694	1.234	1.145	1.127	1.279	1.132	0.934	0.795	0.595	0.561
T	2.675	4.069	9.387	0.880	0.682	0.745	0.765	0.837	0.816	0.835	1.462	1.413
U	0.337	0.318	0.305	0.295	0.071							
DSC	7	9	8	6	5	6	8	6	6	5	7	8

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.4. Dominant Sectors in Bergama District (2021)



Source: SGK, 2022

BEYDAĞ

The number of dominant sectors in Beydağ district ranged from 3 to 7 during the 2010–2021 period (Table 3.8). When examining the dominant sectors by year in Beydağ, the dominant sectors in 2010 were C - manufacturing; G - wholesale and retail trade, repair of motor vehicles and motorcycles; P - education; S - other service activities; and T - activities of households as employers.

When evaluated for 2021, the dominant sectors were observed to be B - mining and quarrying; C - manufacturing; F - construction; N - administrative and support service activities; and P - education.

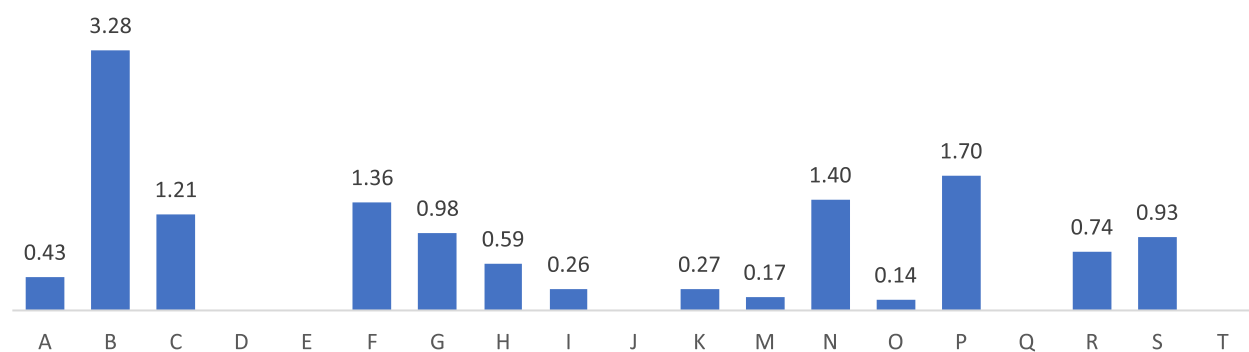
In Beydağ, sectors that were not among the dominant ones in 2010, such as F - construction and N - administrative and support service activities, became dominant sectors as of the year 2021 (Figure 3.5).

TABLE 3.8. İzmir Beydağ District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	0.719	0.369	0.181	0.389	0.008	0.090	0.191	0.411	0.485	0.333	0.411	0.426
B						0.049	1.214	1.495	1.444	1.485	2.681	3.283
C	1.212	1.346	1.367	1.140	1.089	1.171	1.099	1.348	1.282	1.110	1.236	1.208
D	0.741	1.359	1.401	0.220	0.205	0.569	1.672					
E		0.313	1.361					0.114	0.057			
F	0.963	0.940	1.113	1.902	2.237	1.732	1.728	1.706	1.781	2.149	1.837	1.360
G	1.113	1.075	0.934	0.832	0.892	0.985	1.055	1.153	1.140	1.050	1.032	0.981
H	0.783	0.664	0.501	0.489	0.471	0.475	0.415	0.202	0.256	0.487	0.576	0.589
I	0.238	0.242	0.203	0.253	0.285	0.294	0.315	0.424	0.378	0.315	0.374	0.259
J								0.007				
K	0.541	0.496	0.622	0.352	0.341	0.338	0.342	0.326	0.314	0.362	0.327	0.267
M	0.697	0.436	0.446	0.480	0.376	0.414	0.366	0.354	0.151	0.138	0.131	0.166
N	0.864	1.019	0.943	0.820	0.847	1.039	0.992	0.845	1.352	1.825	1.236	1.395
O		0.249					0.247	0.313	0.176	0.152	0.125	0.137
P	1.811	1.849	2.272	2.166	1.661	1.853	1.590	1.000	0.852	0.909	1.294	1.697
Q	0.070	0.074	0.105	0.085	0.086	0.090	0.054					
R	0.770	0.688	0.323	0.232	0.221	0.241	0.412	0.486	0.229	0.351	0.717	0.738
S	3.317	2.128	1.222	0.875	0.816	1.036	1.184	1.177	1.150	1.082	1.040	0.929
T	3.612	3.120	1.845	0.925	0.566							
DSC	5	7	7	3	3	5	7	6	6	6	7	5

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.5. Dominant Sectors in Beydağ District (2021)



Source: SGK, 2022

ÇEŞME

The number of dominant sectors in Çeşme district ranged from 5 to 7 during the 2010–2021 period. When examining the dominant sectors in Çeşme district by year, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; I - accommodation and food service activities; F - construction; L - real estate activities; R - culture, arts, entertainment, recreation, and sports; S - other service activities; and T - activities of households as employers.

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; I - accommodation and food service activities; F - construction; L - real estate activities; R - culture, arts, entertainment, recreation, and sports; and T - activities of households as employers (Figure 3.6).

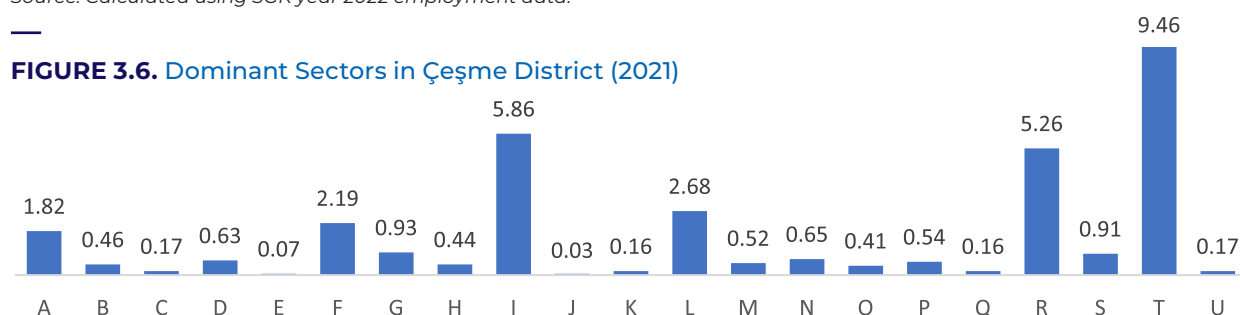
In Çeşme district, there were no sectors that were not dominant in 2010 but became dominant in 2021. However, the values of the agriculture, accommodation, and activities of households as employers sectors decreased. The most notable decrease was in T - activities of households as employers (Table 3.9). The value of L - real estate activities also declined. On the other hand, the values of the construction and culture, arts, entertainment, recreation, and sports sectors increased. A particularly notable upward trend occurred in R - culture, arts, entertainment, recreation, and sports during the 2010–2020 period.

TABLE 3.9. İzmir Çeşme District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	2.28	1.84	1.68	1.95	1.99	1.44	1.59	1.82	1.75	1.71	1.92	1.82
B	0.19	0.28	0.31	0.30	0.39	0.37	0.42	0.59	0.70	0.59	0.60	0.46
C	0.12	0.13	0.13	0.13	0.14	0.14	0.13	0.13	0.16	0.16	0.17	0.17
D	0.95	1.03	1.27	0.70	0.82	0.85	0.74	0.83	0.81	0.78	0.83	0.63
E	0.74	0.59	1.41	1.62	0.30	0.20	0.12	0.11	0.19	0.36	0.14	0.07
F	1.34	1.50	1.70	1.60	1.46	1.62	1.86	1.57	1.47	1.06	1.45	2.19
G	0.98	0.97	0.90	0.93	0.93	0.96	0.96	1.01	0.98	0.99	1.06	0.93
H	0.47	0.50	0.47	0.46	0.51	0.55	0.46	0.48	0.50	0.57	0.59	0.44
I	6.44	6.03	5.75	5.70	5.73	5.62	5.62	5.89	5.98	6.40	5.91	5.86
J	0.18	0.30	0.26	0.24	0.11	0.09	0.07	0.07	0.17	0.16	0.11	0.03
K	0.47	0.42	0.38	0.36	0.36	0.34	0.35	0.36	0.35	0.35	0.25	0.16
L	4.01	3.48	2.91	2.64	2.73	2.65	2.56	2.66	2.67	2.65	2.92	2.68
M	0.59	0.49	0.51	0.47	0.38	0.36	0.37	0.42	0.46	0.40	0.48	0.52
N	0.84	0.77	0.60	0.64	0.70	0.63	0.63	0.65	0.62	0.66	0.73	0.65
O		0.06			0.01	0.02	0.16	0.13	0.14	0.29	0.52	0.41
P	0.56	0.61	0.52	0.51	0.51	0.44	0.37	0.55	0.58	0.55	0.67	0.54
Q	0.24	0.26	0.34	0.26	0.27	0.14	0.13	0.13	0.10	0.10	0.13	0.16
R	3.75	2.87	2.19	2.29	3.20	2.75	2.45	3.38	3.65	4.99	5.10	5.26
S	1.26	1.23	1.34	1.17	1.31	1.20	1.08	1.10	0.94	1.09	1.04	0.91
T	23.89	20.03	12.12	7.12	5.01	4.47	4.90	5.75	6.30	7.10	12.28	9.46
U				0.02	0.31	0.24	0.23	0.21	0.21	0.24	0.20	0.17
DSC	6	7	8	7	6	6	6	7	5	6	7	5

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.6. Dominant Sectors in Çeşme District (2021)



Source: SGK, 2022

DİKİLİ

The number of dominant sectors in Dikili district ranged from 6 to 9 during the 2010–2021 period. When examining the dominant sectors in Dikili district, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; B - mining and quarrying; D - electricity, gas, steam, and air conditioning supply; F - construction; I - accommodation and food service activities; L - real estate activities; N - administrative and support service activities; and T - activities of households as employers.

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; B - mining and quarrying; E - water supply, sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; L - real estate activities; O - public administration and defense, compulsory social security; and T - activities of households as employers (Figure 3.7).

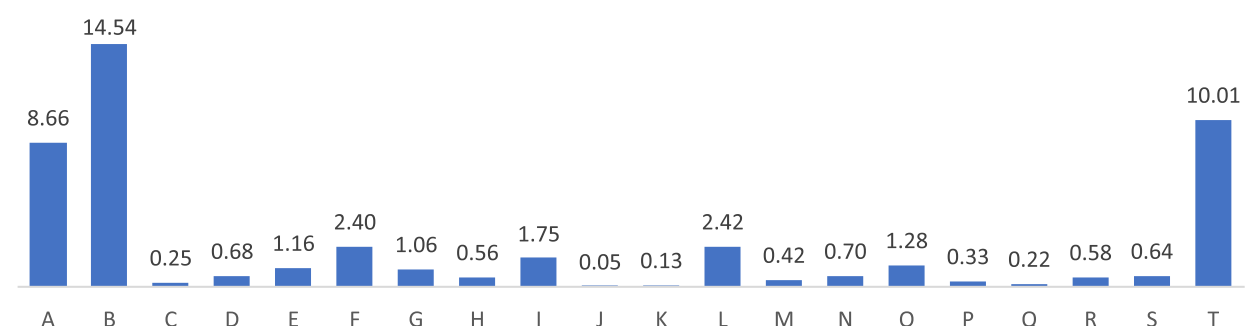
In Dikili district, the O - public administration and defense, compulsory social security sector and the E - water supply, sewerage, waste management, and remediation activities sector, which were not dominant in 2010, became dominant sectors in 2021 (Table 3.10).

TABLE 3.10. İzmir Dikili District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	3.001	4.000	3.864	4.344	5.886	4.538	6.283	7.830	7.769	9.082	8.854	8.660
B	4.648	7.705	8.302	8.057	8.661	7.935	7.780	8.442	10.259	12.771	15.012	14.535
C	0.317	0.244	0.238	0.272	0.294	0.335	0.332	0.317	0.287	0.294	0.269	0.253
D	1.050	0.984	0.341	0.290	0.548	0.819	0.396	0.168	0.639	0.778	0.540	0.681
E	0.457	2.139	0.397	2.779	0.483	0.382	0.301	0.288	0.303	0.955	1.581	1.163
F	2.569	2.413	2.724	2.377	1.993	1.881	1.946	2.057	2.247	2.007	2.065	2.401
G	0.859	0.777	0.802	0.834	0.965	1.031	1.031	1.032	1.017	1.136	1.117	1.064
H	0.903	0.553	0.688	0.538	0.504	0.548	0.508	0.464	0.449	0.543	0.545	0.555
I	1.134	1.187	1.082	1.274	1.287	1.355	1.548	1.725	1.523	1.547	1.655	1.745
J	0.127	0.211	0.036		0.053	0.015	0.024	0.013	0.112	0.134	0.103	0.052
K	0.154	0.140	0.093	0.113	0.213	0.230	0.216	0.211	0.256	0.237	0.158	0.129
L	5.721	4.702	4.006	4.162	4.335	4.012	3.587	3.583	3.144	3.450	2.939	2.417
M	0.430	0.466	0.350	0.385	0.509	0.449	0.403	0.418	0.407	0.452	0.410	0.417
N	1.133	1.269	0.843	0.791	1.143	1.216	1.188	1.038	0.794	0.741	0.741	0.697
O	0.345	0.367	0.105	5.130	0.716	0.108	0.080	0.043	1.535	1.743	1.717	1.277
P	0.365	0.297	0.276	0.300	0.365	0.374	0.260	0.286	0.300	0.301	0.327	0.325
Q	0.335	0.318	0.298	0.306	0.273	0.269	0.263	0.239	0.232	0.258	0.220	0.217
R	0.360	0.555	0.680	0.914	1.045	1.309	1.058	1.137	0.919	0.862	0.769	0.580
S	0.891	0.553	0.605	0.676	0.721	0.668	0.675	0.680	0.615	0.643	0.558	0.639
T	12.242	11.681	8.383	4.393	3.257	3.281	4.171	5.537	5.625	7.244	11.902	10.014
DSC	8	8	6	8	8	9	9	9	8	8	9	9

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.7. Dominant Sectors in Dikili District (2021)



Source: SGK, 2022

FOÇA

The number of dominant sectors in Foça district ranged from 5 to 7 during the 2010–2021 period. When examining the dominant sectors in Foça district, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; D - electricity, gas, steam, and air conditioning supply; F - construction; I - accommodation and food service activities; L - real estate activities; and T - activities of households as employers (Table 3.11).

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; D - electricity, gas, steam, and air conditioning supply; E - water supply, sewerage, waste management, and remediation activities; F - construction; I - accommodation and food service activities; L - real estate activities; and N - administrative and support service activities. Although Foça district, like Dikili district, is located on the northern axis of the İzmir Region, the number of sectors in which it is dominant is relatively lower. One reason for this may be Foça district's status as a Special Environmental Protection Area (Figure 3.8).

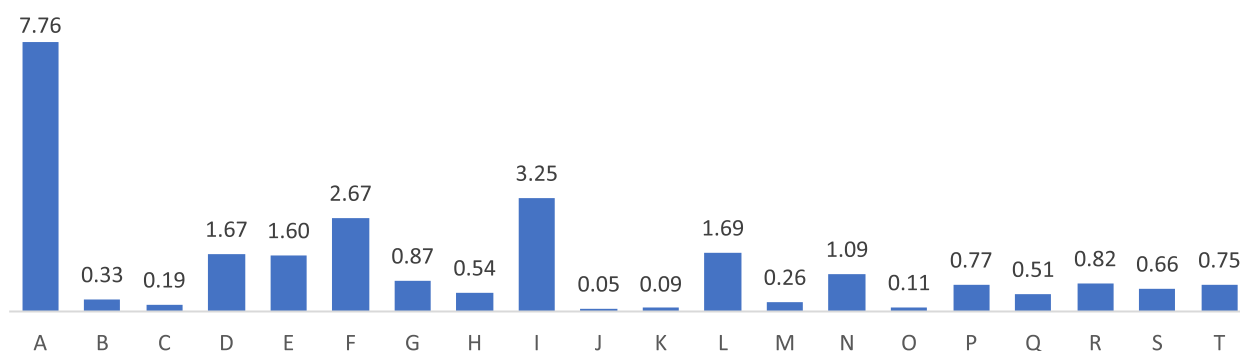
During the 2010–2021 period, the values of A - agriculture, forestry, and fishing and T - activities of households as employers sectors decreased in Foça district. On the other hand, the value of F - construction increased.

TABLE 3.11. İzmir Foça District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	9.995	10.743	10.659	10.101	10.303	8.650	10.693	10.205	9.549	9.932	9.339	7.761
B	0.531	0.081		0.053	0.028	0.091	0.194	0.203	0.155	0.173	0.204	0.332
C	0.489	0.462	0.400	0.441	0.445	0.330	0.321	0.310	0.351	0.350	0.254	0.192
D	1.271	1.241	0.917	1.054	0.768	0.748	0.901	2.679	2.354	1.311	1.928	1.667
E	0.085	1.815	4.598	6.135	5.873	4.410	2.856	1.767	2.181	2.190	1.898	1.603
F	1.667	1.624	1.514	1.441	1.348	1.644	1.765	2.074	2.104	2.411	2.488	2.670
G	0.712	0.719	0.747	0.689	0.720	0.743	0.801	0.796	0.838	0.728	0.777	0.865
H	0.818	0.794	0.908	0.862	0.575	0.539	0.506	0.570	0.451	0.491	0.502	0.544
I	3.853	3.788	3.407	3.510	3.630	3.320	3.603	3.270	3.273	3.384	3.334	3.249
J	0.143	0.091	0.424	0.115	0.071	0.106	0.139	0.076	0.256	0.296	0.281	0.052
K	0.462	0.450	0.350	0.223	0.214	0.134	0.137	0.169	0.161	0.153	0.120	0.089
L	4.036	4.256	4.008	3.595	3.066	2.679	2.408	2.283	2.116	1.944	1.867	1.692
M	0.396	0.236	0.247	0.229	0.214	0.217	0.336	0.225	0.197	0.157	0.236	0.260
N	0.528	0.398	0.600	0.607	0.747	0.849	0.659	0.722	0.798	0.982	1.113	1.086
O	0.214	0.371	0.346	0.424	0.246	0.195	0.177	0.186	0.172	0.135	0.123	0.113
P	0.651	0.673	0.642	0.713	0.689	0.518	0.431	0.480	0.423	0.462	0.697	0.773
Q	0.120	0.186	0.207	0.167	0.276	0.337	0.283	0.268	0.217	0.249	0.424	0.505
R	0.238	0.014	0.068	0.303	0.376	0.320	0.446	0.440	0.702	0.778	0.860	0.816
S	0.225	0.490	0.320	0.417	0.427	0.421	0.542	0.536	0.544	0.489	0.557	0.663
T	1.622	0.952	0.728	0.519	1.104	1.045	1.119	0.920	0.551			0.751
DSC	6	6	5	6	6	6	6	6	6	6	7	7

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.8. Dominant Sectors in Foça District (2021)



Source: SGK, 2022

KARABURUN

The number of dominant sectors in Karaburun district ranged from 6 to 10 during the 2010–2021 period (Table 3.12). When examining the dominant sectors in Karaburun district, the dominant sectors were A - agriculture, forestry, and fishing; F - construction; L - real estate activities; N - administrative and support service activities; T - activities of households as employers; and U - activities of international organizations and representations.

For 2021, the dominant sectors in Karaburun district were observed to be A - agriculture, forestry, and fishing; D - electricity, gas, steam, and air conditioning supply; F - construction; I - accommodation and food service activities; G - wholesale and retail trade, repair of motor vehicles and motorcycles; L - real estate activities; N - administrative and support service activities; R - culture, arts, entertainment, recreation, and sports; and T - activities of households as employers (Figure 3.9).

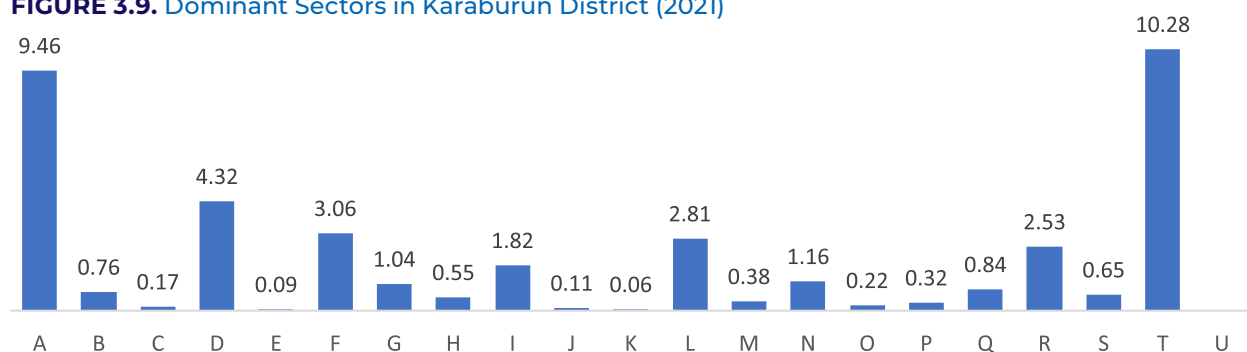
In Karaburun district, the sectors A - agriculture, forestry, and fishing and T - activities of households as employers showed significant decline.

TABLE 3.12. İzmir Karaburun District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	16.266	14.161	13.820	15.692	18.899	12.343	15.569	15.253	15.551	12.943	12.087	9.455
B	0.384	0.883	1.279	1.272	0.652	0.276	0.220	0.213	0.548	0.552	0.692	0.764
C	0.360	0.323	0.253	0.187	0.158	0.164	0.152	0.134	0.143	0.138	0.160	0.172
D	0.636	0.538	2.228	8.113	5.676	5.292	5.169	4.028	4.000	5.043	5.303	4.324
E	0.299	0.135	0.065	0.851	0.765	0.377	0.489	0.164	0.045	0.077	0.089	0.089
F	1.524	2.218	2.365	2.190	2.289	2.479	2.463	2.709	2.425	2.969	2.085	3.059
G	0.968	0.882	0.796	0.862	0.764	0.811	0.891	0.891	0.928	0.902	1.072	1.037
H	0.613	0.503	0.523	0.428	0.486	0.543	0.419	0.451	0.512	0.520	0.651	0.548
I	1.868	1.603	1.547	1.413	1.352	1.375	1.423	1.472	1.463	1.550	1.936	1.816
J	0.711	0.509	0.324	0.212	0.191	0.189	0.172	0.129	0.072	0.044	0.079	0.113
K	0.089	0.073	0.063	0.056	0.093	0.119	0.077	0.092	0.059	0.072	0.085	0.059
L	4.759	3.712	3.184	2.677	2.794	2.588	2.788	3.196	3.049	2.890	3.018	2.813
M	0.324	0.337	0.405	0.476	0.398	0.403	0.450	0.389	0.387	0.370	0.600	0.379
N	1.000	0.786	0.779	0.631	0.600	0.713	0.760	0.895	0.879	1.101	1.293	1.159
O	0.976	0.895	0.107	0.058			0.158	0.180	0.141	0.161	0.221	0.221
P	0.749	0.561	0.437	0.473	0.520	0.415	0.253	0.228	0.282	0.283	0.325	0.315
Q	0.083	0.149	0.138	0.231	0.293	0.153	0.127	0.375	1.044	1.087	1.123	0.842
R	0.743	0.464	0.352	0.710	1.524	1.745	1.798	0.584	2.629	2.281	3.065	2.529
S	0.337	0.278	0.402	0.424	0.310	0.155	0.179	0.308	0.522	0.758	0.847	0.646
T	36.027	21.032	13.016	6.487	4.511	3.613	3.645	4.391	5.635	5.712	10.854	10.282
U	10.186	8.487	7.290	6.736	1.766							
DSC	7	6	8	8	8	7	7	6	8	9	10	9

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.9. Dominant Sectors in Karaburun District (2021)



Source: SGK, 2022

KEMALPAŞA

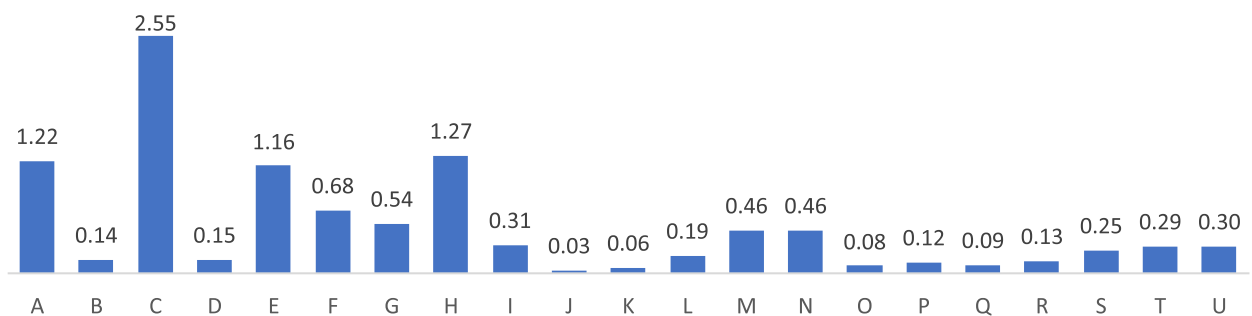
The number of dominant sectors in Kemalpaşa district is relatively low, ranging from 3 to 4 during the 2010–2021 period (Table 3.13). When examining the dominant sectors in Kemalpaşa district by year, the dominant sectors in 2010 were observed to be A - agriculture, forestry, and fishing; C - manufacturing; and H - transportation and storage. For 2021, the dominant sectors were A - agriculture, forestry, and fishing; C - manufacturing; E - water supply, sewerage, waste management, and remediation activities; and H - transportation and storage. It is seen that over the years, the E - water supply, sewerage, waste management, and remediation activities sector became dominant (Figure 3.10).

TABLE 3.13. İzmir Kemalpaşa District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.288	1.307	1.180	1.233	1.473	1.139	1.365	1.358	1.350	1.303	1.251	1.215
B	0.084	0.089	0.088	0.115	0.109	0.096	0.142	0.176	0.136	0.134	0.131	0.140
C	2.287	2.357	2.363	2.391	2.444	2.569	2.614	2.695	2.675	2.667	2.572	2.554
D	0.291	0.327	0.333	0.264	0.182	0.377	0.196	0.094	0.074	0.099	0.299	0.152
E	0.423	0.855	0.381	0.514	0.413	0.388	0.317	0.342	0.563	0.673	1.035	1.158
F	0.486	0.372	0.359	0.411	0.376	0.320	0.294	0.323	0.399	0.435	0.513	0.679
G	0.564	0.570	0.563	0.543	0.563	0.557	0.558	0.600	0.594	0.582	0.537	0.539
H	1.500	1.395	1.346	1.381	1.365	1.387	1.420	1.508	1.516	1.344	1.257	1.266
I	0.191	0.211	0.254	0.236	0.244	0.259	0.294	0.337	0.333	0.284	0.306	0.309
J	0.044	0.050	0.012	0.011	0.015	0.006	0.010	0.009	0.044	0.045	0.038	0.027
K	0.116	0.127	0.155	0.157	0.165	0.146	0.142	0.150	0.134	0.127	0.085	0.063
L	0.070	0.067	0.064	0.058	0.058	0.073	0.106	0.133	0.132	0.117	0.143	0.186
M	0.578	0.543	0.550	0.580	0.573	0.545	0.536	0.512	0.509	0.492	0.469	0.460
N	0.326	0.351	0.475	0.430	0.359	0.368	0.458	0.441	0.408	0.432	0.487	0.460
O	0.064	0.067	0.360	0.524	0.333	0.272	0.152	0.155	0.162	0.226	0.086	0.082
P	0.215	0.209	0.190	0.170	0.178	0.176	0.125	0.092	0.089	0.089	0.102	0.115
Q	0.059	0.059	0.076	0.086	0.088	0.091	0.107	0.108	0.093	0.094	0.085	0.086
R	0.045	0.053	0.074	0.125	0.173	0.116	0.063	0.066	0.108	0.110	0.178	0.126
S	0.585	0.577	0.483	0.394	0.457	0.451	0.487	0.546	0.500	0.377	0.286	0.249
T	0.057	0.132	0.101	0.082	0.140	0.163	0.177	0.183	0.182	0.182	0.204	0.289
U	0.581	0.519	0.460	0.422	0.505	0.496	0.381	0.303	0.278	0.259	0.267	0.297
DSC	3	3	3	3	3	3	3	3	3	3	4	4

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.10. Dominant Sectors in Kemalpaşa District (2021)



Source: SGK, 2022

KINIK

The number of dominant sectors in Kinik district ranged from 3 to 9 during the 2010–2021 period (Table 3.14). When examining the dominant sectors in Kinik district, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; B - mining and quarrying; D - electricity, gas, steam, and air conditioning supply; E - water supply, sewerage, waste management, and remediation activities; H - transportation and storage; O - public administration and defense, compulsory social security; P - education; and T - activities of households as employers.

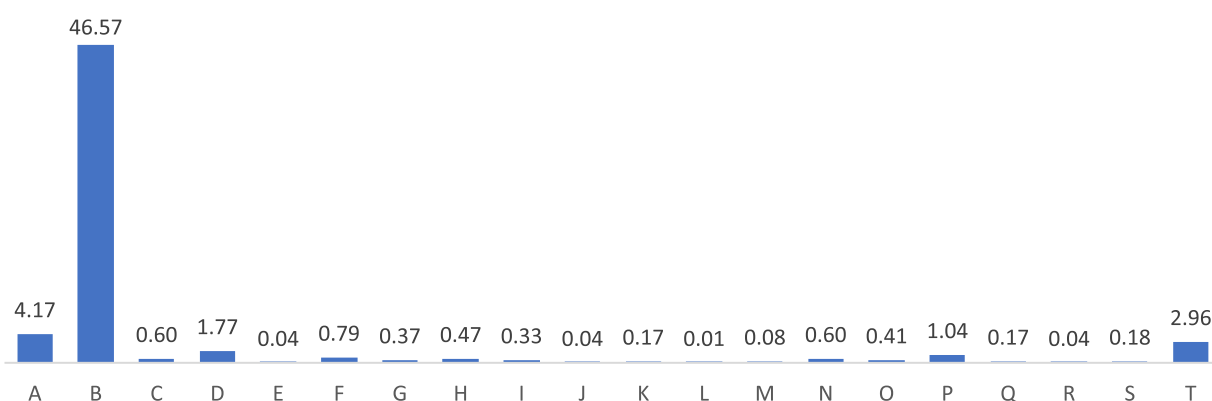
For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; B - mining and quarrying; D - electricity, gas, steam, and air conditioning supply; P - education; and T - activities of households as employers (Figure 3.11).

TABLE 3.14. İzmir Kinik District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.729	2.581	2.031	2.189	2.131	2.144	1.836	2.486	2.374	2.286	1.739	4.166
B	2.707	2.314	2.305	3.160	8.385	14.269	22.855	21.798	26.071	35.955	41.775	46.573
C	0.782	0.821	0.876	0.831	0.982	0.901	0.932	0.788	0.840	0.790	0.705	0.598
D	1.091	1.628	1.451	0.740	0.823	1.289	0.218	0.588	0.742	0.632	0.738	1.771
E	1.590	2.363	2.460	9.055	0.827	0.439	0.357	0.433	0.325	0.065	0.045	0.036
F	0.634	0.599	0.858	1.190	0.887	1.110	1.242	1.478	1.030	0.886	1.256	0.792
G	0.888	0.883	0.806	0.893	0.762	0.721	0.614	0.580	0.579	0.514	0.387	0.367
H	1.591	1.146	1.129	1.220	1.339	1.016	0.796	0.746	0.746	0.565	0.421	0.469
I	0.982	1.112	0.990	0.796	0.800	0.743	0.587	0.478	0.561	0.454	0.373	0.329
J										0.016	0.045	0.040
K	0.597	0.540	0.439	0.429	0.353	0.246	0.228	0.243	0.300	0.376	0.266	0.165
L												0.009
M	0.245	0.315	0.307	0.272	0.196	0.159	0.138	0.133	0.127	0.104	0.089	0.075
N	0.655	0.997	1.136	0.608	1.121	1.139	0.897	0.753	0.719	0.639	0.593	0.604
O	1.121	1.604	0.556	0.895	0.309	0.249	0.235	0.145	0.867	0.816	0.568	0.409
P	3.633	3.429	2.966	2.302	1.833	1.291	0.890	1.242	1.267	1.109	1.034	1.042
Q	0.089	0.134	0.112	0.112	0.100	0.065	0.051	0.078	0.054	0.136	0.222	0.169
R	0.824	0.791	0.521	0.169	0.122	0.269	0.199	0.072	0.219	0.117	0.043	0.041
S	0.950	0.785	0.786	0.871	0.562	0.420	0.338	0.296	0.343	0.347	0.251	0.183
T	5.920	6.878	9.691	1.424	0.250	0.478	0.635	1.235	1.289	2.531	4.451	2.956
DSC	8	9	8	7	5	7	3	5	5	4	5	5

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.11. Dominant Sectors in Kinik District (2021)



Source: SGK, 2022

KIRAZ

The number of dominant sectors in Kiraz district ranged from 3 to 7 during the 2010–2021 period. When examining the dominant sectors in Kiraz district by year, the dominant sectors for 2010 were E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; H - transportation and storage; K - financial and insurance activities; P - education; and S - other service activities.

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; N - administrative and support service activities; and P - education (Figure 3.12).

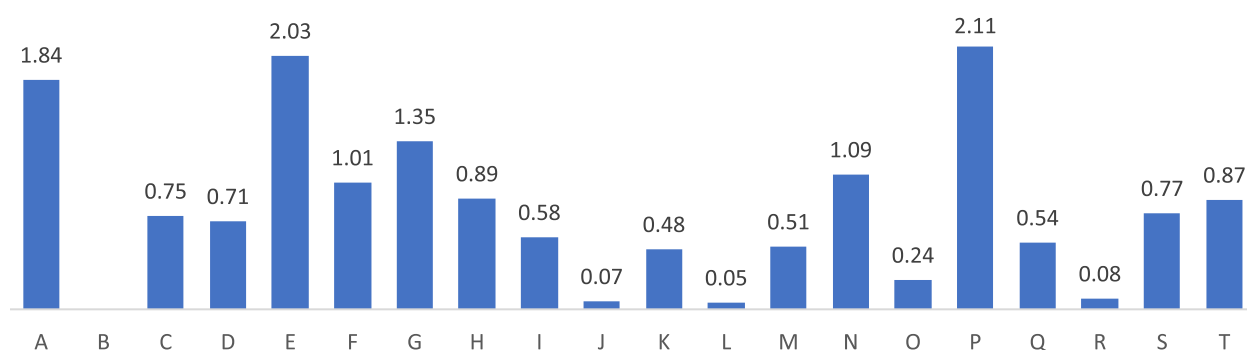
During the 2010–2020 period, the increase in A - agriculture, forestry, and fishing, as well as N - administrative and support service activities, and the decrease in S - other service activities were notable (Table 3.15).

TABLE 3.15. İzmir Kiraz District LQ Analyses by NACE Codes (2010–2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	0.413	0.694	0.759	0.815	1.086	1.163	1.886	1.930	1.974	2.359	2.133	1.836
B		0.030				0.078	0.079	0.043	0.041	0.036		
C	0.701	0.787	0.925	0.901	0.933	1.058	0.996	0.929	0.882	0.821	0.817	0.750
D	0.445	0.376	0.286	0.329	0.298	0.402	0.325	0.325	0.625	0.708	0.792	0.711
E	1.459	1.269	1.393	1.120	0.770	1.395	3.112	0.403	0.505	0.976	2.233	2.029
F	1.078	0.968	0.963	1.145	1.006	0.698	0.643	0.775	1.164	1.570	1.086	1.013
G	1.131	1.125	1.179	1.225	1.538	1.770	1.352	1.237	1.320	1.342	1.325	1.346
H	1.392	1.045	0.840	0.905	0.914	0.886	0.965	0.786	0.808	0.833	0.893	0.891
I	0.933	1.066	1.065	0.947	0.965	0.862	0.789	0.898	0.863	0.761	0.662	0.582
J	0.518	0.482	0.590	0.561	0.084	0.046	0.003	0.019	0.251	0.365	0.266	0.071
K	1.031	0.962	0.812	0.691	0.685	0.703	0.917	0.885	0.948	0.980	0.685	0.482
L											0.038	0.052
M	0.497	0.446	0.480	0.441	0.526	0.536	0.538	0.473	0.503	0.572	0.579	0.508
N	0.622	0.683	0.721	0.639	0.394	0.457	1.015	0.977	0.742	0.563	0.935	1.085
O						0.020	0.081	0.293	0.025	0.188	0.212	0.239
P	2.994	3.285	2.750	2.568	2.528	2.091	1.882	2.226	1.975	1.825	1.965	2.108
Q	0.346	0.386	0.360	0.282	0.102	0.160	0.142	0.133	0.125	0.231	0.389	0.536
R	0.240	0.208	0.032	0.039	0.010			0.053	0.086	0.082	0.086	0.083
S	2.116	1.886	1.927	1.885	1.699	1.134	1.738	0.810	0.954	1.035	1.001	0.768
T						0.187	0.248	0.237		0.644	1.500	0.873
DSC	7	6	5	5	5	6	6	3	4	5	7	6

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.12. Dominant Sectors in Kiraz District (2021)



Source: SGK, 2022

MENDERES

The number of dominant sectors in Menderes district ranged from 6 to 9 during the 2010–2021 period. When examining the dominant sectors in Menderes district by year, the dominant sectors for 2010 were A - agriculture, forestry, and fishing; C - manufacturing; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; and T - activities of households as employers.

For 2021, the dominant sectors in Menderes district were observed to be A - agriculture, forestry, and fishing; B - mining and quarrying; C - manufacturing; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; J - information and communication; and T - activities of households as employers (Figure 3.13).

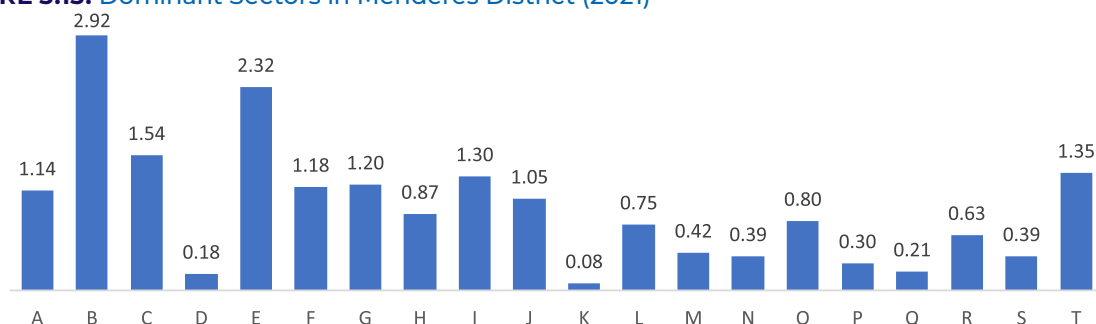
In Menderes district, certain sectors that were not dominant in 2010 became dominant during the 2010–2021 period. For instance, J - information and communication became a dominant sector in 2013 and continued to grow in value until 2021. On the other hand, T - activities of households as employers, which was a dominant sector in 2010, experienced a significant decrease in value by 2021 (Table 3.16).

TABLE 3.16. İzmir Menderes District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.781	1.670	1.506	1.564	1.504	1.158	1.241	1.377	1.358	1.666	2.536	1.139
B	0.898	2.194	2.854	2.602	2.317	2.669	2.824	2.855	2.894	3.198	2.991	2.918
C	1.448	1.498	1.459	1.450	1.391	1.422	1.444	1.425	1.514	1.520	1.569	1.544
D	0.305	0.235	0.315	0.290	0.238	0.201	0.428	0.593	0.278	0.252	0.159	0.176
E	2.348	0.848	0.974	2.583	1.775	1.165	0.961	1.923	2.098	2.355	2.594	2.321
F	1.020	0.981	0.932	0.889	0.976	1.071	1.074	1.102	0.966	0.824	0.931	1.179
G	1.103	1.083	1.077	1.080	1.130	1.096	1.152	1.212	1.211	1.207	1.220	1.204
H	0.594	0.780	0.808	0.819	0.882	0.930	1.106	0.851	0.826	0.862	0.827	0.868
I	1.715	1.620	1.587	1.437	1.289	1.372	1.240	1.374	1.407	1.499	1.032	1.299
J	0.011	0.020	0.644	1.877	2.404	1.718	1.761	1.533	1.177	1.008	0.979	1.047
K	0.197	0.206	0.185	0.183	0.186	0.163	0.169	0.179	0.192	0.176	0.114	0.078
L	0.717	0.678	0.674	0.716	0.661	0.649	0.652	0.711	0.794	0.797	0.797	0.752
M	0.363	0.373	0.393	0.366	0.372	0.390	0.433	0.446	0.463	0.479	0.481	0.424
N	0.689	0.420	0.382	0.386	0.441	0.460	0.395	0.374	0.427	0.499	0.426	0.389
O	0.153	0.139	0.636	0.124	0.135	0.129	0.111	1.609	1.101	0.853	0.972	0.795
P	0.219	0.201	0.185	0.171	0.156	0.159	0.216	0.333	0.327	0.296	0.317	0.299
Q	0.317	0.356	0.364	0.308	0.301	0.338	0.286	0.268	0.218	0.221	0.223	0.207
R	0.583	0.660	0.615	0.759	0.829	0.872	0.834	0.807	0.796	0.700	0.463	0.625
S	0.443	0.356	0.377	0.423	0.418	0.400	0.339	0.311	0.360	0.388	0.366	0.387
T	3.761	3.229	1.855	0.829	0.555	0.462	0.495	0.588	0.674	0.837	1.288	1.345
DSC	7	6	6	7	7	8	8	9	8	7	7	9

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.13. Dominant Sectors in Menderes District (2021)



Source: SGK, 2022

İZMİR CENTER

The number of dominant sectors in İzmir Center district, encompassing the metropolitan settlement of İzmir, ranged from 9 to 12 during the 2010–2021 period. When examining the dominant sectors in İzmir Center district, the sectors dominant in 2010 were C - manufacturing; G - wholesale and retail trade, repair of motor vehicles and motorcycles; H - transportation and storage; K - financial and insurance activities; L - real estate activities; M - professional, scientific, and technical activities; N - administrative and support service activities; S - other service activities; and T - activities of households as employers.

For 2021, the dominant sectors were observed to be E - water supply; sewerage, waste management, and remediation activities; G - wholesale and retail trade, repair of motor vehicles and motorcycles; H - transportation and storage; I - accommodation and food service activities; J - information and communication; L - real estate activities; M - professional, scientific, and technical activities; N - administrative and support service activities; Q - human health and social work activities; R - culture, arts, entertainment, recreation, and sports; S - other service activities; and T - activities of households as employers (Figure 3.14).

During the 2010–2021 period, İzmir Center district lost its dominance in C - manufacturing and K - financial and insurance activities but gained dominance in E - water supply; sewerage, waste management, and remediation activities; I - accommodation and food service activities; J - information and communication; Q - human health and social work activities; and R - culture, arts, entertainment, recreation, and sports (Table 3.17).

C - manufacturing sector lost its dominance in 2014, and K - financial and insurance activities lost its dominance in 2021. Meanwhile, E - water supply; sewerage, waste management, and remediation activities became dominant in 2013; I - accommodation and food service activities in 2020; J - information and communication in 2019; Q - human health and social work activities in 2011; and R - culture, arts, entertainment, recreation, and sports in 2012.

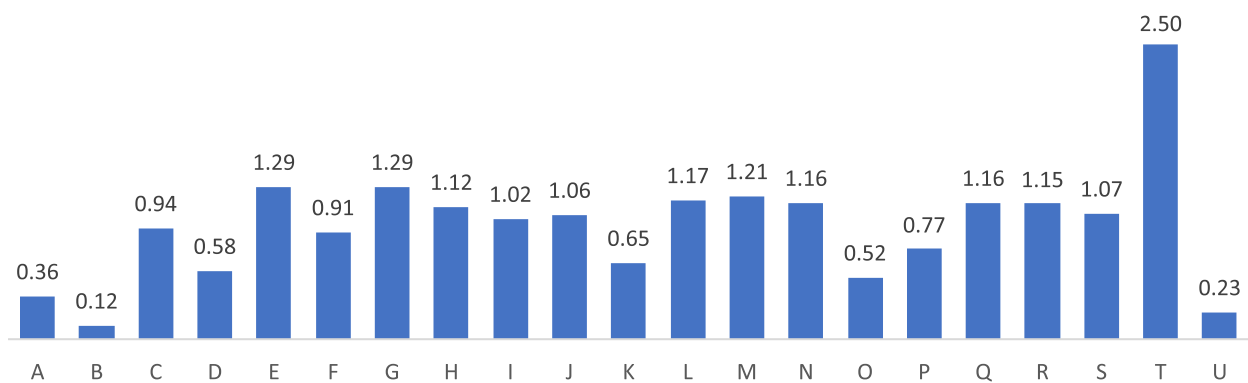
TABLE 3.17. İzmir Center District LQ Analyses by NACE Codes (2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	0.410	0.413	0.403	0.412	0.390	0.322	0.371	0.388	0.366	0.384	0.451	0.364
B	0.148	0.080	0.093	0.087	0.087	0.078	0.081	0.087	0.096	0.093	0.111	0.115
C	1.052	1.050	1.035	1.008	0.986	0.979	0.970	0.956	0.953	0.963	0.945	0.940
D	0.609	0.599	0.549	0.479	0.441	0.416	0.474	0.414	0.523	0.567	0.545	0.576
E	0.989	0.999	0.973	1.142	1.138	1.349	1.253	1.213	1.194	1.151	1.216	1.289
F	0.651	0.683	0.697	0.731	0.734	0.767	0.840	0.947	0.989	0.981	0.871	0.910
G	1.309	1.300	1.295	1.278	1.268	1.261	1.262	1.257	1.246	1.253	1.265	1.285
H	1.149	1.152	1.156	1.205	1.234	1.203	1.189	1.184	1.181	1.159	1.121	1.118
I	0.916	0.903	0.894	0.881	0.881	0.902	0.974	0.988	0.968	0.960	1.056	1.017
J	0.691	0.723	0.740	0.779	0.774	0.882	0.903	0.835	0.945	1.049	1.070	1.057
K	1.030	1.013	1.007	1.008	1.003	1.007	1.011	1.032	1.077	1.106	0.810	0.646
L	1.256	1.241	1.218	1.190	1.179	1.149	1.140	1.128	1.128	1.118	1.148	1.174
M	1.202	1.199	1.177	1.167	1.131	1.161	1.134	1.139	1.146	1.169	1.164	1.211
N	1.138	1.084	1.069	1.062	1.054	1.032	1.017	1.035	1.021	1.017	1.106	1.155
O	0.503	0.621	0.590	0.563	0.519	0.535	0.488	0.317	0.303	0.355	0.467	0.518

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
P	0.770	0.826	0.876	0.899	0.935	0.918	0.837	0.819	0.831	0.813	0.803	0.765
Q	0.935	0.944	1.027	1.059	1.135	1.127	1.075	1.048	1.042	1.019	1.067	1.158
R	0.942	0.945	1.004	1.044	1.059	1.166	1.228	1.288	1.195	1.203	1.220	1.149
S	1.204	1.153	1.185	1.193	1.283	1.255	1.139	1.078	1.055	1.061	1.075	1.065
T	2.106	1.923	1.691	1.541	1.803	1.835	1.844	1.803	1.801	1.855	2.301	2.499
U	0.371	0.355	0.332	0.314	0.295	0.278	0.466	0.343	0.283	0.233	0.212	0.228
DSC	9	9	11	12	11	11	11	11	11	12	12	12

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.14. Dominant Sectors in İzmir Center District (2021)



Source: SGK, 2022

ÖDEMiŞ

The number of dominant sectors in Ödemiş district ranged from 5 to 8 during the 2010–2021 period. When examining the dominant sectors in Ödemiş district by year, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; P - education; S - other service activities; and T - activities of households as employers.

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; B - mining and quarrying; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; O - public administration and defense, compulsory social security; and P - education (Figure 3.15).

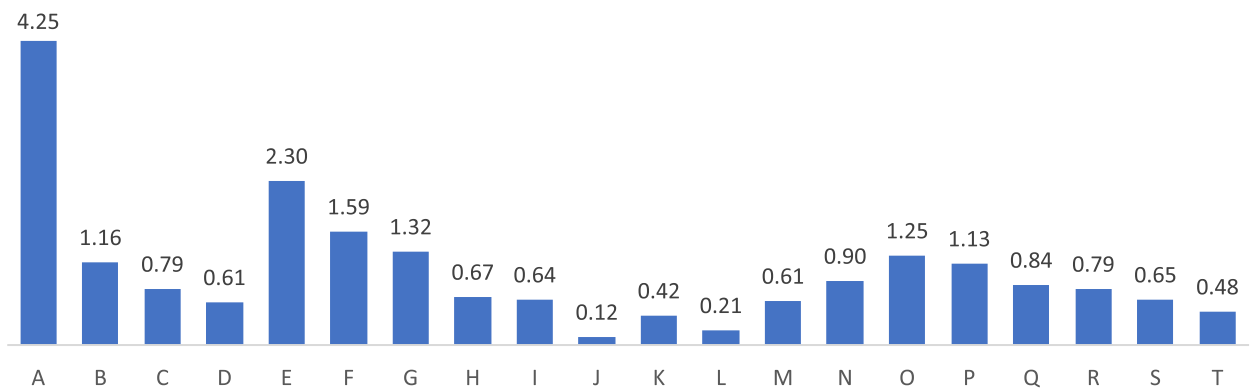
During the 2010–2021 period, the value of A - agriculture, forestry, and fishing increased significantly. B - mining and quarrying became dominant after 2013, and E - water supply; sewerage, waste management, and remediation activities became dominant in 2014. The value of O - public administration and defense, compulsory social security also increased over the years, reaching its peak in 2020.

However, Ödemiş district saw certain sectors lose their dominance. For instance, T - activities of households as employers lost dominance during the 2010–2021 period. Similarly, S - other service activities, which was a dominant sector in 2010, ceased to be dominant after 2016 and did not regain dominance thereafter (Table 3.18).

TABLE 3.18. İzmir Ödemiş District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.366	1.566	1.834	2.089	2.863	2.430	3.146	4.010	3.884	4.107	4.256	4.246
B	0.589	0.866	0.979	1.079	1.364	1.559	1.438	1.267	1.435	1.398	1.181	1.161
C	0.930	0.946	0.932	0.836	0.866	0.906	0.904	0.913	0.857	0.844	0.778	0.793
D	0.514	0.319	0.261	0.501	0.472	0.490	0.181	0.208	0.329	0.563	0.595	0.610
E	0.510	1.318	0.857	0.958	1.749	1.775	1.664	1.407	1.567	1.633	1.589	2.296
F	1.305	1.346	1.361	1.506	1.387	1.299	1.254	1.253	1.309	1.351	1.529	1.592
G	1.358	1.285	1.294	1.301	1.348	1.384	1.413	1.384	1.384	1.356	1.329	1.315
H	0.545	0.581	0.688	0.760	0.726	0.755	0.916	0.857	0.680	0.639	0.654	0.671
I	0.803	0.725	0.750	0.671	0.780	0.759	0.768	0.718	0.694	0.678	0.708	0.638
J	0.127	0.802	0.184	0.694	0.344	0.156	0.123	0.420	0.596	0.724	0.567	0.116
K	0.892	0.814	0.817	0.826	0.898	0.881	0.850	0.847	0.832	0.824	0.569	0.419
L	0.215	0.254	0.309	0.232	0.218	0.256	0.267	0.275	0.335	0.282	0.257	0.209
M	0.580	0.691	0.676	0.706	0.736	0.764	0.957	0.865	0.746	0.690	0.656	0.613
N	0.888	0.714	0.721	0.672	0.598	0.642	0.550	0.638	0.816	0.982	0.988	0.897
O	0.220	0.333	0.368	0.154	0.216	0.097	0.942	0.052	1.195	1.408	1.453	1.253
P	1.408	1.326	1.257	1.218	1.277	1.189	1.038	1.052	1.046	1.041	1.087	1.133
Q	0.793	0.722	0.698	0.689	0.698	0.650	0.599	0.573	0.534	0.617	0.747	0.842
R	0.723	0.796	0.869	1.389	0.524	0.679	0.836	0.941	0.899	0.826	1.044	0.790
S	1.517	1.422	1.572	1.390	1.184	1.000	0.982	1.057	0.911	0.732	0.691	0.647
T	1.983	1.436	0.803	0.472	0.336	0.337	0.349	0.367	0.190	0.247	0.416	0.478
BSS	6	7	5	7	7	7	6	7	7	7	8	7

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.15. Dominant Sectors in Ödemiş District (2021)

Source: SGK, 2022

SEFERİHİSAR

The number of dominant sectors in Seferihisar district ranged from 5 to 8 during the 2010–2021 period. When examining the dominant sectors in Seferihisar district by year, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; H - transportation and storage; I - accommodation and food service activities; L - real estate activities; N - administrative and support service activities; R - culture, arts, entertainment, recreation, and sports; S - other service activities; and T - activities of households as employers (Table 3.19).

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; D - electricity, gas, steam, and air conditioning supply; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; L - real estate activities; O - public administration and defense, compulsory social security; S - other service activities; and T - activities of households as employers (Figure 3.16).

During the 2010–2021 period, while A - agriculture, forestry, and fishing continued to be a dominant sector, its value decreased by approximately half. D - electricity, gas, steam, and air conditioning supply, which was not a dominant sector in 2010, became dominant in 2016 and remained dominant through 2021. Similarly, O - public administration and defense, compulsory social security, which was not dominant in 2010, became a dominant sector in 2017.

In Seferihisar district, H - transportation and storage, which was dominant in 2010, ceased to be dominant after 2011. Similarly, R - culture, arts, entertainment, recreation, and sports, which was dominant in 2010, was no longer dominant after 2012. Additionally, while T - activities of households as employers remained a dominant sector during the 2010–2021 period, its value decreased by 2.5 times.

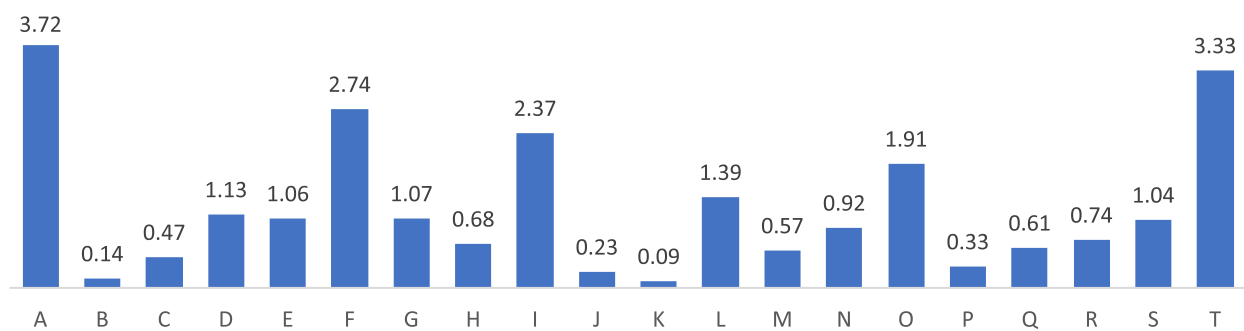
TABLE 3.19. İzmir Seferihisar District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	6.730	6.106	5.017	5.839	5.905	3.742	4.405	5.870	4.636	3.977	5.435	3.723
B				0.209	0.018	0.032	0.037	0.061	0.091	0.028	0.113	0.140
C	0.497	0.487	0.381	0.354	0.353	0.331	0.366	0.415	0.414	0.397	0.467	0.465
D	0.493	0.338	0.450	0.199	0.170	0.571	1.452	1.084	1.107	0.933	0.819	1.125
E	0.549	0.582	0.694	1.747		0.015	0.006	0.038	0.144	0.457	0.486	1.060
F	1.518	1.572	1.993	1.719	1.580	1.956	2.384	2.336	2.040	1.963	2.259	2.737
G	1.114	1.190	1.232	1.117	1.150	1.002	1.074	1.121	1.104	1.092	1.067	1.066
H	1.098	0.864	0.728	0.519	1.065	1.036	0.389	0.561	0.630	0.689	0.717	0.679
I	2.106	2.197	1.825	2.527	2.384	2.232	1.866	1.772	2.474	2.982	2.365	2.367
J	0.355	0.318	0.328	0.288	0.043	0.036	0.023	0.041	0.240	0.303	0.270	0.233
K	0.232	0.229	0.219	0.200	0.188	0.219	0.216	0.182	0.221	0.167	0.141	0.090
L	1.356	1.575	1.642	1.734	1.285	1.126	1.013	1.222	1.108	1.171	1.134	1.387
M	0.660	0.699	0.658	0.716	0.778	0.730	0.747	0.856	0.798	0.838	0.790	0.567
N	1.208	1.209	0.978	1.071	1.078	1.124	1.032	1.062	0.798	0.896	0.955	0.916
O	0.198	0.325	0.371	0.339	0.294	0.236	0.295	0.271	3.443	2.629	2.630	1.905

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
P	0.595	0.480	0.908	1.038	0.990	0.783	0.584	0.369	0.420	0.476	0.450	0.330
Q	0.227	0.159	0.073	0.272	0.356	0.383	0.427	0.546	0.501	0.538	0.545	0.611
R	1.603	1.534	0.870	0.524	0.331	0.359	0.432	0.365	0.461	0.611	0.706	0.737
S	1.476	1.262	0.750	0.626	0.741	0.948	1.120	0.886	0.967	1.175	1.095	1.044
T	8.483	7.321	4.525	1.955	1.459	1.280	1.356	1.374	1.282	1.540	2.275	3.332
DSC	10	9	6	9	8	8	9	8	8	8	8	10

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.16. Dominant Sectors in Seferihisar District (2021)



Source: SGK, 2022

SELÇUK

The number of dominant sectors in Selçuk district ranged from 5 to 7 during the 2010–2021 period. When examining the dominant sectors in Selçuk district by year, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; R - culture, arts, entertainment, recreation, and sports; S - other service activities; T - activities of households as employers; and U - activities of international organizations and representations (Table 3.20).

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; N - administrative and support service activities; R - culture, arts, entertainment, recreation, and sports; and T - activities of households as employers (Figure 3.17).

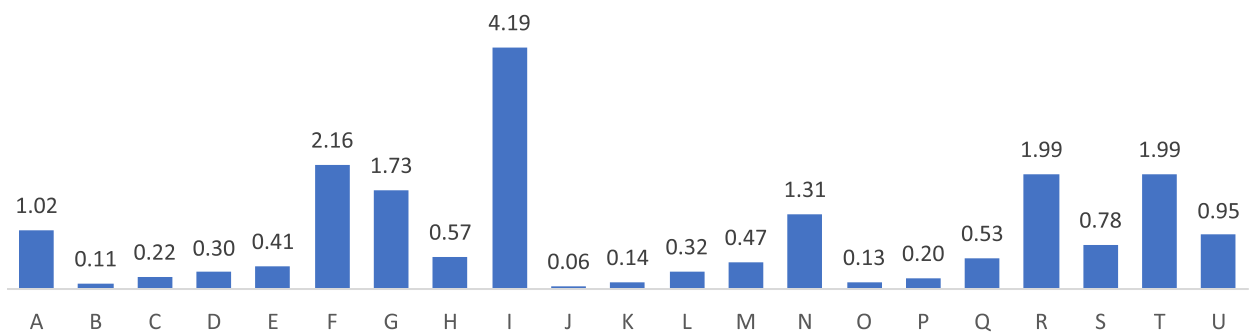
During the 2010–2021 period, when examining the trends in dominance for sectors in Selçuk district, it is seen that although A - agriculture, forestry, and fishing was dominant in both 2010 and 2021, it was not dominant during the periods 2015–2016 and 2018–2020. F - construction became dominant in 2016, with its value continuing to increase through 2021. Similarly, N - administrative and support service activities became a dominant sector for the first time in 2016 and retained its high value through 2021.

On the other hand, certain sectors that were dominant in 2010 lost their dominance by the end of the 2010–2021 period. S - other service activities, which was dominant in 2010, ceased to be dominant after 2016. Similarly, U - activities of international organizations and representations, dominant during 2010–2020, was no longer dominant as of the year 2021.

TABLE 3.20. İzmir Selçuk District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.320	1.184	1.125	1.368	1.281	0.951	0.964	1.004	0.826	0.735	0.891	1.024
B	0.101	0.144	0.167	0.042	0.035	0.015	0.008	0.020	0.050	0.087	0.098	0.112
C	0.247	0.215	0.205	0.196	0.189	0.189	0.177	0.194	0.187	0.194	0.210	0.216
D	0.331	0.675	0.289	0.142	0.138	0.171	0.261	0.547	0.355	0.311	0.291	0.299
E	0.117	1.285	0.146	0.220	0.222	0.331	0.166	0.207	0.280	0.346	0.396	0.413
F	0.884	0.765	0.838	0.922	0.762	0.786	1.616	2.017	1.601	1.384	1.850	2.162
G	1.870	1.937	1.885	1.957	2.017	2.070	1.893	1.657	1.660	1.875	1.995	1.731
H	0.489	0.497	0.642	0.630	0.430	0.459	0.508	0.551	0.542	0.547	0.588	0.568
I	5.929	5.652	5.504	5.121	5.135	4.873	3.873	3.851	4.683	4.848	3.991	4.192
J	0.111	0.401	0.578	0.340	0.065	0.070	0.056	0.057	0.193	0.211	0.202	0.056
K	0.178	0.152	0.183	0.206	0.250	0.223	0.205	0.234	0.253	0.199	0.198	0.135
L	0.162	0.110	0.123	0.225	0.260	0.287	0.267	0.248	0.238	0.229	0.385	0.319
M	0.587	0.559	0.562	0.523	0.536	0.463	0.417	0.450	0.479	0.503	0.499	0.472
N	0.715	0.628	0.586	0.688	0.838	0.904	0.961	1.027	1.057	1.031	1.181	1.308
O	0.309	0.423	0.045	0.040	0.044	0.035	0.053	0.030	0.033	0.161	0.107	0.127
P	0.575	0.575	0.534	0.491	0.539	0.466	0.355	0.249	0.265	0.253	0.256	0.198
Q	0.244	0.236	0.238	0.201	0.194	0.210	0.180	0.234	0.293	0.285	0.401	0.533
R	1.246	2.493	2.625	2.346	2.212	2.913	2.889	2.206	2.433	1.999	1.981	1.994
S	1.743	2.182	1.920	1.354	1.543	1.360	0.995	0.735	0.860	0.701	0.693	0.784
T	1.244	0.750	0.489	0.340	0.334	0.298	0.298	0.099	0.162	0.315	1.095	1.991
U	1.869	1.766	1.643	1.562	1.587	1.461	1.387	1.469	1.032	0.979	1.094	0.947
DSC	7	7	6	6	6	5	5	7	6	5	7	7

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.17. Dominant Sectors in Selçuk District (2021)

Source: SGK, 2022

TİRE

The number of dominant sectors in Tire district ranged from 3 to 5 during the 2010–2021 period. When examining the dominant sectors in Tire district by year, the dominant sectors for 2010 were A - agriculture, forestry, and fishing; C - manufacturing; F - construction; H - transportation and storage; and S - other service activities (Table 3.21).

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; C - manufacturing; D - electricity, gas, steam, and air conditioning supply; M - professional, scientific, and technical activities; and S - other service activities (Figure 3.18).

During the 2010–2021 period, while A - agriculture, forestry, and fishing remained a consistently dominant sector, its value increased by 2.14 times. D - electricity, gas, steam, and air conditioning supply, which was not dominant in 2010, became dominant for the first time in 2016 and remained dominant through 2021. Similarly, M - professional, scientific, and technical activities, which was not dominant in 2010, became a dominant sector for the first time as of the year 2021.

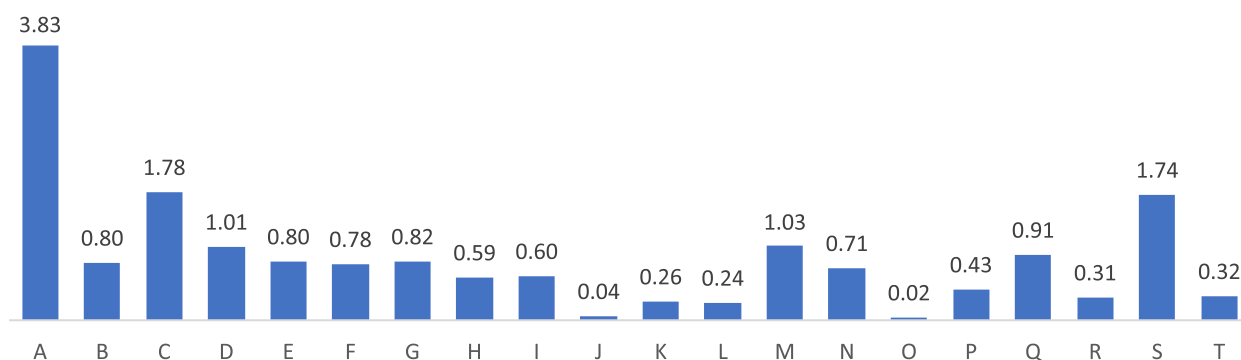
Certain sectors in Tire district lost their dominance during the 2010–2021 period. H - transportation and storage, which was dominant in 2010, was no longer dominant after 2010. Similarly, F - construction, also dominant in 2010, ceased to be dominant during the same period.

TABLE 3.21. İzmir Tire District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	1.784	2.397	2.895	3.610	4.108	3.264	3.928	3.882	3.933	4.092	4.067	3.826
B	0.803	0.851	1.056	1.172	0.946	0.834	0.727	0.682	0.708	0.770	0.724	0.795
C	1.343	1.315	1.335	1.422	1.489	1.457	1.448	1.501	1.538	1.582	1.649	1.783
D	0.254	0.271	0.654	0.575	0.516	0.483	1.111	1.560	0.964	1.128	1.023	1.008
E	0.033	0.081	0.097	0.126	0.854	0.696	0.846	0.932	0.908	0.988	0.991	0.804
F	1.292	1.315	1.098	0.925	0.843	1.051	1.243	1.162	1.169	1.143	1.063	0.781
G	0.781	0.822	0.864	0.878	0.895	0.980	0.898	0.882	0.851	0.857	0.813	0.816
H	1.012	0.910	0.874	0.910	0.863	0.771	0.725	0.738	0.694	0.654	0.572	0.591
I	0.659	0.711	0.641	0.613	0.676	0.569	0.600	0.602	0.605	0.631	0.628	0.604
J	0.076	0.068	0.090	0.079	0.019	0.011	0.024	0.043	0.474	0.574	0.435	0.044
K	0.442	0.469	0.562	0.723	0.818	0.744	0.647	0.530	0.525	0.542	0.370	0.260
L	0.214	0.160	0.181	0.172	0.826	0.213	0.185	0.165	0.134	0.144	0.237	0.239
M	0.664	0.644	0.648	0.643	0.695	0.647	0.687	0.978	0.965	0.908	0.950	1.026
N	0.830	0.732	0.833	0.884	0.699	0.693	0.618	0.591	0.685	0.753	0.761	0.710
O	0.170	0.232	0.014	0.085	0.024	0.019	0.027	0.016	0.017	0.015	0.020	0.023
P	0.813	0.758	0.749	0.735	0.724	0.618	0.551	0.550	0.555	0.527	0.466	0.428
Q	0.630	0.793	1.029	0.597	0.560	0.556	0.494	0.818	0.584	0.527	0.628	0.906
R	0.165	0.260	0.321	0.213	0.437	0.773	0.815	0.899	0.788	0.519	0.355	0.310
S	1.362	1.334	1.297	1.381	1.200	1.615	1.814	1.665	1.592	1.665	1.657	1.736
T	0.159	0.366	0.479	0.455	0.365	0.312	0.336	0.354	0.305	0.337	0.423	0.318
DSC	5	4	6	4	3	4	5	5	4	5	5	5

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.18. Dominant Sectors in Tire District (2021)



TORBALI

The number of dominant sectors in Torbalı district ranged from 2 to 3 during the 2010–2021 period. When examining the dominant sectors in Torbalı district by year, the dominant sectors for 2010 were A - agriculture, forestry, and fishing; C - manufacturing; and E - water supply; sewerage, waste management, and remediation activities.

For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; and C - manufacturing (Figure 3.19).

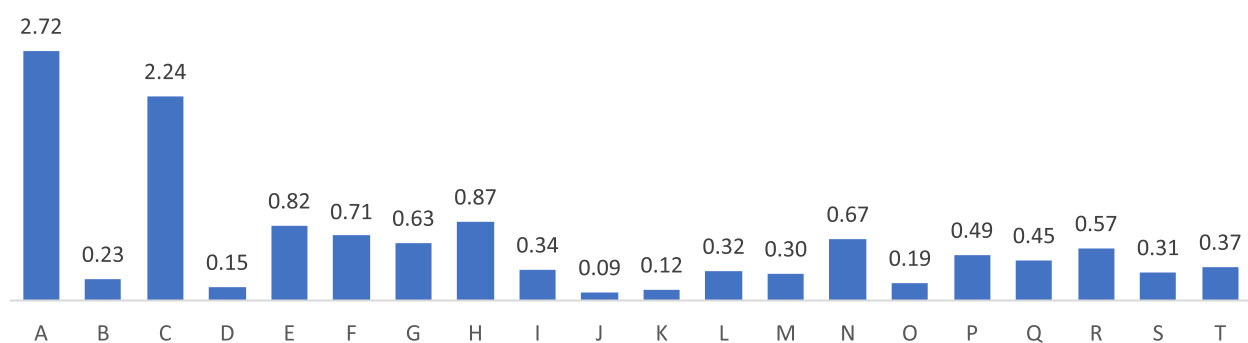
While A - agriculture, forestry, and fishing remained dominant throughout the 2010–2021 period, its value decreased by 1.4 times by the end of the period. E - water supply; sewerage, waste management, and remediation activities, which had shown increasing dominance from 2010 to 2014, was no longer among the dominant sectors as of the year 2021 (Table 3.22).

TABLE 3.22. İzmir Torbalı District LQ Analyses by NACE Codes (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	3.903	3.309	3.005	2.865	3.473	2.551	2.897	3.069	2.998	3.194	2.887	2.718
B	0.158	0.155	0.176	0.210	0.195	0.186	0.192	0.252	0.221	0.214	0.230	0.232
C	2.047	2.115	2.084	2.093	2.065	2.125	2.208	2.278	2.271	2.277	2.226	2.236
D	0.177	0.162	0.231	0.239	0.237	0.181	0.146	0.144	0.118	0.106	0.185	0.151
E	1.016	1.902	2.219	2.149	2.222	1.914	1.687	1.722	1.152	0.890	0.839	0.818
F	0.493	0.470	0.550	0.624	0.734	0.786	0.735	0.722	0.776	0.669	0.673	0.709
G	0.666	0.656	0.626	0.580	0.540	0.554	0.573	0.609	0.605	0.621	0.613	0.634
H	0.984	0.870	0.854	0.727	0.751	0.792	0.810	0.816	0.781	0.842	0.867	0.866
I	0.264	0.269	0.314	0.324	0.308	0.307	0.298	0.283	0.284	0.285	0.336	0.341
J	0.029	0.026	0.122	0.125	0.046	0.028	0.030	0.054	0.087	0.092	0.091	0.089
K	0.434	0.423	0.460	0.385	0.259	0.246	0.237	0.236	0.243	0.243	0.161	0.116
L	0.208	0.239	0.247	0.233	0.240	0.218	0.253	0.320	0.311	0.305	0.303	0.317
M	0.447	0.421	0.420	0.431	0.392	0.413	0.371	0.364	0.369	0.351	0.323	0.295
N	0.788	0.743	0.751	0.805	0.759	0.656	0.607	0.601	0.642	0.653	0.646	0.667
O	0.037	0.068	0.042	0.053	0.052	0.042	0.105	0.097	0.207	0.215	0.178	0.186
P	0.422	0.451	0.444	0.551	0.525	0.528	0.502	0.468	0.471	0.490	0.501	0.494
Q	0.145	0.119	0.165	0.332	0.445	0.452	0.504	0.556	0.558	0.537	0.487	0.445
R	0.296	0.228	0.122	0.127	0.125	0.177	0.245	0.265	0.348	0.556	0.486	0.565
S	0.438	0.427	0.433	0.276	0.262	0.287	0.348	0.307	0.296	0.283	0.273	0.306
T	0.476	0.374	0.361	0.254	0.195	0.154	0.162	0.198	0.203	0.271	0.327	0.368
DSC	3	3	3	3	3	3	3	3	3	2	2	2

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.19. Dominant Sectors in Torbalı District (2021)



Source: SGK, 2022

URLA

The number of dominant sectors in Urla district ranged from 9 to 11 during the 2010–2021 period. When examining the dominant sectors in Urla district by year, the sectors dominant in 2010 were A - agriculture, forestry, and fishing; E - water supply; sewerage, waste management, and remediation activities; F - construction; I - accommodation and food service activities; J - information and communication; L - real estate activities; M - professional, scientific, and technical activities; P - education; S - other service activities; and T - activities of households as employers (Figure 3.20).

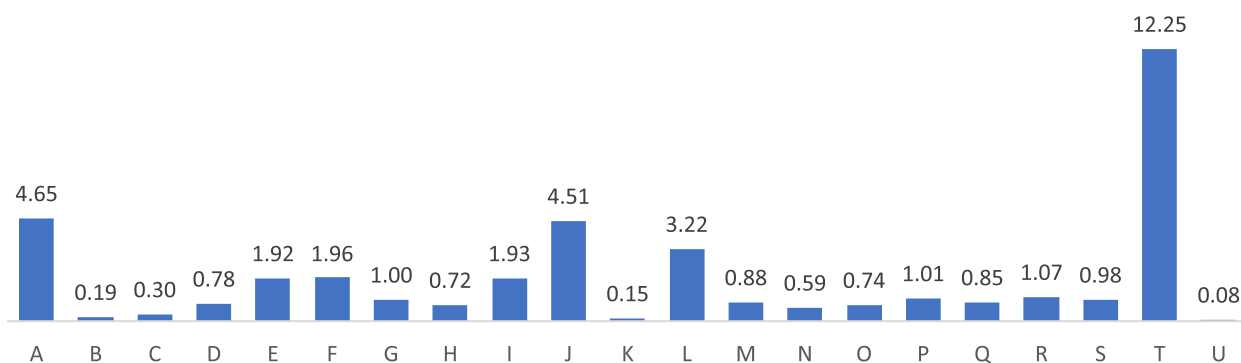
For 2021, the dominant sectors were observed to be A - agriculture, forestry, and fishing; E - water supply; sewerage, waste management, and remediation activities; F - construction; G - wholesale and retail trade, repair of motor vehicles and motorcycles; I - accommodation and food service activities; J - information and communication; L - real estate activities; P - education; R - culture, arts, entertainment, recreation, and sports; and T - activities of households as employers (Table 3.23).

TABLE 3.23. LQ Analyses According to NACE Codes of Urla District, Izmir (2010-2021)

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A	6.544	6.699	7.495	7.206	7.106	5.103	5.873	6.450	5.686	5.540	5.430	4.645
B	0.646	0.539	0.517	0.375	0.517	0.471	0.416	0.416	0.381	0.255	0.163	0.192
C	0.428	0.450	0.437	0.455	0.465	0.445	0.428	0.404	0.376	0.369	0.319	0.301
D	0.618	0.540	0.216	0.201	0.259	0.231	0.250	0.383	0.460	0.476	0.725	0.781
E	1.737	1.377	1.412	1.188	0.841	0.659	1.829	1.840	1.908	1.766	1.645	1.919
F	1.412	1.390	1.169	1.215	1.226	1.264	1.594	1.457	1.524	1.677	1.649	1.963
G	0.828	0.873	0.974	0.974	0.896	0.896	0.878	0.949	0.917	0.958	1.013	1.000
H	0.570	0.589	0.432	0.507	0.559	0.864	0.836	0.894	0.924	0.830	0.779	0.723
I	1.600	1.595	1.428	1.239	1.258	1.408	1.427	1.573	1.695	1.759	1.949	1.932
J	2.504	2.079	2.057	1.879	1.423	1.364	1.523	1.864	2.565	3.357	4.083	4.514
K	0.491	0.461	0.430	0.448	0.452	0.390	0.366	0.325	0.302	0.292	0.175	0.146
L	5.621	5.335	5.455	5.440	4.944	4.227	3.749	3.637	3.617	3.405	3.353	3.222
M	1.001	0.897	0.908	1.052	1.103	1.040	0.929	0.999	1.001	0.966	0.916	0.883
N	0.958	0.953	1.101	0.954	0.958	0.877	0.630	0.649	0.601	0.587	0.622	0.589
O	0.786	0.923	0.947	0.685	0.659	0.390	0.940	0.745	0.895	0.862	0.877	0.743
P	1.313	1.365	1.615	1.624	1.579	1.404	1.174	1.042	1.038	1.027	1.079	1.012
Q	0.601	0.649	0.783	0.889	0.971	1.017	1.051	1.107	1.072	1.038	0.982	0.845
R	0.943	0.844	0.727	0.652	0.753	0.804	0.729	0.834	0.863	0.935	1.086	1.072
S	1.366	1.248	0.985	0.979	1.134	1.087	1.014	0.991	1.008	1.067	1.108	0.977
T	22.064	20.823	18.145	13.327	10.534	9.509	8.914	9.818	10.108	10.603	13.438	12.250
U	0.033	0.248	0.947	1.126	0.244				0.140			0.081
BSS	10	9	9	10	9	10	10	9	11	10	11	10

Source: Calculated using SGK year 2022 employment data.

FIGURE 3.20. Dominant Sectors in Urla District (2021)



Source: SGK, 2022

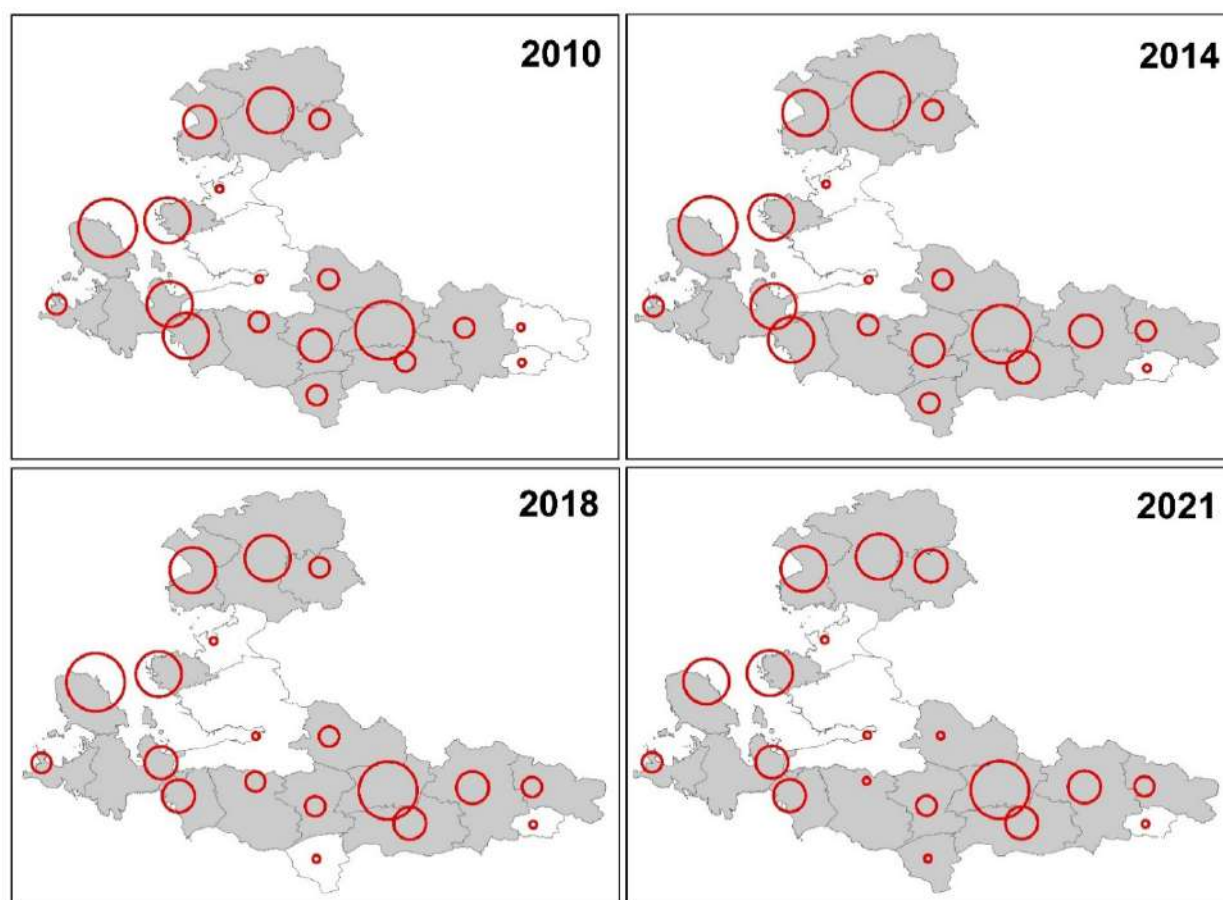
C. Spatial Distribution of Dominant Sectors

The examination of the spatial distribution of dominant (key) sectors at the district level in İzmir Region between 2010 and 2021 provides highly valuable insights for regional planning studies. In this context, 19 districts were analyzed across four different periods (2010, 2014, 2018, 2021), while İzmir Center was considered as a single whole for the purposes of this analysis.

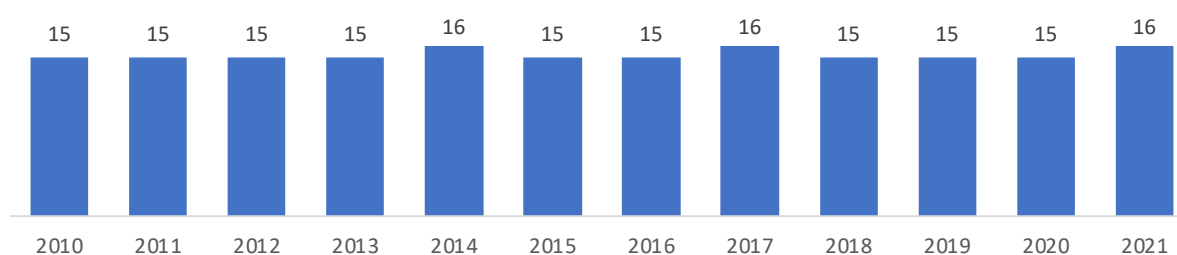
FIGURE 3.21.A. Spatial Distribution of Districts Where A: Agriculture, Forestry and Fishing Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

A

Agriculture, Forestry and Fishing Sector



Source: Calculated using SGK year 2022 employment data.

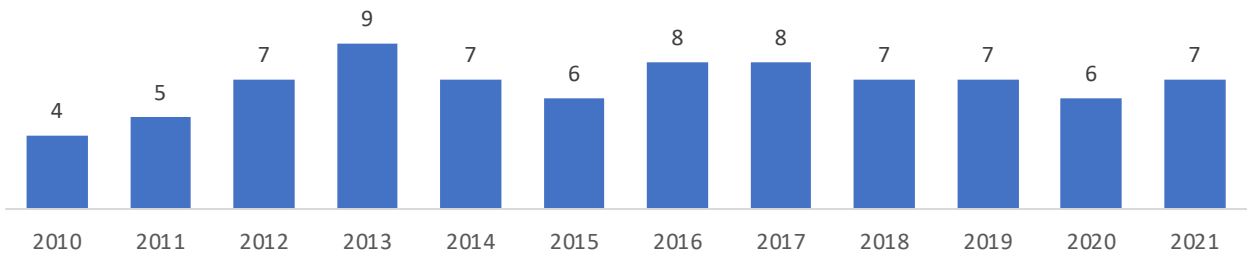
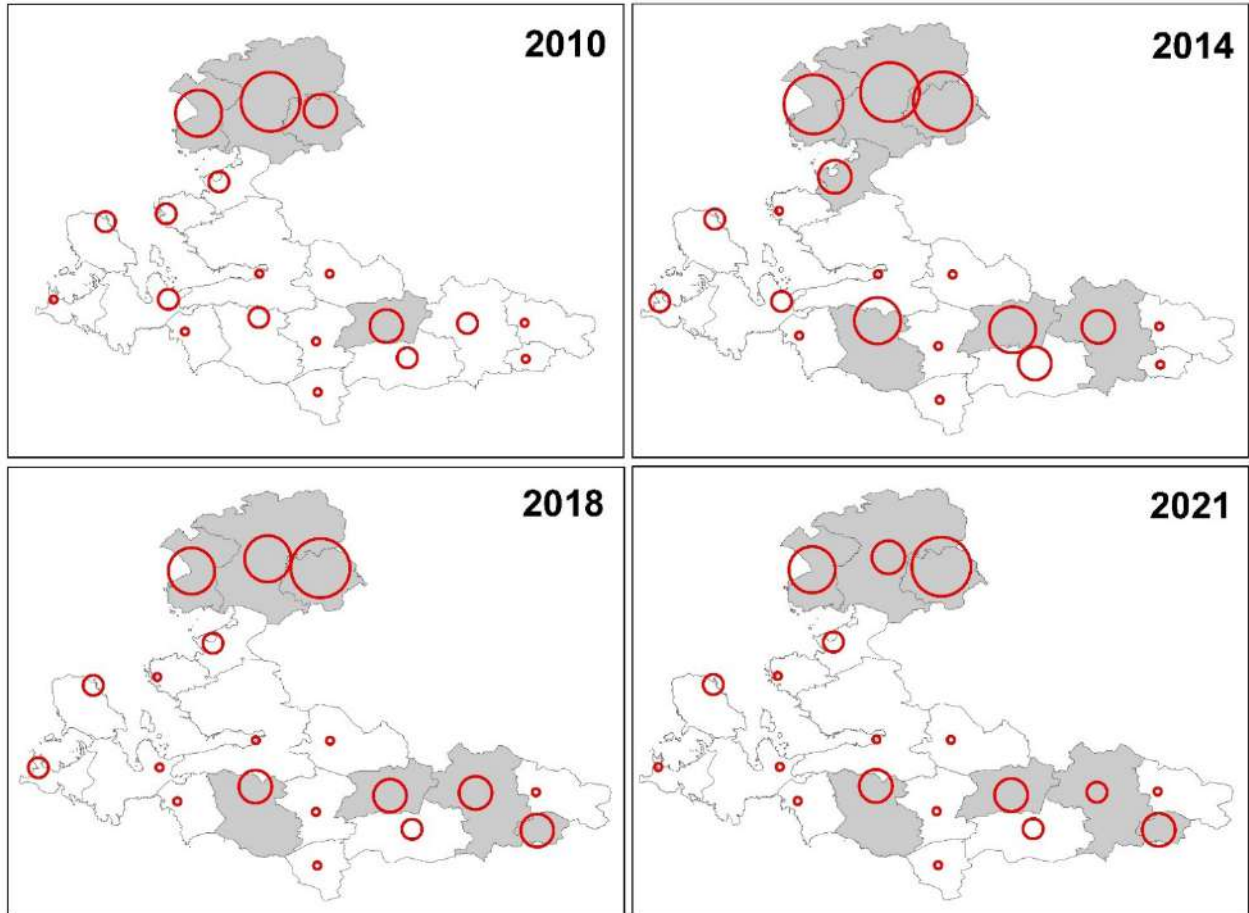


The agriculture, forestry, and fishing (A) sector is a very important sector for İzmir Region. With the advantage of fertile agricultural lands and coastal areas, this sector was dominant in 15 or 16 districts during the four periods examined. By 2021, agriculture, forestry and fishing (A) became a key sector in all 19 districts, except İzmir Center, Aliğa and Beydağ (Figure 3.21-A).

FIGURE 3.21.B. Spatial Distribution of Districts Where B: Mining and Quarrying Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

B

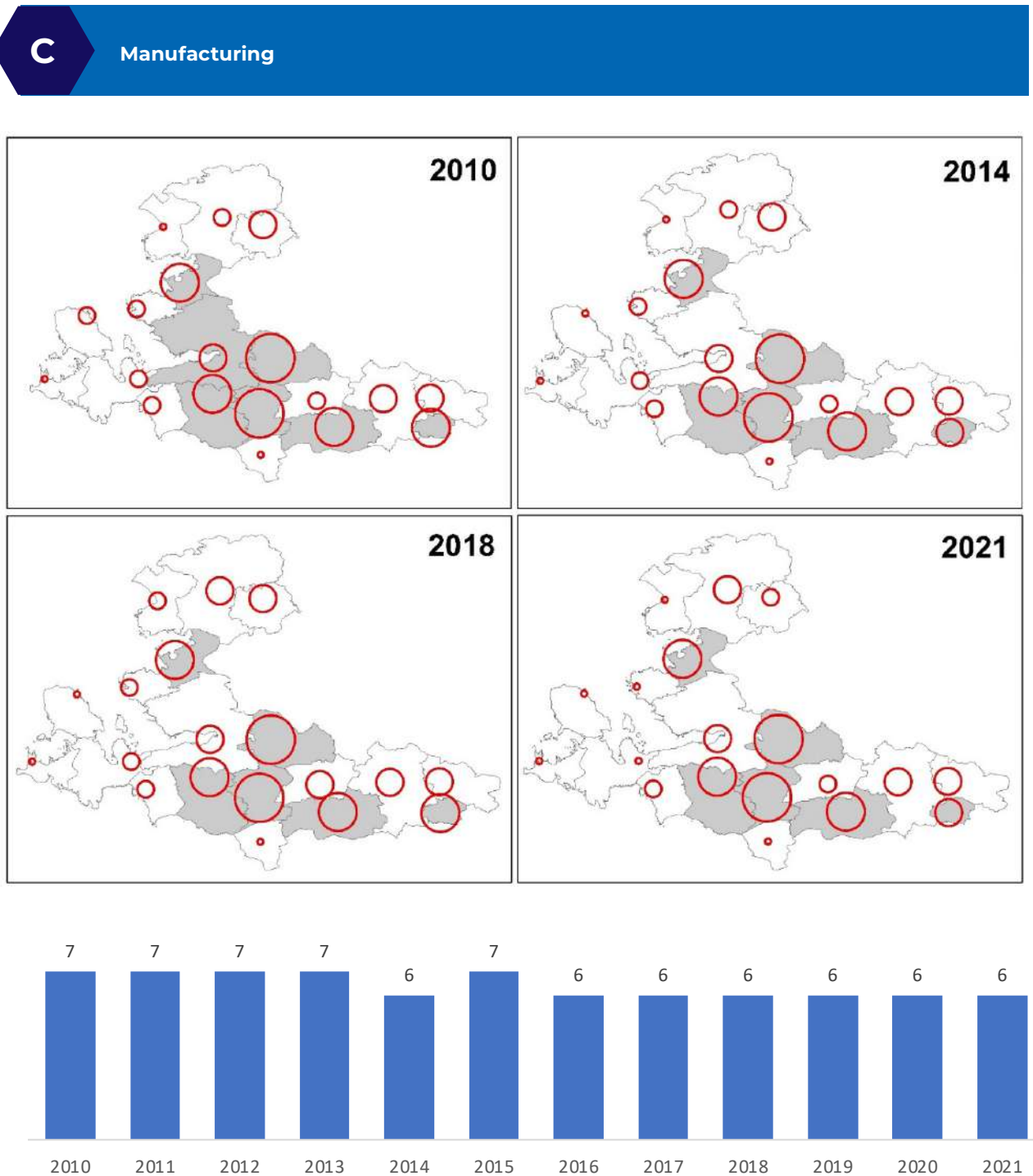
Mining and Quarrying Sector



Source: Calculated using SGK year 2022 employment data.

The mining and quarrying (B) sector in İzmir Region is concentrated in two main areas: Dikili-Bergama-Kınık in the north and Bayındır-Ödemiş-Beydağ in the east. From the mid-2010s onward, Menderes district also became part of these areas (Figure 3.21-B).

FIGURE 3.21.C. Spatial Distribution of Districts Where C: Manufacturing Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)



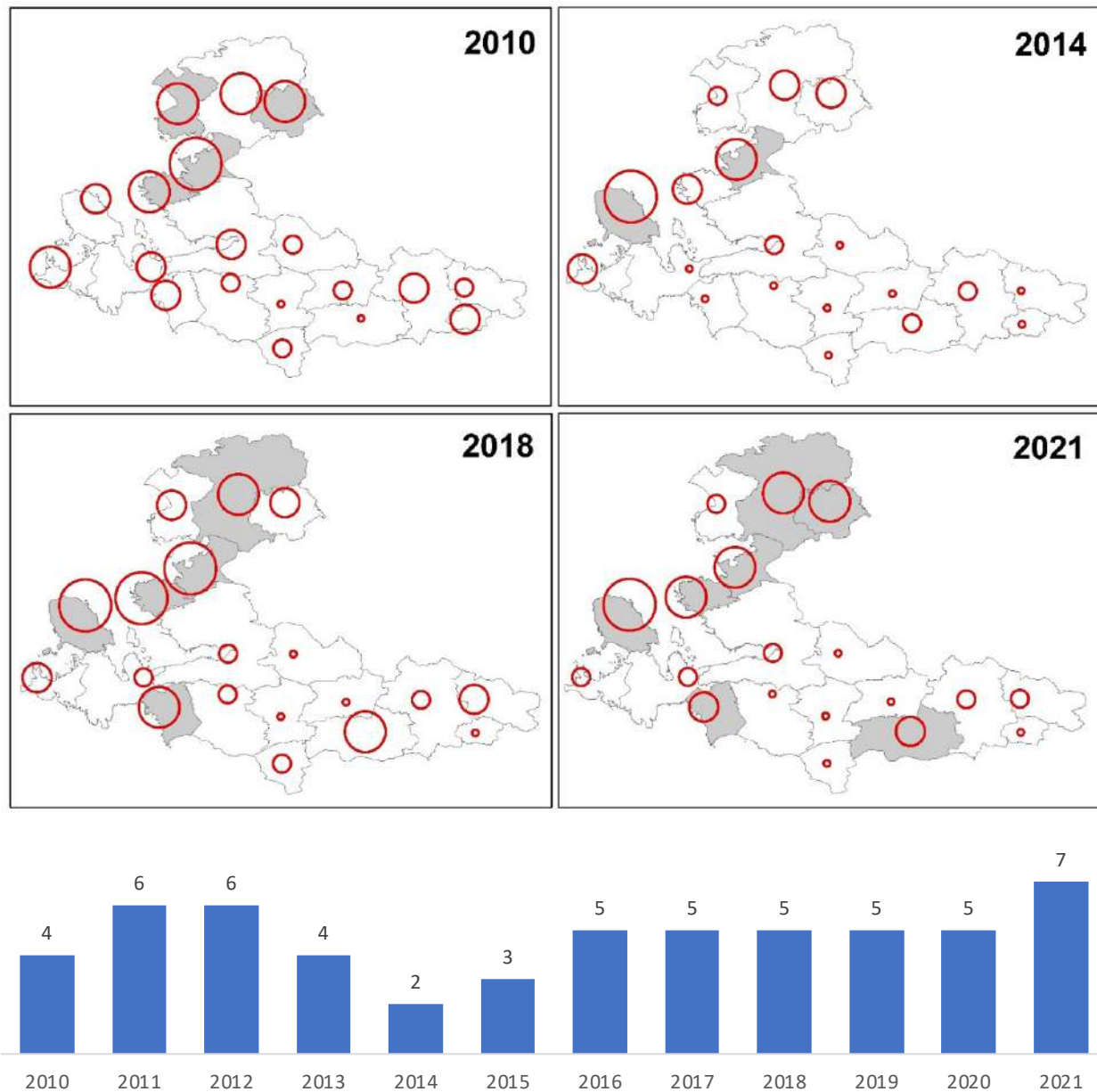
Source: Calculated using SGK year 2022 employment data.

The spatial distribution of the dominance of the manufacturing (C) sector in İzmir Region did not undergo significant changes during the 2010–2021 period. This sector, forming the foundation of production, was strongly dominant in İzmir Center. However, its prominence in the center began to diminish from the mid-2010s. Outside the center, the manufacturing sector was dominant throughout all four periods in districts neighboring the central area with strong transportation connections, such as Aliağa, Menderes, Kemalpaşa and Torbalı, as well as Tire and Beydağ in the east (Figure 3.21-C).

FIGURE 3.21.D. Spatial Distribution of Districts Where D: Electricity, Gas, Steam, and Air Conditioning Supply Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

D

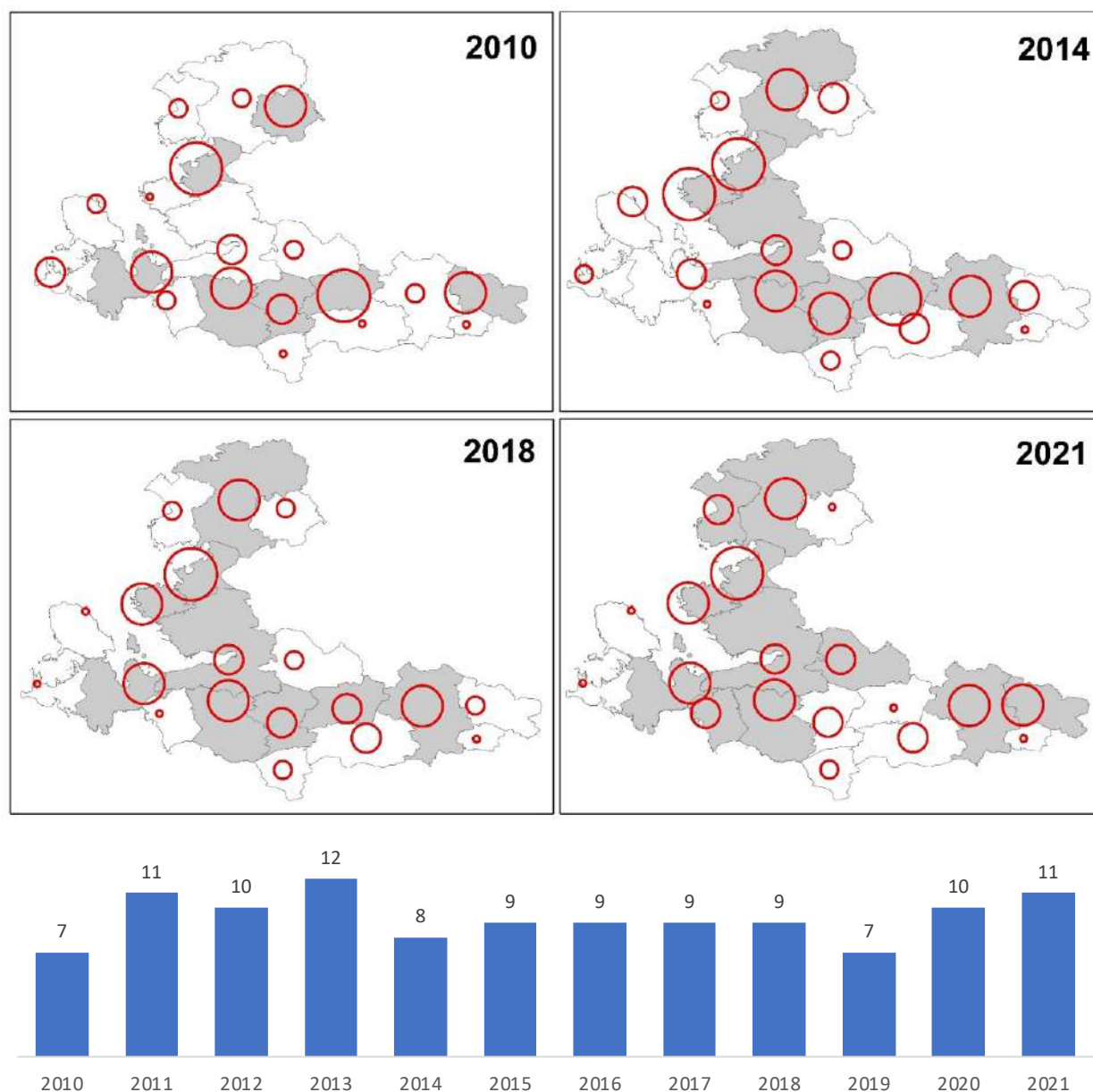
Electricity, Gas, Steam, and Air Conditioning Supply



Source: Calculated using SGK year 2022 employment data.

The electricity, gas, steam, and air conditioning supply (D) sector steadily increased its prominence in İzmir Region between 2010 and 2021. Particularly from the mid-2010s onward, the presence of wind and solar energy plants, along with the development of related subsectors, formed a corridor in the southwest-northeast axis encompassing Karaburun, Foça, Aliağa, Bergama and Kınık. In recent years, Seferihisar and Tire districts in the south have also been included in this area. Geothermal energy production has further contributed to this sector (Figure 3.21-D).

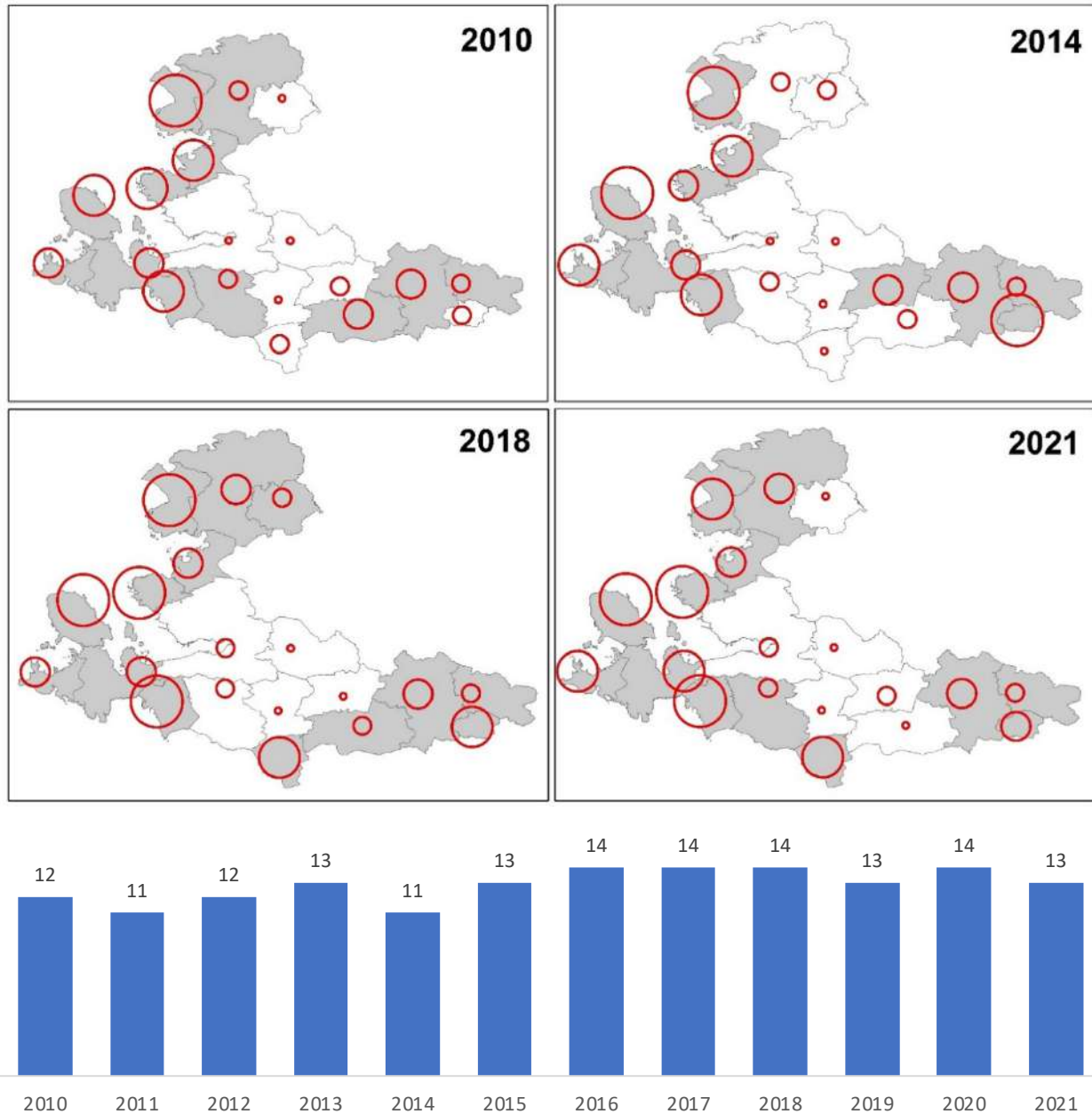
FIGURE 3.21.E. Spatial Distribution of Districts Where E: Water Supply; Sewerage, Waste Management, and Remediation Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

E**Water Supply; Sewerage, Waste Management, and Remediation Activities**

Source: Calculated using SGK year 2022 employment data.

The water supply; sewerage, waste management, and remediation activities (E) sector is fundamentally linked to population size and is predominantly focused on the provision of public services. Influenced by the strong demographic structure of Western Anatolia and the Aegean Region, as well as migration to the region, this sector remained dominant in a significant number of districts during the four periods examined. An analysis of changes between 2010 and 2021 reveals that the sector grew along the main highway transportation axes. By 2021, the sector was dominant in 11 out of 19 districts, including İzmir Center. It is anticipated that the sector will maintain its prominence in the region in the near and medium-term future, driven by population dynamics (Figure 3.21-E).

FIGURE 3.21.F. Spatial Distribution of Districts Where F: Construction Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

F**Construction**

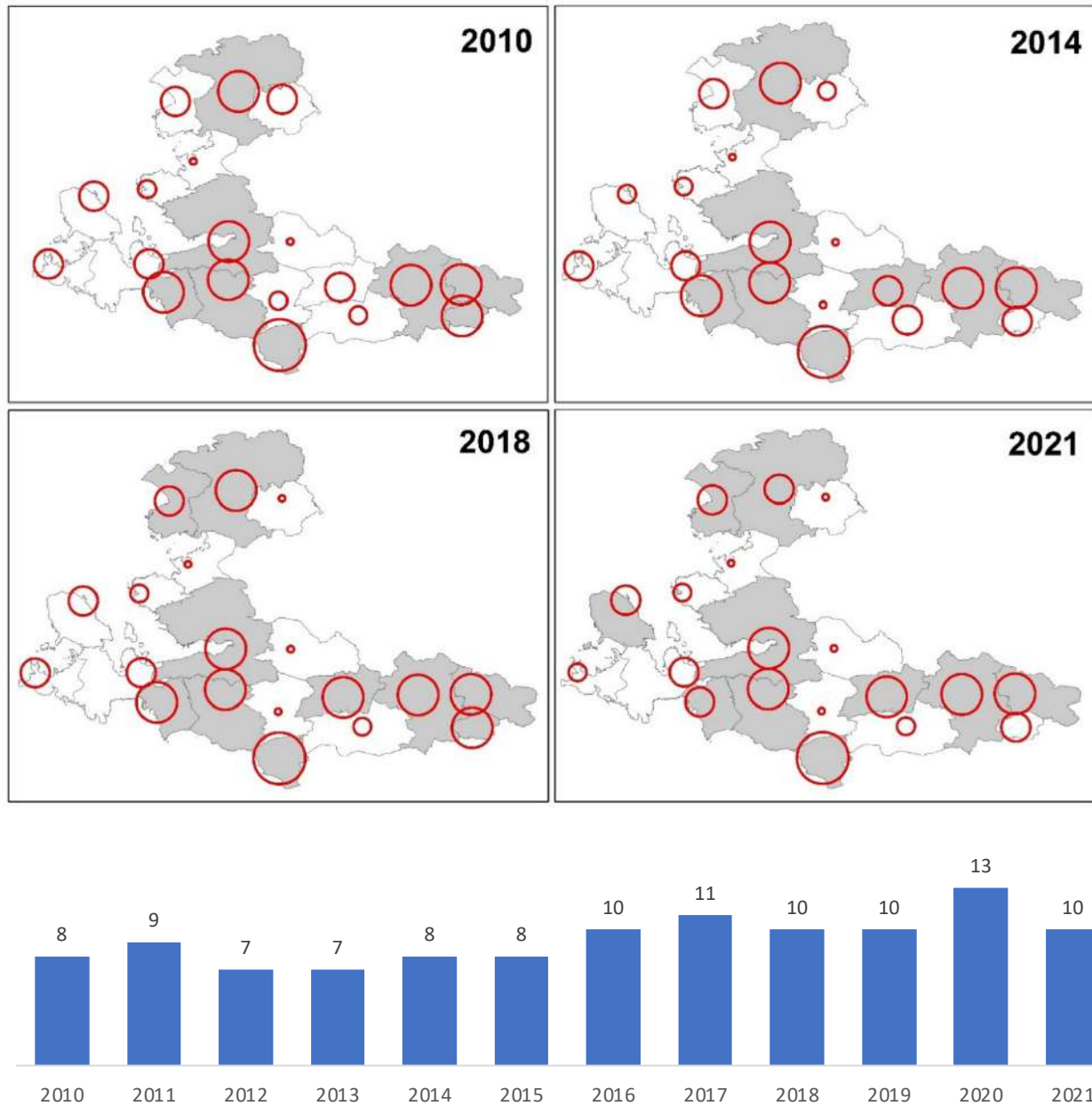
Source: Calculated using SGK year 2022 employment data.

When analyzing the spatial distribution of districts where the construction (F) sector is dominant in İzmir Region, it is observed that the sector exhibits comparative dominance across the region. Since 2010, coastal settlements have also gained prominence. While this finding is positive for the sector, it serves as a warning for İzmir Region, which possesses extremely significant natural and historical assets requiring protection. Similarly, the dominance of the construction sector in areas with fertile agricultural lands, such as Tire and Ödemiş, in recent years necessitates additional measures to protect high-quality agricultural lands in planning efforts at all scales, including regional plans (Figure 3.21-F).

FIGURE 3.21.G. Spatial Distribution of Districts Where G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

G

Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles



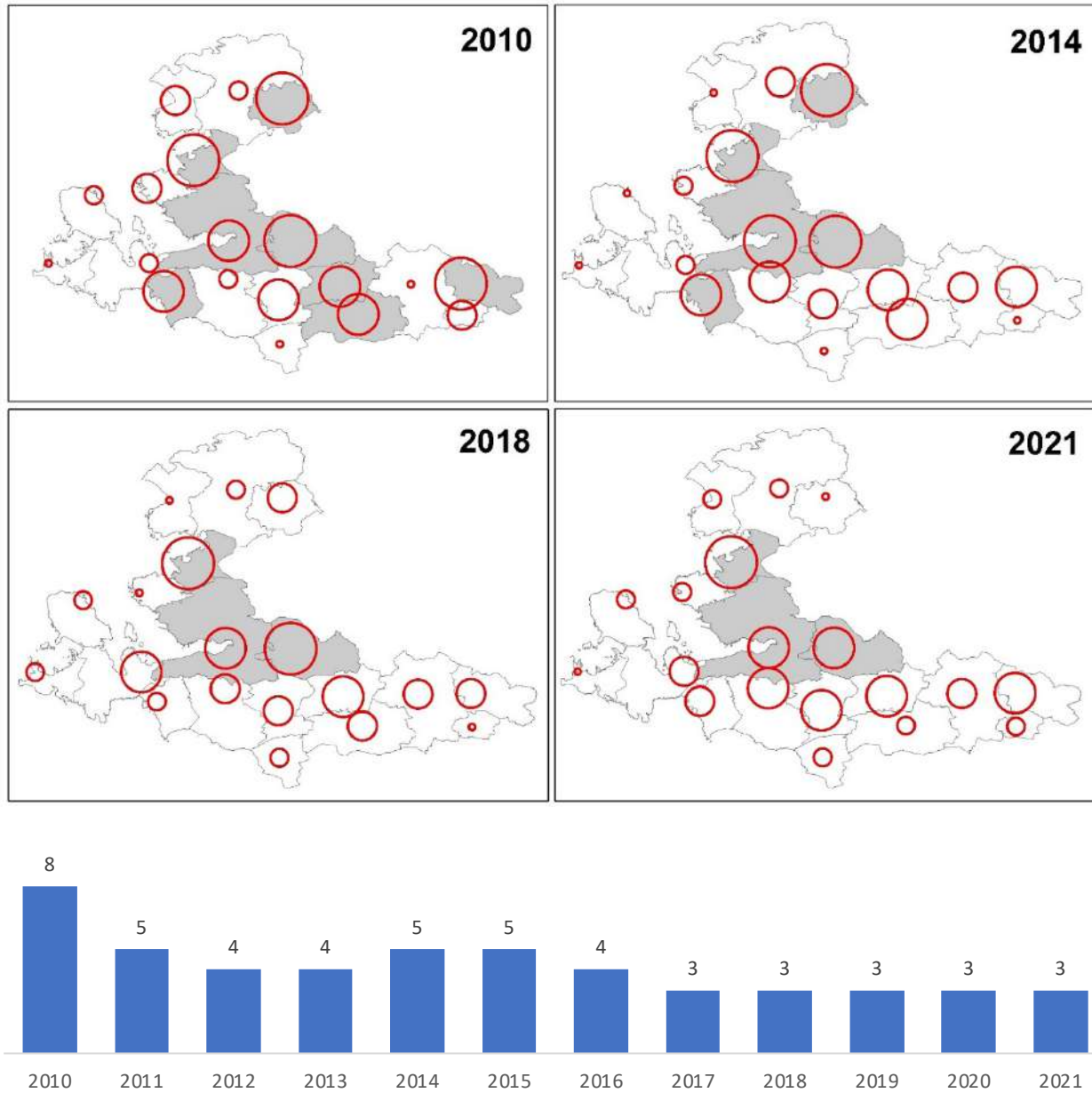
Source: Calculated using SGK year 2022 employment data.

The wholesale and retail trade; repair of motor vehicles and motorcycles (G) sector generally develops in line with the the population size of settlements, particularly in its wholesale and retail dimensions. Along with central districts, this sector was dominant for most of the 2010–2021 period in northern districts like Bergama and Dikili, southern districts such as Seferihisar, Menderes and Selçuk, and eastern districts including Bayındır, Ödemiş and Kiraz. In 2021, Karaburun was added to these districts (Figure 3.21-G).

FIGURE 3.21.H. Spatial Distribution of Districts Where the H: Transportation and Storage Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

H

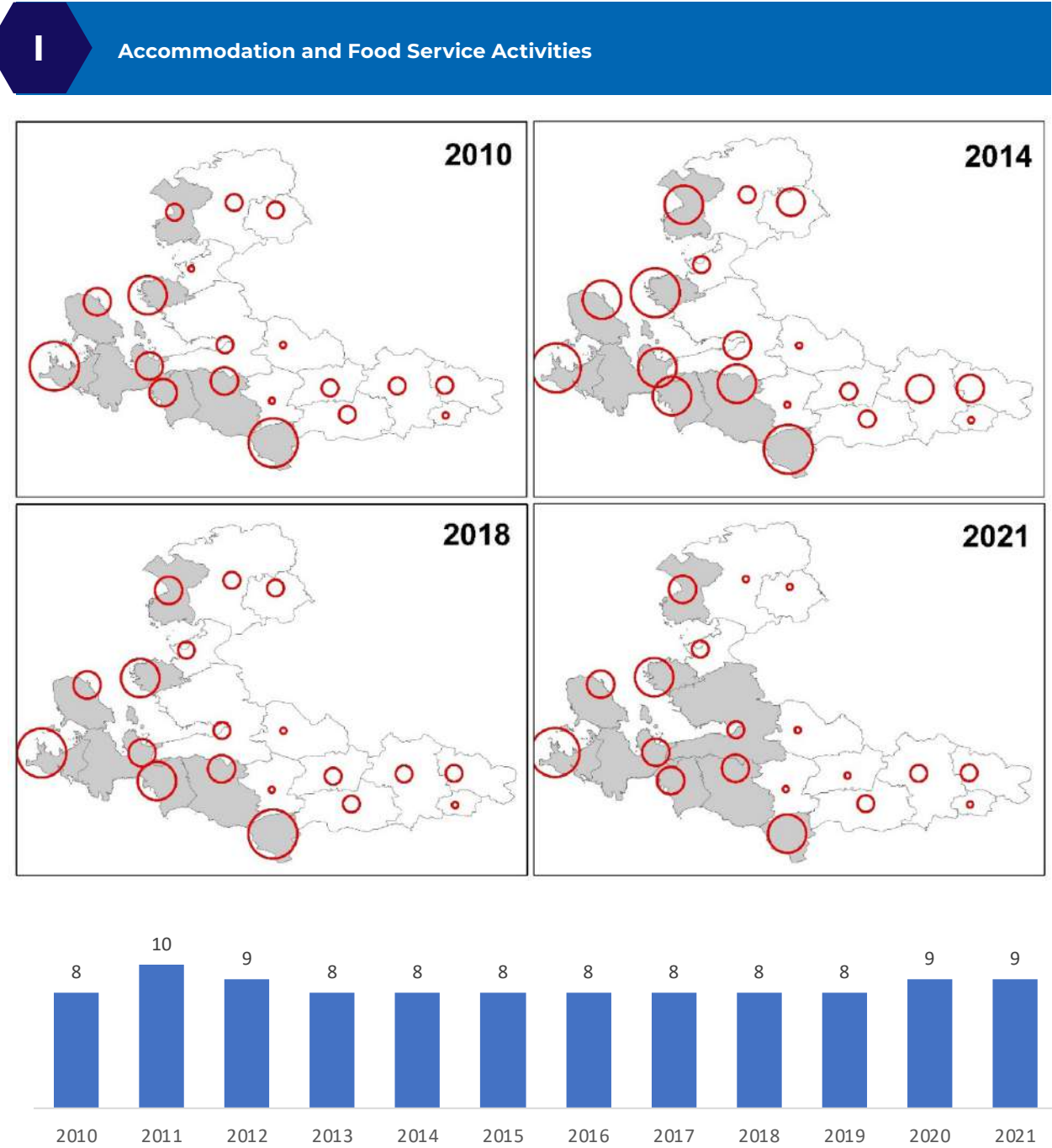
Transportation and Storage



Source: Calculated using SGK year 2022 employment data.

Unlike many other sectors examined, districts where the transportation and storage (H) sector is dominant showed a tendency to contract spatially toward the central area during the 2010–2021 period. The number of districts where this sector was dominant decreased linearly from 8 in 2010 to 3 in 2021. By 2021, districts such as Kınık, Seferihisar, Bayındır, Tire and Kiraz, which were dominant in 2010, had lost their dominance in this sector. Dominant districts for the transportation and storage (H) sector in İzmir Region are now concentrated in İzmir Center, Aliağa and Kemalpaşa. The reasons for this spatial contraction in the sector should be investigated (Figure 3.21-H).

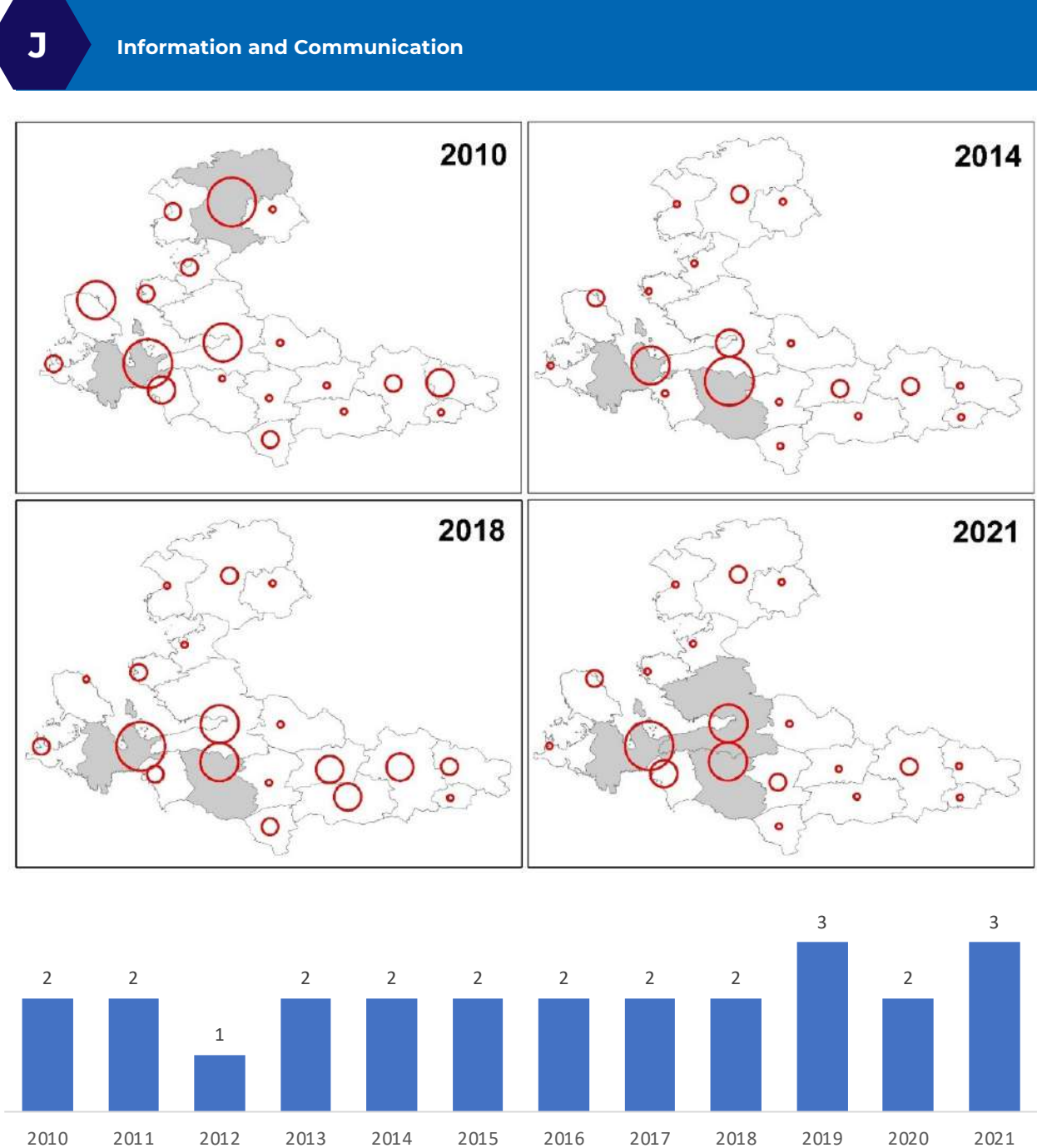
FIGURE 3.21.I. Spatial Distribution of Districts Where the I: Accommodation and Food Service Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)



Source: Calculated using SGK year 2022 employment data.

The spatial distribution of districts where the accommodation and food service activities (I) sector is dominant in İzmir Region did not change significantly between 2010 and 2021. These districts include all coastal districts except Aliağa. With İzmir Center, which was not a dominant district in sector in 2010, 2014 and 2018, becoming dominant in 2021, an important link in the coastal chain was completed. Investments in tourism made after 2010 played a significant role in the accommodation and food service activities (I) sector becoming dominant in İzmir. Adding Aliağa, a highly industrialized city with a qualified workforce, as a dominant sector district would complete the final link in the coastal chain. In inland areas, strengthening agricultural tourism could lead to significant advancements in the sector (Figure 3.21-I).

FIGURE 3.21.J. Spatial Distribution of Districts Where the J: Information and Communication Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)



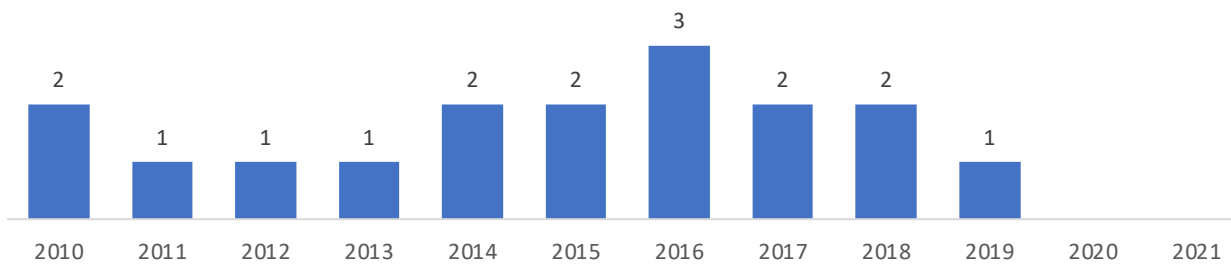
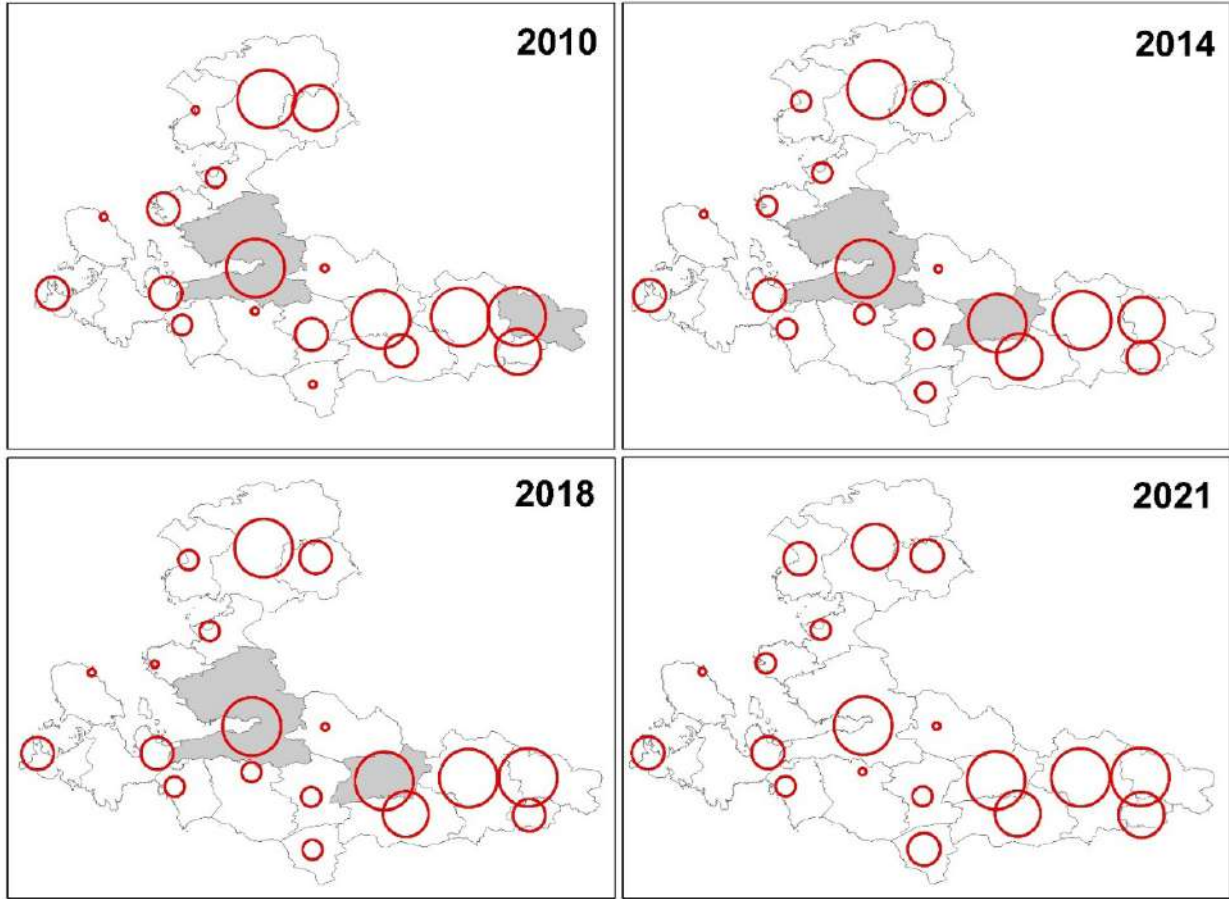
Source: Calculated using SGK year 2022 employment data.

By 2021, districts where the information and communication (J) sector is dominant in İzmir Region were concentrated in and around the center. Districts with high accessibility due to strong transportation networks, such as İzmir Center, Urla and Seferihisar, formed the cluster in 2021, and no other district in the region was dominant in this sector. During the 2010–2021 period, the number of districts dominant in this sector did not exceed 3. This is a noteworthy point for İzmir Region, one of Türkiye's richest regions in terms of qualified workforce and population (Figure 3.21-J).

FIGURE 3.21.K. Spatial Distribution of Districts Where the K: Financial and Insurance Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

K

Financial and Insurance Activities



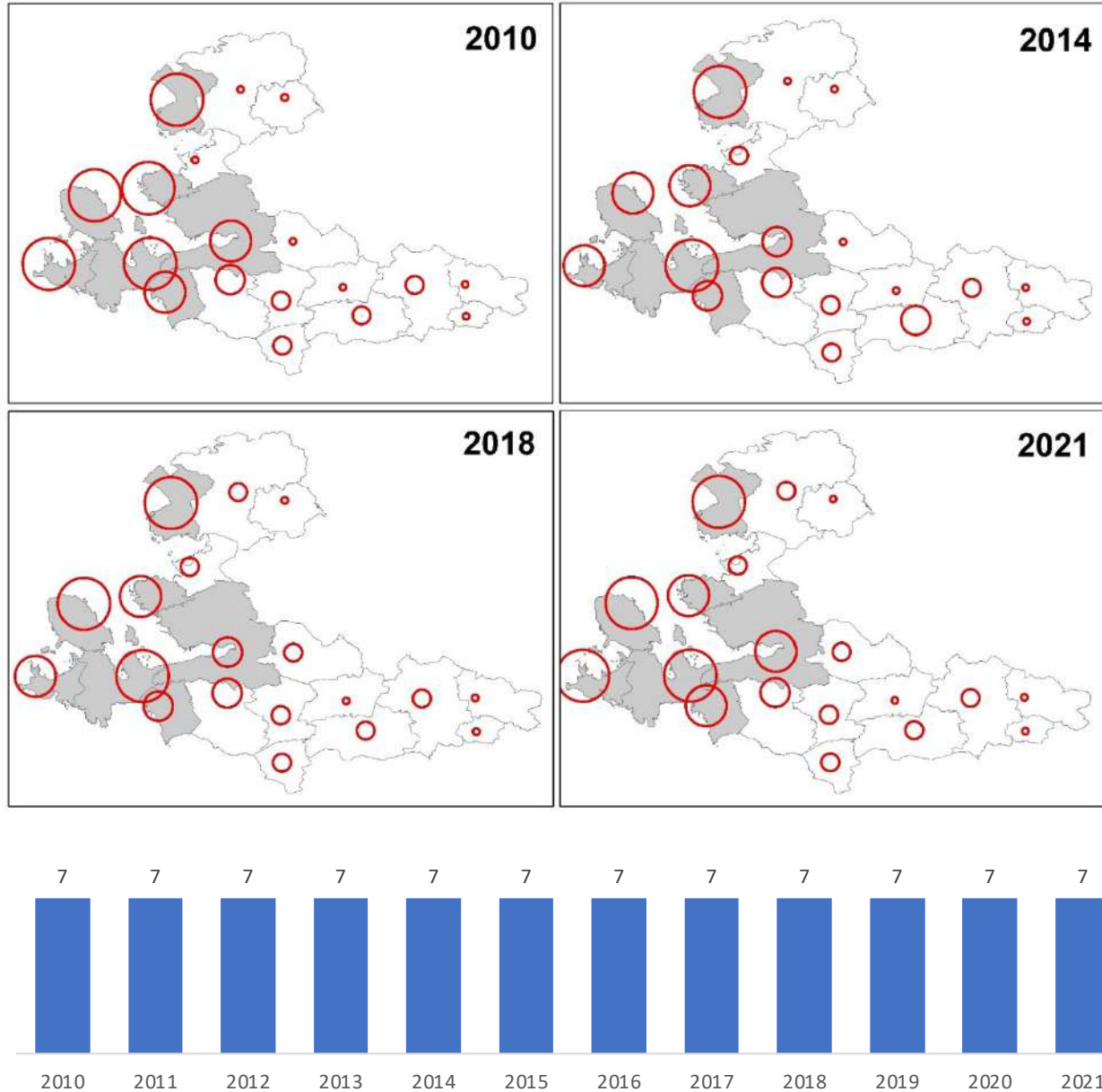
Source: Calculated using SGK year 2022 employment data.

In the financial and insurance activities (K) sector, a critical component of service activities, it is notable that İzmir Center, which was dominant in 2010, lost its dominance by 2016. Furthermore, while this sector was dominant in 3 districts in 2016, no district was found to be dominant in the sector as of the year 2021 (Figure 3.21-K).

FIGURE 3.21.L. Spatial Distribution of Districts Where the L: Real Estate Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

L

Real Estate Activities



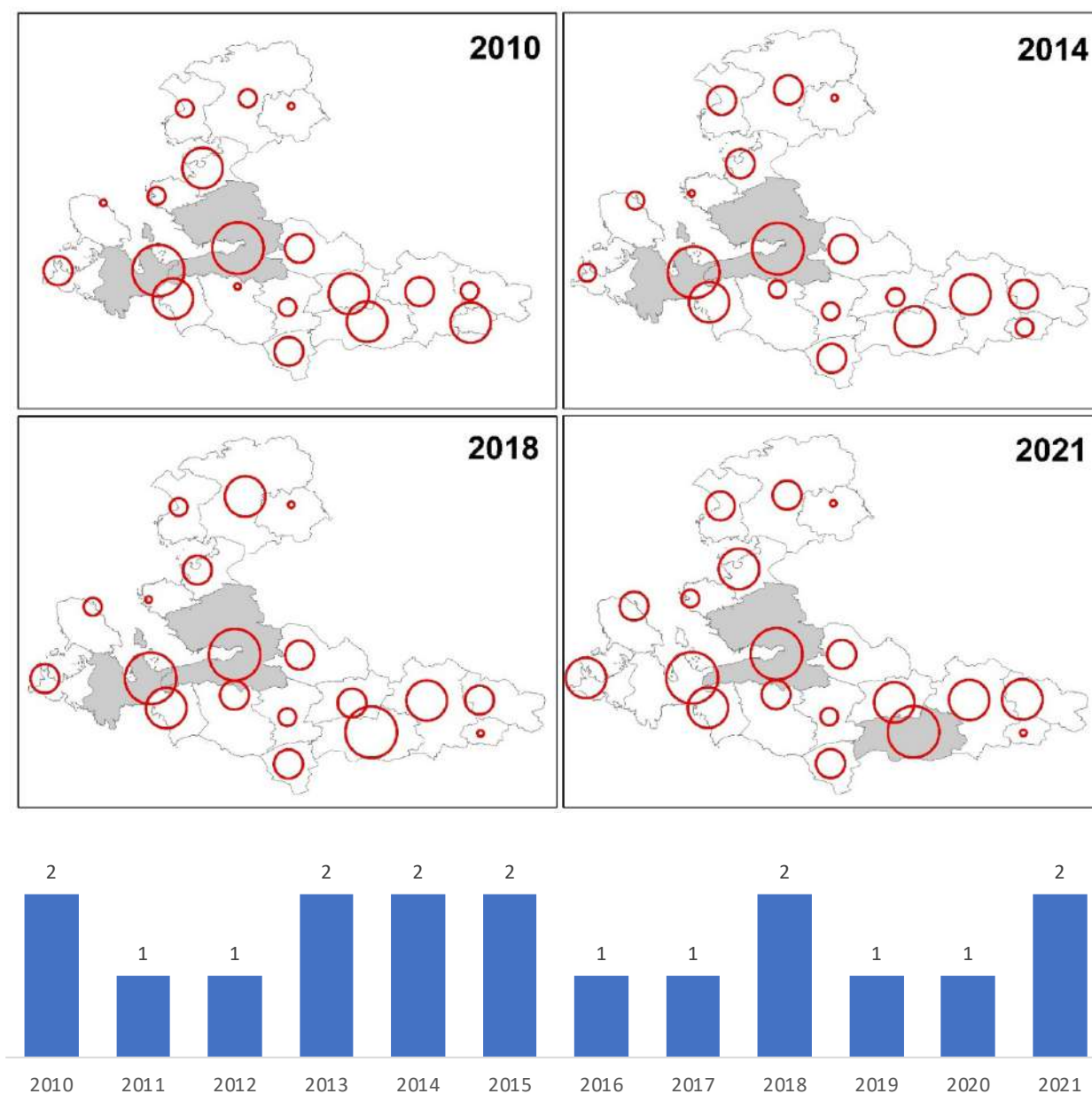
Source: Calculated using SGK year 2022 employment data.

The real estate activities (L) sector remained dominant in İzmir Center and coastal districts such as Dikili, Foça, Karaburun, Çeşme, Urla and Seferihisar across the four periods examined (2010, 2014, 2018 and 2021). İzmir Center and these 6 districts consistently held dominance in this sector between 2010 and 2021. Migration to the region, much of it post-retirement, has contributed to this trend. With the institutionalization of the real estate activities (L) sector, it is likely that this sector may also become dominant in eastern districts in the coming years (Figure 3.21-L).

FIGURE 3.21.M. Spatial Distribution of Districts Where the M: Professional, Scientific and Technical Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

M

Professional, Scientific and Technical Activities



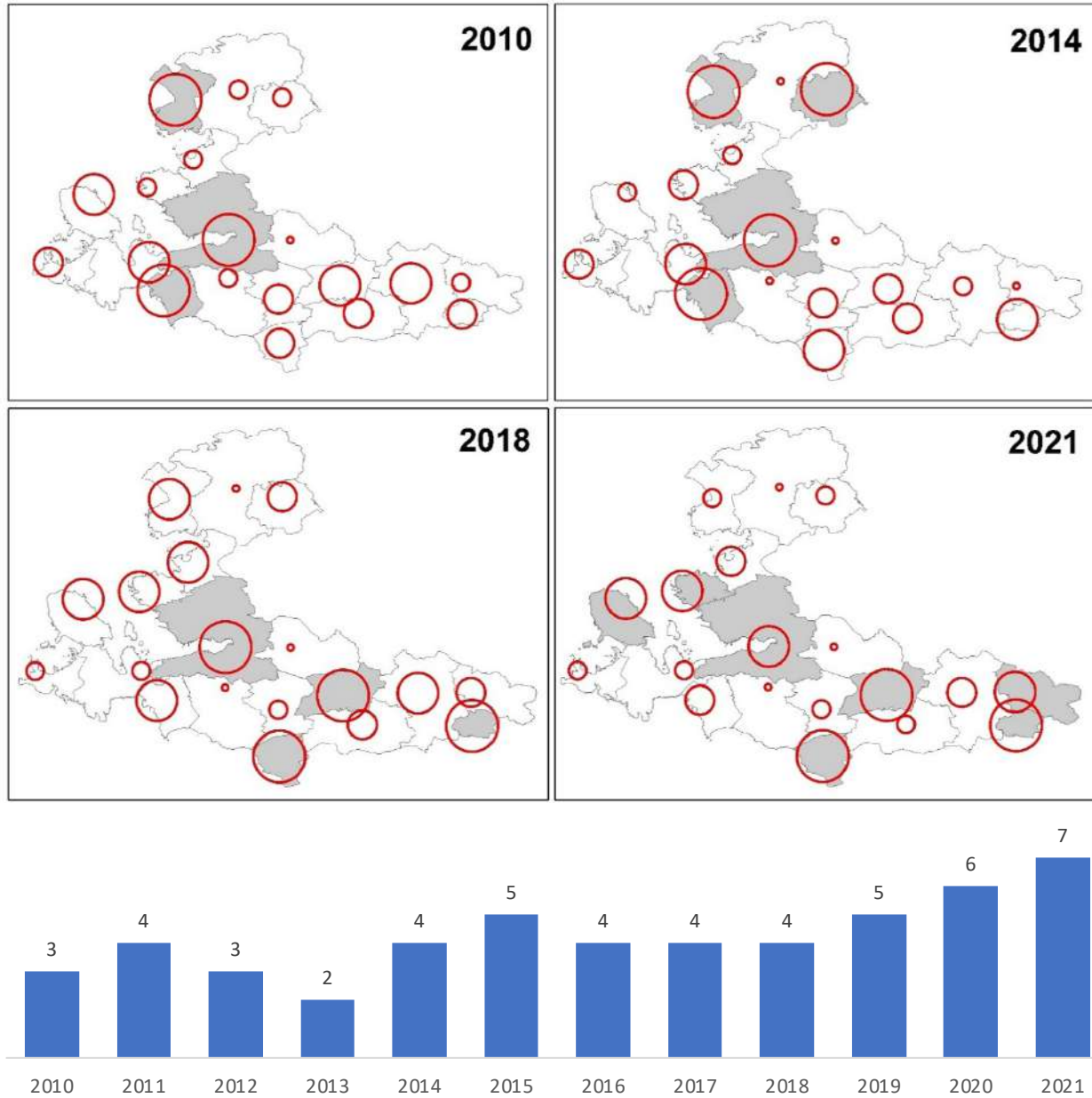
Source: Calculated using SGK year 2022 employment data.

The professional, scientific and technical activities (M) sector maintained its dominance in İzmir Center throughout the four periods examined. Additionally, it is a positive development that this sector became dominant in Tire district in 2021, driven by recent investments in agriculture and livestock-based production. However, it is also significant that Urla district, which was dominant in this sector during the first three periods and is home to one of Türkiye's leading universities and a technopark, lost its dominance in 2021. It is anticipated that Urla district will regain its dominance in the professional, scientific and technical activities (M) sector once ongoing investments are completed and made operational (Figure 3.21-M).

FIGURE 3.21.N. Spatial Distribution of Districts Where the N: Administrative and Support Service Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

N

Administrative and Support Service Activities



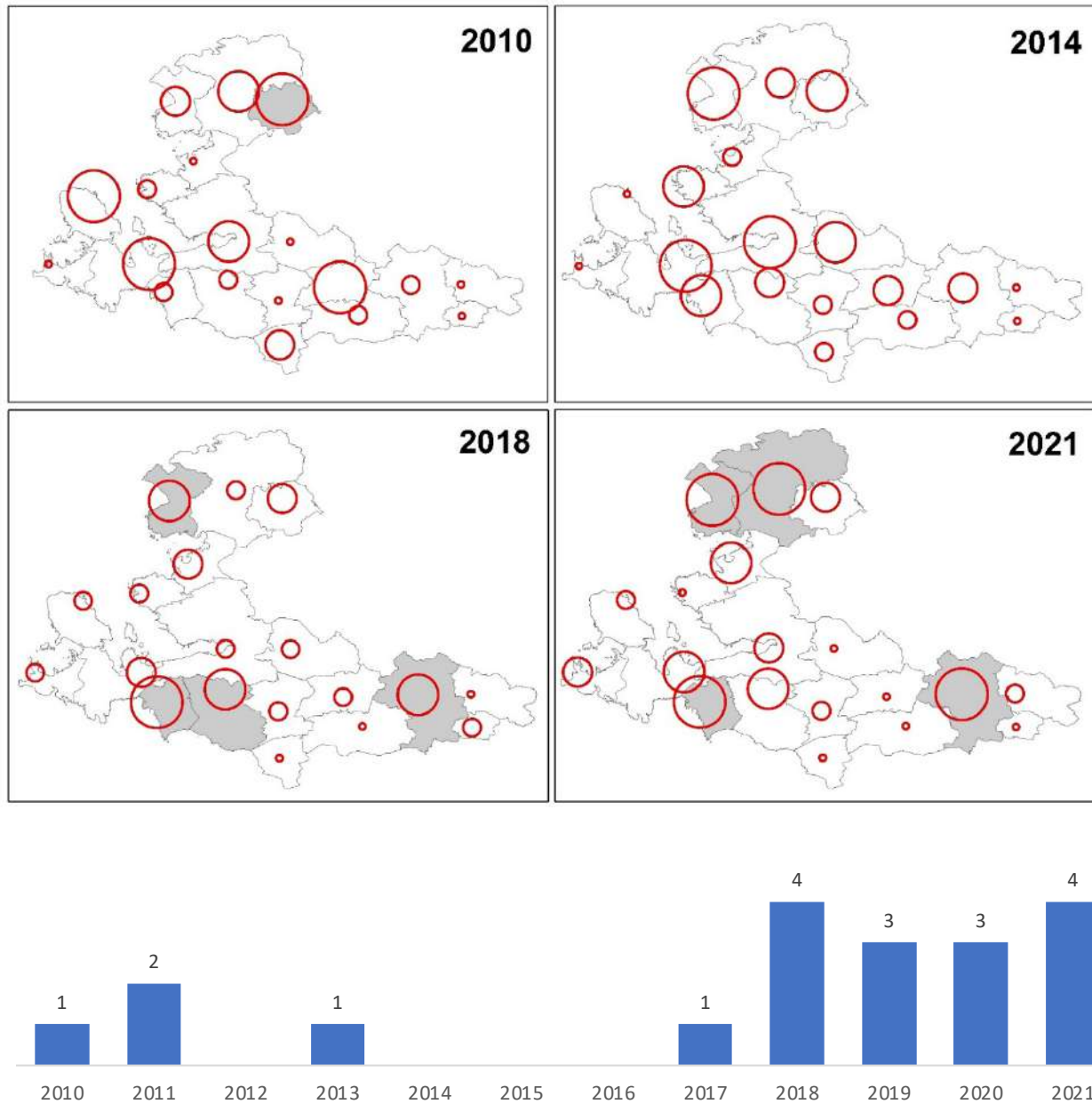
Source: Calculated using SGK year 2022 employment data.

The administrative and support service activities (N) sector was one of the sectors that saw the highest increase in the number of dominant districts in İzmir Region between 2010 and 2021. While only 3 districts were dominant in this sector in 2010, this number rose to 7 by 2021. Initially concentrated in the center and its surroundings, by 2021, dominant districts included Karaburun in the west, Selçuk in the south, and Bayındır, Kiraz and Beydağ in the east. It is noteworthy that Dikili, which was dominant in this sector until the mid-2010s, had lost its dominance by 2021 (Figure 3.21-N).

FIGURE 3.21.O. Spatial Distribution of Districts Where the O: Public Administration and Defense; Compulsory Social Security Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)



Public Administration and Defense; Compulsory Social Security



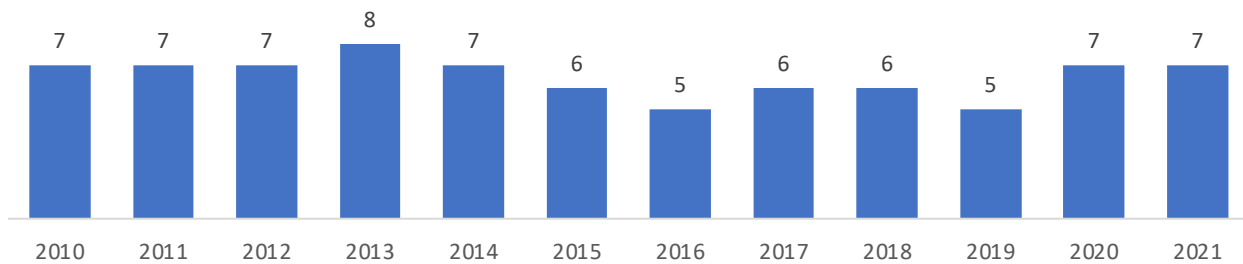
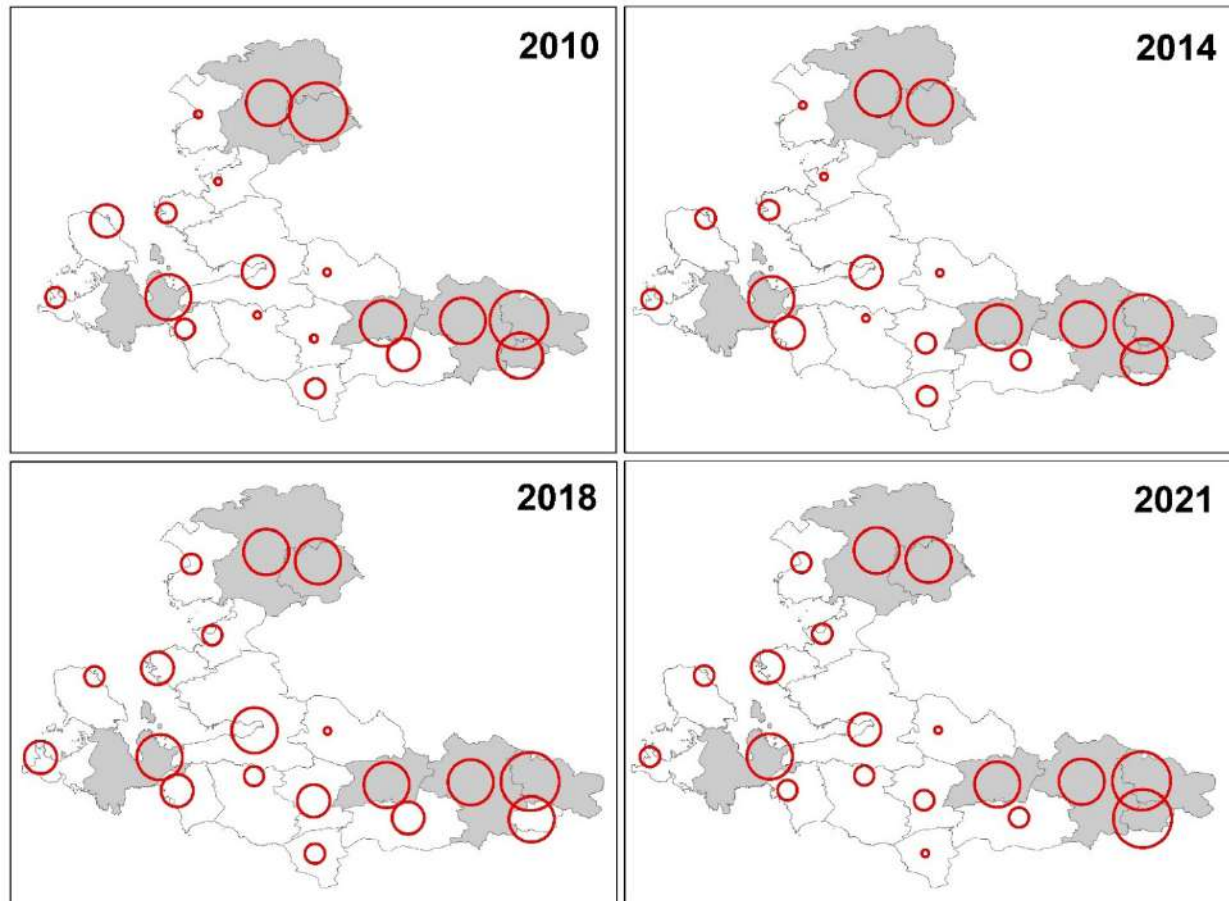
Source: Calculated using SGK year 2022 employment data.

It is noteworthy that districts located far from the center, such as Dikili, Bergama, Seferihisar and Ödemiş, became dominant in the public administration and defense; compulsory social security (O) sector by 2021. The spatial distribution of these districts being balanced is also a significant finding. The number of districts where this sector was dominant in Izmir Region increased from 1 in 2010 to 4 in 2021 (Figure 3.21-O).

FIGURE 3.21.P. Spatial Distribution of Districts Where the P: Education Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

P

Education



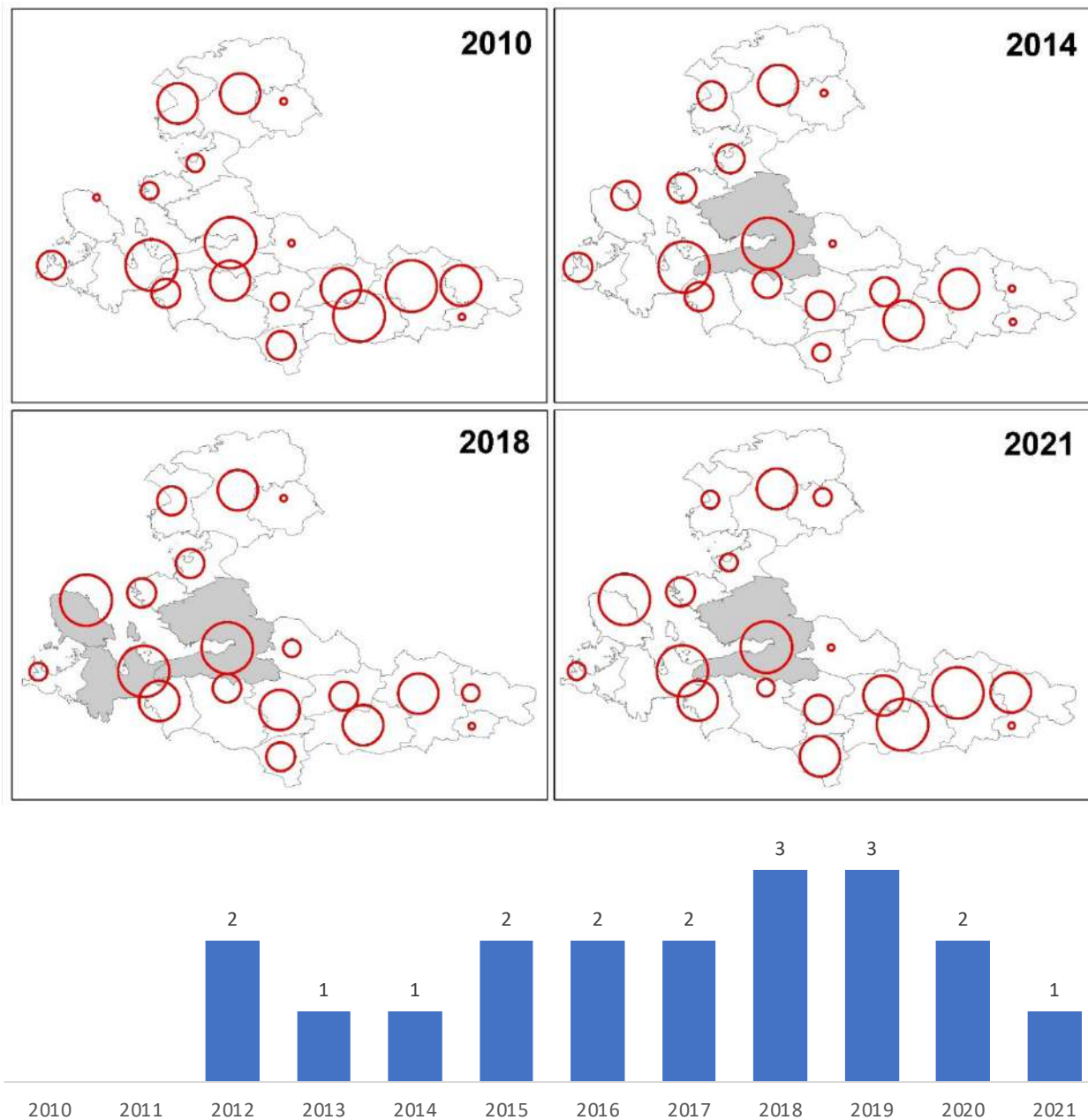
Source: Calculated using SGK year 2022 employment data.

It is striking that İzmir Center was not dominant in the education (P) sector during any of the four periods examined in İzmir Region. In this sector, which is a public service primarily provided by major settlements, districts such as Bergama and Kınık in the north; Urla in the west; and Bayındır, Ödemiş and Kiraz in the east, along with Beydağ (except in 2018), were dominant in 2010, 2014, 2018 and 2021. This observation should be taken into account in all plans and policies developed at any scale for İzmir Region, and the reasons for the absence of education (P) as a dominant sector in İzmir Region should be thoroughly investigated (Figure 3.21-P).

FIGURE 3.21.Q. Spatial Distribution of Districts Where the Q: Human Health and Social Work Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

Q

Human Health and Social Work Activities



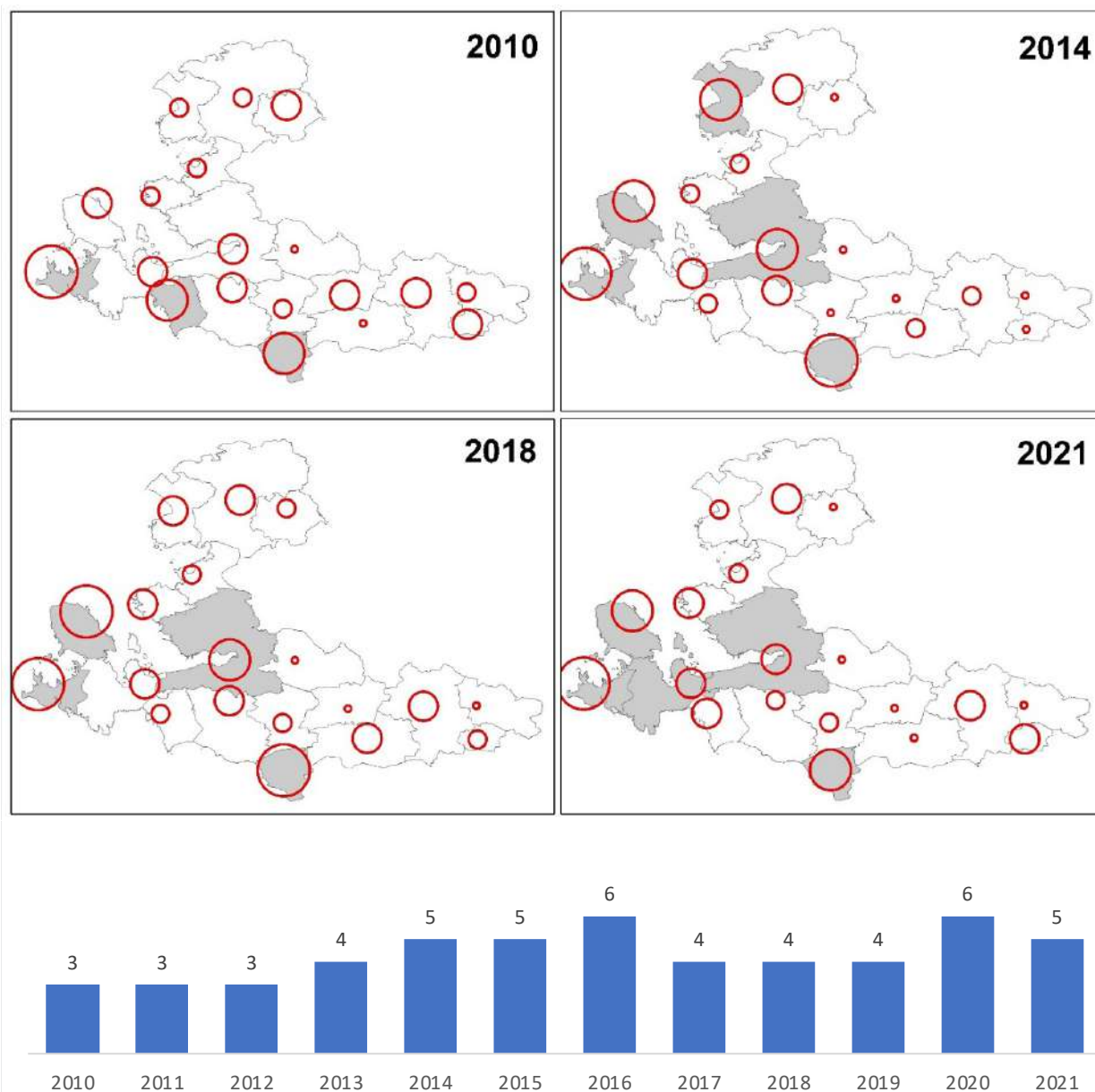
Source: Calculated using SGK year 2022 employment data.

Examining the spatial distribution of districts dominant in the human health and social work activities (Q) sector between 2010 and 2021 reveals that by 2021, İzmir Center was the only district dominant in this sector. While this sector had become dominant in Urla and Karaburun districts in the late 2010s, services provided outside settlements were predominantly concentrated in İzmir Center by 2021 (Figure 3.21-Q).

FIGURE 3.21.R. Spatial Distribution of Districts Where the R: Culture, Arts, Entertainment, Recreation and Sports Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

R

Culture, Arts, Entertainment, Recreation and Sports



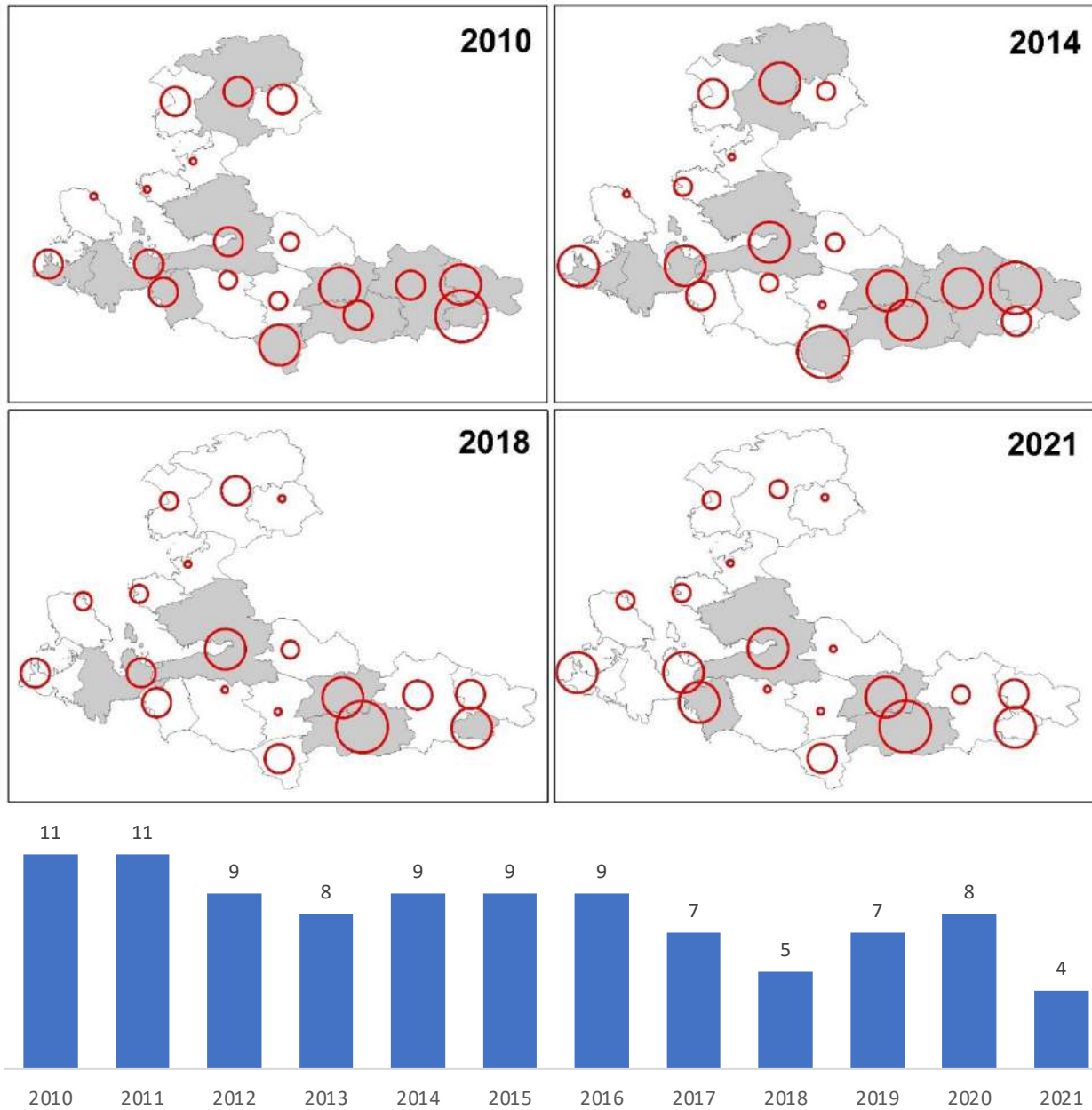
Source: Calculated using SGK year 2022 employment data.

By 2021, districts dominant in the culture, arts, entertainment, recreation and sports (R) sector in İzmir Region were concentrated along the İzmir Center–Urla–Karaburun–Çeşme axis. This corridor includes Selçuk district, which is connected by motorway. The reemergence of İzmir Center as a dominant district in the culture, arts, entertainment, recreation and sports (R) sector by the mid-2010s, after being excluded in 2010, is considered as a positive development, while Seferihisar’s permanent loss of dominance in this sector during the same period is deemed negative. A critical issue for plans at all scales concerning the region is the absence of any district dominant in this sector in the northern and eastern parts of the region, a pattern consistently observed between 2010 and 2021 (Figure 3.21-R).

FIGURE 3.21.S. Spatial Distribution of Districts Where the S: Other Service Activities Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

S

Other Service Activities Sector



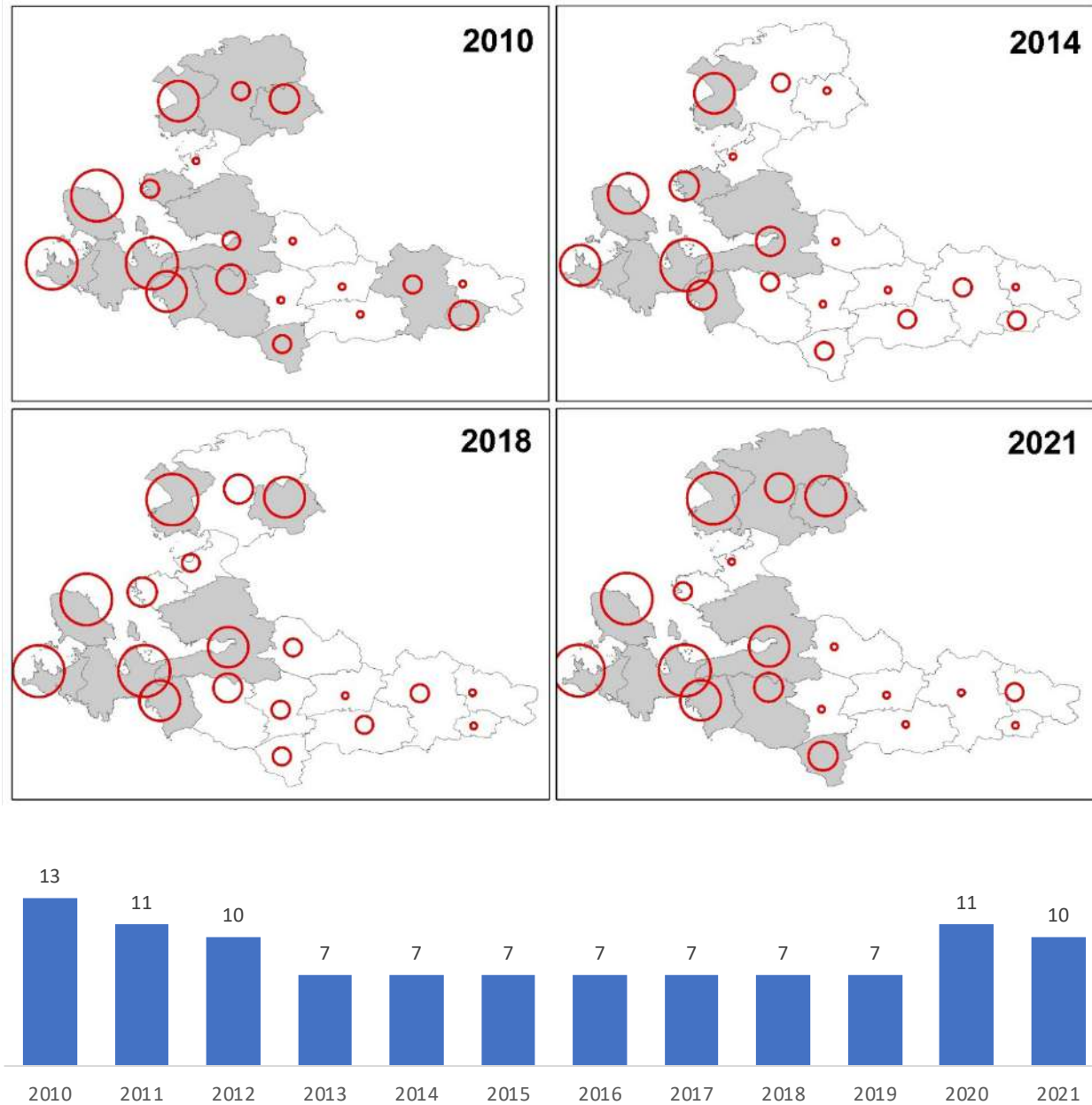
Source: Calculated using SGK year 2022 employment data.

In regards to the other service activities (S) sector, the number of districts where this sector was dominant in İzmir Region was observed to have decreased from 11 in 2010 to 4 in 2021. Examining the spatial distribution shows that while districts such as Bergama, Çeşme, Urla, Ödemiş, Kiraz, Beydağ and Selçuk were dominant in this sector in 2010, by the year 2021, the dominant districts were limited to İzmir Center, Seferihisar, Bayındır and Tire (Figure 3.21-S).

FIGURE 3.21.T. Spatial Distribution of Districts Where the T: Activities of Households as Employers Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant

T

Activities of Households as Employers



(2010–2021)

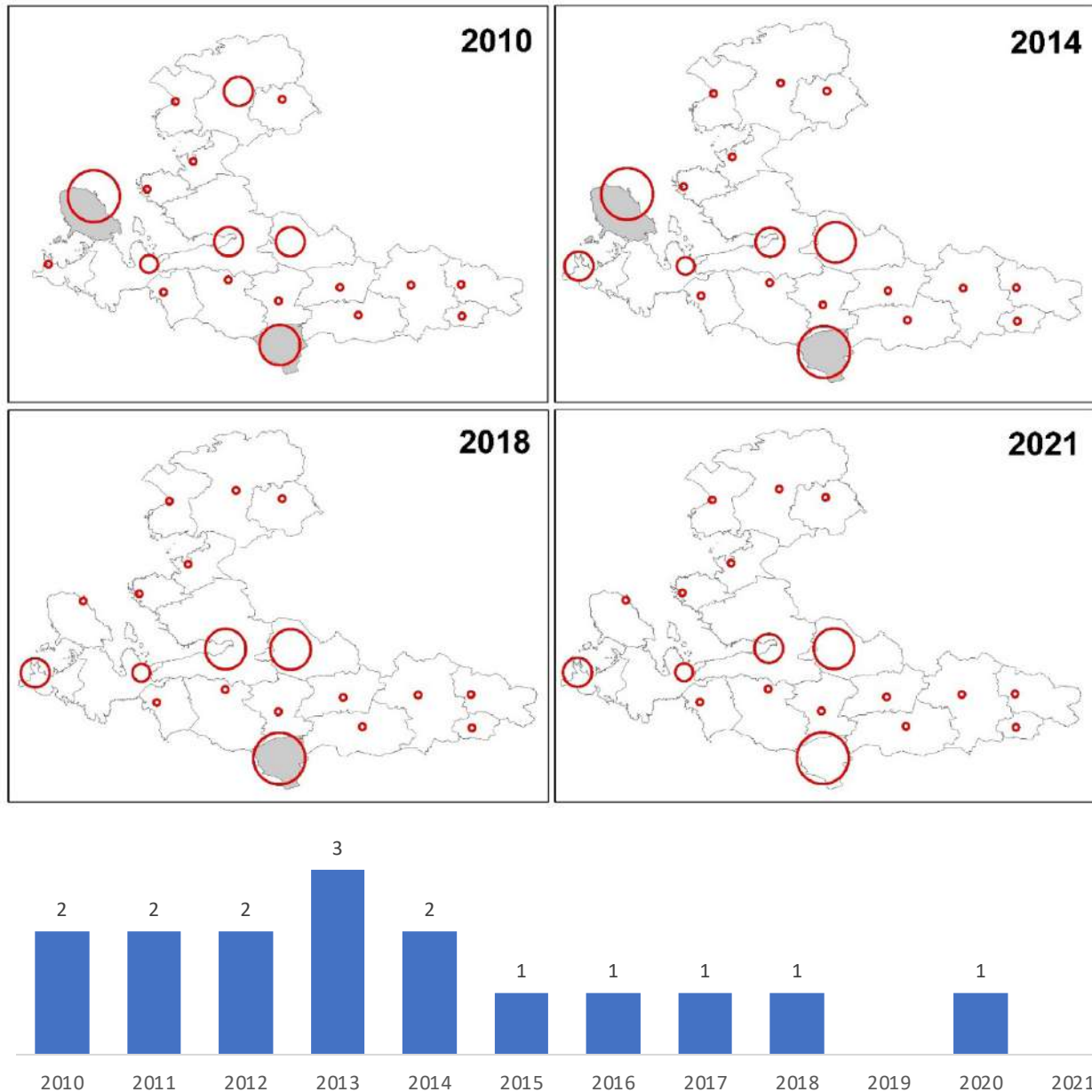
Source: Calculated using SGK year 2022 employment data.

In İzmir Region, the activities of households as employers (T) sector exhibited a fluctuating pattern of dominance. The number of districts where this sector was dominant increased from 10 in 2010 to 11 in 2011, decreased to 10 in 2012, and further dropped to 7 in 2013, before rising back to 11 in 2020. As of 2021, this number was 10. Coastal districts such as İzmir Center, Dikili, Karaburun, Çeşme, Urla and Seferihisar remained dominant in this sector across all four periods examined. By 2021, Bergama, Kınık, Menderes and Selçuk districts were also included (Figure 3.21-T).

FIGURE 3.21.U. Spatial Distribution of Districts Where the U: Activities of Extraterritorial Organizations and Bodies Sector is Dominant (2010, 2014, 2018, 2021) and Number of Districts Where the Sector is Dominant (2010–2021)

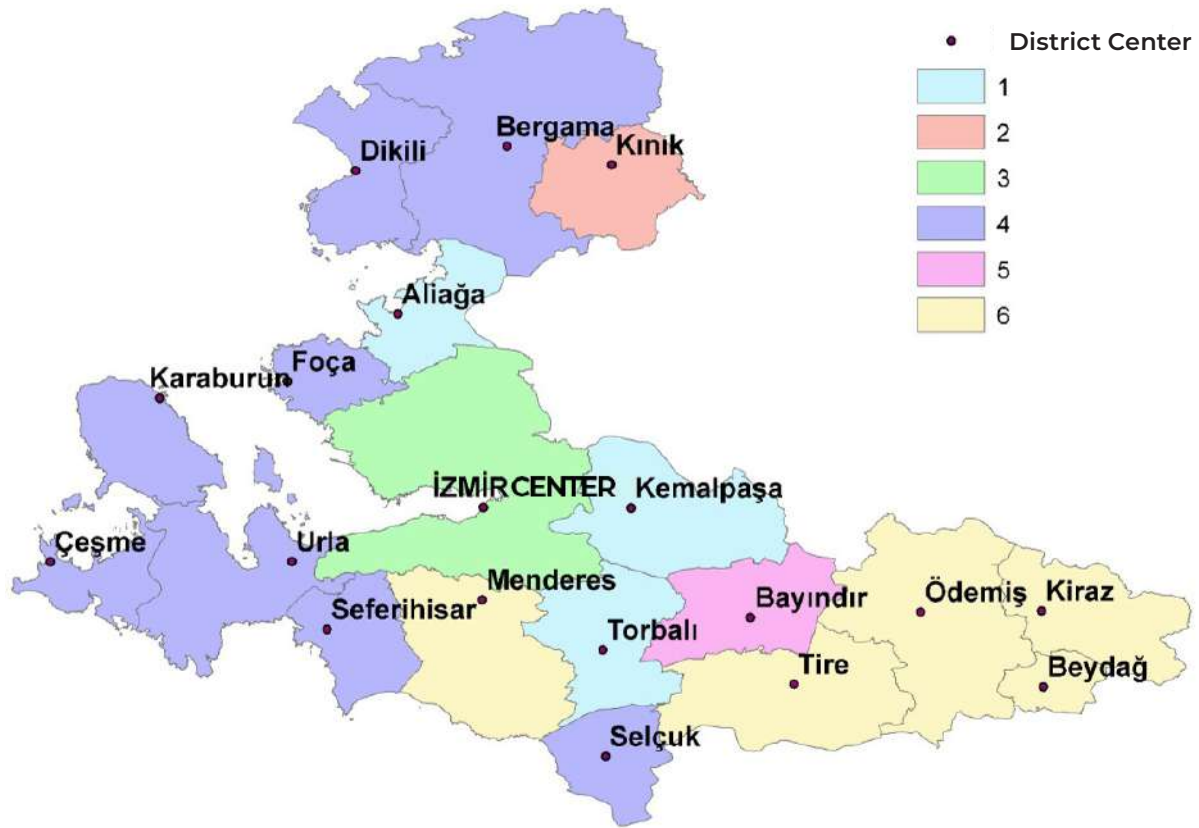
U

Activities of Extraterritorial Organizations and Bodies



Source: Calculated using SGK year 2022 employment data.

Finally, as of 2021, the activities of extraterritorial organizations and bodies (U) sector was found to be not dominant in any district. While this sector was dominant in 3 districts in 2013, the number decreased to 2 in 2014, 1 in 2015, and 0 in 2019. Although the sector was dominant in 1 district in 2020, it again dropped to 0 as of the year 2021. The fact that this sector was not dominant in any district of İzmir Region by 2021, despite İzmir being a major international trade hub and a port city for centuries, is a matter that warrants attention (Figure 3.21-U).

FIGURE 3.21.V. District-Level Grouping Study Based on Sectoral Distribution of Employment (2021)**V****Administrative and Support Service Activities**

Identifying groups (corridors) where sectoral distributions of employment at the district level converge or diverge within İzmir Region provides crucial insights for regional planning. In this context, a grouping analysis was carried out using the 2021 employment data for 21 sectors and 19 districts (the districts within İzmir's metropolitan area were aggregated as İzmir Center under a single district). For the grouping analysis, the weighted "nearest neighbor" method was applied, with the number of neighbors set at eight.

As a result of the grouping analysis, İzmir Region's districts were divided into seven distinct groups. As shown in Figure 3.21-V, the grouping pattern consists of a group formed by İzmir Center, groups formed by the districts surrounding İzmir Center, and groups formed by districts located in the distant periphery. The groups align with the settlement hierarchy established in the YER-SİS study. Group 1 includes Aliaga, identified as a 3A center in the YER-SİS study, as well as Torbalı (3A) and Kemalpaşa (3B). Group 2 comprises Kınık, identified as a 1A-tier settlement center in YER-SİS, located in the northern part of İzmir Region. Group 3 encompasses İzmir Center, which represents the metropolitan area and is identified as a 6B center in the YER-SİS study. Group 4 includes Bergama (2A) and Dikili (2B) identified under YER-SİS, as well as other first- and second-tier settlement centers located in the western part of İzmir Region. Group 5 consists solely of Bayındır district. Group 6 includes eastern districts identified in the YER-SİS study as first- and second-tier settlement centers.

D. Innovation and Entrepreneurship Ecosystem

For the analysis of trends in innovation indicators, patent counts classified according to the International Patent Classification (IPC) and datasets included in the İzmir Innovation Ecosystem Monitoring Reports were utilized.

When examining the dataset, an increase is observed in the number of patent and utility model applications and patent diversity in İzmir. İzmir Region ranks as the third largest region in Türkiye for patent applications. The number of patent applications in İzmir Region increased from 158 in 2010 to 451 in 2022. Compared to İstanbul and Ankara, this indicates that entrepreneurial initiatives in İzmir could benefit from support in the field of patenting (Table 3.24).

TABLE 3.24. Patent Applications in Türkiye, İzmir, and Other Regions by Year (2010–2022)

Year	Türkiye	İzmir	Ankara	İstanbul
2010	3.250	158	328	1.370
2011	4.087	223	417	1.582
2012	4.543	264	569	1.939
2013	4.528	265	562	1.831
2014	4.861	275	596	2.108
2015	5.512	289	636	2.399
2016	6.445	281	738	3.096
2017	8.625	305	823	3.795
2018	7.349	289	931	3.342
2019	8.126	407	985	3.356
2020	8.200	473	1.057	3.413
2021	8.439	471	1.117	3.582
2022	9.009	451	1.172	3.404

Source: TURKPATENT, 2023

When the patent counts obtained from TURKPATENT and classified according to the International Patent Classification (IPC) are examined at the first-level values, it is observed that in İzmir Region, most patents are produced in the fields of A - human necessities, B - performing operations; transport, G - physics, C - chemistry; metallurgy, and F - mechanical engineering; lighting, heating; weapons. Compared to Ankara, İzmir Region stands out in the field of textiles and paper but lags behind Ankara and İstanbul in terms of patent presence in all other classifications (Table 3.25).

TABLE 3.25. Patent Presence by IPC Classifications (2021)

Patent Classification	İzmir	Ankara	İstanbul
A - Human necessities	229	339	1.175
B - Performing operations; transport	119	246	726
C - Chemistry; metallurgy	52	89	277
D - Textiles; paper	19	13	191

Patent Classification	İzmir	Ankara	İstanbul
E - Fixed constructions (building)	23	44	164
F - Mechanical engineering; lighting, heating; weapons	49	186	521
G - Physics	92	474	1.313
H - Electricity	38	236	679
Y - Other	1	3	6

Source: TURKPATENT, 2022

The institutional innovation indicators of İzmir Region for the years 2016-2021 are presented in Table 3.26. It is observed that the number of researchers in universities in İzmir Region increased by approximately 3% over the last five years, reaching 9,885 in 2021. Since 2016, there has been no change in the number of technology development zones and technology transfer offices. However, there has been a significant increase in the number of R&D centers, which rose from 34 in 2016 to 97 in 2021. During the same period, the number of incubators in technology development zones increased from 6 to 7, while the total incubator area decreased to 2,014 square meters. Five of the 10 universities in İzmir Region were included in TÜBİTAK's innovation and entrepreneurship index, which lists the 50 most innovative and entrepreneurial universities in Türkiye (Table 3.26).

TABLE 3.26. İzmir Innovation Indicators I (Institutional Indicators) (2016-2021)

Indicator	Source	2016	2017	2018	2019	2020	2021
Number of Researchers at Universities (Faculty Members)	YÖK	9,614	8,488	8,821	9190	9,032	9,885
Number of TDZs	MoIT	4	4	4	4	4	4
Number of R&D Centers (Law no. 5746)	MoIT	34	59	77	88	95	97
Number of TTOs (Technology Transfer Offices)	Universities	6	6	6	6	6	6
Number of Incubation Centers	TDZs	6	7	7	7	7	7
Size of Incubation Area (m ²)	TDZs	3,542	3,536	3,410	3,123	2,506	2,014
Number of Universities Ranked in the Innovation and Entrepreneurship Index	TÜBİTAK	5	5	5	4	5	5

Source: İZKA, 2022g

Although there has been no significant change in institutional indicators apart from the number of R&D centers in recent years, important developments have been achieved on the academic indicators side. The academic indicators from İzmir Innovation Ecosystem Monitoring Report are presented in Table 3.27. The total number of scientific (SCI/SSCI) publications increased by 33.49% from 3,912 in 2016 to 5,222 in 2021. It is believed that the rapid increase in publications in 2020 was partly influenced by the pause in educational activities during the pandemic. The number of scientific publications per researcher increased from 40.7 to 52.3 over five years. During the same period, findings indicate an increase in the region's capacity for project preparation. The number of projects submitted to TÜBİTAK ARDEB increased from 651 to 1,013, while the project acceptance rate rose from 15% to 17% (Table 3.27). These data indicate that the region is producing more projects of higher quality each year and is benefiting more effectively from support.

Patent applications and registrations by academic institutions in the region also reveal an upward trend. In

2016, there were 17 patent applications and one registration, while by 2021, these numbers had increased to 95 and 27, respectively. Reflecting an increase in the region's patent production capacity, income has begun to be generated from these patents. For the first time in 2019, over 1.6 million TRY was earned from commercialized university patents. Another area of activity for academics is entrepreneurship. The number of companies established by academics in technology development zones rose from 67 to 97 during the monitoring period.

Significant increases are also noted in the industrial indicators from the İzmir Innovation Ecosystem Monitoring Report. The exports of firms in technology development zones in İzmir Region increased by 141%, from 20.1 million USD in 2016 to 48.5 million USD in 2021. Similarly, the number of firms benefiting from TÜBİTAK TEYDEB support in İzmir Region rose from 63 to 100. During the reporting period, both the acceptance rate for TEYDEB project applications from İzmir firms increased from 28% to 44%, and the average grant amount per project increased more than fourfold (Table 3.27). In conclusion, based on the indicators, it is observed that İzmir Region innovation ecosystem has mobilized its potential and shown significant development in both academic and industrial domains.

TABLE 3.27. İzmir Innovation Indicators II (Academic Indicators and Industrial Indicators) (2016-2021)

Indicator	Source	2016	2017	2018	2019	2020	2021
Total Number of Scientific (SCI/SSCI) Publications	YÖK	3.912	3.741	3.485	3.851	4.801	5.222
Number of Scientific (SCI/SSCI) Publications per 100 Researchers	YÖK	40,69	44,07	39,51	41,9	53,16	52,83
Number of Projects Submitted to TÜBİTAK (ARDEB)	TÜBİTAK	651	863	779	967	860	1.013
Number of Projects Supported by TÜBİTAK (ARDEB)	TÜBİTAK	97	176	173	165	120	169
Acceptance Rate of Projects Submitted to TÜBİTAK (ARDEB)	TÜBİTAK	%15	%20	%22	%17	%14	%17
Number of Projects Proposed per 100 Researchers (ARDEB)	TÜBİTAK	6,77	10,17	8,83	10,52	9,52	10,25
Number of Projects Accepted per 100 Researchers (ARDEB)	TÜBİTAK	1,01	2,07	1,96	1,8	1,33	1,71
Average Project Budget in TÜBİTAK ARDEB Projects (thousand TRY)	TÜBİTAK	437	315	328	334	354	884
Total Number of Patent Applications by Universities	TÜRKPATENT	17	27	35	76	127	95
Total Number of Patents Registered by Universities	TÜRKPATENT	1	3	25	11	14	27
Number of Patent Applications per 1,000 Researchers	TÜRKPATENT	1,77	3,18	3,97	8,27	14,06	9,61
Number of Patents Registered per 1,000 Researchers	TÜRKPATENT	0,1	0,35	2,83	1,2	1,55	2,73
Number of Companies Established by Academics in TDZs	TDZs	67	83	82	80	72	97
Number of Commercialized University Patents	TTOs	0	0	1	8	9	26

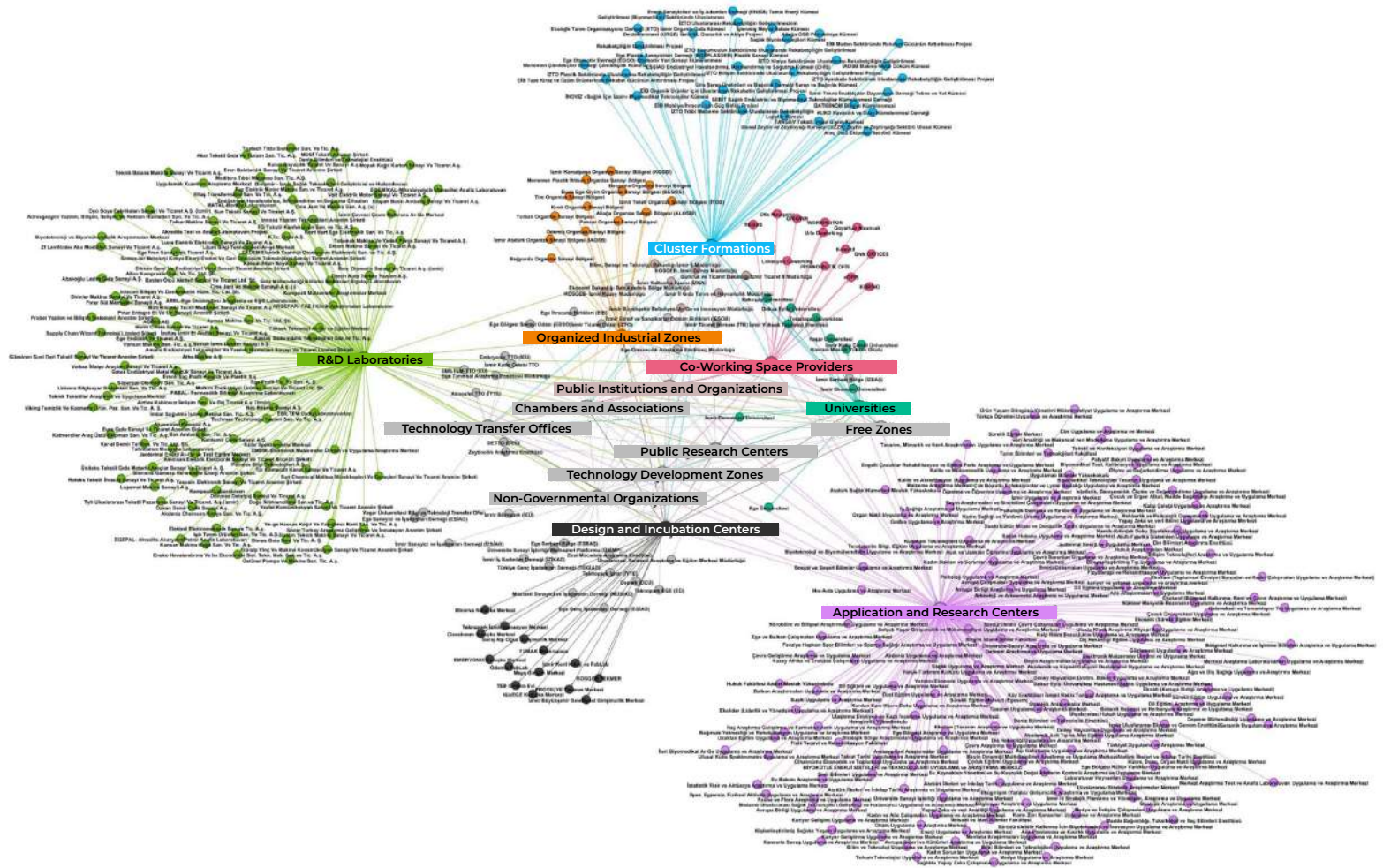
Indicator	Source	2016	2017	2018	2019	2020	2021
Number of Companies Applying for TÜBİTAK-TEYDEB R&D Supports	TÜBİTAK	191	192	179	207	192	182
Number of Companies Receiving Support in TÜBİTAK-TEYDEB R&D Supports	TÜBİTAK	63	122	119	82	127	100
Number of TÜBİTAK-TEYDEB R&D Project Applications	TÜBİTAK	239	246	254	300	264	246
Number of TÜBİTAK-TEYDEB R&D Project Supports	TÜBİTAK	68	145	148	108	135	108
Acceptance Rate of TÜBİTAK-TEYDEB R&D Project Applications	TÜBİTAK	%28	%59	%58	%36	%51	%44
TEYDEB Grant Amount per Project (thousand TRY)	TÜBİTAK	101	113	143	152	343	429
Total Number of Patent Applications	TÜRKPATENT	281	305	289	407	473	471
Total Number of Registered Patents	TÜRKPATENT	96	77	135	65	89	139
Number of Firms in Technology Development Zones (TDZs)	TDZs	412	443	445	381	498	550
Export Volume of Firms in TDZs (thousand USD)	TDZs	20.114	34.986	49.038	36.590	62.392	48.459
Number of Technological Product Investment Supports	KOSGEB	12	12	17	38	13	14
Number of R&D Personnel Employed in TDZs	TDZs	2.414	2.851	3.130	2.851	3.366	3.631

Source: İZKA, 2022g

Innovations and inventions do not occur randomly; rather, they are based on path-dependent processes that involve the ability of regions to organize and coordinate complex knowledge categories on the basis of specialized expertise. All these processes are dynamic and shaped by the economic, social, cultural and cognitive dynamics of regions. Therefore, it is essential for institutions and organizations developing regional development policies, decision-makers, actors, and experts to design integrated policies that will facilitate the development of R&D and innovation efforts and include relevant institutions and organizations in these processes.

İzmir Region innovation ecosystem comprises universities, public research centers, co-working space providers, civil society organizations, chambers and associations, R&D laboratories, clusters, application and research centers, technology development zones, technology transfer offices, and civil society organizations. Although İzmir Region innovation ecosystem network is relatively dense, the number of institutions and organizations that serve as financial components of innovation ecosystems, such as angel investor networks, venture capital institutions, and crowdfunding systems found in the İstanbul Region, is relatively low. Therefore, it is important to encourage the formation of networks that will attract both national and international financial support providers to the İzmir Region.

FIGURE 3.22. İzmir Innovation Ecosystem Network (2022)

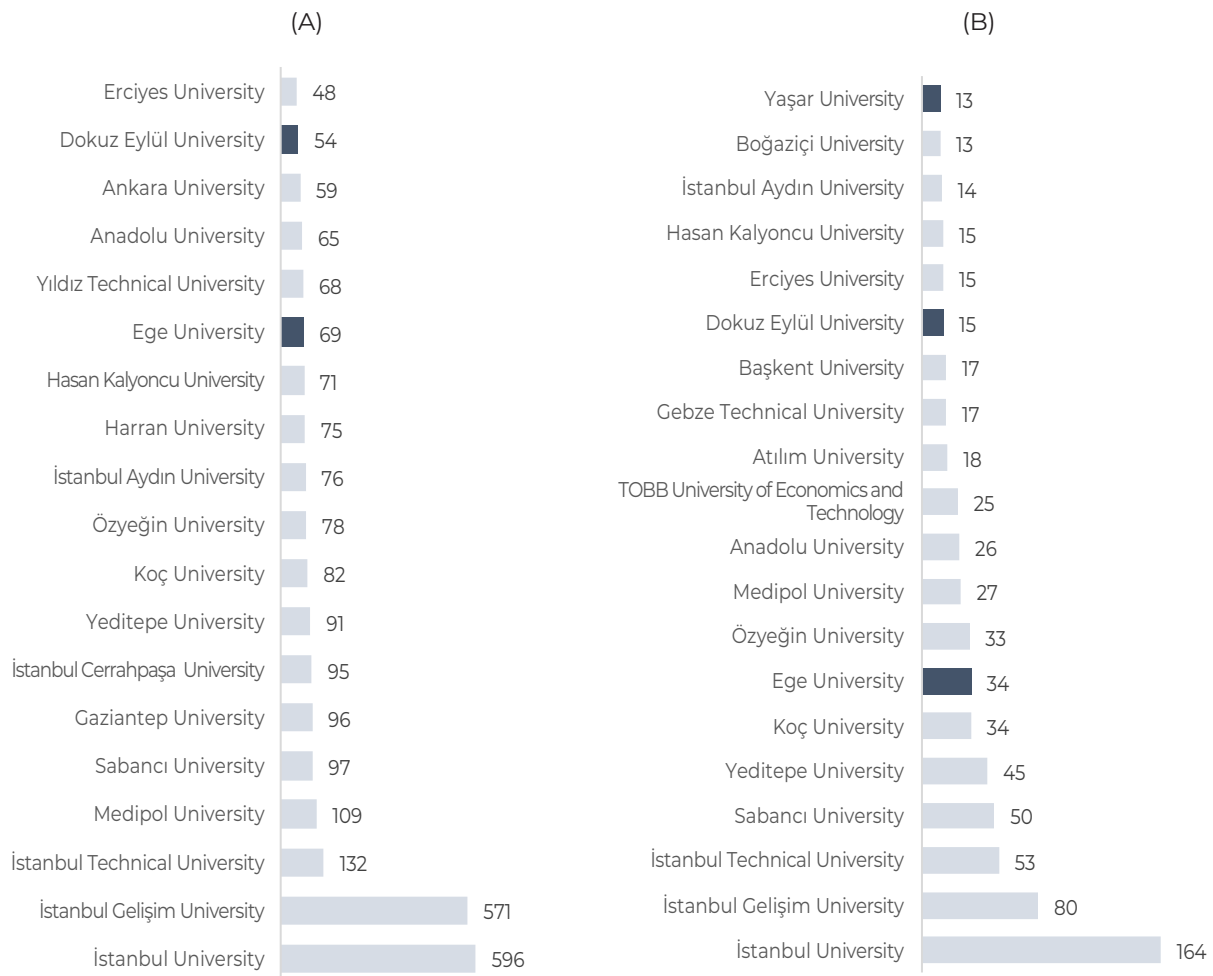


Source: İZKA, 2022a

E. Competence of Universities

The 2021 University Patents Analysis Report prepared by the University-Industry Cooperation Centers Platform (ÜSİMP) was utilized to examine the competence of universities in variables such as R&D orientation. Among the top 20 universities leading in patent and utility model applications, Ege University ranked 14th with 71 patents, and Dokuz Eylül University ranked 19th with 54 patents from İzmir Region. Apart from these two universities in İzmir, no other university from the Aegean Region is listed. On the other hand, the list includes one university from Ankara Region and 12 universities from İstanbul Region (Figure 3.23).

FIGURE 3.23. (A) Leading 20 Universities in Patent and Utility Model Applications; (B) Leading 20 Universities in Patent and Utility Model Registrations (2021)

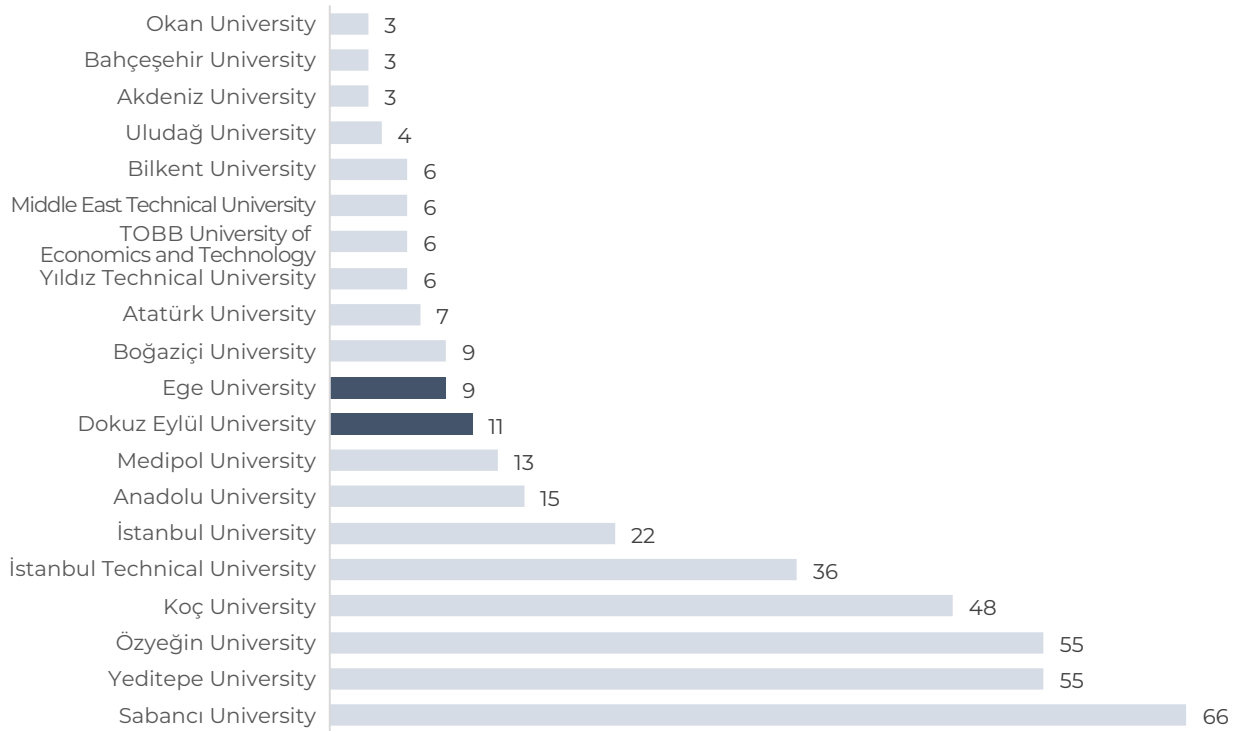


Source: USİMP, 2022

When universities are examined based on the number of registered patents, it is observed that three universities from İzmir Region rank among the top 20. Ege University ranks 7th with 34 patents, Dokuz Eylül University ranks 15th with 15 patents, and Yaşar University ranks 20th with 13 patents (Figure 3.23).

When considering patent applications made in Europe, the USA, Japan, China or South Korea by the top 20 universities in Türkiye, two universities from İzmir Region are listed. Dokuz Eylül University, ranked 9th, submitted 11 patent applications, while Ege University, ranked 10th, submitted 9 applications. The list includes 11 universities from İstanbul Region and three universities from Ankara Region. Universities from İzmir Region rank below those from İstanbul Region but above those from Ankara Region (Figure 3.24).

FIGURE 3.24. Leading 20 Universities in Patent Applications in Europe, USA, Japan, China or South Korea (2021)



Source: USIMP, 2022

In the ranking of universities commercializing their patents, only Ege University from İzmir Region is included. In terms of the number of commercialized patents, Ege University ranks 2nd nationwide. As presented in Table 3.28, İzmir Region has made significant progress in the number of commercialized patents. At Ege University, the total number of commercialized patents is 18, of which 14 have been licensed or transferred. These numbers were six and six, respectively, in 2020. The list also includes three universities from the İstanbul Region, one from the Ankara Region, and TÜBİTAK (Table 3.28).

TABLE 3.28. Leading Universities in Patent Commercialization (2020)

Universities	Total		2020	
	Registered Patents	Licensed/Transferred Patents	Registered Patents	Licensed/Transferred Patents
Middle East Technical University	24	27	8	8
Ege University	18	14	6	6
TÜBİTAK	10	2	5	2
Erciyes University	8	8	5	5
Yıldız Technical University	7	10	6	9
Hasan Kalyoncu University	7	7	-	-
Gaziantep University	7	5	-	-
Sabancı University	5	8	2	2
Anadolu University	2	6	2	3
Bursa Uludağ University	5	5	1	1

Source: USIMP, 2022

The Entrepreneurial and Innovative University Index published by TÜBİTAK is another indicator for measuring the competence of universities. The index comprises four subcategories: scientific and technological research competence, intellectual property pool, cooperation and interaction, and economic and social contribution. Among the top 20 universities included in the 2022 Entrepreneurial and Innovative University Index, two universities from İzmir Region are listed: İzmir Institute of Technology, ranked 10th, and Ege University, ranked 12th. The list includes nine universities from İstanbul Region and six from Ankara Region (Table 3.29).

TABLE 3.29. Top 20 Universities in the TÜBİTAK Entrepreneurial and Innovative University Index (2022)

Rank	University	Total Score	Scientific and Technological Research Competence	Intellectual Property Pool	Cooperation and Interaction	Economic and Social Contribution
1	Middle East Technical University	83.61	14.80	22.17	34.40	14.80
2	Sabancı University	77.89	13.75	23.54	29.03	13.75
3	Istanbul Technical University	74.15	12.08	20.91	29.81	12.08
4	Yıldız Technical University	73.88	13.12	17.85	33.29	13.12
5	İhsan Doğramacı Bilkent University	69.85	12.51	19.87	26.16	12.51
6	Koç University	67.74	11.73	18.29	25.52	11.73
7	Boğaziçi University	65.93	9.19	19.55	27.72	9.19
8	Gebze Technical University	64.85	10.77	17.57	26.97	10.77
9	Özyeğin University	63.18	17.28	16.46	22.85	17.28
10	Izmir Institute of Technology	62.02	11.23	19.61	21.74	11.23
11	Hacettepe University	59.82	7.36	16.87	24.22	7.36
12	Ege University	58.85	9.28	17.91	22.20	9.28
13	Erciyes University	56.49	7.35	14.17	26.08	7.35
14	Ankara University	55.11	4.96	16.51	23.24	4.96
15	Istanbul University	53.80	8.59	14.13	21.32	8.59
16	Gazi University	53.45	7.87	13.76	22.28	7.87
17	Istanbul University-Cerrahpaşa	51.05	11.48	10.82	19.71	11.48
18	Istanbul Medipol University	50.49	15.93	13.28	15.03	15.93
19	TOBB University of Economics and Technology	50.30	8.93	12.67	22.39	8.93
20	Bursa Uludağ University	50.16	6.53	15.95	20.83	6.53

Source: TÜBİTAK, 2023

F. R&D Infrastructure

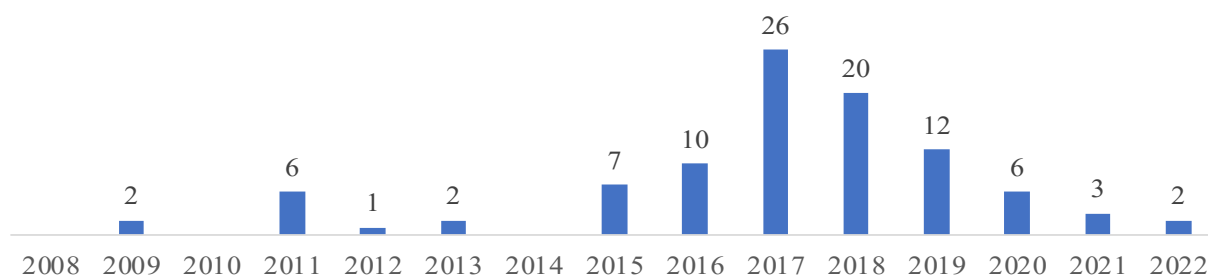
When examining the number of newly established R&D centers, it is observed that the number of R&D centers in İzmir Region has increased over the years; however, the growth rate has slowed after 2019. Considering that the growth rate of R&D centers has also declined in other regions since 2019, it can be inferred that the COVID-19 pandemic has had an impact on this trend. As of 2021, İzmir Region hosts 97 active R&D centers, with the highest number of new centers established in 2017 (Figure 3.25). The total number of R&D centers is 405 in İstanbul Region and 133 in Ankara Region (Table 3.30). Given the population and industrial dynamics of İzmir Region, there is potential for an increase in the number of R&D centers.

TABLE 3.30. Newly Established R&D Centers by Province and Year (2008-2022)

Year	Türkiye	İzmir	Ankara	İstanbul
2008	16	-	2	5
2009	34	2	10	6
2010	18	-	1	3
2011	21	6	2	2
2012	24	1	-	8
2013	19	2	-	10
2014	22	-	2	7
2015	57	7	8	16
2016	90	10	13	32
2017	353	26	28	118
2018	277	20	18	100
2019	172	12	20	47
2020	56	6	9	21
2021	63	3	14	23
2022	19	2	6	7
Total	1.241	97	133	405

Source: Directorate General for R&D Incentives, 2022

FIGURE 3.25. Number of Newly Established R&D Centers in İzmir (2008-2022)



Source: Directorate General for R&D Incentives, 2022

Between 2008 and 2022, the sectoral distribution of R&D centers in İzmir indicates an increase in sectoral diversity. As of 2022, sectoral diversity among newly established R&D centers was recorded at 24. The sectors with the highest number of R&D centers in İzmir Region are automotive sub-industry, textiles, electronics, computer and communication technologies, software, machinery, and equipment manufacturing. The automotive sub-industry accounts for 10 R&D centers; machinery and equipment manufacturing for 18; chemicals for 10; textiles for 8; food industry for 6; and electronics for 6 R&D centers (Table 3.31).

TABLE 3.31. Number of R&D Centers by Sectors in İzmir (2022)

Sectors	Number	Sectors	Number
Packaging	2	Machinery and Equipment Manufacturing	18
Computer and Communication Technologies	5	Medical	1
Ferrous and Non-Ferrous Metals	3	Automotive	3
Foundry	1	Automotive Sub-Industry	10
Electronics	6	Petroleum and Petroleum Products	1
Energy	2	Health	1
Food Industry	6	Defense Industry	1
Climate Control	3	Agriculture	1
Manufacturing Industry	4	Textiles	8
Paper and Paper Products	2	Telecommunications	1
Chemicals	10	Software	5
Apparel and Ready-to-Wear	1	Rubber-Plastics	2
Total			97

Source: General Directorate of R&D Incentives, 2022

Examining the number of design centers by region, it is seen that 26 design centers are located in İzmir Region as of 2021. A total of 506 personnel are employed in these centers. The total number of patents registered in the design centers of İzmir is 34. When comparing the number of patents registered relative to the number of design centers, İzmir Region is significantly more productive than Ankara and İstanbul. A total of 249 patents have been registered in İzmir's R&D centers, where 3,620 personnel are employed (Table 3.32).

TABLE 3.32. Statistics on R&D Units (2021)

R&D Unit Indicators	İzmir	İstanbul	Ankara
Number of Centers	97	410	129
Number of Design Centers	26	148	38
Number of Personnel Employed in R&D Centers	3.620	25.876	16.335
Number of Personnel Employed in Design Centers	506	3.696	772
Number of Patents Registered in R&D Centers	249	2.268	998
Number of Patents Registered in Design Centers	34	45	10

Source: General Directorate of R&D Incentives, 2022

When analyzing Gross Domestic Expenditure on R&D (GERD) data, it is revealed the GERD in İzmir Region

increased by 76% compared to 2018, reaching 3.52 billion TRY in 2021. However, this increase lagged behind the Aegean Region (80%) and Türkiye (113%). In terms of workforce, the number of individuals employed in R&D in İzmir rose from 18,773 in 2018 to 21,586 in 2021, reflecting a 15% increase. Similar to GERD, this growth rate was below that of the Aegean Region (17%) and Türkiye (24%).

TABLE 3.33. Gross Domestic R&D Expenditure (Million TRY) and Workforce (People)

Year	GERD					R&D Workforce				
	İzmir	Aegean	Türkiye	İzmir / Aegean (%)	İzmir / Türkiye (%)	İzmir	Aegean	Türkiye	İzmir / Aegean (%)	İzmir / Türkiye (%)
2018	2,005	3,470	38,534	57.8	5.2	18,773	32,074	289,791	58.5	6.5
2019	2,413	3,956	45,954	61.0	5.2	18,679	32,908	305,811	56.8	6.1
2020	2,811	4,706	54,957	59.7	5.1	19,567	33,751	321,392	58.0	6.1
2021	3,521	6,234	81,922	56.5	4.3	21,586	37,467	358,289	57.6	6.0
2018 - 2021 (%)	76	80	113			15	17	24		

Source: TURKSTAT, 2022

Both GERD and R&D workforce data reveal a declining trend in İzmir Region's share within the Aegean Region and Türkiye. Although İzmir holds a significant share within the Aegean Region, policies and incentive systems aimed at enhancing R&D infrastructure and increasing expenditures are critical to maintaining the region's competitiveness.

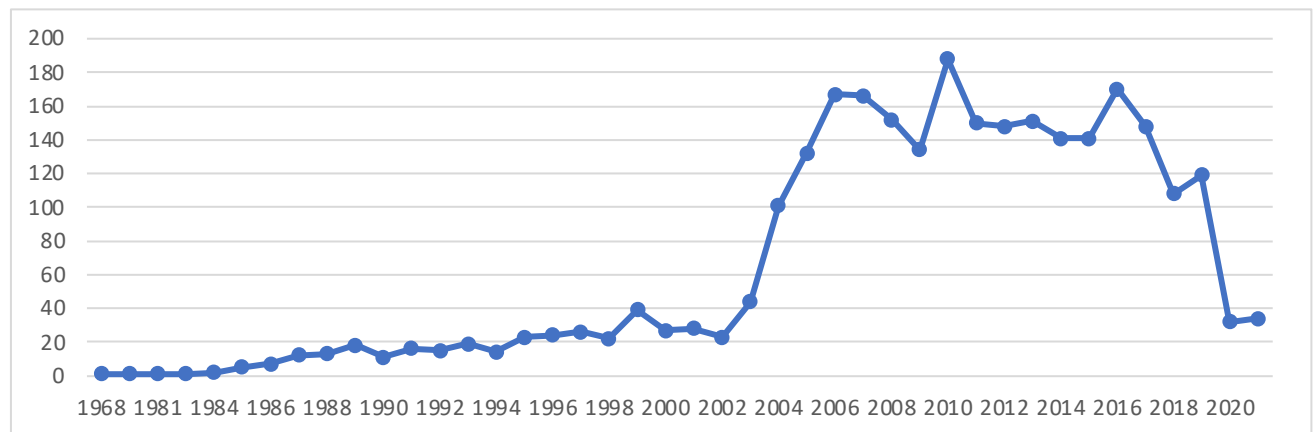
G. Foreign Investments

Analyzing the number of foreign direct investors in the İzmir Region, a rapid increase is observed after 2002, with the number of investments surpassing eightfold, reaching 188 by 2010. Following this peak, a downward trend is observed, with 34 foreign direct investments recorded in 2021 (Table 3.34).

TABLE 3.34. Number of Foreign Direct Investments in İzmir by Year (1968–2021)

Year	Investments	Year	Investments
1968	1	2001	28
1978	1	2002	23
1981	1	2003	44
1982	1	2004	101
1984	2	2005	132
1985	5	2006	167
1986	7	2007	166
1987	12	2008	152
1988	13	2009	134
1989	18	2010	188
1990	11	2011	150
1991	16	2012	148
1992	15	2013	151
1993	19	2014	141
1994	14	2015	141
1995	23	2016	170
1996	24	2017	148
1997	26	2018	108
1998	22	2019	119
1999	39	2020	32
2000	27	2021	34

Source: İZKA, 2022h

FIGURE 3.26. Number of Foreign Direct Investments in İzmir by Year (1968-2021)

Source: İZKA, 2022h

The number of foreign direct investments in İzmir Region has been analyzed by sector for the 2000-2021 period. While foreign direct investments were made in 17 different sectors in 2000, this number increased to 18 in 2021. The diversity of foreign direct investments reached its highest level in 2010 with 38 sectors. After 2003, investments increased notably in sectors such as computer and related activities, construction, transportation, and real estate. Investments in sectors such as machinery and equipment manufacturing, food production, chemical product manufacturing, waterway transportation, textiles, and wholesale and retail trade have shown continuity. As of 2021, the wholesale trade and trade brokerage sector and the construction sector have received the highest number of foreign direct investments.

The increase in sectoral diversity within foreign direct investments is considered to enhance the economic resilience of regions, particularly in crisis situations, by diversifying regional portfolios. Another acknowledged positive aspect of the sectoral diversification of foreign direct investments is the potential for technology diffusion. It is suggested that foreign direct investments allow regions to access and learn from more advanced and updated technologies used in other regions.

H. Investment Incentives

When the investment incentive certificates are analyzed by district, it is observed that Bornova ranks first with 125 certificates, followed by Karabağlar with 114 certificates. On the other hand, when investment incentive certificates are examined by district and sector, prominent sectors include: the manufacturing of machinery and equipment not elsewhere classified, food product manufacturing, printing and reproduction of recorded media, electricity, gas, steam, and air conditioning supply, motor vehicle, trailer,

TABLE 3.35. Distribution of Investment Incentive Certificates in İzmir Districts by NACE Codes (2021)

Code	Description	Aliağa	Bağcıva	Bayındır	Bayraklı	Bergama	Beydağ	Bornova	Buca	
01	Crop and animal production, hunting and related service activities			3		1				
05	Mining of coal and lignite									
08	Other mining and quarrying					4				
10	Manufacture of food products			2		2		3	1	
11	Manufacture of beverages							1		
13	Manufacture of textiles							4	1	
14	Manufacture of wearing apparel								5	
15	Manufacture of leather and related products							7		
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1								
17	Manufacture of paper and paper products							8	3	
18	Printing and reproduction of recorded media	2				2		6	1	
19	Manufacture of coke and refined petroleum products	2								
20	Manufacture of chemicals and chemical products	2						1		
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations									
22	Manufacture of rubber and plastic products	1						2	2	
23	Manufacture of other non-metallic mineral products					1			2	
24	Manufacture of basic metals							1	1	
25	Manufacture of fabricated metal products, except machinery and equipment	1						11		

and semi-trailer manufacturing, rubber and plastic product manufacturing, paper and paper product manufacturing, fabricated metal product manufacturing (excluding machinery and equipment), furniture manufacturing, other manufacturing, waste collection, treatment, and disposal activities, material recovery, warehousing, and support activities for transportation, and crop and animal production, hunting, and related service activities (Table 3.35).

	Çeşme	Çiğli	Dikili	Foça	Gazienir	Güzelbahçe	Karabağlar	Karaburun	Karşıyaka	Kemalpaşa	Kınık	Kiraz	Konak	Menderes	Menemen	Ödemiş	Seferihisar	Selçuk	Tire	Torbalı	Urla	Total
				1						1				3			2		3	1	2	17
											1											1
										1				1								6
	2	3	1		1	1		1	2	10		1		4	2	1	1	1	2	12	4	58
																						1
		2			2	1							1	1						2		14
		1			2	1																9
					3		3			1										3		17
					1																	2
		2	1		2					3				1					1	7		28
		2			1					11			2	3	1				2	3		39
																						2
		2			2					2				1	2		1			2		15
					1					1					1					1		4
		3								6				3	2		1		2	7		29
										1					3					1		8
										3			1									6
		5			1					4				1	2					2		27

Code	Description	Aliağa	Balçova	Bayındır	Bayraklı	Bergama	Beydağ	Bornova	Buca	
26	Manufacture of computer, electronic and optical products							1		
27	Manufacture of electrical equipment	1						3		
28	Manufacture of machinery and equipment n.e.c.	5			1	3		44	4	
29	Manufacture of motor vehicles, trailers and semi-trailers	1						10	1	
30	Manufacture of other transport equipment							1		
31	Manufacture of furniture								4	
32	Other manufacturing	1						7		
35	Electricity, gas, steam and air conditioning supply	2								
38	Waste collection, treatment and disposal activities; materials recovery	3						5		
52	Warehousing and support activities for transportation	3						5	1	
55	Accommodation				1			1		
62	Computer programming, consultancy and related activities							1		
71	Architectural and engineering activities; technical testing and analysis							2		
72	Scientific research and development								1	
82	Office administrative, office support and other business support activities	1								
84	Public administration and defence; compulsory social security								2	
85	Education	1						1	1	
86	Human health activities									
88	Social work activities without accommodation		1							

Source: İZKA, 2022d

	Çeşme	Çiğli	Dikili	Foça	Gazienir	Güzelbahçe	Karabağlar	Karaburun	Karşıyaka	Kemalpaşa	Kınık	Kiraz	Konak	Menderes	Menemen	Ödemiş	Seferihisar	Selçuk	Tire	Torbalı	Urla	Total
		2																				3
		2							3				1	2	1					2		15
		20								42		1	3	12	3	6			1	17	1	164
		3							7					1	2		1			5		31
																						1
		2			4		1		1				1	3						11		27
		2			4		1			2				2	2					4		25
		1						1		5				1	2	1	8	1	1	11		34
		3								4					1				1	6		23
	1								4					3			1		1	1		20
	2				2								1							1		8
																						1
		1																				3
																						1
									3													4
													2	1	1		1		1			8
		2			1	2			1					1	3	1		1		1	1	17
								2				4										6
			1					2						1							1	9

I. Industrial Zones

When industrial zones are examined, it is seen that İzmir Region has a total of 17 organized industrial zones (OIZs), 4 of which are under construction and 13 are operational. In terms of operational zones, there are 8 in İstanbul Region and 10 in Ankara Region. Although the number of OIZs in İzmir Region is higher than in Ankara Region, when the total OIZ area is examined, Ankara Region has approximately twice the OIZ area of İzmir Region, with 7,833 hectares. On the other hand, the total OIZ area in İzmir Region is twice the size of that in İstanbul Region. When examining the number of parcels, the total number of parcels in the OIZs in İzmir Region is 3,199. This number is approximately one-fourth of the total parcel number in the OIZs in Ankara Region, indicating that the average parcel size in İzmir Region is larger than that in Ankara Region. This size is also related to the capacity, technology, and production methods envisioned for use. The total number of parcels in the OIZs in İstanbul Region is approximately half of those in İzmir Region. Regarding allocation rates, while this rate is around 99% for Ankara and İstanbul, it is 94.5% for İzmir (Table 3.36).

TABLE 3.36. Number of Active Organized Industrial Zones (OIZs) in Provinces and Related Data (2023)

Region	Total OIZ Area (Hectares)	Total Parcel Count	Allocated Parcel Count	Allocation Rate (%)	Number of OIZs
İzmir	4,421	3,199	3,023	94.5	13
İstanbul	2,148	1,711	1,705	99.6	8
Ankara	7,833	13,343	13,130	98.9	10

Source: OSBÜK, July 2023

When OIZs are analyzed in terms of area size, İzmir Kemalpaşa is seen to be the largest OIZ in İzmir Region with 1,317 hectares, followed by Aliğa Chemical Specialty and Mixed OIZ and İzmir Atatürk OIZ. Among İzmir OIZs, those with the highest allocation rates are İzmir Kemalpaşa, Kınık, İzmir Pancar and Torbalı Mixed and Furniture OIZs, each at 100%. Allocation rates for all OIZs, except for Tire and Aliğa, exceed 94%. In terms of the number of parcels in production, İzmir Atatürk OIZ, İzmir Kemalpaşa OIZ, and İTOB stand out (Table 3.37).

TABLE 3.37. Operational OIZs in İzmir and Related Data (2023)

OIZ Name	OIZ Type	OIZ Area (Hectares)	Total Parcel Count	Allocated Parcel Count	Allocation Rate (%)	Parcels to be Allocated	Parcels in Production	Parcels Under Construction
Aliğa Chemical Specialty and Mixed	Specialized	922	325	269	82.77	56	87	57
İzmir Atatürk	Mixed	624	636	614	96.54	22	607	4
Bağyurdu (BAYOSB)	Mixed	146.8	90	89	98.89	1	22	21
Bergama	Mixed	179	65	64	98.46	1	5	14
Buca Ege	Mixed	57.7	140	132	94.29	8	116	7
İTOB	Mixed	248.8	348	334	95.98	14	323	8

OIZ Name	OIZ Type	OIZ Area (Hectares)	Total Parcel Count	Allocated Parcel Count	Allocation Rate (%)	Parcels to be Allocated	Parcels in Production	Parcels Under Construction
İzmir Kemalpaşa	Mixed	1,317	1,148	1,148	100.00	0	436	82
Kınık	Mixed	74.3	41	41	100.00	0	10	3
Menemen Plastic Specialty	Specialized	85.5	41	39	95.12	2	24	14
Ödemiş	Mixed	97.4	51	48	94.12	3	4	7
İzmir Pancar	Mixed	128.9	94	94	100.00	0	79	11
Tire	Mixed	410	179	110	61.45	69	75	31
Torbalı Mixed and Furniture	Mixed	129.2	41	41	100.00	0	22	19

Source: OSBÜK, July 2023

When examining the Organized Industrial Zones (OIZs) under construction in İzmir Region, it is observed that four new OIZs with a total area of 650 hectares are planned. The number of OIZs planned in İstanbul Region is one, while it is three in Ankara Region. The number of parcels in the OIZs planned in İzmir Region is 208, of which 85 have been allocated (Table 3.38).

TABLE 3.38. Planned OIZ Areas by Provinces (2023)

Region	Number of OIZs	Total OIZ Area (Hectares)	Total Parcel Count	Total Allocated Parcel Count
İzmir	4	649.69	208	85
İstanbul	1	262	157	0
Ankara	3	367.94	208	108

Source: OSBÜK, July 2023

The ongoing OIZs in İzmir Region are Bayındır TDİ Floriculture OIZ, Dikili TDİ Greenhouse OIZ, İzmir Kınık Agricultural Production TDİOIZ, and İzmir Aliğa Bağyurdu Private OIZ. Details about these OIZs are presented in Table 3.39.

TABLE 3.39. Ongoing OIZ Areas in İzmir and Related Data (2023)

OIZ Name	OIZ Type	OIZ Area (Hectares)	Total Parcel Count	Total Allocated Parcel Count	Total Parcels to be Allocated
Bayındır Floriculture SOIZBA	SOIZBA	89	42	0	42
Dikili Greenhouse SOIZBA	SOIZBA	303	85	85	0
Kınık Agricultural Production SOIZBA	SOIZBA	122,83	90	0	0
İzmir Aliğa Bağyurdu Private OIZ	MIXED	135	81	0	81

Source: OSBÜK, July 2023

There are two industrial zones declared in İzmir Region: SOCAR Turkey Enerji A.S. Private Industrial Zone and MOST Makine Enerji Taahhüt Sanayi ve Ticaret A.S. Industrial Zone. The SOCAR Turkey Enerji A.S. Private Industrial Zone spans 1,453 hectares, while the MOST Makine Enerji Taahhüt Sanayi ve Ticaret A.S. Industrial Zone covers 102.1 hectares (Ministry of Industry and Technology, 2022c).

There are 18 free zones in Türkiye. İzmir Region houses two active free zones: Aegean Free Zone and İzmir (Menemen) Free Zone. One free zone is under construction. As of 2022, a total of 91,303 people are employed in the free zones. The Aegean Free Zone, with 24,218 employees as of 2022, is the free zone with the highest employment in Türkiye. In İzmir (Menemen) Free Zone, 5,227 people were employed as of 2022 (Table 3.40).

TABLE 3.40. Free Zone Employment Numbers (2019-2022)

Free Zone	2019	2020	2021	2022
Aegean	20,407	20,428	21,681	24,218
Bursa	9,907	11,484	12,128	10,577
Mersin	11,001	10,748	9,603	10,424
Antalya	5,091	5,352	5,750	6,490
İstanbul Industry and Trade	5,359	5,167	6,025	6,414
Kocaeli	1,763	3,376	4,303	4,691
TÜBİTAK-MAM Technology	1,608	1,656	2,052	2,407
Europe	4,600	4,600	5,978	6,465
Kayseri	4,766	5,686	5,527	6,251
İzmir (Menemen)	3,844	4,771	5,012	5,227
İstanbul Thrace	2,994	3,251	3,662	3,609
İstanbul Specialized (AHL)	1,135	1,473	1,792	2,492
Adana Yumurtalık	1,132	1,049	1,034	1,172
Samsun	310	169	246	388
Gaziantep	206	241	286	314
Trabzon	54	20	74	34
Denizli	4	80	93	126
Rize	33	2	2	4
Total	74,214	79,553	85,248	91,303

Source: Ministry of Trade, 2023

Trade volume in Türkiye's free zones occurred to be 19.03 billion USD in 2016, increasing to 24.64 billion USD by 2021. The Aegean Free Zone, with a trade volume of 4.08 billion USD in 2016, was the free zone with the highest trade in Türkiye. In 2021, it again recorded the highest trade volume, with \$4.67 billion. In İzmir Free Zone, the trade volume was 210 million USD in 2016, rising to 890 million USD as of the year 2021 (Table 3.41).

TABLE 3.41. Free Zone Trade Volume Statistics (2016-2022) (billion USD)

Free Zone	2016	2017	2018	2019	2020	2021	2022
Aegean	4.08	4.33	4.40	4.15	3.85	4.67	5.30
Mersin	2.86	2.94	2.96	2.80	2.52	3.35	4.01
Avrupa	1.97	2.03	2.31	2.12	2.02	2.91	3.48
İstanbul Industry and Trade	2.77	3.10	2.53	2.08	2.02	2.34	2.80
Bursa	1.84	1.77	1.92	1.90	1.71	2.11	2.55
Adana Yumurtalık	0.60	0.81	1.20	1.17	1.28	1.97	2.48
İstanbul Thrace	1.12	1.26	1.31	1.29	1.34	1.54	2.00
Kayseri	0.75	0.85	0.95	0.97	1.06	1.47	1.48
Kocaeli	0.48	0.59	0.58	0.76	0.74	1.10	1.24
Antalya	0.66	0.72	0.67	0.78	0.84	1.00	1.13
İzmir (Menemen)	0.21	0.35	0.49	0.72	0.68	0.89	1.23
Samsun	0.08	0.08	0.14	0.11	0.16	0.17	0.40
Gaziantep	0.07	0.03	0.04	0.08	0.06	0.11	0.15
TÜBİTAK-MAM Technology	0.06	0.07	0.07	0.07	0.08	0.09	0.11
Trabzon	0.37	0.29	0.25	0.02	0.00	0.03	0.06
Denizli	0.02	0.03	0.03	0.04	0.06	0.07	0.07
Rize	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Total	19.03	20.38	20.93	19.66	22.06	24.62	32.82

Source: Ministry of Trade, 2023

J. Evaluation

Proximity to existing and planned transportation networks, potential to attract and retain a qualified and skilled workforce, cultural diversity, mild climate, and historical and natural riches make İzmir Region a unique investment environment. With 17 organized industrial zones (OIZs) and two free zones, one of which is the largest in the country in terms of trade volume, İzmir has a strong infrastructure in terms of investment opportunities. Over the years, the number and sectoral diversity of foreign direct investments in İzmir Region have increased. It is assessed that the increasing sectoral diversity of foreign direct investment diversifies regional portfolios, thereby enhancing the economic resilience of regions against crises. Another aspect of sectoral diversification in foreign direct investment, which is believed to have positive effects on regions, is potential technology diffusion. It is stated that through foreign direct investments, regions may gain access to and learn about more up-to-date and advanced technologies used in other regions.

According to the İzmir Input-Output Analysis, the three sectors in which İzmir Region has the highest share in Türkiye's sectoral production and gross value added are waterway transportation services, the manufacture of coke, refined petroleum products, and nuclear fuel, and the manufacture of paper and paper products. Additionally, printing and publishing; reproduction of recorded media such as records and cassettes, the manufacture of plastic and rubber products, the manufacture of computing machinery, and other electrical machinery and equipment not elsewhere classified, educational services, the metal goods industry excluding machinery and equipment, and the manufacture of other non-metallic mineral products are among the sectors with development potential. It is crucial to establish incentive systems to support manufacturing in these sectors to maintain the region's relative advantage.

İzmir Region is composed of regions with significantly differing sectoral dominance. Despite regional differences, the dominant sector count of İzmir's central city increased from 9 in 2010 to 12 by 2021, indicating that İzmir's economy has diversified and strengthened, becoming more resilient despite crises over the past decade. Strategies need to be developed for employment creation in sectors such as manufacturing, and finance and insurance activities, which have lost their dominance.

İzmir is also at the forefront in two sectors considered public services: telecommunication services and the production and distribution of electricity, gas, steam and hot water. These services are directly related to the size of the population served by the region. The presence of İzmir's central settlement and high-tier settlements such as Aliağa, Torbalı, and Kemalpaşa, which are populous and serve surrounding areas, strengthens the region in sectors related to the provision of public services.

The agriculture, forestry and fishing sector is a highly significant sector for İzmir Region. With the advantage of fertile agricultural lands and coastal areas, the agriculture, forestry, and fishing sector (Sector A), which was the dominant sector in 15 or 16 districts during the four examined periods, became the main sector in 19 districts except İzmir city center, Aliağa, and Beydağ as of 2021. However, the significant changes in the number of dominant sectors between 2010 and 2021 in districts predominantly strong in agriculture and livestock sectors indicate high workforce mobility and low stability in these districts. While dominant sectors and their numbers may change over time depending on changes in the sectoral structure of settlements, frequent and multi-sector changes significantly impact local economies, making them vulnerable to crises. It is crucial and necessary to ensure stability in workforce mobility to maintain production continuity and economic development at the local level.

Progress in the region's R&D and innovation infrastructure is evident. The number of patent applications in the region, which was 158 in 2010, nearly tripled to 451 by 2022. However, it lags behind regions like İstanbul and Ankara in terms of numbers. Encouraging entrepreneurs in the field of patents is important for the development of the regional ecosystem. Another notable factor in the region is the increase in the number of R&D centers. The number of R&D centers, which was 34 in 2016, rose to 97 by 2022. The sectoral distribution of R&D centers in İzmir shows increased diversity. Sectoral diversity regarding R&D centers opened in 2021 is at 24. While this is a positive indicator of the emphasis placed on R&D activities in the region, the slowdown in the number of R&D centers and R&D expenditures should not be overlooked. Moreover, the limited number of companies investing in R&D and sectors allocating resources to R&D adversely affects the region's global competitiveness. Increasing product diversity and making every stage of production more efficient is only possible through the creation of new knowledge and its integration into design and production processes.

İzmir Region has significant potential in terms of the entrepreneurship ecosystem. Recent years have seen considerable progress in the region's entrepreneurship ecosystem. Indicators such as the number of entrepreneurs, patent applications, R&D expenditures, and scientific publications have all increased in the region. Local actors have also intensified activities to support the entrepreneurship ecosystem. However, financial components of innovation ecosystems such as angel investor networks, venture capital institutions, and crowdfunding systems, which are present in İstanbul Region, are relatively scarce. Therefore, it is important to promote the formation of networks to attract national and international financial support providers to İzmir Region. Developing integrated policies to enhance the regional entrepreneurship ecosystem through collaboration among public institutions, local administrative units, universities, professional organizations, and industrialists in the region is necessary. Increasing the number of entrepreneurs developing high-value-added technological products is particularly important for the region's sustainable development.

4. POPULATION AND HUMAN CAPITAL

Population and human capital are among the most important indicators to be monitored in the regional development process. The dynamics of the population and the trajectory of human capital in the region provide significant insights into socioeconomic developments. Moreover, monitoring these data and planning and managing population movements and human capital in a way that contributes positively to regional development is of great importance. This section evaluates the human structure of İzmir Region and the population movements over the years.

A. Population and Demographic Structure

İzmir Region, which had a population of 531,579 in 1927 and was the second most populous province in Türkiye after İstanbul, has grown to a population of 4,462,056 according to the 2022 Address-Based Population Registration System (ABPRS) results. It is now the third most populous province after İstanbul and Ankara.

One noteworthy aspect of İzmir Region, whose population has continuously increased to date, is its share within Türkiye's population. While the region accounted for 3.9% of Türkiye's population in 1965, this rate increased over the years and surpassed 5% after 2000. During the 2007-2017 period, this rate stabilized at around 5.3%, showing a slight downward trend in subsequent years. As of 2021, İzmir's population accounts for 5.23% of Türkiye's population and 40.99% of the Aegean Region's population (Table 4.1).

TABLE 4.1. Population of Türkiye, the Aegean Region, and İzmir (2007–2022)

Year	Türkiye	Aegean Region	İzmir	İzmir / Türkiye (%)	İzmir / Aegean (%)
2007	70,586,256	9,299,322	3,175,133	5.30	40.21
2008	71,517,100	9,384,848	3,450,537	5.31	40.45
2009	72,561,312	9,517,153	3,525,202	5.33	40.65
2010	73,722,988	9,693,594	3,606,326	5.36	40.74
2011	74,724,269	9,687,692	3,623,540	5.31	40.93
2012	75,627,384	9,779,502	3,661,930	5.30	40.96
2013	76,667,864	9,897,313	4,061,074	5.30	41.03
2014	77,695,904	10,023,549	4,113,072	5.29	41.03
2015	78,741,053	10,138,132	4,168,415	5.29	41.12
2016	79,814,871	10,265,111	4,223,545	5.29	41.14
2017	80,810,525	10,383,963	4,279,677	5.30	41.21
2018	82,003,882	10,514,200	4,320,519	5.27	41.09
2019	83,154,997	10,618,433	4,367,251	5.25	41.13
2020	83,614,362	10,689,115	4,394,694	5.26	41.11
2021	84,680,273	10,784,645	4,425,789	5.23	41.04
2022	85,279,553	10,886,803	4,462,056	5.23	40.99

Source: TURKSTAT, 2022a

When comparing the male and female populations in İzmir Region, it is observed that the female population has increased over the years and currently leads by a narrow margin. In 2022, the male and female populations in İzmir Region were 2,215,716 and 2,246,340, respectively. Females constitute 50.34% of İzmir Region's population, while males account for 49.66% (Table 4.2).

TABLE 4.2. Population of İzmir Region by Gender (1965–2022)

Year	Male Population	Male Population Share (%)	Female Population	Female Population Share (%)	Total
1965	641,118	51.93	593,549	48.07	1,234,667
1970	739,429	51.81	687,744	48.19	1,427,173
1975	868,403	51.88	805,563	48.12	1,673,966
1980	1,021,989	51.70	954,774	48.30	1,976,763
1985	1,198,236	51.70	1,119,593	48.30	2,317,829
1990	1,379,778	51.20	1,314,992	48.80	2,694,770
2000	1,698,819	50.40	1,672,047	49.60	3,370,866
2007	1,872,579	50.08	1,866,774	49.92	3,739,353
2010	1,985,368	50.28	1,963,480	49.72	3,948,848
2015	2,078,224	49.86	2,090,191	50.14	4,168,415
2022	2,215,716	49.66	2,246,340	50.34	4,462,056

Source: TURKSTAT, 2022a

Analyzing the district populations of İzmir Region, it becomes evident that districts exhibit distinct population dynamics and independent trends. In 2022, the most populous districts were Buca, Karabağlar and Bornova, while the least populous were Karaburun, Beydağ and Kınık (Table 4.3).

Between 2008 and 2022, the districts with the highest population growth were found out to be Seferihisar (104%), Güzelbahçe (71%) and Torbalı (70%). Conversely, some districts experienced population declines during the same period, with the most pronounced example being Konak, where the population decreased by 19%. This decrease in Konak is influenced by the conversion of residential properties to non-residential uses. Beydağ, the second most affected district, experienced a 10% population decrease (Table 4.3).

When examining the shares of İzmir districts within İzmir's total population, it is observed that the relative weights of district populations have changed over time. For instance, the share of Konak district within İzmir's population decreased from 10.8% in 2008 to 7.2% in 2022. In particular, the limited availability of areas for residential expansion has played a role in the stabilization or decline of shares in central districts. Karşıyaka, Karabağlar and Gazimur are examples of such districts (Table 4.4).

In the basin of the Küçük Menderes River, districts with low populations and intensive agricultural production, such as Kiraz, Beydağ and Bayındır, experienced population declines over the years. From 2008 to 2022, the population in Kiraz decreased by 2.9%, while Bayındır and Beydağ saw declines of 4.5% and 10.2%, respectively. It is observed that in the region, the population is concentrated in Ödemiş and Tire districts, where socioeconomic opportunities are greater. During the same period, while the population of Ödemiş increased by 3.1%, the population of Tire grew by 13.6%, influenced in part by industrial growth.

In contrast, northern districts with intensive agricultural activities, such as Kınık, Bergama and Dikili, displayed population growth trends. While Kınık's population remained almost stable, Bergama and Dikili experienced increases of 5% and 53%, respectively. Improvements in transportation infrastructure

and the rise of seasonal residential areas have significantly influenced this growth. Karaburun, located in the Peninsula area, is the second least populous district in İzmir Region. Between 2008 and 2022, Karaburun's population grew by 32%, primarily driven by improvements in road infrastructure and the

TABLE 4.3. Populations of the Districts of İzmir (2008-2022)

Districts	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Aliağa	62.258	63.503	65.753	68.432	76.598	80.948	83.366	87.376	91.026	
Balçova	76.219	77.915	77.767	77.941	77.843	77.624	77.311	78.121	78.086	
Bayındır	41.965	41.244	41.506	41.105	40.988	40.690	40.310	39.925	40.216	
Bayraklı	303.816	306.427	307.898	309.147	309.137	310.656	310.765	312.263	314.008	
Bergama	100.671	100.802	100.801	101.158	101.004	101.217	101.813	101.917	102.090	
Beydağ	13.395	13.047	12.977	12.809	12.566	12.555	12.457	12.276	12.300	
Bornova	399.023	409.009	419.070	418.837	423.063	426.490	431.149	435.162	438.549	
Buca	407.526	415.967	423.082	436.989	446.491	454.112	461.761	470.768	482.337	
Çeşme	31.968	32.475	33.051	33.931	34.563	35.965	39.243	39.243	40.312	
Çiğli	153.508	154.397	157.530	163.774	168.599	173.667	176.864	182.349	186.717	
Dikili	30.863	31.907	33.021	34.358	35.230	36.124	41.999	40.537	41.275	
Foça	29.018	30.779	44.500	32.476	32.141	32.534	30.002	28.647	28.591	
Gazimir	112.149	121.255	129.691	126.737	127.730	129.534	130.870	132.365	132.566	
Güzelbahçe	22.138	24.296	24.462	25.335	28.469	27.389	28.470	29.774	29.835	
Karabağlar	443.159	449.707	458.890	463.279	466.023	471.676	473.741	477.238	480.253	
Karaburun	9.224	8.889	8.689	8.848	8.799	9.092	9.456	9.403	9.575	
Karşıyaka	296.031	304.507	310.061	312.213	315.294	321.870	325.717	333.250	338.485	
Kemalpaşa	87.147	89.084	91.276	93.431	94.831	97.499	99.626	101.693	103.806	
Kınık	28.337	28.550	28.210	28.104	27.950	28.000	28.072	28.052	28.265	
Kiraz	44.830	44.436	44.555	44.587	44.009	44.017	43.971	43.615	43.845	
Konak	411.112	411.112	405.580	397.201	390.682	385.843	380.295	375.490	370.662	
Menderes	68.029	69.515	70.977	73.191	74.831	77.706	81.297	83.331	86.494	
Menemen	125.478	128.113	131.394	134.889	138.143	142.836	148.662	156.974	163.565	
Narlıdere	59.161	65.714	72.832	65.478	63.301	63.743	64.599	64.712	64.800	
Ödemiş	128.797	129.210	129.695	129.968	129.005	129.295	129.407	132.028	131.728	
Seferihisar	26.945	28.603	32.655	30.890	31.467	33.588	35.960	36.335	37.697	
Selçuk	34.459	34.479	34.441	34.643	34.587	34.979	35.281	35.736	35.960	
Tire	77.015	78.176	78.342	78.975	79.519	80.381	81.315	82.102	83.082	
Torbalı	121.963	124.581	127.642	133.089	138.040	144.293	150.127	156.983	164.981	
Urla	49.774	50.609	52.500	53.417	54.556	56.751	59.166	60.750	62.439	
Total	3.795.978	3.868.308	3.948.848	3.965.232	4.005.459	4.061.074	4.113.072	4.168.415	4.223.545	

Source: TURKSTAT, 2022a

increase in seasonal residences in the region. Although this percentage indicates a high relative growth, the numerical increase is modest, with the population rising by approximately 3,000 to reach 12,200 in 2022 (Table 4.3).

	2017	2018	2019	2020	2021	2022	Trend	%2008 - 2022
	94.070	95.392	96.974	101.242	103.364	104.828		68,38
	78.442	79.357	79.681	78.804	80.513	80.721		5,91
	40.258	40.584	40.414	40.418	40.049	40.073		-4,51
	314.402	311.524	312.264	306.988	296.839	298.519		-1,74
	102.961	103.185	103.867	104.944	104.980	105.754		5,05
	12.391	12.507	12.340	12.329	12.197	12.030		-10,19
	442.839	445.232	450.992	446.927	452.867	454.470		13,90
	492.252	499.325	510.695	507.773	517.963	522.404		28,19
	41.278	43.489	44.363	46.093	48.167	48.924		53,04
	190.607	194.525	200.211	204.549	209.951	214.065		39,45
	41.697	44.172	43.806	45.217	46.587	47.360		53,45
	31.061	33.131	32.264	33.227	33.611	34.946		20,43
	136.273	137.553	137.808	138.519	137.856	137.754		22,83
	31.429	32.592	33.725	36.727	37.572	37.753		70,53
	480.790	479.986	480.925	479.592	478.788	479.338		8,16
	9.812	10.603	10.759	11.329	11.927	12.200		32,26
	342.062	344.140	349.290	350.100	347.023	346.264		16,97
	105.506	106.298	107.556	110.209	112.049	114.250		31,10
	28.271	29.803	28.802	28.691	28.513	28.694		1,26
	43.859	43.989	43.925	44.105	43.674	43.510		-2,94
	363.181	356.563	351.572	344.678	336.545	332.277		-19,18
	89.777	93.796	97.123	101.338	104.147	106.173		56,07
	170.090	174.564	179.881	186.182	193.229	200.904		60,11
	66.269	66.203	65.737	65.178	63.438	62.923		6,36
	132.241	132.511	132.876	133.679	132.769	132.740		3,06
	40.785	43.546	44.526	48.320	52.507	54.993		104,09
	35.991	36.360	36.824	37.386	37.689	38.151		10,71
	83.829	84.457	84.804	86.315	86.758	87.462		13,56
	172.359	178.772	185.908	194.285	201.476	207.840		70,41
	64.895	66.360	67.339	69.550	72.741	74.736		50,15
	4.279.677	4.320.519	4.367.251	4.394.694	4.425.789	4.462.056		17,55

TABLE 4.4. Districts' Shares in İzmir's Population (2008-2022)

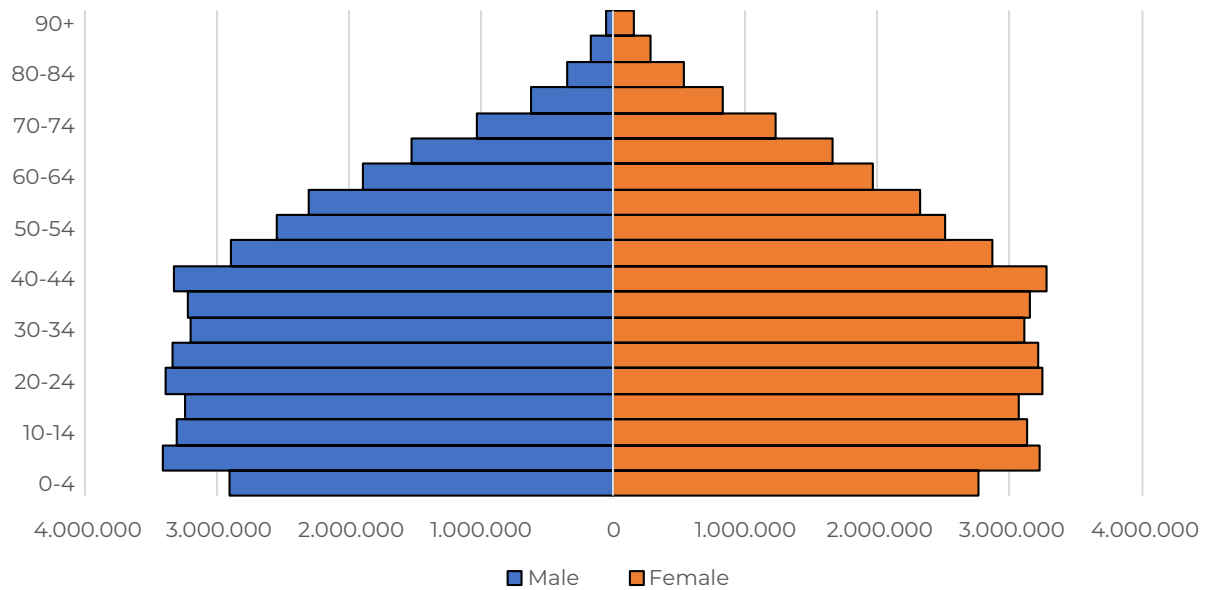
Districts	2008	2009	2010	2011	2012	2013	2014	2015	
Aliağa	1,64%	1,64%	1,67%	1,73%	1,91%	1,99%	2,03%	2,10%	
Balçova	2,01%	2,01%	1,97%	1,97%	1,94%	1,91%	1,88%	1,87%	
Bayındır	1,11%	1,07%	1,05%	1,04%	1,02%	1,00%	0,98%	0,96%	
Bayraklı	8,00%	7,92%	7,80%	7,80%	7,72%	7,65%	7,56%	7,49%	
Bergama	2,65%	2,61%	2,55%	2,55%	2,52%	2,49%	2,48%	2,44%	
Beydağ	0,35%	0,34%	0,33%	0,32%	0,31%	0,31%	0,30%	0,29%	
Bornova	10,51%	10,57%	10,61%	10,56%	10,56%	10,50%	10,48%	10,44%	
Buca	10,74%	10,75%	10,71%	11,02%	11,15%	11,18%	11,23%	11,29%	
Çeşme	0,84%	0,84%	0,84%	0,86%	0,86%	0,89%	0,95%	0,94%	
Çiğli	4,04%	3,99%	3,99%	4,13%	4,21%	4,28%	4,30%	4,37%	
Dikili	0,81%	0,82%	0,84%	0,87%	0,88%	0,89%	1,02%	0,97%	
Foça	0,76%	0,80%	1,13%	0,82%	0,80%	0,80%	0,73%	0,69%	
Gaziemir	2,95%	3,13%	3,28%	3,20%	3,19%	3,19%	3,18%	3,18%	
Güzelbahçe	0,58%	0,63%	0,62%	0,64%	0,71%	0,67%	0,69%	0,71%	
Karabağlar	11,67%	11,63%	11,62%	11,68%	11,63%	11,61%	11,52%	11,45%	
Karaburun	0,24%	0,23%	0,22%	0,22%	0,22%	0,22%	0,23%	0,23%	
Karşıyaka	7,80%	7,87%	7,85%	7,87%	7,87%	7,93%	7,92%	7,99%	
Kemalpaşa	2,30%	2,30%	2,31%	2,36%	2,37%	2,40%	2,42%	2,44%	
Kınık	0,75%	0,74%	0,71%	0,71%	0,70%	0,69%	0,68%	0,67%	
Kiraz	1,18%	1,15%	1,13%	1,12%	1,10%	1,08%	1,07%	1,05%	
Konak	10,83%	10,63%	10,27%	10,02%	9,75%	9,50%	9,25%	9,01%	
Menderes	1,79%	1,80%	1,80%	1,85%	1,87%	1,91%	1,98%	2,00%	
Menemen	3,31%	3,31%	3,33%	3,40%	3,45%	3,52%	3,61%	3,77%	
Narlıdere	1,56%	1,70%	1,84%	1,65%	1,58%	1,57%	1,57%	1,55%	
Ödemiş	3,39%	3,34%	3,28%	3,28%	3,22%	3,18%	3,15%	3,17%	
Seferihisar	0,71%	0,74%	0,83%	0,78%	0,79%	0,83%	0,87%	0,87%	
Selçuk	0,91%	0,89%	0,87%	0,87%	0,86%	0,86%	0,86%	0,86%	
Tire	2,03%	2,02%	1,98%	1,99%	1,99%	1,98%	1,98%	1,97%	
Torbalı	3,21%	3,22%	3,23%	3,36%	3,45%	3,55%	3,65%	3,77%	
Urla	1,31%	1,31%	1,33%	1,35%	1,36%	1,40%	1,44%	1,46%	
Total	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	

Source: TURKSTAT, 2022a

	2016	2017	2018	2019	2020	2021	2022	Trend
	2,16%	2,20%	2,21%	2,22%	2,30%	2,34%	2,35%	
	1,85%	1,83%	1,84%	1,82%	1,79%	1,82%	1,81%	
	0,95%	0,94%	0,94%	0,93%	0,92%	0,90%	0,90%	
	7,43%	7,35%	7,21%	7,15%	6,99%	6,71%	6,69%	
	2,42%	2,41%	2,39%	2,38%	2,39%	2,37%	2,37%	
	0,29%	0,29%	0,29%	0,28%	0,28%	0,28%	0,27%	
	10,38%	10,35%	10,31%	10,33%	10,17%	10,23%	10,19%	
	11,42%	11,50%	11,56%	11,69%	11,55%	11,70%	11,71%	
	0,95%	0,96%	1,01%	1,02%	1,05%	1,09%	1,10%	
	4,42%	4,45%	4,50%	4,58%	4,65%	4,74%	4,80%	
	0,98%	0,97%	1,02%	1,00%	1,03%	1,05%	1,06%	
	0,68%	0,73%	0,77%	0,74%	0,76%	0,76%	0,78%	
	3,14%	3,18%	3,18%	3,16%	3,15%	3,11%	3,09%	
	0,71%	0,73%	0,75%	0,77%	0,84%	0,85%	0,85%	
	11,37%	11,23%	11,11%	11,01%	10,91%	10,82%	10,74%	
	0,23%	0,23%	0,25%	0,25%	0,26%	0,27%	0,27%	
	8,01%	7,99%	7,97%	8,00%	7,97%	7,84%	7,76%	
	2,46%	2,47%	2,46%	2,46%	2,51%	2,53%	2,56%	
	0,67%	0,66%	0,69%	0,66%	0,65%	0,64%	0,64%	
	1,04%	1,02%	1,02%	1,01%	1,00%	0,99%	0,98%	
	8,78%	8,49%	8,25%	8,05%	7,84%	7,60%	7,45%	
	2,05%	2,10%	2,17%	2,22%	2,31%	2,35%	2,38%	
	3,87%	3,97%	4,04%	4,12%	4,24%	4,37%	4,50%	
	1,53%	1,55%	1,53%	1,51%	1,48%	1,43%	1,41%	
	3,12%	3,09%	3,07%	3,04%	3,04%	3,00%	2,97%	
	0,89%	0,95%	1,01%	1,02%	1,10%	1,19%	1,23%	
	0,85%	0,84%	0,84%	0,84%	0,85%	0,85%	0,86%	
	1,97%	1,96%	1,95%	1,94%	1,96%	1,96%	1,96%	
	3,91%	4,03%	4,14%	4,26%	4,42%	4,55%	4,66%	
	1,48%	1,52%	1,54%	1,54%	1,58%	1,64%	1,67%	
	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	

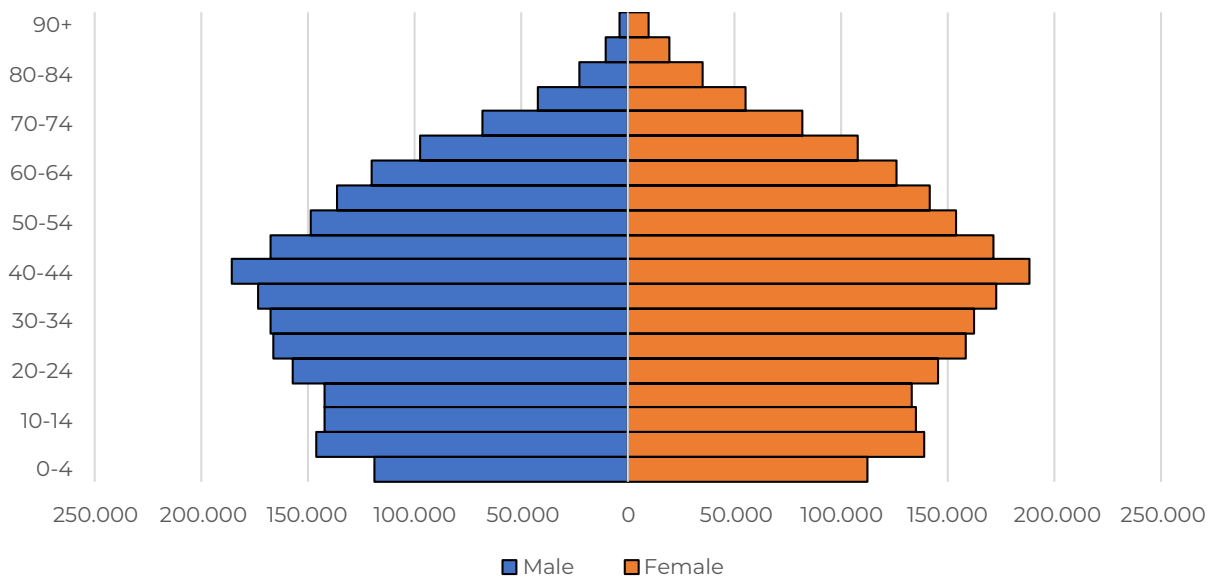
One of the most critical demographic indicators is the distribution of the population by age groups. As demonstrated by age pyramids, in 2022, the proportion of the young population (0-14 years old) in İzmir stands at 17.8%, below Türkiye's average of 22.0%. On the other hand, the proportion of the population aged 65 and above is 12.4%, approximately 2.5 percentage points higher than the national average. This indicates not only a decrease in the proportion of the young population in İzmir Region but also an increase in the elderly population above the national average. One of the main factors contributing to this situation is the rise in retired individuals migrating to districts rich in secondary (summer) housing options.

FIGURE 4.1. Distribution of Türkiye's Population by Age Groups (2022)



Source: TURKSTAT, 2022a

FIGURE 4.2. Distribution of İzmir's Population by Age Groups (2022)



Source: TURKSTAT, 2022a

B. Rural-Urban Population Analysis

The definition of urban and rural areas in Türkiye is determined by legal regulations. The “Municipality Law” No. 5393, which entered into force in 2005, the “Law on the Establishment of Fourteen Metropolitan Municipalities and Twenty-Seven Districts and Amendments to Certain Laws and Decrees” No. 6360, effective from 2012, and the “Law on Amendments to the Law on the Establishment of Thirteen Metropolitan Municipalities and Twenty-Six Districts and Amendments to Certain Laws and Decrees” No. 6447, effective from 2013, all define urban and rural areas in Türkiye (İZKA, 2021c).

Following the aforementioned legal regulations, the number of metropolitan municipalities in the country increased to 30, and under Law No. 6360, the boundaries of metropolitan municipalities were aligned with provincial boundaries. According to the new administrative system established by this law, all villages in İzmir Region were reclassified as neighborhoods. Consequently, all settlements in İzmir Region are considered urban populations. For provinces like İzmir with metropolitan status, TURKSTAT ABPRS does not publish rural population data. However, according to a study by TURKSTAT based on the European Union Degree of Urbanization (DEGURBA) classification, 78.6% of İzmir’s population resides in areas of dense urbanization, 12.2% in moderately dense urbanization, and 9.1% in rural areas (TURKSTAT, 2023).

Both the “Analysis Study for Determining Urban and Rural Areas in İzmir Province” published by İZKA and the “YER-SİS Study” by the General Directorate of Development Agencies classified settlements into various urban and rural categories, regardless of their inclusion in a metropolitan municipality. This has enabled the identification of the rural population in İzmir Region.

In the “Analysis Study for Determining Urban and Rural Areas in İzmir Province,” urban neighborhoods were categorized into two groups: dense urban and sparse urban. Dense urban neighborhoods are those with population densities greater than or equal to the median population density, while sparse urban neighborhoods have population densities below the median. According to this analysis, İzmir Region has 300 dense urban neighborhoods and 300 sparse urban neighborhoods (Table 4.5).

TABLE 4.5. Number of Urban and Rural Neighborhoods in İzmir Province (2021)

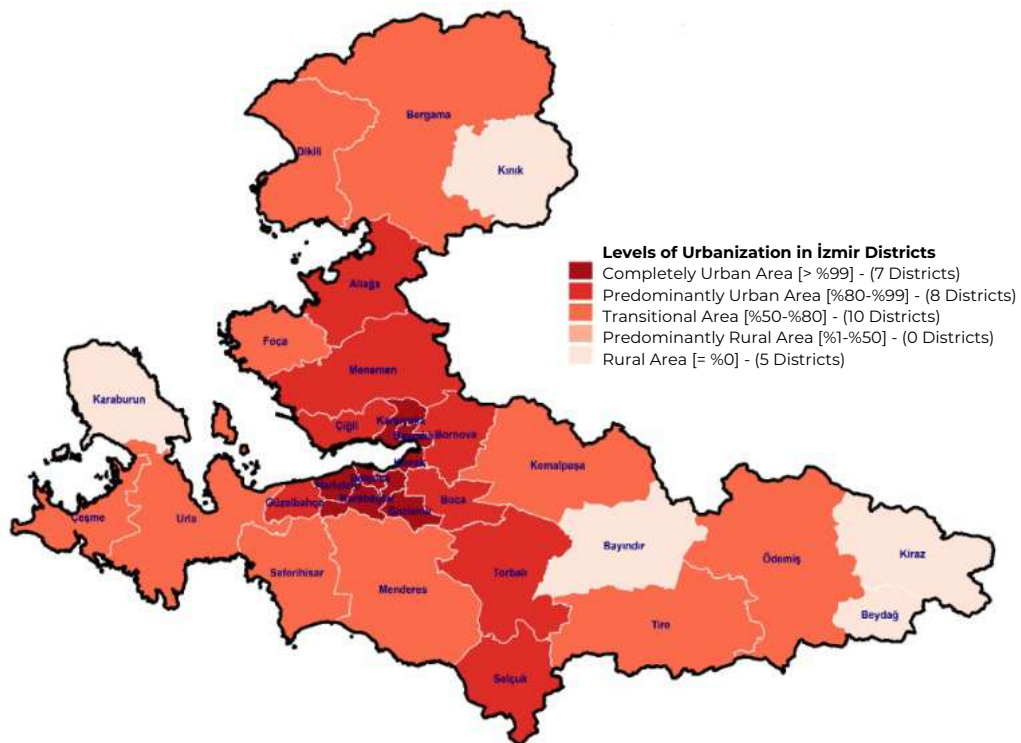
District	Total Number of Neighborhoods	Dense Urban	Sparse Urban	Nearby Rural	Remote Rural
Aliağa	30	1	8	12	9
Balçova	8	4	4	0	0
Bayındır	59	3	14	28	14
Bayraklı	24	21	3	0	0
Bergama	137	8	10	29	90
Beydağ	25	0	6	19	0
Bornova	45	19	18	8	0
Buca	47	34	6	2	5
Çeşme	25	0	12	10	3
Çiğli	26	13	11	2	0
Dikili	30	0	5	17	8
Foça	16	0	5	5	6
Gaziemir	16	5	11	0	0
Güzelbahçe	12	0	8	4	0
Karabağlar	58	51	5	2	0
Karaburun	16	0	2	9	5
Karşıyaka	27	22	3	2	0
Kemalpaşa	49	0	11	15	23
Kınık	37	0	7	22	8
Kiraz	56	0	10	25	21

District	Total Number of Neighborhoods	Dense Urban	Sparse Urban	Nearby Rural	Remote Rural
Konak	113	84	29	0	0
Menderes	44	3	13	10	18
Menemen	65	11	16	23	15
Narlıdere	11	4	7	0	0
Ödemiş	99	7	13	35	44
Seferihisar	21	0	7	9	5
Selçuk	14	0	5	8	1
Tire	88	5	17	30	36
Torbalı	60	5	15	23	17
Urla	37	0	19	7	11
Total	1.295	300	300	356	339

Source: İZKA, 2021c

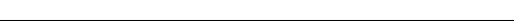
The study also calculated the urbanization rates and typologies of districts. Districts such as Balçova, Bayraklı, Gaziemir, Narlıdere and Konak, with an urbanization rate of 100%, are classified as entirely urban. Additionally, districts like Karşıyaka (99.9%) and Karabağlar (99.8%) are also considered entirely urban. İzmir Region has seven districts in the entirely urban category. On the other hand, districts like Bayındır, Beydağ, Karaburun, Kınık and Kiraz, with urbanization rates of 0%, are classified as rural regions. İzmir Region has five districts in the rural category and eight in the urban category. Districts categorized as predominantly urban include Buca, Bornova, Çiğli, Güzelbahçe, Menemen, Selçuk, Aliağa and Torbalı. Districts with urbanization rates ranging from 60% to 75% are evaluated under the transitional region category, including ten districts. Notably, İzmir does not have any districts classified as predominantly rural (Figure 4.3).

FIGURE 4.3. Distribution of İzmir Districts by Urbanization Level (2021)



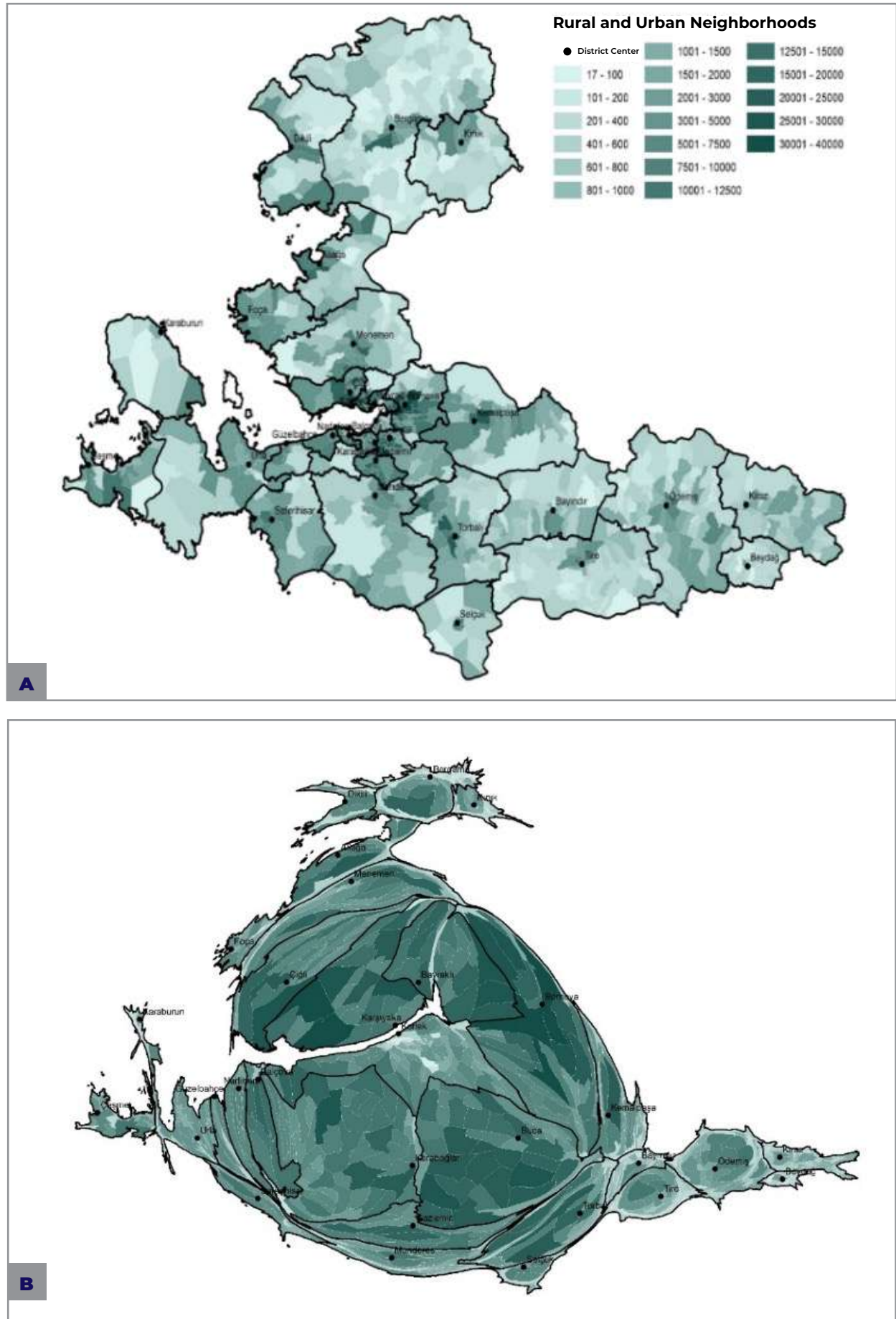
Source: İZKA, 2021c

FIGURE 4.4. Urbanization Rate and City Typologies by Districts (2021)

District	Urban Typology	Urbanization Rate
Aliağa	Predominantly Urban Area	 82.2%
Balçova	Completely Urban Area	 100%
Bayındır	Rural Area	 0%
Bayraklı	Completely Urban Area	 100%
Bergama	Transitional Area	 66.7%
Beydağ	Rural Area	 0%
Bornova	Predominantly Urban Area	 98.6%
Buca	Predominantly Urban Area	 98.6%
Çeşme	Transitional Area	 72%
Çiğli	Predominantly Urban Area	 97.3%
Dikili	Transitional Area	 70%
Foça	Transitional Area	 66.8%
Gaziemir	Completely Urban Area	 100%
Güzelbahçe	Predominantly Urban Area	 92%
Karabağlar	Completely Urban Area	 99.8%
Karaburun	Rural Area	 0%
Karşıyaka	Completely Urban Area	 99.9%
Kemalpaşa	Transitional Area	 63%
Kınık	Rural Area	 0%
Kiraz	Rural Area	 0%
Konak	Completely Urban Area	 100%
Menderes	Transitional Area	 66.5%
Menemen	Predominantly Urban Area	 86.8%
Narlıdere	Completely Urban Area	 100%
Ödemiş	Transitional Area	 69.1%
Seferihisar	Transitional Area	 71.1%
Selçuk	Predominantly Urban Area	 83.6%
Tire	Transitional Area	 71.8%
Torbalı	Predominantly Urban Area	 81.4%
Urla	Transitional Area	 68.5%

Source: İZKA, 2021c

FIGURE 4.5. İzmir Province Population (A) - Population Distribution of Neighborhoods (B) - Cartogram Map (2021)



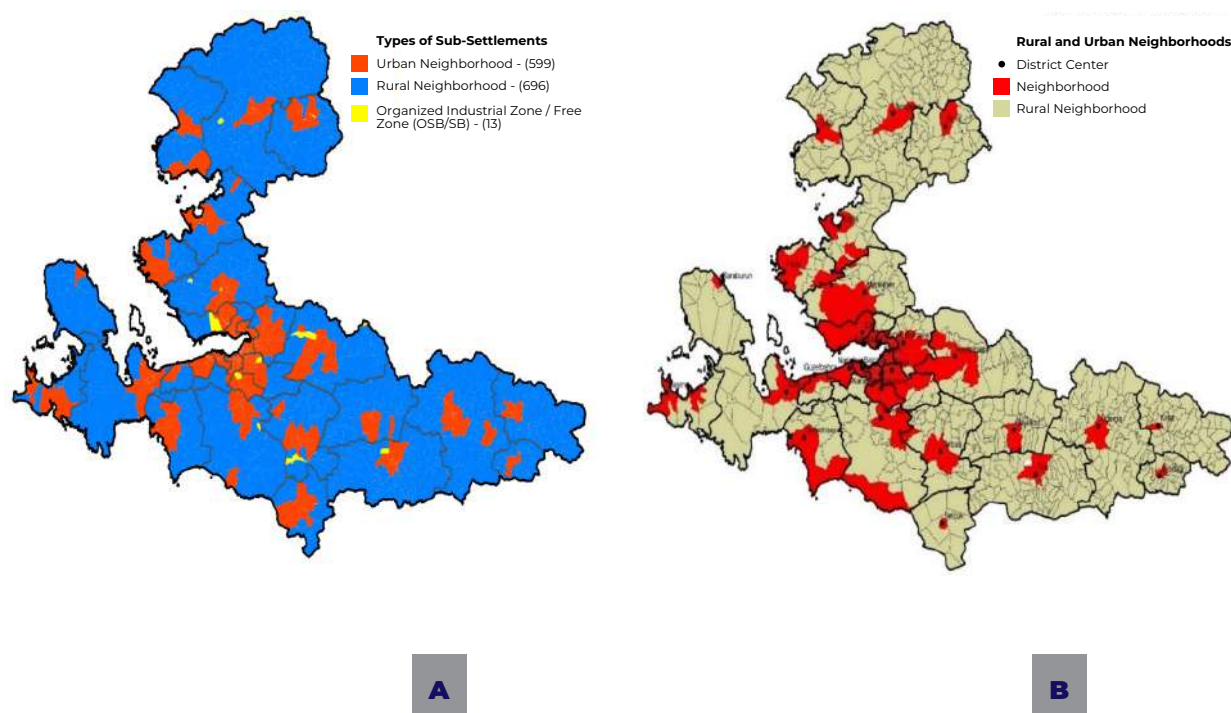
Source: TURKSTAT, 2022a

The spatial distribution of the population by neighborhoods in İzmir Region is presented in Figure 4.5. The spatial distribution of the population provides significant insights into the unequal spatial concentration of the population in regions. Specifically for İzmir Region, as observed, 75% of the population is concentrated in districts bordering İzmir Bay and the neighboring districts. Another important finding highlighted in Figure 4.5 is that the population concentrated in İzmir's center forms high-density urban areas, while the districts located in the northern, eastern and western axes have significantly lower population densities.

As part of the Analysis Study for Determining Urban and Rural Areas in İzmir Province, 695 neighborhoods were identified as rural neighborhoods. Of these rural neighborhoods, 356 are classified as nearby rural, and 339 as remote rural. Nearby rural neighborhoods are those with population densities greater than or equal to the median population density, while remote rural neighborhoods are those whose distance from the district center is greater than or equal to the median distance.

According to YER-SİS data, there are 718 rural service centers and 19 urban service centers located in rural areas within İzmir Region. Additionally, within the region's boundaries, there are 17 transitional service centers (rural-urban), of which 2 are urban and 15 are rural. The neighborhoods and rural neighborhoods in İzmir Region identified by both studies are shown in Figure 4.6. Despite the methodological differences between the two studies, the spatial distributions obtained are quite similar. All neighborhoods in the districts forming İzmir's metropolitan urban center, as well as the neighborhoods in the centers of other peripheral districts, are prominently classified as urban neighborhoods. Neighborhoods outside these are considered rural neighborhoods.

FIGURE 4.6. Distribution of Neighborhoods in İzmir Region by Rural and Urban Classification (A) Analysis Study for Determining Urban and Rural Areas in İzmir Province, (B) YER-SİS



Source: İZKA, 2021c; General Directorate of Development Agencies, 2020

An examination of the 2018 population data obtained from the YER-SİS study reveals significant differences between the summer and winter populations of areas classified as rural neighborhoods. While the total rural winter population in these areas was 776,540, the summer population reached 1,719,347. This disparity is particularly pronounced in tourism-focused rural neighborhoods located in coastal regions. Çeşme, Dikili, Menderes and Seferihisar are the districts with the most significant population differences (Table 4.6).

TABLE 4.6. Rural Summer and Winter Populations of İzmir Districts According to YER-SİS (2019)

District	Winter Population	Summer Population	Winter Population / Summer Population	Winter Population / Total Population (%)	Summer Population / Total Population (%)
Aliağa	19,753	25,749	0.77	2.54	1.50
Bayındır	32,888	37,077	0.89	4.24	2.16
Bergama	41,241	47,187	0.87	5.31	2.74
Beydağ	6,938	7,317	0.95	0.89	0.43
Çeşme	14,581	275,050	0.05	1.88	16.00
Dikili	23,536	127,039	0.19	3.03	7.39
Foça	33,338	51,060	0.65	4.29	2.97
Karaburun	9,214	18,700	0.49	1.19	1.09
Kemalpaşa	85,916	87,876	0.98	11.06	5.11
Kınık	18,402	20,485	0.90	2.37	1.19
Kiraz	37,822	38,265	0.99	4.87	2.23
Menderes	66,319	428,895	0.15	8.54	24.95
Menemen	143,955	157,626	0.91	18.54	9.17
Ödemiş	59,048	72,555	0.81	7.60	4.22
Seferihisar	18,022	128,547	0.14	2.32	7.48
Selçuk	7,339	7,303	1.00	0.95	0.42
Tire	31,594	35,967	0.88	4.07	2.09
Torbalı	108,168	113,462	0.95	13.93	6.60
Urla	18,466	39,187	0.47	2.38	2.28
Total	776,540	1,719,347	0.45	100	100

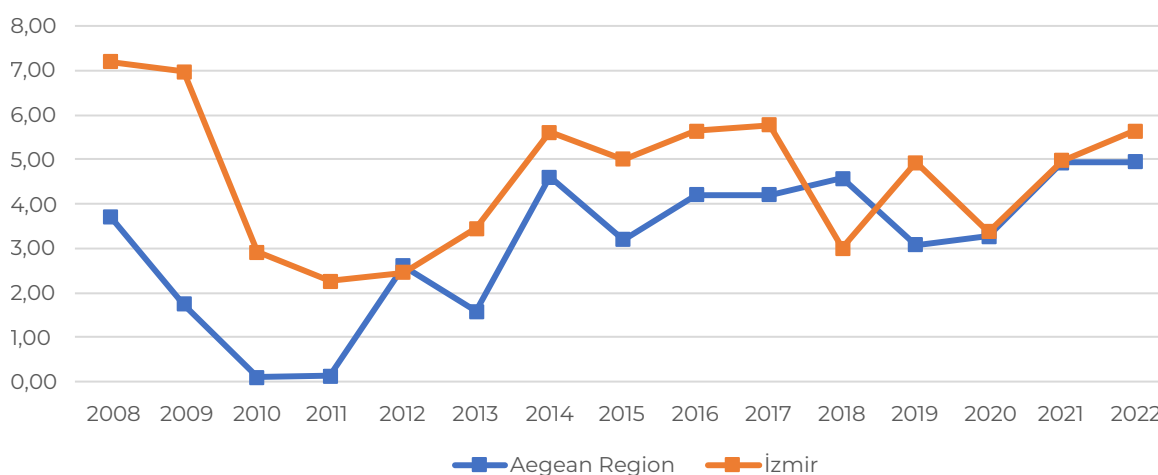
Source: General Directorate of Development Agencies, 2020

C. Migration Analysis

The analysis of migration from regions provides crucial demographic insights for understanding the social and economic dynamics of these areas. In countries like Türkiye, characterized by late industrialization, ongoing development and rapid urbanization, migration is one of the key dynamics contributing to inter-regional differences. İzmir, as one of Türkiye's modern cities, has historically been an attractive center due to its status as a port city, a trend that continued following the establishment of the Republic. Migration to İzmir Region has consistently increased the region's capital and population density throughout history.

As Türkiye's third-largest province, İzmir is one of the regions with a high level of inward migration. In 2008, 117,067 people, representing 3.4% of İzmir Region population, migrated to the region. By 2022, this figure had increased to 132,426, corresponding to 3% of the region's population. Although the volume of migration to the region has grown, its proportion relative to the total population has declined. It is seen that the migration trends in the Aegean Region and İzmir Region exhibit similar patterns (Figure 4.7).

FIGURE 4.7. Migration Rates in İzmir and Aegean Regions Over the Years (Per Mille) (2008–2022)



In 2008, the out-migration from İzmir Region amounted to 89,819 people, corresponding to 2.6% of the region's population. By 2022, this figure rose to 107,312 people, accounting for 2.4% of the region's population. Compared to in-migration, out-migration from the region has decelerated to a lesser extent. Consequently, the net population growth rate due to migration has decreased (Table 4.7).

TABLE 4.7. Migration Figures Over the Years (2008–2022)

Year	Aegean Region				İzmir			
	In-Migration	Out-Migration	Net Migration	Migration Rate (%)	In-Migration	Out-Migration	Net Migration	Migration Rate (%)
2008	198,469	163,777	34,692	3.7	117,067	89,819	27,248	7.2
2009	181,459	164,896	16,563	1.74	116,390	89,517	26,873	6.97
2010	185,595	184,640	955	0.1	111,255	99,775	11,480	2.91
2011	192,204	190,979	1,225	0.13	110,364	101,420	8,944	2.26
2012	195,844	170,489	25,355	2.6	105,804	95,954	9,850	2.46
2013	204,839	189,098	15,741	1.59	113,673	99,681	13,992	3.45
2014	235,605	189,490	46,115	4.61	124,439	101,447	22,992	5.61

Year	Aegean Region				İzmir			
	In-Migration	Out-Migration	Net Migration	Migration Rate (‰)	In-Migration	Out-Migration	Net Migration	Migration Rate (‰)
2015	236,581	204,334	32,247	3.19	126,238	105,389	20,849	5.01
2016	228,339	185,289	43,050	4.2	122,668	98,902	23,766	5.64
2017	238,382	194,727	43,655	4.21	127,394	102,776	24,618	5.77
2018	260,130	212,197	47,933	4.57	130,092	117,113	12,979	3.01
2019	238,962	206,347	32,615	3.08	128,370	106,895	21,475	4.93
2020	204,780	169,843	34,937	3.27	107,172	92,400	14,772	3.37
2021	262,022	208,967	53,055	4.93	131,394	109,470	21,924	4.97
2022	260,763	206,988	53,775	4.95	132,426	107,312	25,114	5.64

Source: TURKSTAT, 2022a

Analyzing the education levels of people who migrate to and from regions provides valuable information about the quality of the population. The education levels of migrants in İzmir Region have been examined in this context. When analyzing population movements of individuals aged 15 and above in 2021, İzmir Region demonstrates an advantageous position regarding educated migration. The region receives more educated migrants than it loses (Table 4.8).

TABLE 4.8. Characteristics of Migration to and from İzmir Region by Education Level (2021) (+15 Years)

Education Level	In-Migration	Percentage (%)	Out-Migration	Percentage (%)
Doctorate	576	0.5	353	0.4
Master's or Bachelor's Degree (Five Years or More)	5,183	4.7	3,873	4.2
Higher Education or Faculty	36,036	32.4	28,872	31.0
High School and Equivalent Vocational School	44,230	39.7	37,233	40.0
Primary Education	3,856	3.5	3,831	4.1
Secondary School or Equivalent Vocational Secondary School	12,195	11.0	9,867	10.6
Primary School	6,345	5.7	6,771	7.3
Literate but No Diploma	1,490	1.3	1,140	1.2
Illiterate	866	0.8	706	0.8
Unknown	591	0.5	451	0.5
Total	111,368		93,097	

Source: TURKSTAT, 2022a

Examining the migration trends over the years reveals a consistent increase in the educated population migrating to the region. For instance, the proportion of individuals with doctorates migrating to İzmir rose from 0.28% in 2010 to nearly 0.52% in 2021. Similarly, the proportion of migrants with associate, bachelor's, or master's degrees increased from 21% in 2010 to 37% in 2021 (Tables 4.9 and 4.10). A similar trend is observed for out-migration from the region (Tables 4.11 and 4.12).

TABLE 4.9. İzmir's In-Migration by Education Level (2010–2021) (+15 Years)

Education Level	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Illiterate	2,676	2,168	2,012	1,693	1,747	1,815	1,558	1,431	1,333	1,191	905	866
Literate but No Diploma	3,332	3,785	3,966	3,727	3,598	3,600	2,894	2,743	2,246	2,035	1,494	1,490
Primary School	13,243	11,864	10,631	10,260	11,142	11,013	8,758	9,481	7,965	7,924	5,923	6,345
Primary Education	11,937	13,871	15,799	14,043	12,286	11,750	10,831	10,271	9,919	5,251	3,783	3,856
Secondary School or Equivalent Vocational Secondary School	3,415	2,734	2,449	2,435	4,875	6,197	6,852	6,721	8,166	13,912	11,849	12,195
High School and Equivalent Vocational School	31,396	30,413	27,593	34,258	37,260	36,828	35,716	38,314	39,196	39,913	29,012	44,230
Master's	1,299	1,340	1,258	2,094	2,358	2,312	2,252	3,676	4,368	3,826	3,662	5,183
Higher Education or Faculty	17,561	20,721	19,737	23,290	30,239	31,495	31,246	32,810	35,870	32,931	31,761	36,036
Doctorate	254	281	290	406	521	436	371	472	602	456	468	576
Unknown	5,378	2,653	2,468	2,093	1,245	787	551	519	547	1,018	535	591
Total	90,491	89,830	86,203	94,299	105,271	106,233	101,029	106,438	110,212	108,457	89,392	111,368

Source: TURKSTAT, 2022a

TABLE 4.10. Shares of Education Levels in İzmir's In-Migration (2010-2021) (+15 Years) (%)

Education Level	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Illiterate	2.96	2.41	2.33	1.80	1.66	1.71	1.54	1.34	1.21	1.10	1.01	0.78
Literate but No Diploma	3.68	4.21	4.60	3.95	3.42	3.39	2.86	2.58	2.04	1.88	1.67	1.34
Primary School	14.63	13.21	12.33	10.88	10.58	10.37	8.67	8.91	7.23	7.31	6.63	5.70
Primary Education	13.19	15.44	18.33	14.89	11.67	11.06	10.72	9.65	9.00	4.84	4.23	3.46
Secondary School or Equivalent Vocational Secondary School	3.77	3.04	2.84	2.58	4.63	5.83	6.78	6.31	7.41	12.83	13.26	10.95
High School and Equivalent Vocational School	34.70	33.86	32.01	36.33	35.39	34.67	35.35	36.00	35.56	36.80	32.45	39.72
Master's	1.44	1.49	1.46	2.22	2.24	2.18	2.23	3.45	3.96	3.53	4.10	4.65
Higher Education or Faculty	19.41	23.07	22.90	24.70	28.72	29.65	30.93	30.83	32.55	30.36	35.53	32.36
Doctorate	0.28	0.31	0.34	0.43	0.49	0.41	0.37	0.44	0.55	0.42	0.52	0.52
Unknown	5.94	2.95	2.86	2.22	1.18	0.74	0.55	0.49	0.50	0.94	0.60	0.53
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: TURKSTAT, 2022a

TABLE 4.11. İzmir's Out-Migration by Education Level (2010-2021) (+15 Years)

Education Level	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Illiterate	2,404	1,788	1,571	1,372	1,304	1,141	973	951	1,318	742	671	706
Literate but No Diploma	2,654	2,907	2,885	2,906	2,813	2,384	1,854	1,890	2,316	1,499	1,255	1,140
Primary School	12,624	11,699	10,950	10,202	10,836	10,121	8,143	8,622	11,484	6,930	6,695	6,771
Primary Education	10,174	10,563	11,429	10,504	9,476	8,581	7,979	8,261	9,983	4,596	4,093	3,831
Secondary School or Equivalent Vocational Secondary School	3,222	2,744	2,488	2,428	4,292	5,203	5,332	5,462	7,574	10,218	10,279	9,867
High School and Equivalent Vocational School	27,125	29,786	29,477	32,381	31,876	34,268	33,205	33,232	36,665	35,246	25,353	37,233
Master's	1,430	1,480	1,150	1,881	1,905	2,072	1,685	3,092	3,221	3,308	2,978	3,873
Higher Education or Faculty	16,895	21,643	18,477	21,263	22,969	26,220	24,000	24,602	26,941	27,113	25,037	28,872
Doctorate	322	307	231	368	311	384	310	410	378	366	356	353
Unknown	4,338	2,131	1,332	1,326	701	466	395	345	432	1,067	403	451
Total	81,188	85,048	79,990	84,631	86,483	90,840	83,876	86,867	100,312	91,085	77,120	93,097

Source: TURKSTAT, 2022a

TABLE 4.12. Shares of Education Levels in İzmir's Out-Migration (2010-2021) (+15 Years) (%)

Education Level	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Illiterate	2.96	2.10	1.96	1.62	1.51	1.26	1.16	1.09	1.31	0.81	0.87	0.76
Literate but No Diploma	3.27	3.42	3.61	3.43	3.25	2.62	2.21	2.18	2.31	1.65	1.63	1.22
Primary School	15.55	13.76	13.69	12.05	12.53	11.14	9.71	9.93	11.45	7.61	8.68	7.27
Primary Education	12.53	12.42	14.29	12.41	10.96	9.45	9.51	9.51	9.95	5.05	5.31	4.12
Secondary School or Equivalent Vocational Secondary School	3.97	3.23	3.11	2.87	4.96	5.73	6.36	6.29	7.55	11.22	13.33	10.60
High School and Equivalent Vocational School	33.41	35.02	36.85	38.26	36.86	37.72	39.59	38.26	36.55	38.70	32.87	39.99
Master's	1.76	1.74	1.44	2.22	2.20	2.28	2.01	3.56	3.21	3.63	3.86	4.16
Higher Education or Faculty	20.81	25.45	23.10	25.12	26.56	28.86	28.61	28.32	26.86	29.77	32.46	31.01
Doctorate	0.40	0.36	0.29	0.43	0.36	0.42	0.37	0.47	0.38	0.40	0.46	0.38
Unknown	5.34	2.51	1.67	1.57	0.81	0.51	0.47	0.40	0.43	1.17	0.52	0.48
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: TURKSTAT, 2022a

D. Foreign and Temporarily Protected Population

Monitoring the movement of foreign nationals and populations arriving through international migration is a critical aspect of maintaining the demographic structure of the region. As of June 2023, 29,000 foreign nationals reside in İzmir Region, accounting for 0.6% of the region's population. This figure is significantly below the national average of 1.5%. While the number of foreign nationals living in İstanbul Region is 668,000 and approximately 84,000 in Ankara Region, İzmir has a lower density of foreign nationals compared to the averages (Table 4.13).

TABLE 4.13. Distribution of Foreign Nationals with Residence Permits in İzmir and Other Provinces (2023)

Region	Number of Foreign Nationals	Share within Regional Population (%)	Share within Total Foreign Nationals in Türkiye (%)
Türkiye	1,292,834	1.5	100
İzmir	28,821	0.6	2.2
İstanbul	667,949	4.2	51.7
Ankara	83,956	1.5	6.5

Source: Directorate General of Migration Management, 2023

Syrian nationals under temporary protection due to the civil war have spread across many regions in Türkiye, with some regions hosting a higher concentration. As of June 2023, the number of Syrians under temporary protection in Türkiye is approximately 3.344 million. Among this population, 136,000 reside in İzmir Region. The proportion of this community within the regional population is below the national average (Table 4.14).

TABLE 4.14. Syrians Under Temporary Protection in İzmir and Other Provinces (2023)

Region	Number of Syrians Under Temporary Protection	Share within Regional Population (%)	Distribution within Türkiye (%)
Türkiye	3,344,092	3.9	100
İzmir	136,240	3.1	4.1
İstanbul	531,392	3.3	15.9
Ankara	90,840	1.6	2.7

Source: Directorate General of Migration Management, 2023

When examining the distribution of Syrians under temporary protection across İzmir districts, it is observed that Konak district, where central business areas are located, holds the largest share at 25%; followed by Karabağlar, which includes small industrial sites and low-cost housing areas, at 21%; Bornova at 19%; and Buca, which houses a textile industry site, at 11%. The distribution of Syrians under temporary protection by districts is presented in Table 4.15.

TABLE 4.15. Distribution of Syrians Under Temporary Protection in İzmir Districts (2019)

District	Population	Share (%)
Aliağa	387	0.27
Balçova	82	0.06
Bayındır	826	0.57
Bayraklı	10,105	6.94
Bergama	215	0.15
Beydağ	23	0.02
Bornova	27,327	18.78
Buca	15,200	10.45
Çeşme	344	0.24
Çiğli	1,333	0.92
Dikili	185	0.13
Foça	780	0.54
Gaziemir	1,684	1.16
Güzelbahçe	10	0.01
Karabağlar	29,971	20.60
Karaburun	280	0.19
Karşıyaka	478	0.33
Kemalpaşa	1,598	1.10
Kınık	110	0.08
Kiraz	48	0.03
Konak	35,587	24.46
Menderes	1,869	1.28
Menemen	2,575	1.77
Narlıdere	152	0.10
Ödemiş	538	0.37
Seferihisar	1112	0.76
Selçuk	214	0.15
Tire	730	0.50
Torbalı	10,705	7.36
Urla	176	0.12
Total	145,503	100%

Source: Güngördü, 2021

E. Educational Indicators

As a social input, education is a significant socio-economic dynamic for the stability and development of regions, and notable differences are observed in educated populations among regions in Türkiye (Erdem, 2016). Paul Romer, who was awarded the Nobel Prize in Economics in 2018, demonstrated in his regional model that contributions to intrinsic dynamics such as human capital, research and development, and innovation will accelerate regional development in the future. Accessible and high-quality modern education will enhance the capacity of ecosystems that accelerate regional development.

When examining the educational status of the population in İzmir Region, literacy levels are above the national average. According to 2022 data, the literacy rate in İzmir Region is 98.81%, compared to the national average of 97.59%. Regarding the education level of the population aged 15 and over, high schools and equivalent vocational schools account for the largest share at approximately 27.6%. İzmir Region also surpasses the national average in terms of higher education levels. The distribution of the population aged 15 and over by education level is shown in Table 4.16.

TABLE 4.16. Population Ratios by Education Level (2010, 2022)

Education Level	2010 İzmir (%)	2022 İzmir (%)	2022 Türkiye (%)
Doctorate	0.28	0.49	0.37
Master's Degree (Including 5- or 6-Year Faculties)	0.78	2.62	2.27
Vocational School or University	11.02	22.04	18.71
High School and Equivalent Vocational Schools	23.19	27.64	26.82
Primary Education	15.56	6.92	7.76
Secondary School or Equivalent Vocational Secondary School	6.44	16.57	18.49
Primary School	29.53	18.95	18.30
Literate but No Diploma	4.14	2.80	3.48
Illiterate	4.31	1.20	2.65
Unknown	4.74	0.77	1.14

Source: TURKSTAT, 2022d

When the education level of the regional population is compared to 2010, a clear increase in education levels may be observed. The share of the population with a high school or equivalent vocational school education level increased from 23.2% in 2010 to 27.6% in 2022. While the proportion of the population with doctoral, undergraduate, and master's degrees has risen, the proportion with lower education levels, such as primary and Secondary School, has declined. Similarly, the percentage of illiterates has decreased over the years, reaching 1.2% in 2022. These educational indicators reveal that the average education level in İzmir Region has consistently improved over time (Tables 4.17 and 4.18).

TABLE 4.17. Educational Status of İzmir Region Over the Years (2010-2022) (+15 Years Old)

Year	Docto- rate	Master's Degree (Including 5- or 6-Year Faculties)	Vocational School or University	High School and Equivalent Vocational Schools	Primary Education	Secondary School or Equivalent Vocational Secondary School	Primary School	Literate but No Diploma	Illiterate	Un- known	Total
2010	8,996	24,710	347,995	732,386	491,261	203,385	932,316	130,715	136,139	149,710	3,157,613
2011	9,705	27,140	408,834	749,908	540,062	190,360	938,929	169,731	83,386	53,545	3,171,600
2012	9,739	28,155	430,123	751,329	579,633	189,002	923,722	172,671	75,977	52,339	3,212,690
2013	11,529	36,511	470,372	754,981	593,255	187,282	907,135	174,229	69,707	53,467	3,258,468
2014	12,089	39,664	516,898	782,371	520,944	290,724	880,547	164,491	67,165	32,048	3,306,941
2015	12,843	43,855	571,359	802,516	453,767	349,076	877,640	155,256	65,573	21,219	3,353,104
2016	13,164	46,448	608,212	826,910	425,484	406,458	842,175	146,762	62,403	20,487	3,398,503
2017	14,627	59,459	631,903	847,317	434,777	415,774	825,019	138,984	59,200	19,874	3,446,934
2018	15,082	66,623	662,614	883,929	439,453	440,782	766,649	128,116	55,624	20,586	3,479,458
2019	15,468	73,113	692,044	907,880	288,276	610,206	740,977	119,440	51,780	21,767	3,520,951
2020	16,200	76,209	731,822	925,803	275,528	627,244	718,534	114,141	48,918	23,442	3,557,841
2021	17,095	89,885	769,101	967,679	256,196	607,601	705,089	105,851	46,041	25,973	3,590,511
2022	17,805	95,155	800,362	1,003,854	251,234	601,833	688,302	101,758	43,751	27,839	3,361,713

Source: TURKSTAT, 2022d

TABLE 4.18. Educational Status Shares of İzmir Region Over the Years (2010-2022) (+15 Years Old) (%)

Year	Docto- rate (%)	Master's Degree (Including 5- or 6-Year Faculties) (%)	Vocational School or University (%)	High School and Equivalent Vocational Schools (%)	Primary Education (%)	Secondary School or Equivalent Vocational Secondary School (%)	Primary School (%)	Literate but No Diploma (%)	Illiterate (%)	Unknown (%)
2010	0.28	0.78	11.02	23.19	15.56	6.44	29.53	4.14	4.31	4.74
2011	0.31	0.86	12.89	23.64	17.03	6.00	29.60	5.35	2.63	1.69
2012	0.30	0.88	13.39	23.39	18.04	5.88	28.75	5.37	2.36	1.63
2013	0.35	1.12	14.44	23.17	18.21	5.75	27.84	5.35	2.14	1.64
2014	0.37	1.20	15.63	23.66	15.75	8.79	26.63	4.97	2.03	0.97
2015	0.38	1.31	17.04	23.93	13.53	10.41	26.17	4.63	1.96	0.63
2016	0.39	1.37	17.90	24.33	12.52	11.96	24.78	4.32	1.84	0.60
2017	0.42	1.72	18.33	24.58	12.61	12.06	23.93	4.03	1.72	0.58
2018	0.43	1.91	19.04	25.40	12.63	12.67	22.03	3.68	1.60	0.59
2019	0.44	2.08	19.66	25.79	8.19	17.33	21.04	3.39	1.47	0.62
2020	0.46	2.14	20.57	26.02	7.74	17.63	20.20	3.21	1.37	0.66
2021	0.48	2.50	21.42	26.95	7.14	16.92	19.64	2.95	1.28	0.72
2022	0.49	2.62	22.04	27.64	6.92	16.57	18.95	2.80	1.20	0.77

Source: TURKSTAT, 2022d

When the 2021-2022 Formal Education Statistics of the Ministry of National Education are examined, it is observed that İzmir's gross and net enrollment (schooling) rates in preschool age groups are higher compared to İstanbul and Ankara Regions. The net enrollment rate in İzmir Region is 47% for the 3-5 age group, 59% for the 4-5 age group, and 82% for the 5 age group. Additionally, the enrollment rates for males and females in all preschool age groups in İzmir are equal (Table 4.19).

TABLE 4.19. Preschool Enrollment Rates for İzmir Region and Other Regions by Age Groups (2021)

Region	Age	Preschool Gross			Preschool Net		
		Total	Male	Female	Total	Male	Female
Aegean	3-5	55.88	56.27	55.47	49.25	49.24	49.27
	4-5	68.41	68.78	68.02	61.27	61.18	61.36
	5	101.45	102.55	100.29	87.28	87.45	87.10
İzmir	3-5	53.80	54.25	53.32	47.40	47.49	47.39
	4-5	64.91	65.31	64.48	58.47	58.47	58.46
	5	94.90	95.93	93.81	82.15	82.36	81.93
İstanbul	3-5	45.32	45.87	44.74	41.14	41.36	40.91
	4-5	55.60	56.27	54.89	51.16	51.39	50.92
	5	80.77	82.02	79.46	71.98	72.34	71.61
Ankara	3-5	50.68	51.28	50.06	44.57	44.71	44.43
	4-5	60.72	61.37	60.04	54.65	54.78	54.52
	5	85.03	86.11	83.90	72.99	73.06	72.91

Source: MoNE, 2022

In the net enrollment rate for secondary school and secondary education, İzmir Region is above the Aegean Region and Türkiye averages. For primary school enrollment, it is very close to the Türkiye average (Table 4.20).

TABLE 4.20. Enrollment Rates in İzmir Region and Other Regions (2021) (%)

Education Level	İzmir		Aegean		Türkiye	
	Gross Enrollment	Net Enrollment	Gross Enrollment	Net Enrollment	Gross Enrollment	Net Enrollment
Secondary School	96.97	91.2	95.55	90.82	96.22	89.84
Secondary Education	120.53	92.06	116.22	91.63	116.1	89.67
Primary School	96.54	93.35	96.64	93.39	96.59	93.16

Source: MoNE, 2022

When the student-to-teacher ratios are examined, it is observed that İzmir Region is below the Türkiye average. From 2012 to 2021, the student-to-teacher ratio in all education levels, except primary school, has decreased (Tables 4.21 and 4.22).

TABLE 4.21. Student-to-Teacher Ratios in İzmir Region (2021)

Education Level	Türkiye	İzmir
General Secondary Education	14	12
Vocational and Technical Secondary Education	12	10
Secondary School	14	13
Secondary Education	13	11
Primary School	18	16

Source: MoNE, 2022

TABLE 4.22. Student-to-Teacher Ratios in İzmir Region Over the Years (2012-2021)

Education Level	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General Secondary Education	14	14	12	11	12	11	10	11	12	12
Vocational and Technical Secondary Education	14	13	12	12	11	11	10	9	10	10
Secondary School	17	15	14	13	14	14	14	14	13	13
Secondary Education	14	13	12	11	12	11	10	10	11	11
Primary School	16	16	16	16	15	15	15	15	15	16

Source: MoNE, 2022

When the student-to-classroom ratios are examined, İzmir Region and Türkiye averages are observed to have similar characteristics. While the number of students per classroom significantly decreased from 2012 to 2019, it started to increase again afterward. The increase in both student-to-teacher and student-to-classroom density indicates a concentration of the student population in the region. This is attributed to the positive net migration to İzmir Region for many years (Tables 4.23 and 4.24).

TABLE 4.23. Student-to-Classroom Ratios in İzmir Region (2021)

Education Level	İzmir	Türkiye
General Secondary Education	23	24
Vocational and Technical Secondary Education	21	20
Secondary Education	22	22
Primary Education	25	23

Source: MoNE, 2022

Over the past decade, the number of students per classroom in İzmir Region has decreased for all educational levels. During this period, the number of students per classroom dropped from 30 to 25 in primary education, from 32 to 22 in secondary education, and from 38 to 21 in vocational and technical secondary education (Table 4.24).

TABLE 4.24. Student-to-Classroom Ratios in İzmir Region Over the Years (2012-2021)

Education Level	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General Secondary Education	28	27	25	19	22	20	20	20	23	23
Vocational and Technical Secondary Education	38	34	30	29	24	23	20	19	21	21
Secondary Education	32	30	28	23	23	22	20	20	22	22
Primary Education	30	30	28	26	25	25	25	24	24	25

Source: MoNE, 2022

Under bussed education, İzmir Region had 211 schools in 2022, compared to 133 in İstanbul Region and 186 in Ankara Region. Regarding settlements without schools, İzmir Region had 701 units as of 2022, compared to 231 in İstanbul Region and 865 in Ankara Region. The total number of transported students was 10,329 in İzmir Region. This figure was 14,339 for İstanbul Region and 5,600 for Ankara Region. While İstanbul Region has fewer schools for bussed education, its number of transported students is significantly higher than both İzmir and Ankara Regions. In İzmir Region, the total number of transported students was 5,337 males and 4,992 females. The ratio of transported male to female students was 1.07 in İzmir Region, 1.04 in İstanbul Region, and 1.11 in Ankara Region, with a smaller gender disparity in İstanbul (Table 4.25).

TABLE 4.25. Bussed Education Statistics in İzmir and Other Regions (2021)

Bussed Education		Türkiye	İzmir	İstanbul	Ankara
Number of Central Schools		12,462	211	133	186
Number of Transported Schools and Number of Transported Settlement Places without a School		41,907	701	231	865
Total Number of Students	Total	677,139	10,329	14,339	5,600
	Male	344,084	5,337	7,315	2,944
	Female	333,055	4,992	7,024	2,656
Number of Primary School Students	Total	260,562	4,294	7,284	2,412
	Male	132,735	2,246	3,690	1,293
	Female	127,827	2,048	3,594	1,119
Number of Secondary School Students	Total	416,577	6,035	7,055	3,188
	Male	211,349	3,091	3,625	1,651
	Female	205,228	2,944	3,430	1,537

Source: MoNE, 2022

F. Information on Universities

When examining the number of universities in the İzmir Region, it is observed that the number, which was 7 in 2008, increased to 10 in 2023, including one vocational school. Compared to İstanbul and Ankara, the number of universities in İzmir is relatively low. The number of university students in İzmir Region was 98,759 in 2009, rising to 191,345 in 2023. The number of university students in İzmir Region has nearly doubled during the 2009-2023 period. The number of male students, which was 53,519 in 2009, increased to 98,405 in 2023, while the number of female students rose from 45,240 in 2009 to 92,940 in 2023. During this period, male students increased by 87%, and female students increased by 105% (Table 4.26).

When students in İzmir Region are categorized by education level, it is revealed that there are 123,154 undergraduate students and 22,034 graduate students. Dokuz Eylül University has the highest number of students in the region, with 62,764 students, followed by Ege University with 55,659 students. Ege University ranks first in the number of graduate students with 7,863, followed by Dokuz Eylül University with 7,477 graduate students (Table 4.27).

TABLE 4.26. Number of Universities and University Students in İzmir by Years (2009-2023)

Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Male Students	53,519	57,944	59,844	67,278	73,642	83,506	85,424	93,329	93,329	95,144	90,685	90,147	92,825	92,332	98,405
Female Students	45,240	49,997	53,043	59,690	65,789	73,914	76,389	78,333	78,333	79,665	79,244	79,374	83,242	86,011	92,940
Total Number of Students	98,759	107,941	112,887	126,968	139,431	157,420	161,813	171,662	171,662	174,809	169,929	169,521	176,067	178,343	191,345
Number of Universities	7	7	8	8	8	8	8	8	8	10	10	10	10	10	10

Source: YÖK, 2023b

TABLE 4.27. Number of Students in İzmir Universities (2022/2023)

University Name	Number of Associate Students			Number of Undergraduate Students			Number of Graduate Students			Number of Doctoral Students			Grand Total Students		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Dokuz Eylül University	8,359	4,285	12,644	25,029	21,393	46,422	3,037	3,527	6,564	1,136	1,253	2,389	37,561	30,458	68,019
Ege University	8,605	5,536	14,141	16,981	17,461	34,442	2,073	2,832	4,905	1,232	1,733	2,965	28,891	27,562	56,453
İzmir Bakırçay University	191	197	388	2,473	2,987	5,460	324	343	667	34	39	73	3,022	3,566	6,588
İzmir Democracy University	189	243	432	4,383	5,088	9,471	298	372	670	17	36	53	4,887	5,739	10,626
İzmir University Of Economics	1,030	1,085	2,115	3,702	4,137	7,839	234	333	567	29	53	82	4,995	5,608	10,603
İzmir Kâtip Çelebi University	296	535	831	6,800	7,061	13,861	1,343	1,080	2,423	250	220	470	8,689	8,896	17,585

University Name	Number of Associate Students			Number of Undergraduate Students			Number of Graduate Students			Number of Doctoral Students			Grand Total Students		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
İzmir Kavram Vocational School	1,294	1,571	2,865	0	0	0	0	0	0	0	0	0	1,294	1,571	2,865
İzmir Tinaztepe University	273	803	1,076	210	861	1,071	8	58	66	0	0	0	491	1,722	2,213
İzmir Institute of Technology	0	0	0	2,926	2,653	5,579	503	475	978	212	251	463	3,641	3,379	7,020
Yaşar University	1,080	720	1,800	3,564	3,332	6,896	224	313	537	66	74	140	4,934	4,439	9,373
Total	21,317	14,975	36,292	66,068	64,973	131,041	8,044	9,333	17,377	2,976	3,659	6,635	98,405	92,940	191,345

Source: YÖK, 2023b

On the other hand, when examining the number of graduate students per academic staff employed at universities in İzmir Region, it is observed that İzmir Region ranks at a relatively low level. The number of graduate students per professor in İzmir Region is 9.9. This figure is 16.5 for İstanbul Region and 12.6 for Ankara Region (Table 4.28). It is evaluated that appropriate efforts should be undertaken to increase the number of graduate students pursuing education in İzmir Region.

TABLE 4.28. Number of Graduate Students per Academic Staff (2023)

Academic Staff	İzmir	Ankara	İstanbul
Professor	9.9	12.6	16.5
Associate Professor	18.4	30.0	29.9
Assistant Professor	13.6	17.9	13.9
Lecturer	12.6	15.9	21.2
Research Assistant	9.0	11.4	17.1

Source: YÖK, 2023b

As part of the YER-SİS project, individuals traveling to provinces for educational purposes from other provinces were measured. For 2017, it is seen that people from all over Türkiye came to İzmir Region for education. When examining the number of individuals coming from other provinces to İzmir Region for education, the top-ranking provinces in terms of quantity are İstanbul, Manisa, Aydın, Bursa and Antalya, respectively (Figure 4.8).

FIGURE 4.8. Distribution of Individuals Coming to İzmir for Education by Province (2017)



Source: General Directorate of Development Agencies, 2020

As part of the YER-SİS project, individuals traveling from provinces to other provinces for educational purposes were also measured. Similar to those coming for education, it is observed that there is mobility from İzmir to all provinces in Türkiye for education. When examining which provinces were predominantly preferred for educational purposes, it is seen that Eskişehir ranks first, followed by Manisa, İstanbul, Aydın and Ankara (Figure 4.9).

FIGURE 4.9. Distribution of Individuals Traveling from İzmir for Education by Province (2017)



Source: General Directorate of Development Agencies, 2020

G. Vocational and Technical Education

Vocational education emerges as one of the most critical issues for the sustainable growth of İzmir Region, which is Türkiye's third-largest industrial region. Increasing employment opportunities in the region and training the workforce needed in the local labor market can only be achieved through vocational education.

When examining data related to vocational education, it is observed that while there were 311 vocational and technical secondary education institutions in İzmir Region in 2012, this number decreased to 228 in 2021. In contrast, the total number of secondary education institutions increased from 501 to 564 during the same period. The decline in vocational and technical secondary education institutions over ten years is similar at both the national level and within the Aegean Region. However, the rate of decrease in İzmir Region surpasses that of both the Aegean Region and Türkiye in general. In ten years, the number of schools in İzmir Region decreased by 27%, while the Aegean Region experienced a 17% decline and Türkiye experienced a 3% decline (Table 4.29).

TABLE 4.29. Change in the Number of Secondary Education Institutions Over the Years

Year	Number of Vocational and Technical Secondary Education Institutions			Total Number of Secondary Education Institutions		
	Türkiye	Aegean	İzmir	Türkiye	Aegean	İzmir
2012	6,204	904	311	10,418	1,438	501
2013	7,211	980	346	10,955	1,486	527
2014	5,106	643	204	9,061	1,182	394
2015	5,239	659	206	10,550	1,380	478
2016	5,851	744	231	11,076	1,420	478
2017	6,066	770	239	11,783	1,503	509
2018	6,264	790	242	12,506	1,592	562
2019	6,121	768	233	13,046	1,626	569
2020	6,096	769	231	12,972	1,628	571
2021	6,043	754	228	12,804	1,594	564

Source: TURKSTAT, 2022d

Similarly, when examining the number of students in vocational and technical secondary education institutions, a decline in student numbers is observed, just as with the number of schools. While the number of students in İzmir Region was approximately 116,000 in 2012, it decreased by 18% to 95,000 in 2021. During this period, the total number of students in secondary education institutions increased by 19%. Although a parallel trend is observed in the Aegean Region similar to İzmir Region, the number of students in vocational and technical high schools has increased nationally. The decline in student numbers in İzmir and the Aegean Region poses a risk of failing to meet the demands of the regional labor market. Additionally, the reduced demand for vocational schools in the Aegean Region suggests potential issues in meeting İzmir Region's human resource needs from neighboring regions (Table 4.30).

TABLE 4.30. Number of Students in Secondary Education Institutions Over the Years

Year	Number of Students in Vocational and Technical Secondary Education Institutions			Total Number of Students in Secondary Education Institutions		
	Türkiye	Aegean	İzmir	Türkiye	Aegean	İzmir
2012	2,269,651	286,748	116,311	4,995,623	580,795	242,652
2013	2,513,887	294,318	122,950	5,420,178	620,899	256,861
2014	2,788,117	306,750	125,541	5,691,071	645,466	262,425
2015	2,760,140	294,729	122,675	5,807,643	657,828	270,386
2016	2,713,530	294,108	119,014	5,849,970	665,778	270,897
2017	2,614,785	284,986	114,181	5,689,427	645,447	262,802
2018	2,399,260	257,773	103,257	5,649,594	630,470	258,972
2019	2,218,088	238,325	94,334	5,630,652	627,297	258,307
2020	2,398,519	259,852	98,139	6,318,602	687,440	283,448
2021	2,450,995	261,274	95,167	6,543,599	704,270	289,143

Source: TURKSTAT, 2022d

In addition to meeting the demands of the required sectors in the region, it is crucial for vocational and technical schools to develop curricula aligned with the sectors in their respective areas to expand employment opportunities for their graduates. It is observed that various vocational branches exist in vocational and technical secondary education institutions in the İzmir Region, tailored to different areas. Ensuring alignment with local industries will create opportunities for applied education, which will also positively impact the quality of education. Therefore, it is essential to foster close communication and cooperation between vocational schools and sector representatives.

Another critical institution playing a significant role in vocational education is vocational training centers. Particularly in rural areas, vocational training centers play a critical role in fostering rural development, enhancing productivity and ensuring sustainability in production. It is seen that there are 18 vocational training centers in İzmir Region (Table 4.31).

TABLE 4.31. Vocational Training Centers in İzmir (2023)

Vocational Training Center	District
Aliağa Justice Vocational Training Center	Aliağa
Bayındır Vocational Training Center	Bayındır
Bergama Vocational Training Center	Bergama
Beydağ Vocational Training Center	Beydağ
Ayküsan Vocational Training Center	Bornova
Bornova Vocational Training Center	Bornova
Buca Justice Vocational Training Center	Buca
Atatürk Organized Industrial Zone Vocational Training Center	Çiğli
Dikili Vocational Training Center	Dikili
Foça Justice Vocational Training Center	Foça

Vocational Training Center	District
Karabağlar Vocational Training Center	Karabağlar
Faruk Argüden Vocational Training Center	Kemalpaşa
Kiraz Vocational Training Center	Kiraz
Nene Hatun Vocational Training Center	Menemen
Ödemiş Vocational Training Center	Ödemiş
Selçuk Vocational Training Center	Selçuk
Tire Vocational Training Center	Tire
Torbalı Vocational Training Center	Torbalı

Source: MoNE, 2023

It is observed that interest in vocational education has been steadily declining in İzmir Region's vocational and technical secondary education institutions. For a significant industrial and production region like İzmir, this situation is highly unfavorable. It is imperative to develop regional policies on vocational education to train a qualified workforce, provide employment opportunities, and secure the human resources required for production. Expanding vocational education institutions in İzmir Region, such as secondary schools, vocational colleges, and vocational training courses, and increasing their capacities, is crucial. Furthermore, to ensure the efficiency of these institutions, planning and curricula must be developed in close collaboration with industrialists and professional organizations at the regional level.

H. Employment and Workforce

Data on employment and workforce are among the most critical indicators for understanding regional economic and social dynamics. They provide insights into the structure and characteristics of the regional labor market while also offering clues about the social dimension of the workforce and the production structure in the region. According to 2022 data, the employment rate for individuals aged 15 and over in İzmir was 47.3%, with 1.731 million employed. Unemployment stood at 260,000, equating to 13.0% (TURKSTAT, 2022c).

TABLE 4.32. Key Employment and Workforce Indicators (2022) (15+ Years Age)

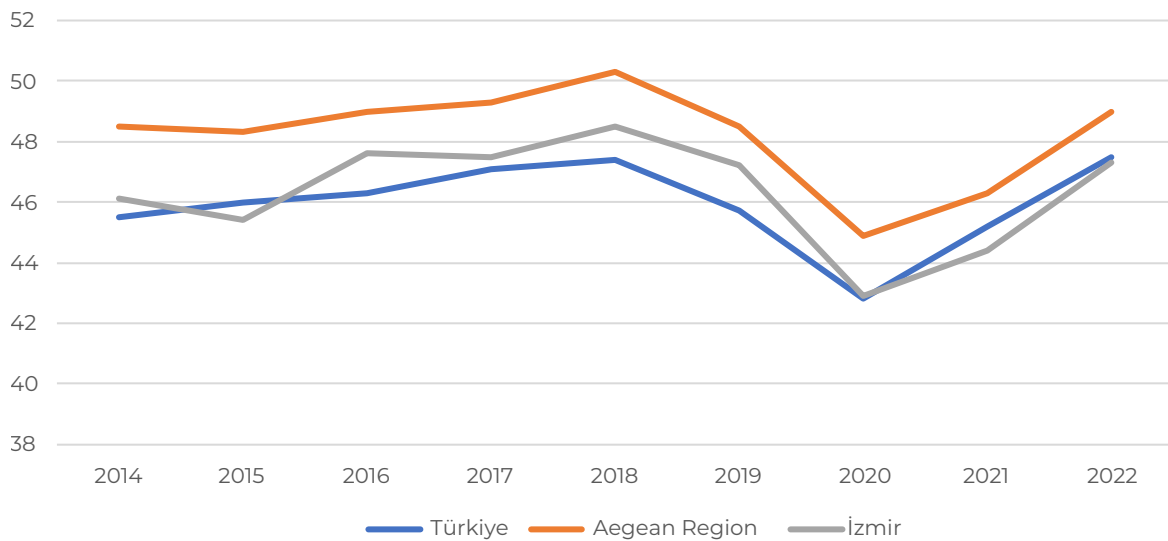
Indicator	Türkiye	Aegean Region	İzmir
Unemployment Rate (%)	10.4	10.1	13
Employment Rate (%)	47.5	49	47.3
Labor Force Participation Rate (%)	53.1	54.4	54.4
Population (Thousand)	85,280	10,887	4,462
Labor Force (Thousand)	34,334	4,728	1,991
Number of Unemployed (Thousand)	3,582	476	260
Employed (Thousand)	30,752	4,252	1,731

Source: TURKSTAT, 2022c

One of the areas most affected by the COVID-19 pandemic, which has had adverse economic consequences for countries and regions worldwide, is employment. Measures taken to combat the pandemic led to a contraction in production and employment worldwide, exacerbating social and economic disparities among countries and regions. One of the critical findings of the study “Cities in a Post-COVID World,” authored by prominent economic geographers Richard Florida, Andres Rodríguez-Pose and Michael Storper, is that the changes and transformations experienced by countries and regions after COVID-19 have been to the detriment of underdeveloped regions (Florida, Rodríguez-Pose, and Storper, 2021). Developed regions have leveraged their infrastructure and human capital to implement significant technological changes and transformations reflecting concepts such as Industry 4.0, the Internet of Things, and lights-out manufacturing, making their production systems relatively less vulnerable. Therefore, it is particularly important to analyze the trends in employment and the labor market during the pandemic.

An examination of the period from 2014 to 2022 reveals that, as in Türkiye and the Aegean Region, employment rates in İzmir Region increased until 2018, but declined in 2019 and 2020. With the pandemic-driven downturn in 2020, employment rates fell below 2014 levels. The recovery process that began in 2021 and continued into 2022 saw employment rates rise again, surpassing 2014 levels in both Türkiye and İzmir. However, İzmir's employment rate has yet to return to 2018 levels and remains lower than that of both Türkiye and the Aegean Region (Figure 4.10).

FIGURE 4.10. Employment Rates by Year in Türkiye, Aegean Region, and İzmir Region (%)



Source: TURKSTAT, 2022c

In İzmir Region, the number of employed individuals rose from 1,504,000 in 2014 to 1,731,000 in 2022, reflecting a 15.1% increase. During the same period, the rates of increase for the Aegean Region and Türkiye were 12.9% and 18.6%, respectively. The primary factors driving the increase in employment across these regions are believed to include industrial growth and population expansion (Table 4.33).

TABLE 4.33. Total Employment by Year in İzmir Region and Other Regions (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	25,933	3,766	1,504	5,097	1,778
2015	26,620	3,803	1,483	5,306	1,832
2016	27,205	3,877	1,566	5,558	1,908
2017	28,189	4,007	1,611	5,664	1,960
2018	28,738	4,108	1,663	5,899	1,999
2019	28,080	4,005	1,619	5,778	1,947
2020	26,812	3,766	1,491	5,362	1,880
2021	28,797	3,967	1,588	5,780	2,027
2022	30,752	4,252	1,731	6,279	2,147
2014-2022 (%)	18.58	12.90	15.09	23.19	20.75

Source: TURKSTAT, 2022c

When employment rates in İzmir Region are analyzed by gender, it is observed that the employment rate for men is twice as high as for women. In 2022, the employment rate for men was 63.6%, while it was 31.2% for women. The disparity in employment rates by gender parallels the averages for the Aegean Region and Türkiye.

Compared to 2014, the current situation in İzmir Region shows that the employment rate for men increased from 64.3% to 65.0%, a marginal rise of only 0.7 points, while the improvement in the employment rate for women was also minimal. During this period, the employment rate for women increased from 28.2% to 31.2%. Considering the gap of more than 30 points between male and female employment rates, it is evident that significant progress has not been achieved in bringing the female employment rate to the desired level, highlighting the need for targeted policies in this regard.

TABLE 4.34. Employment Rates by Year and Gender (%)

Year	Türkiye		Aegean Region		İzmir	
	Male	Female	Male	Female	Male	Female
2014	64.8	26.7	66.2	31.2	64.3	28.2
2015	65.0	27.5	65.5	31.7	63.2	28.3
2016	65.1	28.0	66.1	32.3	65.2	30.7
2017	65.6	28.9	66.4	32.5	64.9	30.5
2018	65.7	29.4	67.3	33.7	66.1	31.2
2019	63.1	28.7	64.5	32.8	63.8	30.8
2020	59.8	26.3	60.9	29.0	58.9	27.2
2021	62.8	28.0	62.7	30.3	61.0	28.3
2022	65.0	30.4	64.9	33.2	63.6	31.2

When analyzed by gender distribution, the number of employed men is approximately double that of women, mirroring the employment rate pattern. However, it is noteworthy that the number of employed women has increased at a much faster rate than the number of employed men across Türkiye and other regions (Tables 4.35 and 4.36).

TABLE 4.35. Male Employment in İzmir Region and Other Regions Over Years (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	18,244	2,534	1,038	1,260	3,643
2015	18,562	2,535	1,013	1,301	3,748
2016	18,893	2,585	1,053	1,349	3,875
2017	19,460	2,671	1,087	1,368	3,888
2018	19,720	2,722	1,123	1,399	4,014
2019	19,156	2,631	1,085	1,339	3,989
2020	18,506	2,542	1,013	1,307	3,672
2021	19,792	2,662	1,077	1,394	3,906
2022	20,818	2,805	1,155	1,457	4,197
2014-2022 (%)	14.11	10.69	11.27	15.63	15.21

Source: TURKSTAT, 2022c

TABLE 4.36. Female Employment in İzmir Region and Other Regions Over Years (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	7,689	1,232	466	1,454	518
2015	8,058	1,268	470	1,558	531
2016	8,312	1,292	513	1,683	559
2017	8,729	1,336	524	1,776	592
2018	9,018	1,386	540	1,885	600
2019	8,924	1,374	534	1,789	608
2020	8,306	1,224	478	1,690	573
2021	9,005	1,305	511	1,874	633
2022	9,935	1,447	575	2,083	690
2014-2022 (%)	29.21	17.45	23.39	43.26	33.20

Source: TURKSTAT, 2022c

When employment in İzmir Region is analyzed by workplace size, it is observed that workplaces employing fewer than 50 individuals account for approximately 65% of total employment in the region, while workplaces employing 50 or more individuals constitute around 35% of employment. Among workplace categories, those employing 10 or fewer individuals have the largest share. The share of employment by workplaces employing 10 or fewer individuals within total employment decreased between 2014 and 2022. Conversely, the share of workplaces employing 50 or more individuals increased from 25% to approximately 35% during the same period. Another growing workplace size category includes workplaces employing 11–19 individuals, whose share rose from 5.44% to 9.96% (Table 4.37). As of 2021, data for workplaces employing 50 or more individuals has been divided into two categories: those employing 50–249 and those employing 250 or more individuals. In 2022, İzmir Region had 330,000 individuals employed in workplaces with 50–249 employees and 275,000 individuals employed in workplaces with 250 or more employees.

In summary, employment in İzmir Region is predominantly composed of a workforce employed in small

enterprises. This indicates that while these businesses may face challenges such as limited institutionalization and lack of economies of scale, they also exhibit positive traits such as flexibility and a capacity for rapid adaptation to customer and demand-focused operations.

TABLE 4.37. Employment and Shares in İzmir Region by Workplace Size (Thousand) (%)

Workplace Size	2014	2015	2016	2017	2018	2019	2020	2021	2022
10 or Fewer Employees	804	771	796	793	810	815	738	705	743
11–19 Employees	81	74	74	75	89	78	74	153	172
20–49 Employees	220	213	233	215	193	163	151	201	207
50 or More Employees	384	423	463	529	571	563	526	-	-
50–249 Employees	-	-	-	-	-	-	-	295	330
250 or More Employees	-	-	-	-	-	-	-	229	275
10 or Fewer Employees (%)	54.00	52.06	50.83	49.19	48.71	50.34	49.56	44.54	43.02
11–19 Employees (%)	5.44	5.00	4.73	4.65	5.35	4.82	4.97	9.67	9.96
20–49 Employees (%)	14.78	14.38	14.88	13.34	11.61	10.07	10.14	12.70	11.99
50 or More Employees (%)	25.79	28.56	29.57	32.82	34.34	34.77	35.33	-	-
50–249 Employees (%)	-	-	-	-	-	-	-	18.64	19.11
250 or More Employees (%)	-	-	-	-	-	-	-	14.47	15.92

Source: TURKSTAT, 2022c

When employment is analyzed by educational level, it is seen that employment among individuals with less than high school education constitutes the highest share in İzmir Region. However, the share of individuals with less than high school education in total employment in İzmir Region decreased between 2014 and 2022. A significant indicator is the increasing share of individuals with higher education among the employed, which rose from 23.6% in 2014 to approximately 32.6% in 2022. Similarly, the share of high school and equivalent vocational school graduates in employment also showed an upward trend in 2021 and 2022 (Table 4.38).

TABLE 4.38. Employment and Shares in İzmir Region by Educational Level (Thousand) (%)

Education Level	2014	2015	2016	2017	2018	2019	2020	2021	2022
Below High School Education	786	740	796	784	779	761	689	671	696
High School and Equivalent Vocational Schools	337	335	337	342	362	349	326	374	453
Illiterate	26	26	31	26	26	30	22	24	18
Higher Education	354	382	403	459	496	480	453	519	564
Below High School Education (%)	52,30	49,90	50,80	48,67	46,84	46,98	46,24	42,25	40,21
High School and Equivalent Vocational Schools (%)	22,42	22,59	21,51	21,23	21,77	21,54	21,88	23,55	26,17
Illiterate (%)	1,73	1,75	1,98	1,61	1,56	1,85	1,48	1,51	1,04
Higher Education (%)	23,55	25,76	25,72	28,49	29,83	29,63	30,40	32,68	32,58
Total (%)	100	100	100	100	100	100	100	100	100

Source: TURKSTAT, 2022c

When examining employment data by economic activity, it is observed that the services sector accounts for the highest employment in İzmir Region, with 1,042,000 individuals employed. The services sector has shown a tendency to grow over the years, currently constituting 60.2% of total employment in İzmir. Meanwhile, the industrial sector employs 562,000 people, and the agricultural sector employs 127,000 people. While the share of agriculture in total employment has decreased over the years, the shares of the industrial and services sectors have increased.

TABLE 4.39. Employment and Shares by Economic Activity in İzmir Region (Thousand) (%)

Economic Activity	2014	2015	2016	2017	2018	2019	2020	2021	2022
Agriculture	158	147	165	161	141	151	123	142	127
Industry	477	475	517	501	539	502	497	523	562
Services	869	861	885	949	983	967	870	922	1.042
Agriculture (%)	10.5	9.9	10.5	10	8.5	9.3	8.2	8.9	7.34
Industry (%)	31.7	32	33	31.1	32.4	31	33.4	32.9	32.47
Services (%)	57.8	58.1	56.5	58.9	59.1	59.7	58.4	58.1	60.20

Source: TURKSTAT, 2022c

Workforce is defined as the sum of employed and unemployed individuals. It is a critical measure indicating the development potential of regions. Therefore, workforce analysis is essential for regional plans. Since 2014, the workforce in İzmir Region has shown a rising trend, except for a sharp decline in 2020 due to the impact of COVID-19. During this period, individuals may have opted out of the workforce due to pandemic-related risks. However, the workforce began to rise again in 2021 and beyond (Table 4.40).

Overall, during the 2014-2022 period, the labor force in İzmir Region grew by 14%. This growth is lower than the increases observed in Türkiye (19%) and the Aegean Region (14%). Additionally, the change rate of İzmir Region's labor force during this period is significantly lower than that of İstanbul and Ankara Regions (Table 4.40).

TABLE 4.40. Workforce in İzmir and Other Regions by Year (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	28,786	4,142	1,746	5,785	2,010
2015	29,678	4,200	1,745	6,092	2,064
2016	30,535	4,272	1,821	6,427	2,153
2017	31,643	4,439	1,874	6,578	2,210
2018	32,274	4,552	1,928	6,738	2,224
2019	32,549	4,563	1,927	6,788	2,269
2020	30,873	4,296	1,797	6,289	2,207
2021	32,716	4,464	1,861	6,595	2,341
2022	34,334	4,728	1,991	6,992	2,443
2014-2022 (%)	19.27	14.15	14.03	20.86	21.54

Source: TURKSTAT, 2022c

When the workforce is examined by gender, it is revealed that İzmir Region had a male workforce of 1.3 million and a female workforce of 700,000 in 2022. Similar to other regions, the male workforce in İzmir is approximately twice that of the female workforce. However, comparing 2014 and 2022, the increase in the female workforce is higher than that in the male workforce. Promoting the integration of women into the labor market and supporting development policies in sectors that reduce their vulnerability are essential for contributing to regional welfare (Tables 4.41 and 4.42).

TABLE 4.41. Male Workforce in İzmir and Other Regions by Year (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	20,057	2,739	1,164	4,061	1,386
2015	20,453	2,756	1,154	4,214	1,420
2016	20,899	2,789	1,186	4,392	1,483
2017	21,484	2,901	1,228	4,396	1,510
2018	21,801	2,950	1,259	4,508	1,521
2019	21,863	2,936	1,251	4,583	1,511
2020	21,105	2,858	1,187	4,256	1,490
2021	22,156	2,933	1,220	4,383	1,567
2022	22,862	3,065	1,291	4,588	1,616
2014-2022 (%)	13.99	11.90	10.91	12.98	16.59

Source: TURKSTAT, 2022c

TABLE 4.42. Female Workforce in İzmir and Other Regions by Year (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	8,730	1,403	582	1,723	624
2015	9,224	1,443	591	1,878	644
2016	9,636	1,482	635	2,035	669
2017	10,159	1,539	647	2,182	699
2018	10,473	1,602	669	2,230	703
2019	10,686	1,626	676	2,205	758
2020	9,768	1,438	610	2,033	717
2021	10,560	1,532	640	2,212	774
2022	11,473	1,663	699	2,404	828
2014-2022 (%)	31.42	18.53	20.10	39.52	32.69

Source: TURKSTAT, 2022c

An analysis of the workforce in İzmir Region by educational level reveals that the largest share belongs to the workforce with high school or lower education. The share of the workforce with high school or lower education decreased from 51.8% to 40.1% between 2014 and 2022. Although the number of workers with high school or equivalent vocational school education is approximately 270,000 less than those with lower than high school education, the share of workers with high school or equivalent vocational

school education in the total workforce has steadily increased over the years. A similar trend is observed for the workforce with higher education. The number of workers with higher education in İzmir Region increased from 410,000 in 2014 to 640,000 in 2022. Over the years, the proportion of the workforce with higher education has also steadily risen, surpassing 32% (Table 4.43).

TABLE 4.43. Educational Levels of İzmir Workforce by Year (Thousand)

Education Level	2014	2015	2016	2017	2018	2019	2020	2021	2022
Below High School	905	879	914	901	900	905	832	789	798
High School or Equivalent	400	400	400	413	424	426	402	444	530
Illiterate	31	31	37	32	29	34	26	28	22
Higher Education	410	435	470	529	575	562	537	599	640
Below High School (%)	51.83	50.37	50.19	48.05	46.68	46.96	46.30	42.42	40.10
High School or Equivalent (%)	22.91	22.92	21.97	22.03	21.99	22.11	22.37	23.87	26.63
Illiterate (%)	1.78	1.78	2.03	1.71	1.50	1.76	1.45	1.51	1.11
Higher Education (%)	23.48	24.93	25.81	28.21	29.82	29.16	29.88	32.20	32.16
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: TURKSTAT, 2022c

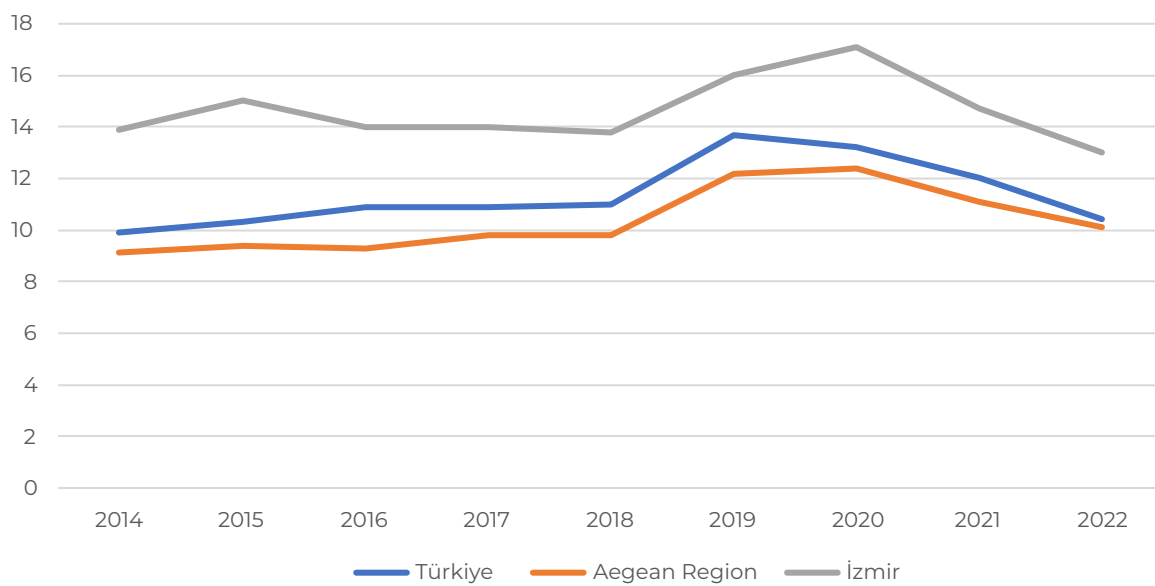
Unemployment, aside from being a social problem, causes economic loss as an untapped resource resulting from the inability to transfer the available workforce into the production process as an input. Therefore, reducing unemployment to its natural level is one of the primary macroeconomic goals.

An examination of unemployment rates in İzmir Region since 2014 reveals fluctuations in unemployment rates. Starting from 2020 and beyond, unemployment entered a downward trend. However, compared to other regions and the national average of Türkiye, unemployment rates in İzmir Region have been significantly higher. Consequently, unemployment stands out as a matter that requires special attention and emphasis in İzmir Region.

TABLE 4.44. Unemployment Rates in İzmir and Other Regions by Year

Year	Türkiye	Aegean Region	İzmir	Ankara	İstanbul
2014	9.9	9.1	13.9	11.5	11.9
2015	10.3	9.4	15.0	11.2	12.9
2016	10.9	9.3	14.0	11.4	13.5
2017	10.9	9.8	14.0	11.3	13.9
2018	11.0	9.8	13.8	10.1	12.5
2019	13.7	12.2	16.0	14.2	14.9
2020	13.2	12.4	17.1	14.8	14.7
2021	12.0	11.1	14.7	13.4	12.3
2022	10.4	10.1	13.0	12.1	10.2

Source: TURKSTAT, 2022c

FIGURE 4.11. Unemployment Rates Over the Years in Türkiye, Aegean Region and İzmir Region (%)

Source: TURKSTAT, 2022c

In İzmir Region, the number of unemployed people was 243,000 in 2014 and, due in part to population growth, increased to 260,000 by 2022. Between 2014 and 2021, the rate of increase in the number of unemployed in İzmir Region (7%) was lower than both Türkiye (25.6%) and the Aegean Region (26.6%).

TABLE 4.45. Number of Unemployed in İzmir and Other Regions by Year (Thousand)

Year	Türkiye	Aegean Region	İzmir	İstanbul	Ankara
2014	2,853	376	243	688	231
2015	3,057	397	262	786	231
2016	3,330	396	254	869	244
2017	3,454	433	263	914	250
2018	3,537	445	265	839	225
2019	4,469	557	307	1,010	322
2020	4,061	531	307	926	327
2021	3,919	497	273	814	314
2022	3,582	476	260	713	297
2014-2022 (%)	25.55	26.60	7.00	3.63	28.57

Source: TURKSTAT, 2022c

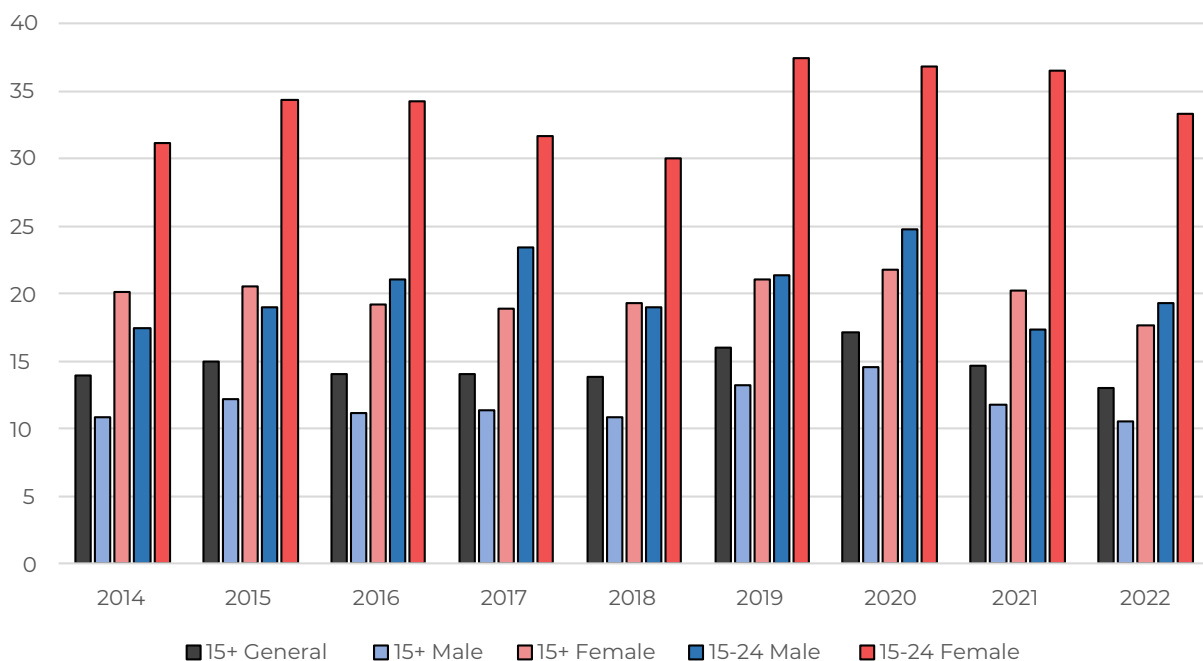
When examining the unemployment by educational level in İzmir Region, it is observed that the highest share of unemployed belongs to those with high school or lower education. The share of high school or lower educated unemployed individuals in the total unemployed population in the region has decreased during the 2014–2022 period. On the other hand, the share of unemployed individuals with higher education within the total unemployed population in İzmir Region has increased (Table 4.46). The growing share of unemployed individuals with higher education within the total unemployed population indicates that the region has been relatively unsuccessful in fully utilizing its economic dynamics and potentials to develop employment opportunities for highly educated individuals in both the public and private sectors.

TABLE 4.46. Unemployed Population by Education Level in İzmir Region by Year (Thousand)

Education Level	2014	2015	2016	2017	2018	2019	2020	2021	2022
Below High School Education	119	139	119	117	122	144	143	118	103
High School and Equivalent Vocational School	68	65	63	71	62	78	76	70	77
Illiterate	5	5	6	5	3	4	4	4	3
Higher Education	56	53	67	70	78	82	83	80	77
Below High School Education (%)	47.98	53.05	46.67	44.49	46.04	46.75	46.73	43.38	39.62
High School and Equivalent Vocational School (%)	27.42	24.81	24.71	27.00	23.40	25.32	24.84	25.74	29.62
Illiterate (%)	2.02	1.91	2.35	1.90	1.13	1.30	1.31	1.47	1.15
Higher Education (%)	22.58	20.23	26.27	26.62	29.43	26.62	27.12	29.41	29.62
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: TURKSTAT, 2022c

When examining unemployment rates in İzmir Region by gender and age group, it is noteworthy that unemployment among young women is at the highest level. Over the past eight years, a similar ranking by gender and age group in unemployment has persisted, which is another significant observation. Although unemployment increased across all groups in 2019, the rise among women aged 15–24 was particularly pronounced. In this group, the unemployment rate increased by more than 12% compared to the previous year, reaching 39.5% in 2019. This indicates the need to identify the qualifications of unemployed women aged 15–24 in İzmir Region and to train them as human resources for areas in demand through vocational education activities.

FIGURE 4.12. Unemployment Rates in İzmir Region by Gender and Age Group (2022) (%)

Source: TURKSTAT, 2022c

From a sectoral perspective, the highest number of unemployed individuals in İzmir Region is in the services sector. Both the number of unemployed in the services sector and the share of the unemployed in this sector within İzmir Region's total unemployment increased during the 2014–2022 period. The share of unemployed in the industrial sector, however, is declining. Additionally, the share of those who left work more than eight years ago within the unemployed population in İzmir Region has decreased. Similarly, the share of those who have never worked is also showing a decreasing trend (Table 4.47).

TABLE 4.47. Unemployed Population in İzmir Region by Last Employment Sector by Year (Thousand)

Sector	2014	2015	2016	2017	2018	2019	2020	2021	2022
Agriculture	8	8	9	8	11	10	12	9	11
Industry	74	83	83	80	83	106	97	78	70
Services	116	127	130	141	139	151	164	153	149
Left Employment More Than 8 Years Ago	25	24	16	16	18	19	17	16	16
Never Worked Before	19	20	16	18	14	21	17	17	13
Agriculture (%)	3.31	3.05	3.54	3.04	4.15	3.26	3.91	3.30	4.25
Industry (%)	30.58	31.68	32.68	30.42	31.32	34.53	31.60	28.57	27.03
Services (%)	47.93	48.47	51.18	53.61	52.45	49.19	53.42	56.04	57.53
Left Employment More Than 8 Years Ago (%)	10.33	9.16	6.30	6.08	6.79	6.19	5.54	5.86	6.18
Never Worked Before (%)	7.85	7.63	6.30	6.84	5.28	6.84	5.54	6.23	5.02
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: TURKSTAT, 2022c

When the changes in workforce and employment indicators in İzmir Region from 2014 to 2022 are observed, it becomes evident that substantial progress has not been achieved in these indicators over eight years. Although the general unemployment rate has decreased in 2022 compared to 2014, youth unemployment is on the rise. Data indicates that the Covid-19 pandemic had a significant impact on this negative trend. However, when compared to OECD country averages, Türkiye and İzmir Region diverge negatively in these indicators. Thus, it would not be accurate to attribute the problem solely to the Covid-19 pandemic.

Increasing employment opportunities in the region and reducing unemployment rates by enhancing workforce participation is of critical importance. In İzmir Region, which has demonstrated economic growth, the current demand in the labor market and potential future demands should be carefully analyzed, and employment policies should be developed accordingly. Considering the qualifications of the unemployed population in the region, it is deemed essential to strengthen collaboration with industrialists and other producers and to prioritize vocational education activities.

I. Evaluation

As of 2022, İzmir Region's population, amounting to 4,462,056, constitutes approximately 5.2% of Türkiye's population. While this ratio was around 4% in the 1960s, it rose to 5.3% in the 2000s and has remained relatively consistent until the 2020s. During this period, the annual net migration rate has generally ranged between 0.2% and 0.6%, consistently staying positive. According to TURKSTAT's research, a significant portion of migration occurs due to education, employment and better living conditions. This situation decreases the proportion of the young population in the region. However, the educational level of incoming migrants is higher than that of those leaving the region, which is considered a positive aspect for İzmir Region. The foreign population residing in the region with residence permits constitutes 0.6% of the region's population, a figure lower than the national average of 1.5%. The region's school enrollment rate and educational level are above the national average. The number of universities, which was seven in 2009, increased to 10 by 2018. In the 2022/2023 academic year, the total number of students in higher education was 191,345, representing 4% of the population. In other words, one out of every 25 residents in the region is a higher education student. The student population coming to universities in İzmir Region from nearly every part of Türkiye has been rapidly increasing. Considering this growth, it is crucial to plan for housing, transportation and other needs that will arise. Additionally, identifying areas of specialization and development for universities in the region, taking into account their potentials, will directly contribute to training the region's human resources and supporting the development of sectors.

Other educational indicators for İzmir Region also surpass both the national average and the averages of comparable large regions in most cases. While the educated population increases, the uneducated population decreases, and average education durations are extending, leading to a steady rise in the region's educational level over time. İzmir Region also performs better than the national average in terms of the number of students per classroom and per teacher. However, in some areas, there has been an observed increase in regional averages in recent years. Monitoring these figures and implementing the necessary investments is essential to enhancing the quality of education in the region.

With these characteristics, İzmir Region possesses a qualified structure in terms of population and human capital. The region's rich cultural and natural makeup, heterogeneous cultural geography, and experienced and qualified workforce structure provide a conducive environment for development and growth. Migration is not perceived as a problem area in the region. Indeed, the migration to the region is largely composed of educated and experienced individuals. The number of foreign migrants received by the region is also limited. The development of industry in İzmir Region generates a need for qualified human resources at all levels. While having a suitable population and human capital for development and growth is critical, it is not sufficient on its own. University-industry collaboration in the region is below the desired level. Internship, scholarship and incentive programs that restructure the education-innovation-production relationship in the region could be designed. It is possible to expand such programs, which currently exist at the postgraduate and doctoral levels, to undergraduate, associate, and vocational education levels. Establishing vocational schools, colleges and new-generation departments to meet this need is also deemed crucial.

On the other hand, concrete progress in employment and workforce indicators has not been achieved in the region. Creating job opportunities through new investments and enhancing the qualifications of the unemployed population through vocational training is a sensitive issue for the socio-economic development of the region. Increasing employment and workforce participation will contribute to accelerating growth by developing the production capacity in İzmir Region. Additionally, it is considered that this will also lead to a reduction in social problems caused by unemployment. In light of employment and workforce indicators, prioritizing policies that focus on women's workforce participation and youth employment emerges as another critical issue.

5. SOCIAL DEVELOPMENT

A. Income Distribution and Poverty

One of the fundamental requirements of sustainable development is undoubtedly ensuring equity in income distribution and reducing poverty in society. Achieving equity in income distribution in developing economies is significant for ensuring that all segments of society benefit from growth and development. Otherwise, economic prosperity will only reflect in certain segments of society, and the gap between income groups will widen. Examining income distribution in İzmir Region is therefore a significant indicator in this respect.

The Gini coefficient, used to measure income inequality, is an important indicator providing insights into trends in income distribution over time both in Türkiye and the region. The Gini coefficient ranges between 0 and 1, where a value closer to 1 indicates increasing inequality, and a value closer to 0 signifies greater equity in income distribution. According to the OECD average Gini coefficient calculated for income inequalities across countries, the value was 0.32 in 2014, rising to 0.43 by 2021. In Türkiye, the Gini coefficient increased from 0.39 in 2014 to 0.415 in 2022. Accordingly, it is observed that income distribution across the country slightly deteriorated by 2022. While Türkiye's Gini coefficient was significantly higher than the OECD average in 2014, it fell below the OECD average in 2021 (Table 5.1).

The Gini coefficient trend in İzmir Region over the years shows significant differentiation from the national trend in Türkiye. In 2014, the Gini coefficient for İzmir Region was 0.382, rising to 0.385 by 2022. The increase in Türkiye's Gini coefficient was particularly pronounced during the years encompassing the Covid-19 pandemic. While a declining trend in the Gini coefficient was observed for İzmir over the years, the coefficient rose following the pandemic in 2020 and subsequent years. In the İstanbul Region, the coefficient values showed a significant rise during the 2014-2022 period. In contrast, the Ankara Region exhibited a declining trend over the years, with a notable increase in 2022 (Table 5.1).

TABLE 5.1. Gini Coefficient in İzmir and Other Regions (2014-2022)

Year	OECD Average ⁷	Türkiye	İzmir	Ankara	İstanbul
2014	0.321	0.391	0.382	0.389	0.367
2015	0.320	0.397	0.385	0.382	0.397
2016	0.316	0.404	0.384	0.395	0.413
2017	0.317	0.405	0.387	0.372	0.443
2018	0.316	0.408	0.363	0.382	0.444
2019	0.312	0.395	0.358	0.352	0.428
2020	0.336	0.41	0.362	0.381	0.451
2021	0.431	0.401	0.373	0.350	0.434
2022	-	0.415	0.385	0.402	0.444

Source: TURKSTAT, 2022j; OECD, 2022a

⁷ Calculated as the average of 37 countries from the dataset published by the OECD as income inequality statistics of countries.

Another indicator of income distribution equity, the P80/P20 ratio, is calculated by dividing the income of the top 20% income group by the income of the bottom 20% income group in an economy. A decrease in this ratio indicates an improvement in income equity. Examining the P80/P20 ratios over the years reveals that Türkiye's ratio increased from 6.9 in 2014 to 7.8 in 2022. In the İzmir Region, the ratio rose from 6.9 in 2014 to 7.7 in 2017. Although it showed a declining trend in subsequent years, it began increasing again from 2019, reaching 7.4 in 2022 (Table 5.2).

TABLE 5.2. P80/P20 Ratio Based on Household Disposable Income (2014-2022)

Year	Türkiye	İzmir	Ankara	İstanbul
2014	6.895	6.881	6.729	5.864
2015	7.198	7.176	6.436	6.474
2016	7.395	7.693	6.829	6.913
2017	7.402	7.665	6.360	7.938
2018	7.62	6.604	6.436	7.849
2019	7.026	6.318	5.796	7.455
2020	7.804	6.676	6.736	8.510
2021	7.125	6.893	5.735	7.970
2022	7.773	7.377	7.117	8.224

Source: TURKSTAT, 2022j

At the regional level and for examining the cost of living year by year, another important factor is the poverty line. While the average poverty line in Türkiye was 6,665 TL in 2014, this figure increased to 21,296 TL in 2022. The poverty line of İzmir Region remains higher than Türkiye's average poverty line. İzmir's poverty line, which was 7,752 TL in 2014, rose to 27,246 TL in 2022. İzmir's poverty line is not only above that of Türkiye but also higher than that of Ankara Region. When the change rates of the poverty line between 2014 and 2022 are examined, it is observed that İzmir experienced a higher increase than both Türkiye and Ankara and İstanbul Regions. It is noteworthy that the increase in İzmir Region during this period was significantly greater than the national average and the increases in Ankara and İstanbul Regions (Table 5.3).

TABLE 5.3. Poverty Threshold in İzmir and Other Regions (2014-2022) (TRY)

Year	Türkiye	İzmir	Ankara	İstanbul
2014	6,665	7,752	9,000	8,765
2015	7,495	8,975	10,066	9,504
2016	8,539	10,916	11,589	10,871
2017	9,532	11,830	11,996	12,301
2018	10,670	13,885	13,320	14,200
2019	12,952	16,522	16,715	16,824
2020	14,873	19,002	19,036	19,523
2021	16,841	22,157	22,134	21,417
2022	21,296	27,246	25,806	28,322

Source: TURKSTAT, 2022j

Data on the number of poor individuals over the years show that in 2014, there were 16.5 million poor individuals in Türkiye, increasing by 9% to reach 18 million by 2022. In İzmir Region, the number of poor individuals rose from 793,000 in 2014 to 932,000 in 2022, reflecting the same rate of increase. During the same period, increases of 17% and 6% were observed in İstanbul and Ankara Regions, respectively (Table 5.4).

To measure poverty levels at the national and regional levels, poverty rates must also be determined. While 21.8% of the population in Türkiye was below the poverty line in 2014, this rate was 21.6% in 2022. In İzmir Region, the rate rose significantly from 19.8% in 2014 to 21.3% in 2022, surpassing the rates in Ankara and İstanbul (Table 5.4).

TABLE 5.4. Number of Poor Individuals in Türkiye and Other Regions (2014-2022) (Thousand Persons)

Year	Türkiye		İzmir		Ankara		İstanbul	
	Number of Poor	% of Population	Number of Poor	% of Population	Number of Poor	% of Population	Number of Poor	% of Population
2014	16,501	21.8	793	19.8	926	18.5	2,406	17
2015	16,706	21.9	804	19.9	987	19.4	2,560	17.8
2016	16,328	21.2	804	19.7	1,008	19.5	2,602	17.8
2017	15,864	20.1	767	18.4	925	17.5	2,776	18.8
2018	16,888	21.2	832	19.7	886	16.5	3,149	21
2019	17,207	21.3	844	19.8	934	17.1	2,673	17.7
2020	17,921	21.9	875	20.3	1,087	19.6	2,941	19.2
2021	17,636	21.3	847	19.5	982	17.4	3,044	19.6
2022	18,030	21.6	932	21.3	980	17.2	2,827	18.1

Source: TURKSTAT, 2022j

Examining household consumption data is essential to monitor consumption trends and expenditure patterns by product groups. When the distribution of household consumption expenditures is analyzed by type, it is observed that housing and rent expenditures hold a significantly high share within total expenditures in İzmir Region. This expenditure accounts for approximately 30% of total expenditures on average. Following this, food and transportation rank among the significant expense categories. Education and healthcare expenditures, which are among the most critical components of sustainable development, represent the lowest expense categories at 2.6% and 2.1%, respectively. Household consumption trends have not exhibited significant variations over the years (Table 5.5).

TABLE 5.5. Distribution of Household Consumption Expenditures in İzmir Region by Type (%) (2010-2019)

Type of Consumption	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Other	4.6	4.9	4.6	4.7	4.9	4.9	4.8	4.8	4.9	4.8
Various goods and services	3.7	3.5	3.6	3.8	3.6	3.8	3.7	3.9	3.8	3.9
Educational services	2	2	2.2	2.4	2.2	2.4	2.6	3	2.7	2.6
Entertainment and culture	2.9	3	3.5	3.5	3.5	3.2	3.2	3.1	3	3.1
Food and non-alcoholic beverages	20.3	20.1	18.4	17.8	17.8	18	18	17.5	18	18.5
Clothing and footwear	4.8	4.7	5	4.9	4.8	5	5	4.8	4.4	4.5
Communication	4.3	4	3.8	4	4	4	3.9	3.9	3.7	3.4
Housing and rent	31.6	30.4	29.4	28.2	27.7	27.7	27.3	27.6	27.2	27.6
Restaurants and hotels	5	5.5	5.9	6.2	6.4	6.9	7.1	7.2	7.1	7.1
Furniture and household appliances	5.9	5.9	6.6	6.6	6.8	6.4	6.4	6.2	6.1	5.9
Health	1.8	1.9	2	2	2	2	2.1	2.3	2.2	2.1
Transportation	13.2	14.1	15	16	16.4	15.6	15.9	15.7	16.9	16.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: TURKSTAT, 2022q

B. Civil Society Organizations

Undoubtedly, civil society organizations are essential building blocks of the development process. A robust social structure requires strong civil society organizations. Through their activities, civil society organizations strengthen social bonds and significantly contribute to social sustainability.

İzmir Region is rich in terms of the presence of civil society organizations. According to 2023 data, the region hosts more than 5,800 CSOs active in various fields. Of these, 33 are unions. These unions, operating in different sectors, predominantly engage in areas such as hunting, fishing, agriculture, and forestry, as well as general affairs (Table 5.6).

TABLE 5.6. Distribution of Unions in İzmir Region by Activity (2023)

Field of Activity	Number
01-Hunting, fishing, agriculture, and forestry	6
01-Office, banking, and insurance services	1
02-Food industry	2
03-Health and social services	3
04-Petroleum, chemicals, rubber, plastics, and pharmaceuticals	1
04-Local government services	1
05-Press, broadcasting, and communication services	1
05-Textiles, apparel, and leather	3
06-Wood and paper	2
10-Trade, office, education, and fine arts	3

Field of Activity	Number
11-Cement, ceramics, and glass	2
12-Metal	1
18-Accommodation and entertainment services	1
19-Defense and security	2
20-General affairs	4
Total	33

Source: Ministry of Interior, July 2023

Associations in İzmir Region are primarily concentrated in professional and solidarity activities. Associations engaged in these activities constitute about one-third of the total associations in the region (Table 5.7).

TABLE 5.7. Distribution of Associations in İzmir Region by Field of Activity (2023)

Field of Activity	Number	(%)
Individual teaching and social development associations	192	3.40
Environmental and wildlife protection associations	207	3.67
Children's associations	4	0.07
Solidarity associations with external Turks	100	1.77
Associations for religious service activities	700	12.41
Thought-based associations	78	1.38
Educational research associations	222	3.94
Associations for people with disabilities	87	1.54
Associations operating in food, agriculture, and livestock	69	1.22
Rights and advocacy associations	116	2.06
Associations for zoning, urban planning, and development	179	3.17
Humanitarian aid associations	138	2.45
Associations supporting public institutions and staff	50	0.89
Culture, arts, and tourism associations	464	8.23
Professional and solidarity associations	2055	36.43
Health-related associations	224	3.97
Sports and sports-related associations	545	9.66
Associations for martyrs' families and veterans	15	0.27
Associations preserving social values	134	2.38
International organizations and cooperation associations	37	0.66
Associations for the elderly and children	25	0.44
Total	5,641	100

Source: Ministry of Interior, July 2023

As of July 2023, when the numbers of associations and foundations are examined by district, the highest concentration is seen in the Konak district. Approximately 24% of associations and nearly 39% of foundations in the province are located in Konak (Table 5.8).

TABLE 5.8. Distribution of Associations and Foundations in İzmir Districts (2023)

Districts	Association	Share within the Province (%)	Foundations	Share within the Province (%)
Aliağa	103	1.8	5	1.8
Balçova	99	1.8	7	2.6
Bayındır	52	0.9	2	0.7
Bayraklı	431	7.7	17	6.3
Bergama	98	1.7	4	1.5
Beydağ	8	0.1	1	0.4
Bornova	619	11.0	13	4.8
Buca	390	6.9	7	2.6
Çeşme	80	1.4	2	0.7
Çiğli	166	2.9	6	2.2
Dikili	52	0.9	6	2.2
Foça	41	0.7	4	1.5
Gazimir	135	2.4	5	1.8
Güzembahçe	54	1.0	4	1.5
Karabağlar	373	6.6	10	3.7
Karaburun	25	0.4	1	0.4
Karşıyaka	442	7.9	16	5.9
Kemalpaşa	122	2.2	4	1.5
Kınık	36	0.6	1	0.4
Kiraz	27	0.5	1	0.4
Konak	1,357	24.1	105	38.7
Menderes	125	2.2	5	1.8
Menemen	135	2.4	4	1.5
Narlıdere	69	1.2	4	1.5
Ödemiş	94	1.7	8	3.0
Seferihisar	93	1.7	1	0.4
Selçuk	56	1.0	4	1.5
Tire	70	1.2	5	1.8
Torbalı	147	2.6	4	1.5
Urla	129	2.3	13	4.8
Center	-	-	2	0.7
Total	5,545	100	272	100

Source: Ministry of Interior, July 2023; Directorate General of Foundations, July 2023

C. Disadvantaged Groups and Social Inclusion

In a sustainable society in respect to its social dimension, it is critical to have inclusive policies and practices that address all segments of society, support disadvantaged groups, and ensure the integration of individuals from these groups into the community. The development of disadvantaged groups, such as the poor, disabled, elderly, women, and children, should be closely monitored, and support such as social assistance, employment and education should be provided according to their specific disadvantages.

The proportion of the population aged 65 and older within the total population continues to increase. In 2022, the percentage of the population aged 65 and older in İzmir Region was found out to be 12.40%, corresponding to 553,378 individuals (Table 5.9). This rate exceeds the Türkiye average of 9.9%.

TABLE 5.9. Percentage of Population Aged 65 and Over in İzmir Region by Year

Indicator	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage of Population Aged 65+ (%)	9.07	9.32	9.71	10.05	10.24	10.54	10.88	11.30	11.83	12.15	12.40

Source: TURKSTAT, 2022a

Alongside the rise in the elderly population rate, the dependency ratio for the elderly has also increased. The elderly dependency ratio, which represents the number of elderly individuals per 100 working-age individuals, was 13.64% in 2014 and increased to 17.76% in İzmir Region by 2022 (Table 5.10).

TABLE 5.10. Elderly Dependency Ratios (2022)

Indicator	Türkiye	Ege	İzmir
Elderly Dependency Ratio	14.55	18.45	17.76

Source: TURKSTAT, 2022a

Regional and national data on individuals with disabilities remain limited. One of the major challenges in generating data on individuals with disabilities is defining disability itself. The most recent study on identifying individuals with disabilities at the regional level was conducted by TURKSTAT in 2011. According to this study, there are 206,000 individuals with disabilities in İzmir Region (Table 5.11).

TABLE 5.11. Population Aged Three and Over with At Least One Disability (2011)

Level	Number of Individuals with Disabilities (Thousand)			Proportion of Individuals with Disabilities in the Population (%)		
	Total	Male	Female	Total	Male	Female
İzmir	206	88	118	5.4	4.6	6.2
Türkiye	4,876	2,085	2,792	6.9	5.9	7.9

Source: TURKSTAT, 2011

When examining the number of individuals with disabilities receiving home care, it is observed that this figure in İzmir Region increased by 55 individuals compared to the previous year, reaching 1,271 in 2021. Of these individuals, 63% are male, and 37% are female. Regarding age groups, the majority fall within the 19-54 age range (Table 5.12).

TABLE 5.12. Number of Individuals Receiving Residential Services in İzmir Region by Gender and Age Group (2021)

District	Female	Male	0-12	13-18	19-64	65+	Total
Bornova	51	63	0	0	93	21	114
Çiğli	21	29	0	0	40	10	50
Gaziemir	74	73	0	16	76	55	147
Karabağlar	15	80	0	0	82	13	95
Karaburun	33	60	0	0	77	16	93
Kemalpaşa	24	32	0	0	32	24	56
Menderes	61	142	0	0	165	38	203
Menemen	62	95	0	0	121	36	157
Seferihisar	44	78	0	0	102	20	122
Selçuk	40	99	0	0	84	55	139
Torbalı	41	54	0	0	86	9	95
İzmir Total	466	805	0	16	958	297	1,271

Source: Ministry of Family and Social Services, 2021

The increase in the elderly population has also led to a rise in the number of nursing homes in the region. While there were 41 nursing homes in İzmir Region in 2012, this number increased to 66 by 2021. Of these 66 nursing homes, 55 are private institutions, 8 belong to the Ministry of Family and Social Services, and the remaining three are owned by other public institutions. In 2021, these nursing homes accommodated 3,622 elderly individuals aged 65 and over (Table 5.13).

TABLE 5.13. Number of Nursing Homes and Elderly Residents in İzmir Region (2021)

Type of Nursing Home	Number of Nursing Homes	Number of Residents Aged 65+
Private	55	1,916
Affiliated with the Ministry	8	1,360
Affiliated with Other Public Institutions	3	346
Total	66	3,622

Source: Ministry of Family and Social Services, 2021

Various social assistance programs are provided by the state to support disadvantaged groups. As of October 2022, the Ministry of Family and Social Services data indicates that 15 billion Turkish liras were allocated for social assistance to 562,365 individuals with disabilities nationwide. İzmir Region is among the regions receiving the least social assistance relative to its population (Table 5.14).

TABLE 5.14. Ratio of Individuals Receiving Home Care Assistance to Population (2021)

Province	Total Population (2021)	Number of Individuals Receiving Home Care Assistance (December 2021)	Ratio of Home Care Assistance Recipients to Population (%)
Ankara	5,747,325	22,150	0.38
Eskişehir	898,369	3,540	0.39
İzmir	4,425,789	18,136	0.40
Bilecik	228,334	928	0.40
Denizli	1,051,056	4,541	0.43

Source: Ministry of Family and Social Services Disability and Elderly Statistics Bulletin, October 2022

According to data shared by the Turkish Employment Agency (İŞKUR), the number of individuals from disadvantaged groups placed in employment in İzmir Region decreased from 1,419 in 2014 to 933 in 2022. Over the period 2014-2022, more than 75% of individuals with disabilities placed in employment by İŞKUR were male (Table 5.15).

TABLE 5.15. Disadvantaged Groups Placed in Employment by İŞKUR in İzmir Region (2019-2022)

Year	Total	Male	Female
2014	1,419	1,136	283
2015	960	762	198
2016	695	529	166
2017	517	392	125
2018	696	523	173
2019	1,341	924	417
2020	310	233	77
2021	655	476	179
2022	933	748	245

Source: Turkish Employment Agency, 2022

When examining the distribution of households benefiting from social assistance in the İzmir Region, as of 2022, the districts with the highest number of assisted households are observed to be Karabağlar, Buca and Konak (Table 5.16). The high concentration of assisted households in these districts can be attributed to their population density and the prevalence of socioeconomically disadvantaged groups in these areas. Similarly, these districts also have a high density of associations targeting disadvantaged groups. These district-specific characteristics should also be considered in regional planning efforts.

TABLE 5.16. Distribution of Social Assistance Beneficiaries Placed in Employment by İŞKUR (2020-2022)

District	2020			2021			2022		
	Number of Active Households	(%)	Number of People in Households	Number of Active Households	(%)	Number of People in Households	Number of Active Households	(%)	Number of People in Households
Aliağa	5,361	1.72	18,171	5,383	2.14	17,767	1,428	1.47	4,887
Balçova	4,085	1.31	11,604	3,291	1.31	9,203	1,174	1.21	3,602
Bayındır	396	0.13	11,906	3,714	1.48	10,949	2,387	2.47	6,721
Bayraklı	20,079	6.42	73,533	16,308	6.48	56,662	575	0.59	20,991
Bergama	6,057	1.94	15,976	5,253	2.09	13,444	3,432	3.54	8,605
Beydağ	1,074	0.34	2,928	1,098	0.44	3,099	660	0.68	1,804
Bornova	29,838	9.55	108,698	21,676	8.61	73,995	7,411	7.65	26,721
Buca	43,508	13.92	142,758	44,125	17.52	140,786	7,159	7.39	25,111
Çeşme	1,724	0.55	5	1,984	0.79	5,809	510	0.53	1,597
Çiğli	12,099	3.87	38,754	12,524	4.97	39,457	3,909	4.04	12,908
Dikili	3,778	1.21	10,598	2,844	1.13	7,632	1,565	1.62	4,336
Foça	1,433	0.46	4,616	1,451	0.58	4,676	656	0.68	2,167
Gaziemir	6,146	1.97	20,455	5,685	2.26	18,682	2,184	2.26	7,438
Güzelbahçe	1,224	0.39	3,469	1,165	0.46	3,262	356	0.37	956
Karabağlar	44,842	14.35	159,298	38,905	15.45	136,304	13,693	14.14	49,484
Karaburun	508	0.16	1,292	506	0.20	1,245	278	0.29	656
Karşıyaka	11,106	3.55	33,279	8,326	3.31	24,818	2,648	2.73	8,715
Kemalpaşa	10,505	3.36	35,059	10,131	4.02	33,284	4,673	4.83	15,659
Kınık	1,345	0.43	4,085	1,163	0.46	3,472	841	0.87	2,493
Kiraz	4,454	1.43	13,958	3,232	1.28	9,643	2,164	2.23	6,416
Konak	36,975	11.83	127,902	3,108	1.23	10,175	16,215	16.75	54,613
Menderes	8,081	2.59	26,233	6,671	2.65	21,176	2,382	2.46	7,381
Menemen	12,667	4.05	4,833	11,703	4.65	42,907	5,132	5.30	19,399
Narlıdere	2,964	0.95	8,945	3,571	1.42	10,458	1,265	1.31	4,095
Ödemiş	10,501	3.36	29,693	7,856	3.12	21,188	4,789	4.95	11,956
Seferihisar	2,763	0.88	885	2,681	1.06	8,337	1,069	1.10	3,212
Selçuk	3,441	1.10	10,882	343	0.14	10,898	1,441	1.49	4,703
Tire	5,624	1.80	16,041	4,928	1.96	13,564	279	0.29	7,165
Torbalı	17,891	5.72	61,823	20,327	8.07	65,807	5,684	5.87	19,615
Urla	2,057	0.66	5,863	1,842	0.73	5,131	871	0.90	2,404
Total	312,526	100	1,052,255	251,794	100	908,884	96,830	100	344,729

Source: Turkish Employment Agency, 2022

Women's shelters are social service centers where women subjected to physical, emotional, sexual, economic or verbal abuse or violence can stay temporarily to be protected and supported. In 2021, there were 3 women's shelters in İzmir Region with a total capacity of 108 people.

İzmir Region has a growing and aging population structure. As a result, the number of children, elderly individuals, and persons with disabilities in need of care has increased over the years. As an element of social development, the social infrastructure capabilities in the region must be planned and enhanced, taking into account the region's population growth projections.

There are significant gaps in the availability of data that could serve as inputs for social infrastructure development policies at the regional level. Collecting accurate data on needs such as the elderly, persons with disabilities, and children is crucial for social policies. Data collection and compilation must be carried out in cooperation with institutions to address various dimensions, including disparities between districts. Such work is necessary to highlight gaps in social infrastructure capabilities and address these deficiencies in the relevant regions. Institutional collaboration in the region on social assistance would also support the efficient and equitable distribution of social benefits.

Social inclusion, an essential component of social development, must be fostered at the national level and within İzmir Region. Building a socially sustainable society requires raising awareness and implementing concrete actions to integrate disadvantaged groups—such as women, children, persons with disabilities, the elderly, and the poor—into society.

D. Evaluation

When examining the social development indicators of İzmir Region, it is observed that progress made over the years has been very limited, with some previously achieved gains even being reversed. This indicates a lack of sustainability in the policies implemented. A notable issue is the significant increase in poverty levels, far exceeding the national average in recent years. Additionally, indicators reflecting income distribution fairness show limited progress. While the P80/P20 ratios and Gini coefficients in İzmir Region are below the national averages, they fall short when compared to the averages of developed countries in terms of social development. Between 2014 and 2022, improvements in income distribution were observed intermittently, but it cannot be stated that progress was consistent. Furthermore, poverty reduction initiatives in the region have failed to yield the desired outcomes, as significant improvements in poverty rates over the years have not been achieved. For this reason, it is crucial to renew poverty alleviation policies, establish sustainable measures, and monitor indicators closely until tangible results are achieved in the fight against poverty.

An examination of household expenditure patterns over the years reveals minimal changes. Housing and nutrition expenses constitute the largest portions of household expenditures, while spending on education and health—key components of social development—remains at very low levels. From 2005 to 2019, approximately one-third of household income in İzmir Region was spent on housing and rent, and one-fifth on food and non-alcoholic beverages. The shares allocated to these two categories gradually decreased during this period. However, the COVID-19 pandemic, the Russia-Ukraine war, and rising energy and raw material costs significantly increased the share of these two categories in 2021 and beyond. The real increase in spending on housing and food due to inflation exacerbates income inequality and increases the population living below the poverty line. Therefore, ensuring affordable housing options for all income levels and minimizing transportation costs is essential. Supporting agricultural and livestock activities to meet local needs and planning urban peripheries accordingly are fundamental. However, these two objectives often result in conflicting planning decisions. For instance, allocating agricultural lands on the urban periphery for housing accelerates housing supply but negatively affects agricultural production.

The solution lies in making more efficient use of existing urban areas, planning idle lands within cities for urban use, and transforming obsolete urban functions into new ones through urban regeneration. However, these planning approaches must consider the existing socio-economic structure. For instance, low-income groups in central İzmir predominantly reside in Karabağlar, Buca and Konak districts. Planning approaches and urban regeneration processes developed without considering the socio-economic structure in these areas lead to the displacement of individuals from their current residences, causing social tensions within the city. Mechanisms that involve all groups affected by projects in decision-making processes must be developed in all strategies and projects. Incorporating these groups into planning processes will foster widespread ownership of the strategies and projects produced, contributing significantly to achieving common goals.

Building an inclusive society with policies and practices that address all segments of society is a fundamental requirement for social sustainability. Identifying the needs of disadvantaged groups at the regional level is particularly critical. İzmir Region, rich in civil society organizations, hosts many organizations working for disadvantaged groups. While the region has made efforts toward social development, these efforts have not achieved the desired level, and some indicators that showed progress have deteriorated over time. Special plans and sustainable policies must be implemented for the social development of the region. Ensuring harmony among the activities of institutions that are critical for social development is essential for enhancing the efficiency and effectiveness of these efforts within the region.

6. QUALITY OF LIFE AND INFRASTRUCTURE

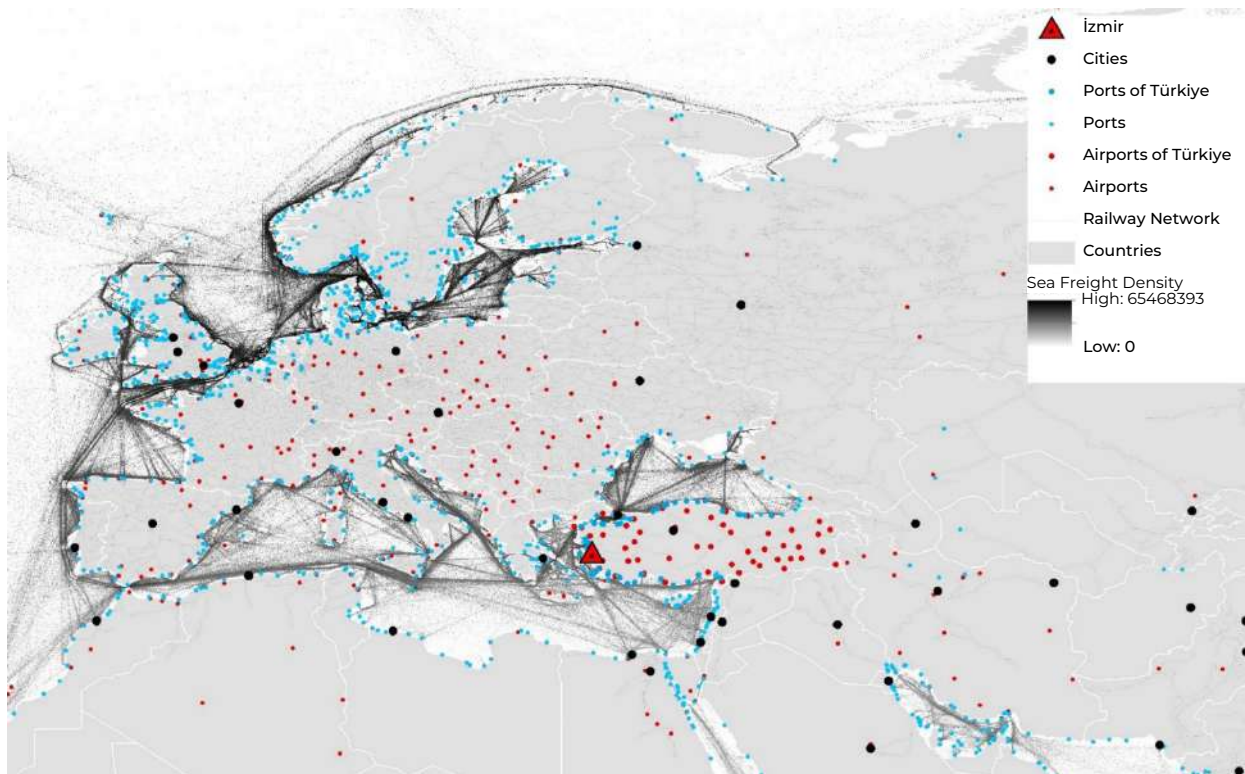
A. Transportation Infrastructure

I. National and International Transportation Infrastructure

Accessibility and transportation capabilities are among the fundamental factors of regional development, as they determine the speed of circulation and distribution of goods and services produced in the regions. Enhancing the region's accessibility through improved infrastructure enables goods and services to reach distant markets faster and in larger quantities, thus increasing regional income, welfare, employment and market share (Krugman, 1997).

The economy and development processes of İzmir Region, an ancient port city, are largely based on trade. İzmir, which hosts major industries and tourist attractions, draws residential and commercial investments and is one of the most important cities on the Mediterranean coast.

FIGURE 6.1. The Position of İzmir Region Among Transportation Links⁸



As of 2022, the population of İzmir Region is 4.46 million, with over 3 million residing in the metropolitan center (TURKSTAT, 2022a). Therefore, İzmir Region has historically been at the center of significant transportation connections. Today, İzmir, situated at the intersection of major sea, land and air transportation links, continuously increases its level of accessibility through transportation investments (Figure 6.1).

⁸ Prepared using OpenstreetMap (2022) data.

The urban development structure of İzmir Region's metropolitan center can be described as linear, established along four growth axes. The first urban growth axis is the northern axis, characterized mainly by residential areas, organized heavy industrial zones, agricultural lands and partially protected natural reserves. The second axis is the eastern urban growth axis, which hosts a major industrial zone, universities and residential areas. The third urban growth axis, the southern axis, includes the international airport, a free zone, industrial areas, warehouses, commercial zones and residential areas. Lastly, the western axis consists of tourism, residential and agricultural areas. The port, the central business area, the historic city center, and the ancient city of Smyrna are located near the city's geographical center.

Road Infrastructure

İzmir Region is a significant intersection of land routes. As the largest settlement in Türkiye's westernmost area, substantial road investments are being made to accelerate the passenger and freight transportation between İzmir Region and other key centers in Türkiye. With the Motorway 5 (Otoyol 5) project, which has reduced the travel time between İstanbul and İzmir to 3.5 hours, economic and social interaction between the settlements along the route and the hinterland of İzmir and İstanbul Regions is expected to increase (Figure 6.2).

According to year 2022 data from the General Directorate of Highways under the Ministry of Transport and Infrastructure, İzmir's road infrastructure comprises 516 km of state highways and 723 km of provincial roads, totaling 1,239 km, of which 525.64 km are divided highways. The length of completed motorways in the region is 355 km. In addition to the İzmir-İstanbul motorway, the 60 km-long İzmir Ring Road surrounds the metropolitan center. Passenger and freight flows between İzmir Region and its hinterland occur via the İzmir-Aydın-Denizli motorway.

The 95 km İzmir-Aydın section of the İzmir-Denizli motorway was completed in 1996, while the 163 km Aydın-Denizli section is nearing completion. The North Aegean Motorway, which facilitates passenger and freight flows between İzmir Region's northern growth axis and the regions to the north, is 95.9 km long and was put into service in 2020 (İZKA, 2021a).

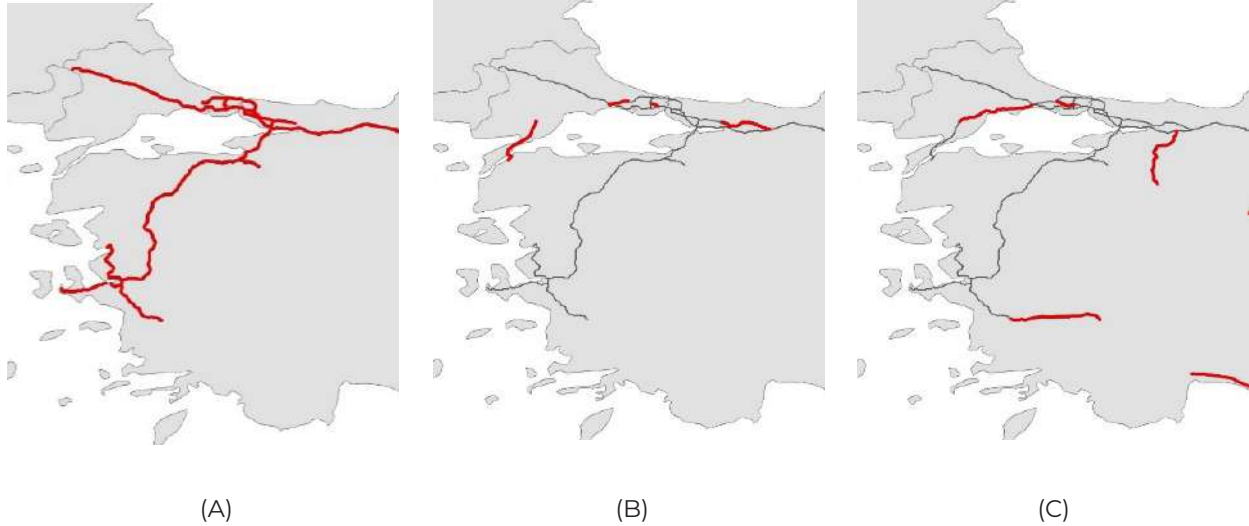
FIGURE 6.2. İzmir Region Road Network



Source: Ministry of Transport and Infrastructure, 2021

The General Directorate of Highways has provided information on the roads planned for completion in the coming years, as shown in Figure 6.3. One of the most significant investments for İzmir Region is the extension of the İzmir-Aydın Motorway to Denizli, expanding İzmir Region's service area to inner Aegean regions, thereby accelerating the flow of capital and goods (Figure 6.3).

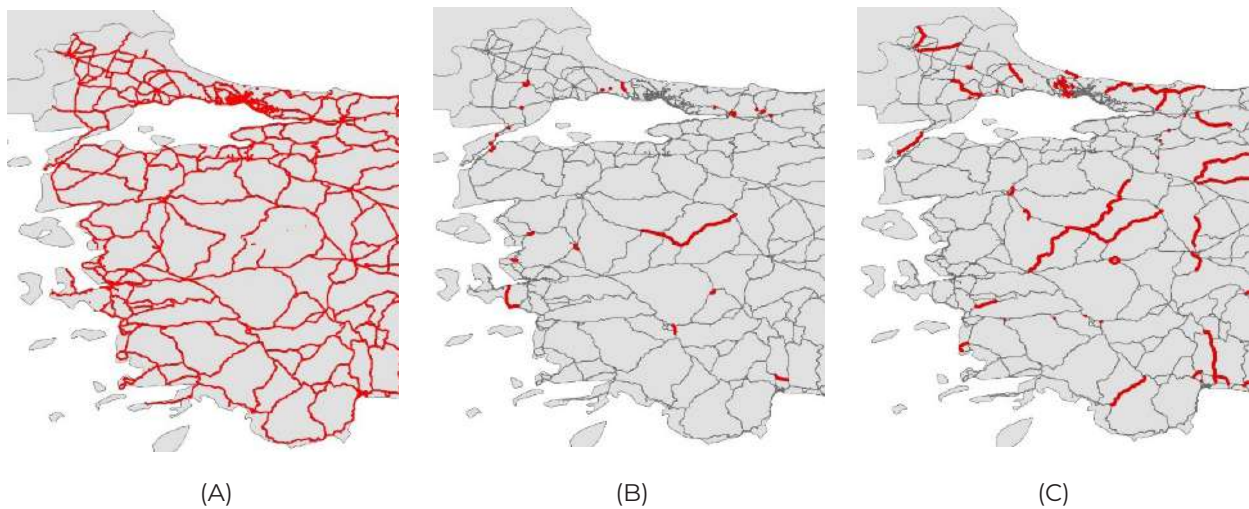
FIGURE 6.3. Planned Motorways: (A) 2019, (B) 2023, (C) 2029



Source: Ministry of Transport and Infrastructure, 2022a

The visuals of provincial and state roads reveal that among the roads planned for construction by 2023 are the Güzelbahçe-Özdere and Bergama-Dikili highways. The 2029 visual depicts the provincial and state roads planned within İzmir's Küçük Menderes Basin and Manisa province boundaries. These roads will increase passenger, capital and goods flows both within the region and between İzmir's metropolitan center and other service areas (Figure 6.4).

FIGURE 6.4. Planned Provincial and State Roads (A) 2019 Provincial and State Roads, (B) 2023 Provincial and State Roads, (C) 2029 Provincial and State Roads



Source: Ministry of Transport and Infrastructure, 2022a

Due to its geopolitical position at the intersection of Asia and Europe and its coastlines along four seas, Türkiye lies on key maritime routes. According to the İzmir Ports Current Status Analysis Report, there are 197 coastal facilities in Türkiye in various categories (piers, buoys, dolphins, platforms, etc.) (İZKA, 2021a). According to the report, the Aegean Region has the fewest coastal facilities, with 28 facilities, accounting for 14% of Türkiye's coastal facilities. The Marmara Region has 89 facilities (45%), while the Mediterranean Region has 45 facilities (23%).

İzmir Region contain TCDD İzmir Port and seven ports located in Aliağa district's Nemrut Bay. These ports include Habaş, Ege Çelik, Batılıman, İzmir Demir Çelik, Ege Gübre (TCEEGE), Nemport on the northern coast, and Petkim/Socar Port.

TÜRLİM Members

- ★ TÜRLİM Members
- Port clusters
- Individual ports

According to the Ministry of Transport and Infrastructure's future projections, the ports planned for completion by year are presented in Figure 6.6. Accordingly, the Çandarlı Port, located in the northern part of the İzmir Region, is expected to be completed in 2023.

Source: Ministry of Transport and Infrastructure, 2022b

Air Infrastructure

Of the three airports in İzmir, Adnan Menderes Airport is located in Gazimir district, the Efes Airport belonging to the Turkish Aeronautical Association is in Selçuk district, and the Kaklıç Military Airport is within the borders of Çiğli district. Adnan Menderes Airport has four terminal buildings, namely domestic flights, international flights, cargo and general aviation terminals.

İzmir Adnan Menderes Airport began operations in 1987, with the international terminal renovated in 2006 and the domestic terminal in 2014. Until 2012, the terminal operated in a covered area of 28,500 m², which has now expanded to 204,500 m², with a capacity of 30 million passengers.

Railway Infrastructure

As a historically significant port city, İzmir Region has relied on the railway network between İzmir Port and its hinterland to facilitate the transport of goods produced in the hinterland to national and international markets via the port. The İzmir-Aydın and İzmir-Turgutlu railway lines, the first railway lines in Anatolia, continue to facilitate passenger and freight transport between İzmir Region and its hinterland (Figure 6.7).

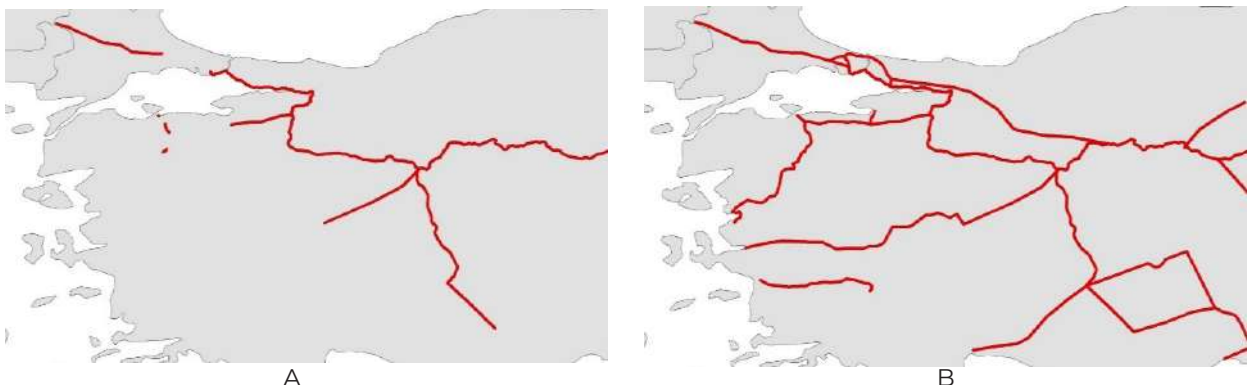
FIGURE 6.7. Türkiye National Railway Infrastructure Network



Source: İZKA, 2021a

According to the 2022 Investment Program, a budget allocation of 3.3 billion TRY was made for the Ankara-İzmir High-Standard Railway project, aimed at facilitating freight and passenger transport between Ankara and İzmir (Presidency of Strategy and Budget, 2022). When examining the projections for the high-speed rail network, it is observed that by 2029, the high-speed railway will reach İzmir Region via both the Ankara and Balıkesir routes. The availability of this alternative high-speed transport option serving İzmir Region will enhance integration between the three metropolitan cities (Figure 6.8).

FIGURE 6.8. Planned High-Speed Rail Network (A) 2023 High-Speed Rail Network, (B) 2029 High-Speed Rail Network



Source: Ministry of Transport and Infrastructure, 2022d

II. Urban Transportation

Bus Transport

Following the enactment of Law No. 6360 in 2012, which defined the service areas of metropolitan municipalities as provincial boundaries, İzmir Metropolitan Municipality began providing public transportation services to an area of 11,891 km² and a population of 4.4 million.

Within the provincial boundaries of İzmir, there are 391 bus routes, 10,055 stops, 33 transfer centers, 10 service areas, 7 garages, 5 workshops and 6 depots in service. İzmir Metropolitan Municipality's ESHOT General Directorate operates a total of 1,735 buses for urban transportation, including 1,006 standard buses, 624 articulated buses, and 105 midibuses. The share of wheeled public transport in the public transportation system is 61% (ESHOT, 2022).

Maritime Transport

Maritime transport in İzmir, as a public transportation service, is provided through the use of 13 passenger ferries, 2 high-speed passenger ferries, 1 passenger vessel and 5 car ferries. As of 2022, a total of 274 trips are made daily on 9 different routes between 12 piers operated by İZDENİZ in İzmir Bay (Bostanlı, Karşıyaka, Mordoğan, Foça, Alsancak, Pasaport, Konak, Göztepe, Üçkuyular, Karantina, Urla and Güzelbahçe piers) (Figure 6.9). As of 2022, 15.6 million passengers, 240,000 bicycle passengers, and 1.3 million vehicles were transported via maritime routes. In 2022, maritime transport accounted for 3% of İzmir's public transportation system (İZDENİZ, 2022).

FIGURE 6.9. İzmir Maritime Transport Network



Source: İZDENİZ, 2022

Rail Transport

Three different rail transport operators serve İzmir Region (Figure 6.10). The first is İzmir Metro. As of 2022, it operates on a 20 km line with 17 stations between Evka 3 and Fahrettin Altay. Construction is ongoing for the Narlıdere metro station on the Fahrettin Altay-Narlıdere line, as well as for the driverless metro line that will serve a 9.5 km route between Üçyol Station, Dokuz Eylül University Tınaztepe Campus and Buca Koop. İzmir Metro and tram systems transported a total of 140 million passengers in 2019 (İzmir Metropolitan Municipality, 2022a).

Another rail-based public transportation provider is İZBAN. İZBAN operates on a suburban line between Aliğa, located on the northern development axis of İzmir Region, and Selçuk, situated on the southern axis, providing rail-based public transport services for the city and the region as a whole, including airport connections. Established with 50% partnerships between TCDD and İzmir Metropolitan Municipality, İZBAN began operations in 2010. The number of stations, which was 32 in 2010, has increased to 40 as of 2022. The Aliğa-Selçuk line spans a total of 136 km, with plans to extend it to 185 km (İzmirMetro, 2022a).

And the third rail-based public transportation system is Tram İzmir. Tram İzmir provides public transportation services on two different lines integrated with İzmir Metro and İZBAN on both sides of İzmir Bay. The first line, known as the Karşıyaka Tram, operates a 14-station route spanning 8.8 km between Ataşehir and Alaybey, serviced by 17 vehicles. The second line, the Konak Tram, runs a 19-station route over 12.6 km between Halkapınar and Fahrettin Altay, with 21 vehicles operating on the line (İzmirMetro, 2022a).

FIGURE 6.10. İzmir Rail Transport Network

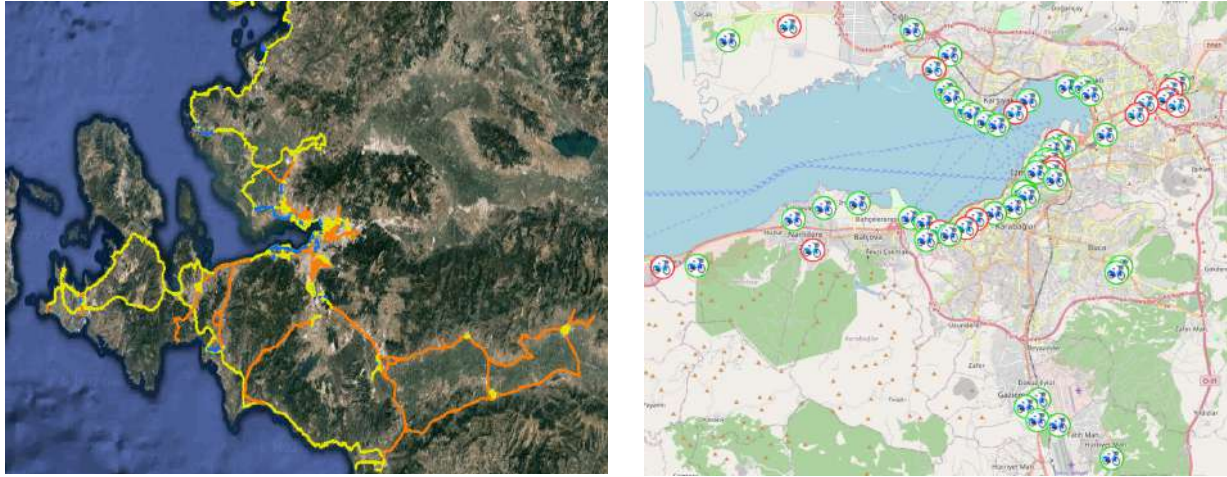


Source: İzmirMetro, 2022b

Bicycle Transport

Bicycle transport in İzmir Region is becoming increasingly widespread, and infrastructure is improving. The bicycle-sharing service provider in İzmir is BİSİM. Having started operations in 2014, BİSİM had reached approximately 2.9 million rentals by 2022, with 60 rental stations and 890 bicycles. İzmir Region has a total of 89 km of bicycle paths, and with the completion of ongoing construction, this figure is expected to exceed 100 km in the near future. Visuals showing the locations of İzmir's bicycle paths and BİSİM stations are presented in Figure 6.11.

FIGURE 6.11. Bicycle Paths and Parking Stations (A) İzmir Bicycle Paths, (B) BİSİM Network



Source: Bizizmir, 2022; BİSİM, 2022

III. Freight and Passenger Traffic

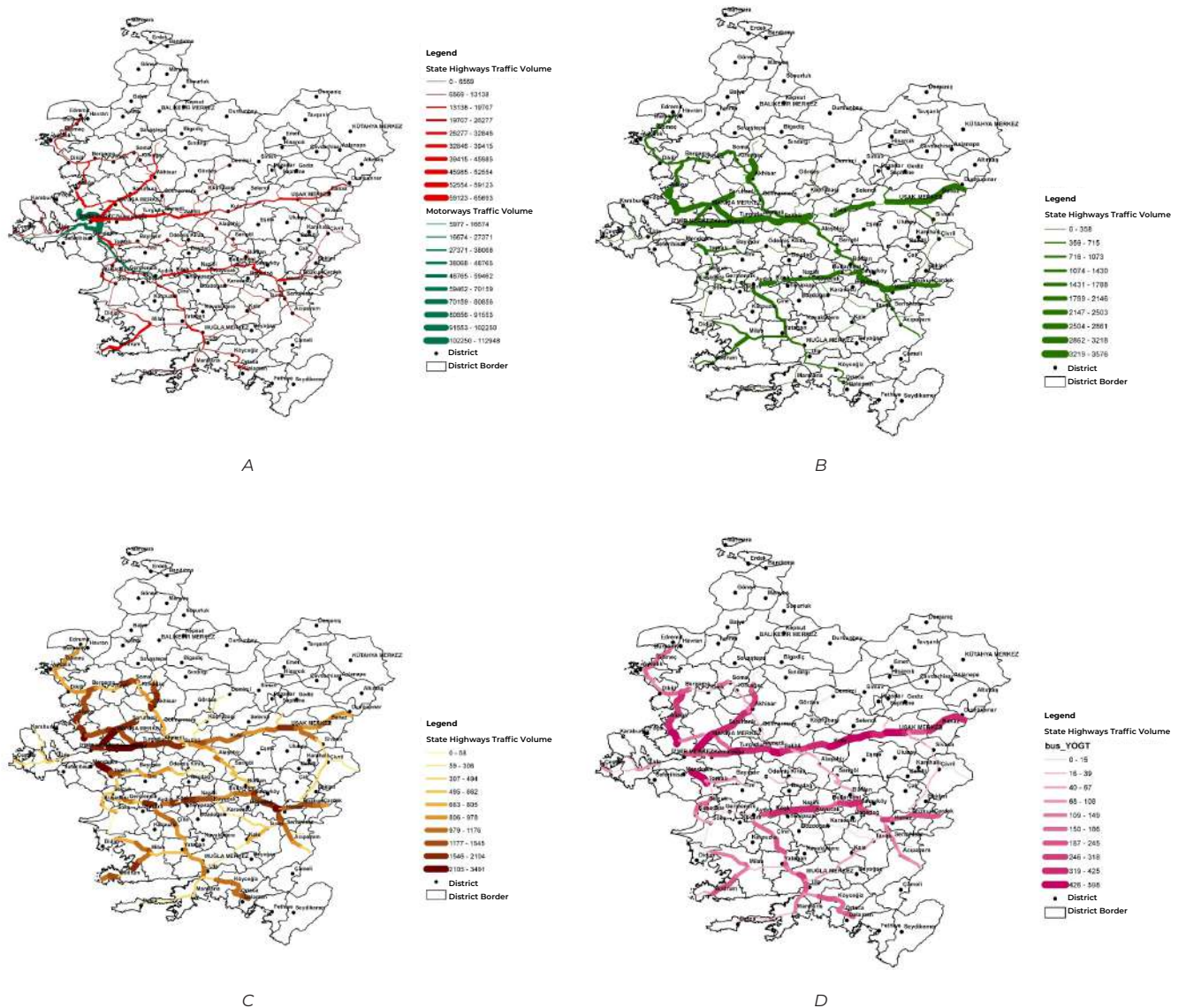
Road Traffic

According to traffic volume data published by the General Directorate of Highways, the highest average traffic density in İzmir Region and its hinterland is observed in the İzmir metropolitan center. The ring road and connecting roads, which enable the flow of freight and passengers between other provinces and districts around İzmir Bay, are the highways with the highest traffic density. The average traffic density on these roads ranges between 102,000 and 112,000 vehicles. From the perspective of state roads, the roads with the highest traffic density are those in and around the İzmir metropolitan center. The traffic volume on these state roads ranges between 59,000 and 65,000 vehicles. The highest density on state roads is observed on the İzmir center–Akhisar, İzmir center–Uşak, and İzmir center–Torbalı axes. Traffic density between İzmir and Aydın is concentrated on the Aydın Motorway, which, upon reaching Aydın, disperses into the Aydın–Denizli and Aydın–Muğla axes (Figure 6.12-A).

When examining the average truck traffic density on state roads in the İzmir Region, the highest density is observed between İzmir center and Aliağa and between İzmir center and Uşak center. There is also high average truck traffic between Manisa and Aliağa. In 2022, the highest average truck traffic density ranged between 32,000 and 35,000 vehicles (Figure 6.12-B). Regarding the average traffic density of lorries on state roads in the İzmir Region, the densest roads were observed to be similar to those with the highest truck traffic density: İzmir center–Aliağa, İzmir center–Manisa, İzmir center–Uşak, and the Aydın–Denizli axis. The highest average lorry traffic volume ranges between 2,000 and 3,500 vehicles (Figure 6.12-C).

Regarding the average bus traffic density in the İzmir Region, the highest density is observed on the İzmir center–Bergama axis, followed by the İzmir center–Akhisar and İzmir center–Uşak axes. There is also high average bus traffic density on the İzmir center–Torbalı and Aydın–Denizli axes (Figure 6.12-D).

FIGURE 6.12. Highway Volume (Vehicles/Day) (A) Average Density, (B) Truck Density, (C) Lorry Density, (D) Bus Density (2021)



Source: Ministry of Transport and Infrastructure, 2021

The General Directorate of Highways publishes statistics for three motorways in the İzmir Region. The first is the Çeşme Motorway, connecting Çeşme and Güzelbahçe, which spans 72 km and is used daily by an average of 91,000 light vehicles and 12,000 heavy vehicles for a total of 103,000 vehicles. The second is the Işıkkent–Germencik motorway, 90 km in length, with a daily average usage of 131,500 light vehicles and 43,300 heavy vehicles for a total of 175,000 vehicles. The third is the İzmir Ring Road Motorway, which spans 40 km and facilitates the flow of freight and passengers between Balçova and Karşıyaka, with a daily average usage of 291,000 light vehicles and 65,300 heavy vehicles for a total of 357,000 vehicles. Detailed statistics for the motorway sections are presented in Table 6.1.

TABLE 6.1. İzmir Region Motorway Statistics (2022)

Section Name	Length (km)	Light Vehicles (Vehicles/Day)	Heavy Vehicles (Vehicles/Day)	Total
Şehitlik - Seferihisar	12.5	52,186	4,576	56,762
Seferihisar - Urla	9.7	25,897	2,951	28,848
Urla - Karaburun	9.2	18,089	2,390	20,479
Karaburun - Zeytinler	12.5	14,727	2,035	16,762
Zeytinler - Alaçatı	17	13,790	1,908	15,698
Alaçatı - Çeşme	11.1	5,963	1,098	7,061
Işıkkent - Tahtalıçay	11.1	37,343	13,139	50,482
Tahtalıçay - Torbalı	13.6	34,447	11,411	45,858
Torbalı - Belevi	21.6	26,285	8,660	34,945
Belevi - Germencik	22.0	21,066	8,233	29,299
Germencik - Şevketiye	21.7	18,965	7,215	26,180
Balçova - Gaziemir	9.6	58,353	5,899	64,252
Gaziemir - Motorway Junction	9.0	67,924	10,982	78,906
Motorway Junction - University Junction	11.5	90,810	21,535	112,345
University Junction - Karşıyaka	9.7	74,167	26,129	100,296

Source: Ministry of Transport and Infrastructure, 2022

Under the YER-SİS project, the number of incoming intercity (81 provinces) bus services was measured. When analyzing bus services to the İzmir Region, it is observed that the highest number of buses come from İstanbul Region, followed by Bursa, Aydın, Manisa and Balıkesir, respectively (Figure 6.13).

FIGURE 6.13. Incoming Bus Services to İzmir Region (2018)

Source: General Directorate of Development Agencies, 2020

When examining outgoing bus services, it is observed that the highest number of buses departing from İzmir Region go to İstanbul Region, followed by Bursa, Aydın, Denizli and Manisa, respectively (Figure 6.14).

FIGURE 6.14. Outgoing Bus Services from İzmir Region (2018)



Source: General Directorate of Development Agencies, 2020

Air Traffic

In 2023, İzmir Adnan Menderes Airport offered flights to 64 international and 21 domestic destinations. Analyzing airport passenger numbers by year, İzmir Adnan Menderes Airport, located in the İzmir Region, is observed to have served 7.5 million passengers in 2010. While this number was measured at 9.8 million passengers in 2022, it is observed that the number of passengers using İzmir Adnan Menderes Airport had reached approximately 13.4 million in 2018, prior to the COVID-19 pandemic (Table 6.2).

When comparing the airports and passenger numbers of the three major cities for the 2010–2022 period, it is understood that passenger numbers at İzmir Adnan Menderes Airport increased by 31%. When the time series for İstanbul Atatürk and İstanbul Airports, both located in İstanbul Region, are combined, passenger numbers increased by 101%. During the same period, the passenger increase at Sabiha Gökçen Airport was 175%, whereas it was 12% at Ankara Esenboğa Airport (Table 6.2).

TABLE 6.2. Passenger Numbers by Year at Airports (2010–2022)

Year	İzmir Adnan Menderes	İstanbul Atatürk	İstanbul	İstanbul Sabiha Gökçen	Ankara Esenboğa
2010	7,485,098	32,143,819	-	11,189,678	7,763,914
2011	8,523,533	37,394,694	-	13,124,670	8,485,467
2012	9,355,902	45,091,962	-	14,686,052	9,273,108
2013	10,233,140	51,297,790	-	18,521,762	10,942,060
2014	10,970,663	56,695,166	-	23,494,646	11,035,606
2015	12,178,100	61,332,124	-	28,108,738	12,113,439
2016	12,051,243	60,415,470	-	29,667,853	13,044,116
2017	12,824,310	64,106,014	-	31,386,038	15,817,158
2018	13,410,378	68,346,784	95,205	34,133,617	16,740,003
2019	12,365,256	16,112,804	52,009,220	35,560,610	13,740,595

Year	İzmir Adnan Menderes	İstanbul Atatürk	İstanbul	İstanbul Sabiha Gökçen	Ankara Esenboğa
2020	5,464,858	-	23,410,380	16,951,190	5,162,569
2021	7,569,054	454	37,181,907	24,900,907	7,029,630
2022	9,834,578	-	64,518,073	30,737,854	8,679,594

Source: DHMI, 2022

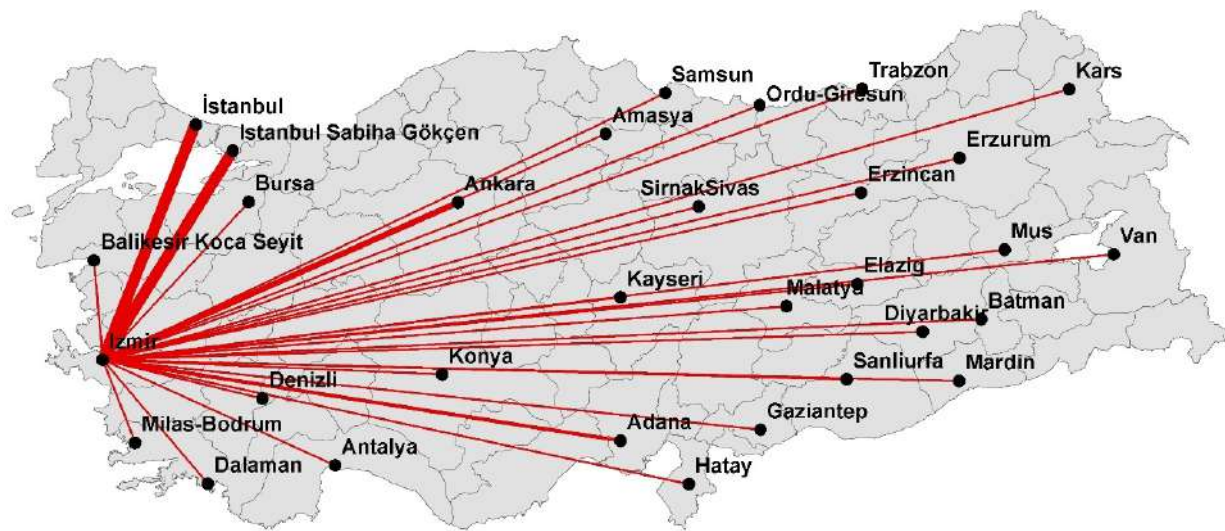
Data on freight traffic by airport obtained from the General Directorate of State Airports Authority (DHMI) is presented in Table 6.3. Following İstanbul, Sabiha Gökçen and Antalya Airports, İzmir Adnan Menderes Airport ranks fourth with 139,000 tons of freight.

TABLE 6.3. Freight Traffic by Year at Airports (2010–2022) (Tons)

Year	İstanbul	İstanbul Atatürk	İstanbul Sabiha Gökçen	Antalya	İzmir Adnan Menderes	Ankara Esenboğa
2010		943,673	171,524	447,480	94,718	88,955
2011		1,069,656	184,013	508,540	100,792	92,928
2012		1,231,504	176,750	325,362	108,710	95,517
2013		1,433,153	229,387	345,307	121,371	108,876
2014		1,631,528	283,065	361,548	127,643	110,266
2015		1,754,724	329,409	347,894	134,616	113,023
2016		1,907,028	341,215	228,717	120,922	112,073
2017		2,188,947	348,021	295,853	128,990	130,521
2018	610	2,428,869	374,961	368,731	126,631	132,504
2019	1,492,908	1,112,088	389,919	424,495	133,452	119,957
2020	965,640	830,208	219,197	116,303	71,677	59,236
2021	1,529,778	841,615	304,918	256,948	109,133	78,897
2022	2,700,482	58,650	365,963	403,079	138,968	94,387

Source: DHMI, 2022

The highest flight, passenger, and freight traffic from İzmir Region are directed to the airports in İstanbul, Ankara and Adana Regions. The data indicates that air traffic is also heavily utilized for Trabzon, Diyarbakır, Kayseri, Van and Antalya. It is observed that flights from İzmir Adnan Menderes Airport are intensively operated to regional centers located beyond an 8-hour drive from Türkiye's eastern, northern and southern regions. The centers with flights are presented in Figure 6.15.

FIGURE 6.15. Airports Served by Flights from İzmir Adnan Menderes Airport (2017)

Source: DHMI, 2017

Maritime Traffic

According to data from the Directorate General of Maritime Affairs of the Ministry of Transport and Infrastructure, the amount of cargo handled at Turkish ports rose to 542.6 million tons in 2022. In İzmir Region, 91.8 million tons of cargo were handled in 2022, accounting for 16.9% of Türkiye's total handled cargo. Over the 2011–2022 period, İzmir Region's share of Türkiye's handled cargo increased from 13.7% to 16.9%. Analyzing the change in cargo handled at Türkiye and İzmir ports over the same period, it is seen that the total handled cargo in Türkiye increased by 49.3%, while the cargo handled in İzmir Region increased by 84.5% (Table 6.4).

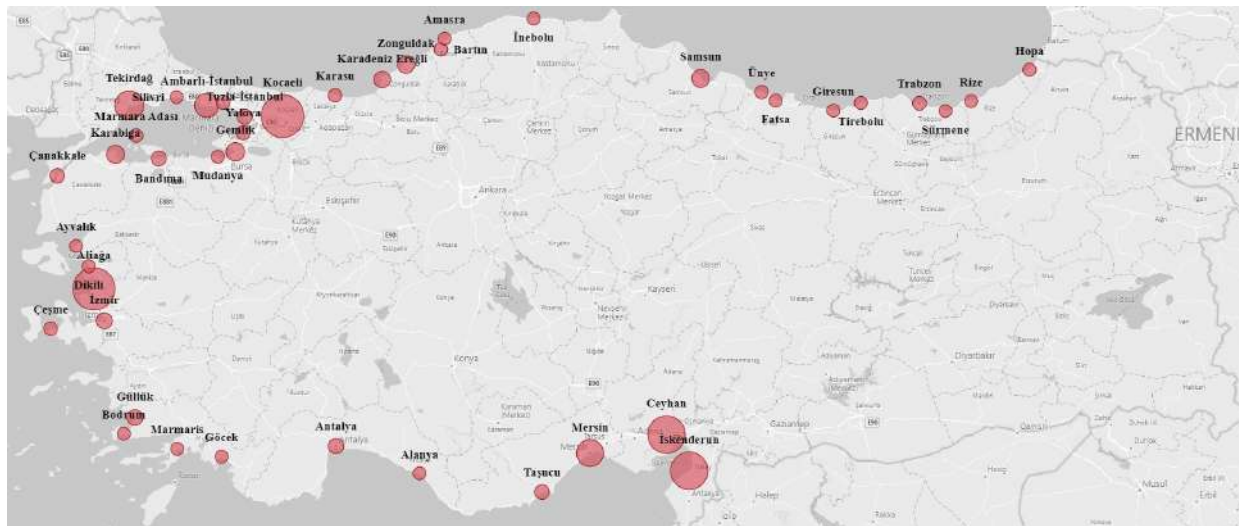
TABLE 6.4. Cargo Handling by Port Authorities by Year (2011–2022) (Tons)

Year	Ports across Türkiye	Ports in İzmir	İzmir / Türkiye (%)
2011	363,346,723	49,740,219	13.7
2012	387,426,232	54,103,994	14
2013	384,930,758	52,630,143	13.7
2014	383,120,619	54,568,020	14.2
2015	416,036,695	59,815,737	14.4
2016	430,201,162	61,813,049	14.4
2017	471,173,896	67,157,805	14.3
2018	460,153,560	64,800,719	14.1
2019	484,168,412	77,098,663	15.9
2020	496,642,652	80,070,434	16.1
2021	526,306,784	84,452,318	16.5
2022	542,610,283	91,776,752	16.9
2011–2022 (%)	49.3	84.5	-

Source: Ministry of Transport and Infrastructure, 2022e

Cargo handled at Turkish ports in 2022 by port volume is presented in Figure 6.16. It is observed that the highest amount of cargo was handled at ports in İzmir and İstanbul Regions, followed by the ports in Mersin and Iskenderun (Figure 6.16).

FIGURE 6.16. Cargo Handling by Port Authorities in 2022



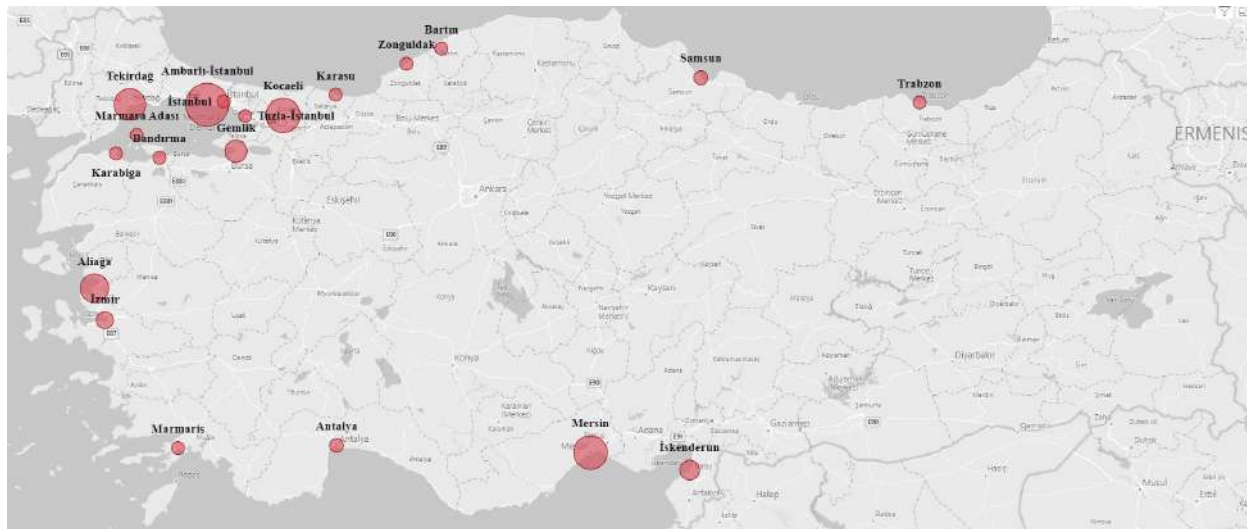
Source: Ministry of Transport and Infrastructure, 2022e

When container handling volumes are compared, it is revealed that the ports in İzmir Region handled 1 million containers in 2011, rising to 1.9 million containers in 2022. During the 2011–2022 period, the number of containers handled in Türkiye increased by 89.6%, while in İzmir Region ports, this number rose by 79.5% (Table 6.5). The number of containers handled by port in 2022 is presented in Figure 6.17. The ports with the highest share were Ambarlı, Kocaeli, Mersin, Tekirdağ and Aliağa (Figure 6.17).

TABLE 6.5. Container Handling by Port Authorities by Year (2011–2022)

Year	Ports across Türkiye	Ports in İzmir	İzmir / Türkiye (%)
2011	6,523,506	1,049,633	16.09
2012	7,192,396	1,109,372	15.42
2013	7,899,933	1,149,617	14.55
2014	8,351,122	1,215,274	14.55
2015	8,146,398	1,229,816	15.10
2016	8,761,974	1,321,749	15.09
2017	10,010,536	1,432,245	14.31
2018	10,843,998	1,555,613	14.35
2019	11,591,838	1,674,159	14.44
2020	11,626,650	1,711,609	14.72
2021	12,591,470	1,905,743	15.14
2022	12,366,382	1,884,116	15.24
2011-2022 (%)	89.6	79.5	-

Source: Ministry of Transport and Infrastructure, 2022e

FIGURE 6.17. Container Handling by Port Authorities in 2022

Source: Ministry of Transport and Infrastructure, 2022e

B. Healthcare Services Infrastructure

The healthcare services infrastructure and health indicators provide insights into the development and progress levels of regions. Between 2013 and 2020, life expectancy at birth in Türkiye increased from 75.3 to 75.7 years for men and from 80.7 to 81.1 years for women. Similar to Ankara and İstanbul, life expectancy at birth in İzmir exceeds the national average (Table 6.6). However, compared to the 2020 average life expectancy in the 28 European Union countries, İzmir's life expectancy is 1.5 years shorter for men and 1.2 years shorter for women.

TABLE 6.6. Life Expectancy at Birth (2013-2020)

Gender	Year	Türkiye	İzmir	İstanbul	Ankara
Male	2013-2014	75.3	75.8	75.8	76.6
	2015-2017	75.3	75.8	75.8	76.7
	2018-2020	75.6	76.0	76.2	76.5
Female	2013-2014	80.7	81.9	81.5	81.9
	2015-2017	80.8	81.6	81.5	81.9
	2018-2020	81.1	82.0	82.0	82.0

Source: TURKSTAT, 2022k

Another key indicator reflecting the state of the healthcare system is infant mortality rates, which are observed to be lower in İzmir Region compared to the national average but higher than those in Ankara and İstanbul. Between 2009 and 2022, similar to the national trend, infant mortality rates in İzmir exhibited a decrease, dropping to 8.9 per thousand in 2022 (Table 6.7).

TABLE 6.7. Infant Mortality Rate (2009–2022) (Per Thousand)

Year	Türkiye	İzmir	İstanbul	Ankara
2009	13.9	13.2	11.4	10.2
2010	12.0	9.7	9.6	8.4
2011	11.6	10.8	7.9	9.2
2012	11.6	10.9	8.6	8.4
2013	10.8	7.1	8.0	7.9
2014	11.1	9.1	8.9	6.9
2015	10.2	8.5	8.2	7.3
2016	9.8	7.1	8.0	6.7
2017	9.3	6.9	7.6	7.2
2018	9.3	7.1	7.6	7.7
2019	9.3	7.4	7.4	7.6
2020	8.7	6.2	6.7	6.9
2021	9.3	7.9	6.9	7.3
2022	9.2	8.9	6.9	7.3

Source: TURKSTAT, 2022k

Examining the number of public hospitals (Ministry of Health) over the years reveals that the number of hospitals in Türkiye increased from 843 in 2010 to 908 in 2021. In İzmir Region, however, the number of public hospitals remained constant at 29 during the same period. In 2010, İzmir Region accounted for 3.75% of the public hospitals in Türkiye, which decreased to 3.19% in 2021. Between 2010 and 2021, while the number of public hospitals increased by 7.71% nationwide, the increase was revealed to be 5.88% in Ankara, 3.85% in İstanbul, and 0% in İzmir.

TABLE 6.8. Number of Ministry of Health Hospitals (2010–2021)

Year	Türkiye	İzmir	İstanbul	Ankara	İzmir / Türkiye (%)	İstanbul / Türkiye (%)	Ankara / Türkiye (%)
2010	843	29	52	34	3.75	6.17	4.03
2011	840	29	52	35	3.75	6.19	4.17
2012	832	27	52	34	3.49	6.25	4.09
2013	854	29	55	38	3.75	6.44	4.45
2014	866	28	57	37	3.62	6.58	4.27
2015	865	28	55	37	3.62	6.36	4.28
2016	876	28	56	40	3.62	6.39	4.57
2017	879	28	54	40	3.62	6.14	4.55
2018	889	28	53	40	3.62	5.96	4.50
2019	895	29	54	36	3.75	6.03	4.02
2020	900	28	54	36	3.62	6.00	4.00
2021	908	29	54	36	3.19	5.95	3.96
2010-2021	7.71	0.00	3.85	5.88	-	-	-

Source: TURKSTAT, 2022b

As yet another important indicator of healthcare capacity, examining the number of private hospitals reveals that while there were 489 private hospitals in Türkiye in 2010, this figure increased to 571 in 2021. In İzmir Region, the number of private hospitals rose from 16 in 2010 to 31 in 2021. The share of private hospitals in İzmir compared to Türkiye increased steadily from 3.9% in 2010 to 5.4% in 2021. During the 2010–2021 period, the number of private hospitals in Türkiye grew by 16.8%, while the increase was measured to be 63.2% in İzmir, 6.5% in İstanbul, and 35.7% in Ankara (Table 6.9).

TABLE 6.9. Number of Private Hospitals (2010-2021)

Year	Türkiye	İzmir	İstanbul	Ankara	İzmir / Türkiye (%)	İstanbul / Türkiye (%)	Ankara / Türkiye (%)
2010	489	19	154	28	3.89	31.49	5.73
2011	503	20	152	29	3.98	30.22	5.77
2012	541	23	158	31	4.25	29.21	5.73
2013	550	24	162	31	4.36	29.45	5.64
2014	556	25	163	37	4.50	29.32	6.65
2015	562	23	162	36	4.09	28.83	6.41
2016	565	25	166	36	4.42	29.38	6.37
2017	571	27	168	37	4.73	29.42	6.48
2018	577	27	167	38	4.68	28.94	6.59
2019	575	28	165	37	4.87	28.70	6.43
2020	566	30	162	37	5.30	28.62	6.54
2021	571	31	164	38	5.43	28.72	6.65
2010-2021 (%)	16.77	63.16	6.49	35.71	-	-	-

Source: TURKSTAT, 2022b

According to the Ministry of Health, the number of university hospitals in Türkiye increased from 62 in 2010 to 68 in 2021. Currently, İzmir Region possesses three university hospitals. When the number of hospital beds in İzmir Region is examined over the years, the total number is seen to have increased from 11,758 in 2010 to 12,329 in 2021. During the 2010–2021 period, the number of beds in Ministry of Health hospitals increased by 2%, while the number of beds in private hospitals recorded a significant rise of 204% (Table 6.10).

TABLE 6.10. Number of Hospital Beds in İzmir Region (2010-2021)

Year	Ministry of Health	Private	University	Other	Total
2010	6,281	972	2,830	1,675	11,758
2011	6,320	1,367	2,979	512	11,178
2012	6,300	1,590	2,976	548	11,414
2013	6,188	1,597	2,976	600	11,361
2014	6,083	1,835	2,976	558	11,452
2015	6,051	1,882	2,983	550	11,466

Year	Ministry of Health	Private	University	Other	Total
2016	6,349	2,238	2,834	0	11,421
2017	6,538	2,415	2,969	0	11,922
2018	6,712	2,301	2,969	0	11,982
2019	6,756	2,521	2,971	0	12,248
2020	6,270	2,836	2,971	0	12,077
2021	6,404	2,954	2,971	0	12,329
2010-2021 (%)	1.96	203.91	4.98	-100	4.86

Source: TURKSTAT, 2022b

Analysis of the total number of healthcare personnel in İzmir Region shows an increase from 26,686 in 2010 to 44,364 in 2021. During the 2010–2021 period, the number of specialist physicians increased by 42%, general practitioners by 9%, assistant physicians by 65%, dentists by 46%, nurses by 79%, midwives by 6%, and pharmacists by 22%. The total number of healthcare personnel in İzmir Region grew by 66% during this period (Table 6.11).

TABLE 6.11. Number of Healthcare Personnel in İzmir Region (2010–2021)

Year	Specialist Physicians	General Practitioners	Assistant Physicians	Dentists	Nurses	Midwives	Pharmacists	Other	Total
2010	4,708	2,131	1,934	1,760	7,036	2,539	1,848	4,730	26,686
2011	4,724	2,210	1,925	1,727	7,494	2,627	1,850	5,402	27,959
2012	5,061	2,139	1,868	1,593	8,394	2,647	1,855	6,226	29,783
2013	5,688	2,149	1,907	1,549	8,491	2,713	1,874	7,476	31,847
2014	5,772	2,268	1,830	1,604	8,599	2,846	1,880	7,523	32,322
2015	5,872	2,294	1,830	1,759	9,017	2,876	1,891	7,717	33,256
2016	5,759	2,224	1,830	1,857	8,750	2,787	1,895	7,454	32,556
2017	6,377	2,381	2,142	2,003	9,241	2,718	2,050	8,364	35,276
2018	6,256	2,323	2,468	2,226	10,093	2,715	2,015	8,853	36,949
2019	6,299	2,366	2,518	2,309	10,219	2,684	2,144	9,189	37,728
2020	6,347	2,190	2,975	2,389	11,628	2,707	2,195	10,127	40,558
2021	6,692	2,332	3,200	2,571	12,618	2,698	2,253	12,000	44,364
2010-2021 (%)	42.14	9.43	65.46	46.08	79.33	6.26	21.92	153.70	66.24

Source: TURKSTAT, 2022b

The data on the number of physicians per thousand people over the years reveals an increase in İzmir, parallel to the national trend in Türkiye. In İzmir Region, the number of physicians per thousand people rose from 2.2 in 2010 to 2.8 in 2021 (Table 6.12).

TABLE 6.12. Number of Physicians per Thousand People (2010-2021)

Year	Türkiye	İzmir	İstanbul	Ankara
2010	1.7	2.2	1.9	3.5
2011	1.7	2.2	1.9	3.1
2012	1.7	2.3	1.9	3.1
2013	1.7	2.4	1.8	3.2
2014	1.7	2.4	1.9	3.1
2015	1.8	2.4	2.0	3.1
2016	1.8	2.3	2.2	3.1
2017	1.9	2.5	2.0	3.1
2018	1.9	2.6	2.2	3.0
2019	1.9	2.6	2.2	3.1
2020	2.0	2.6	2.5	3.4
2021	2.2	2.8	2.7	3.6

Source: TURKSTAT, 2022b

The number of hospital beds per hundred thousand people in İzmir Region decreased from 298 in 2010 to 279 in 2021. During the 2010–2021 period, while Türkiye and İstanbul experienced an increase in this indicator, İzmir experienced decline (Table 6.13). Currently, İzmir's hospital bed count per capita is below the national average. However, it is expected that this figure will increase significantly once the İzmir City Hospital becomes operational.

TABLE 6.13. Number of Hospital Beds per Hundred Thousand People (2010-2021)

Year	Türkiye	İzmir	İstanbul	Ankara
2010	272	298	255	463
2011	260	282	230	378
2012	265	285	233	375
2013	264	280	234	357
2014	266	278	234	362
2015	266	275	233	344
2016	273	270	244	352
2017	279	279	253	338
2018	283	277	261	332
2019	286	280	262	343
2020	300	275	300	350
2021	301	279	296	335

Source: TURKSTAT, 2022b

Under the YER-SİS project, the mobility of individuals traveling to and from different settlements for healthcare services was measured. Urban infrastructure serves not only the population of the region where it is located but also provides services to the populations of other regions and provinces, creating mobility. The intensity and form of this mobility reveal the level of interconnection between provinces and regions, as well as the hierarchy of settlements. In this context, when patients registered in other provinces but receiving treatment at hospitals in İzmir Region are examined, the top five provinces are observed to be İstanbul, Manisa, Artvin, Aydın, Balıkesir and Muğla (Figure 6.18). Similarly, when individuals from İzmir Region travel to hospitals in other regions for treatment, the leading provinces are Manisa, İstanbul, Ankara, Muğla and Aydın (Figure 6.19).

FIGURE 6.18. Patients Traveling to İzmir Region for Hospital Services (2019)



Source: General Directorate of Development Agencies, 2020

FIGURE 6.19. Patients Traveling from İzmir Region for Hospital Services (2019)



Source: General Directorate of Development Agencies, 2020

C. Cultural Services Infrastructure

Libraries hold a significant place in the cultural services infrastructure of regions. In İzmir Region, the number of public libraries increased from 37 in 2012 to 40 in 2022, marking an 8.1% increase. However, this growth rate in İzmir still remained below the national average. During the 2012–2022 period, while the share of libraries in Ankara and İstanbul within the total for Türkiye increased, İzmir's share declined to 3.2% (Table 6.14).

TABLE 6.14. Number of Public Libraries (2012-2022)

Year	Türkiye	İzmir	İstanbul	Ankara	(%) İzmir	(%) İstanbul	(%) Ankara
2012	1,112	37	36	41	3.33	3.24	3.69
2013	1,118	38	36	41	3.40	3.22	3.67
2014	1,121	38	35	42	3.39	3.12	3.75
2015	1,130	38	35	42	3.36	3.10	3.72
2016	1,137	38	35	42	3.34	3.08	3.69
2017	1,146	38	36	43	3.32	3.14	3.75
2018	1,162	38	38	45	3.27	3.27	3.87
2019	1,182	38	39	47	3.21	3.30	3.98
2020	1,213	38	48	57	3.13	3.96	4.70
2021	1,252	40	62	64	3.19	4.95	5.11
2022	1,257	40	69	72	3.18	5.49	5.73
(%) 2012-2022	13.04	8.11	91.67	75.61	-	-	-

Source: TURKSTAT, 2022I

Museums are another vital element of cultural service infrastructure. The number of museums affiliated with the Ministry of Culture and Tourism in İzmir Region remained unchanged at 10 throughout the 2014–2021 period. This indicator showed a downward trend in İstanbul and an upward trend in Ankara. Over the years, the share of İzmir and İstanbul Regions in the total number of museums in Türkiye has declined (Table 6.15). Currently, one museum affiliated with the Ministry of Culture and Tourism is under construction in İzmir.

TABLE 6.15. Number of Museums Affiliated with the Ministry of Culture and Tourism (2014-2021)

Year	Türkiye	İzmir	İstanbul	Ankara	(%) İzmir	(%) İstanbul	(%) Ankara
2014	192	10	19	5	5.21	9.90	2.60
2015	193	10	18	5	5.18	9.33	2.59
2016	193	10	18	5	5.18	9.33	2.59
2017	199	10	19	5	5.03	9.55	2.51
2018	200	10	17	6	5.00	8.50	3.00
2019	199	10	13	5	5.03	6.53	2.51
2020	205	10	15	6	4.88	7.32	2.93
2021	210	10	15	6	4.76	7.14	2.86
(%) 2014-2021	9.38	0.00	-21.05	20.00	-	-	-

Source: TURKSTAT, 2022I

Private museums also play a significant role in the cultural services infrastructure, contributing substantially to regional economies. In İzmir Region, the number of private museums increased from 17 in 2014 to 19 in 2021. Parallel to the rapid growth in Türkiye during the 2014–2021 period, the number of private museums in İstanbul and Ankara Regions increased significantly, while, the growth in İzmir was limited to approximately 12%, and İzmir's share in Türkiye decreased during this period (Table 6.16).

TABLE 6.16. Number of Private Museums (2014-2021)

Year	Türkiye	İzmir	İstanbul	Ankara	(%) İzmir	(%) İstanbul	(%) Ankara
2014	200	17	46	37	8.50	23.00	18.50
2015	216	17	51	39	7.87	23.61	18.06
2016	224	17	51	40	7.59	22.77	17.86
2017	239	17	56	41	7.11	23.43	17.15
2018	251	17	59	40	6.77	23.51	15.94
2019	268	17	62	46	6.34	23.13	17.16
2020	289	19	65	49	6.57	22.49	16.96
2021	309	19	63	52	6.15	20.39	16.83
(%) 2014-2021	54.50	11.76	36.96	40.54	-	-	-

Source: TURKSTAT, 2022/

When examining the number of users per thousand people in public libraries, an increase of 22% in Türkiye and 27% in İzmir was observed during the 2012–2022 period. Before the pandemic, İzmir Region had a higher usage rate of public libraries compared to Ankara and İstanbul. However, during the 2021–2022 period, İzmir fell to the lowest position among the three provinces. Currently, the number of users per thousand people in İzmir is 108, which is almost half of the pre-pandemic level (Table 6.17).

TABLE 6.17. Number of Public Library Users per Thousand People (2012-2022)

Year	Türkiye	İzmir	İstanbul	Ankara
2012	258	85	32	107
2013	264	73	34	110
2014	268	85	40	113
2015	299	129	45	122
2016	292	151	54	134
2017	310	161	79	129
2018	344	166	89	144
2019	378	213	102	189
2020	155	63	34	67
2021	185	61	78	90
2022	314	108	131	162
(%) 2012-2022	21.71	27.06	309.38	51.40

Source: TURKSTAT, 2022/

In İzmir Region, the number of visitors to museums affiliated with the Ministry of Culture and Tourism was

around 3 million in 2014, decreasing by 57.7% to 1.2 million in 2021. Excluding the negative impact of the pandemic, the number of museum visitors in İzmir has fluctuated over the years. However, İzmir's share in the total number of museum visitors in Türkiye has shown a declining trend (Table 6.18).

TABLE 6.18. Number of Visitors to Museums Affiliated with the Ministry of Culture and Tourism (2014-2021)

Year	Türkiye	İzmir	İstanbul	Ankara	(%) İzmir	(%) İstanbul	(%) Ankara
2014	29,799,790	3,022,429	9,412,353	622,544	10.14	31.59	2.09
2015	28,122,934	2,915,258	8,797,229	760,374	10.37	31.28	2.70
2016	17,247,440	1,669,001	3,807,644	518,324	9.68	22.08	3.01
2017	20,509,746	1,724,101	4,884,790	671,891	8.41	23.82	3.28
2018	28,169,615	2,476,621	7,387,680	691,464	8.79	26.23	2.45
2019	35,048,417	3,059,225	7,798,283	986,538	8.73	22.25	2.81
2020	9,241,912	704,776	803,386	180,518	7.63	8.69	1.95
2021	16,635,380	1,277,860	1,104,509	486,070	7.68	6.64	2.92
(%) 2014-2021	-44.18	-57.72	-88.27	-21.92	-	-	-

Source: TURKSTAT, 2022I

During the 2014–2021 period, the number of visitors to private museums decreased by 18.7%. In 2014, İzmir Region had 129,000 private museum visitors, which decreased to 61,000 by 2021. The effects of the pandemic significantly reduced the number of private museum visitors in Türkiye, including İstanbul, Ankara and İzmir. However, during the pre-pandemic period (2014–2019), the number of visitors in İzmir had more than doubled (Table 6.19).

TABLE 6.19. Number of Visitors to Private Museums (2014-2021)

Year	Türkiye	İzmir	İstanbul	Ankara	(%) İzmir	(%) İstanbul	(%) Ankara
2014	8,131,778	129,383	4,396,599	839,512	1.59	54.07	10.32
2015	8,925,132	280,604	4,381,894	912,666	3.14	49.10	10.23
2016	8,040,090	387,076	2,947,664	871,393	4.81	36.66	10.84
2017	10,151,930	376,164	3,902,978	1,068,876	3.71	38.45	10.53
2018	12,478,229	389,094	4,755,063	1,522,924	3.12	38.11	12.20
2019	16,258,132	312,073	5,930,711	1,654,270	1.92	36.48	10.18
2020	4,514,571	106,424	1,640,471	542,683	2.36	36.34	12.02
2021	6,609,937	61,143	1,250,641	960,443	0.93	18.92	14.53
(%) 2014-2021	-18.71	-52.74	-71.55	14.40			

Source: TURKSTAT, 2022I

The cultural services infrastructure of İzmir Region, as detailed in the explanatory report of the 1/25,000-Scale İzmir Metropolitan Area Environmental Plan, includes 39.2 hectares of cultural facility areas. The share of cultural facility areas in total land use is 0.4%. İzmir Region has 76.1 hectares of fair, festival and exhibition areas, accounting for 0.8% of land use (Table 6.20).

TABLE 6.20. Distribution of Green and Large Open Spaces in the İzmir Metropolitan Area (2021)

Green and Large Open Space	Area (ha)	Share in Land Use (%)	Share in Total Area (%)
Regional Park/Large Urban Green Area	2.970	30.8	0.6
Nature Park	528.2	5.5	0.1
Ecology Park	748.2	7.8	0.1
Fair, Festival, Exhibition Area	76.1	0.8	0
Botanical Garden (Arboretum)	151.7	1.6	0
Urban and Regional Large Sports Area	265.6	2.8	0
University Campus Areas	4,323.9	44.8	0.8
Healthcare Facilities	222.5	2.3	0
Cultural Facility Area	39.2	0.4	0
Urban Social Infrastructure Areas	184.2	1.9	0
Educational Sites	135.1	1.4	0
Total	9,644.7	100	1.8

Source: İzmir Metropolitan Municipality, 2021

D. Housing Market

The ratio of housing prices to household income, key data on homeownership, and potential areas for development are presented in the following table and visuals. When examining housing sales in İzmir Region during the 2015–2022 period, the number of housing sales, 77,419 in 2015, increased to 83,066 as of the year 2022. Regarding sales to foreigners in the İzmir Region, 194 houses were sold to foreigners in 2013. This number rose to 908 in 2020 and 1,322 in 2022.

When housing sales by district are examined, the highest number of sales in 2015 occurred in the districts of Karşıyaka, Buca and Karabağlar, respectively. The districts with the lowest number of sales in 2015 were Kiraz, Kınık and Bayındır. In 2022, the districts with the highest number of sales occurred to be Buca, Karşıyaka and Menemen, respectively. During the 2015–2022 period, the highest increases in housing sales were observed in Kiraz at 362%, followed by Bornova at 71% and Seferihisar at 64%. During this period, the number of housing sales decreased by 42% in Bayındır and 28% in Karşıyaka. Housing sales in İzmir Region increased by 7.3% during the 2015–2022 period (Table 6.21). Considering the significant increase in 2020, it is believed that the İzmir housing market was positively affected by the pandemic conditions.

TABLE 6.21. Number of Housing Sales by Districts in İzmir (2015-2022)

District	2015	2016	2017	2018	2019	2020	2021	2022	2015-2022 (%)
Aliağa	2,035	2,379	1,785	1,639	1,690	2,210	1,916	1,723	-15.33
Balçova	1,652	1,667	1,756	1,399	1,378	1,572	1,637	1,493	-9.62
Bayındır	205	79	117	84	79	205	102	119	-41.95
Bayraklı	3,804	3,939	4,212	3,518	3,503	4,246	3,517	3,378	-11.20
Bergama	1,321	1,368	1,701	1,499	1,822	2,027	1,836	1,742	31.87
Bornova	3,518	3,886	4,670	4,411	5,055	5,692	5,446	6,024	71.23

District	2015	2016	2017	2018	2019	2020	2021	2022	2015-2022 (%)
Buca	7,682	8,200	10,208	9,695	10,626	11,299	10,211	10,007	30.27
Çeşme	1,550	1,612	1,484	1,314	1,319	1,872	1,892	1,533	-1.10
Çiğli	4,505	5,886	5,561	5,312	6,094	7,488	5,585	4,901	8.79
Dikili	2,253	2,205	2,115	1,955	2,029	2,445	2,329	2,043	-9.32
Foça	1,130	1,387	1,325	1,269	1,250	1,734	1,583	1,479	30.88
Gaziemir	1,817	1,858	2,017	1,562	1,624	1,794	1,612	1,403	-22.78
Güzelbahçe	808	913	913	801	753	1,028	1,020	731	-9.53
Karabağlar	7,394	6,652	6,504	5,940	5,452	6,509	6,284	5,712	-22.75
Karaburun	444	590	725	683	494	899	771	591	33.11
Karşıyaka	10,936	9,982	9,510	7,888	8,604	9,741	8,669	7,843	-28.28
Kemalpaşa	1,649	1,749	1,436	1,240	1,440	1,933	1,943	1,909	15.77
Kınık	47	53	86	25	81	21	24	70	48.94
Kiraz	26	21	20	26	43	165	154	120	361.54
Konak	4,852	4,906	4,725	3,885	4,151	4,636	4,693	6,072	25.14
Menderes	1,955	2,318	2,495	2,239	2,307	2,449	2,031	1,865	-4.60
Menemen	4,576	4,868	4,989	4,712	4,724	5,976	6,633	6,550	43.14
Narlıdere	1,087	1,087	1,143	944	928	1,131	1,135	938	-13.71
Ödemiş	1,880	1,875	2,031	1,822	1,741	2,056	1,875	2,059	9.52
Seferihisar	1,558	2,196	2,601	2,415	2,476	3,234	3,195	2,553	63.86
Selçuk	610	556	694	581	665	712	706	795	30.33
Tire	1,487	1,449	1,455	1,242	1,362	1,629	1,466	1,384	-6.93
Torbalı	5,364	5,807	6,335	5,980	5,958	6,890	6,537	6,603	23.10
Urla	1,274	1,418	1,174	1,110	1,167	1,547	1,576	1,426	11.93
Total	77,419	80,906	83,787	75,190	78,815	93,140	86,378	83,066	7.29

Source: TURKSTAT, 2022m

In 2013, there were 28,491 brand new housing sales in İzmir Region, which decreased to 23,281 in 2022. When second-hand housing sales in İzmir Region are examined, the number of sales is seen to have increased from 43,930 in 2013 to 60,221 in 2022. During the 2013–2022 period, brand new sales decreased by 18%, while second-hand sales increased by 37%. It can be observed that second-hand housing sales consistently surpassed initial sales over the years (Table 6.22).

TABLE 6.22. Number of Initial and Second-Hand Housing Sales in İzmir Region by Year (2013-2022)

Year	Brand New Sales	Second Hand Sales
2013	28,491	43,930
2014	29,357	42,422
2015	31,065	46,731
2016	32,609	48,707
2017	34,661	49,523
2018	32,872	42,800
2019	28,079	51,142
2020	27,534	65,923
2021	23,216	63,506
2022	23,281	60,221
(%) 2013-2022	-18.29	37.08

Source: TURKSTAT, 2022m

When examining the total housing sales value by districts in İzmir for 2021, the highest district totals were seen to have been recorded in Karşıyaka at 9.1 billion TRY, Bornova at 7.7 billion TRY, Buca at 7.5 billion TRY, and Çeşme at 7.1 billion TRY. The lowest district totals were in Beydağ, Kiraz and Kınık. Regarding unit sale prices by district, the highest values were recorded in Narlıdere at 1.1 million TRY, Çeşme at 1.08 million TRY, and Güzelbahçe at 880,000 TRY (Table 6.23).

TABLE 6.23. Total Housing Sales Values in Districts of İzmir (2021)

District	Total Sales Value (billion TRY)	Unit Sale Price (Million TRY)
Narlıdere	2.72	1.10
Çeşme	7.08	1.08
Güzelbahçe	2.31	0.88
Gaziemir	3.27	0.74
Urla	4.57	0.73
Bornova	7.73	0.58
Karşıyaka	9.08	0.53
Çiğli	6.65	0.52
Bayraklı	4.12	0.49
Konak	5.59	0.47
Aliağa	2.64	0.42
Balçova	1.51	0.42
Seferihisar	3.56	0.39
Foça	1.54	0.36
Menemen	4.95	0.35
Menderes	3.68	0.33

District	Total Sales Value (billion TRY)	Unit Sale Price (Million TRY)
Karabağlar	4.61	0.32
Kemalpaşa	3.02	0.32
Selçuk	0.78	0.29
Buca	7.51	0.28
Torbali	5.05	0.28
Karaburun	0.86	0.26
Dikili	2.27	0.26
Tire	1.47	0.24
Bergama	1.74	0.21
Ödemiş	1.70	0.19
Kınık	0.26	0.13
Kiraz	0.18	0.10
Bayındır	0.46	0.09
Beydağ	0.06	0.09

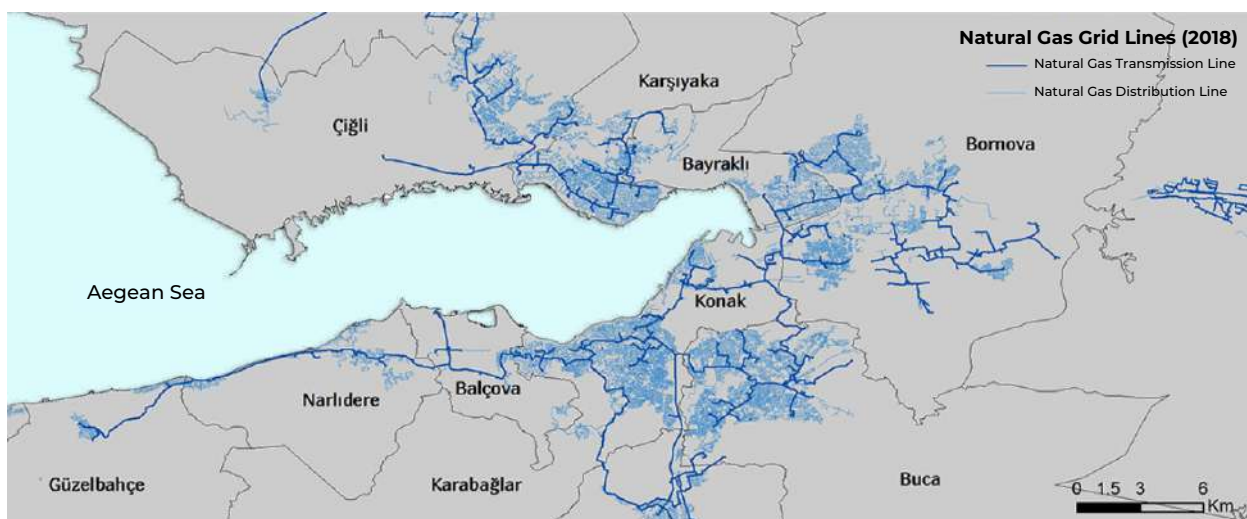
Source: İZKA, 2022

E. Urban Infrastructure

Urban infrastructure systems encompass spatially overlapping urban service providers such as electrical grids, potable water and sewage networks, natural gas pipelines, internet cable networks, roadways, and rail networks for settlement centers.

The natural gas grid in İzmir Region is shown in Figure 6.20. By the end of 2018, a total of 706 km of steel pipelines, 3,744 km of polyethylene main pipelines, and 1,660 km of service pipelines had been laid in İzmir Region, providing services to approximately one million subscribers as of 2019 (Zengin, 2021).

FIGURE 6.20. Natural Gas Network in İzmir Region



Source: İzmir Urban Infrastructure Research Project, 2022

Drinking and utility water in İzmir Region is supplied from groundwater sources such as Sarıkız (Manisa-Saruhanlı), Göksu (Manisa-Muradiye), Çavuşköy (Menemen), Halkapınar, Pınarbaşı, Buca, and Sarnıç deep wells; from surface water sources such as Tahtalı Dam (Menderes), Balçova Dam, Gördes Dam (Manisa); as well as other surface water sources (İZSU, 2022a). Since the water distribution system in the metropolitan center of İzmir is integrated, water obtained from different sources is fed into the system at various points and merges within the system. In districts outside the metropolitan center, drinking and utility water is supplied from the water resources of each settlement (Figure 6.21).

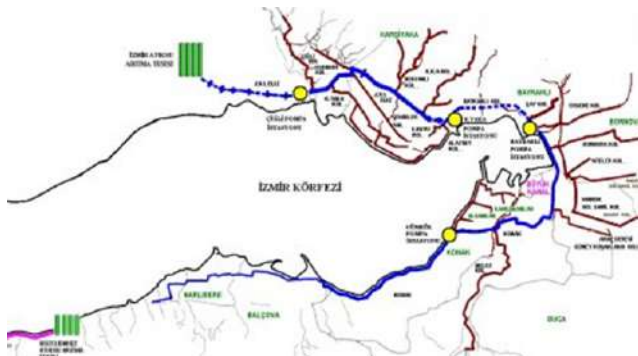
FIGURE 6.21. Water Distribution Network in İzmir Region



Source: İZSU, 2022a

The sewage infrastructure of İzmir Region is shown in Figure 6.22. According to İZSU data, approximately 4,150 km of main sewer networks and 100 km of secondary collector sewer lines collect wastewater in the İzmir Region. The collected wastewater is transported via a 42 km main interception channel and four pump stations from the Narlıdere wastewater treatment plant to the Çiğli wastewater treatment plant. The treated water from the treatment plant is discharged into the sea through a reinforced concrete open channel, 8 m wide, 2 m deep and 2.5 km long (İZSU, 2022b).

FIGURE 6.22. Sewer Network in İzmir Region



Source: İZSU, 2022b

F. Technological Infrastructure

Examination of the telecommunications statistics in İzmir Region over the years reveals that mobile communication has increased due to rapidly developing technologies like smartphones, while the number of users of traditional fixed communication tools has declined. In 2011, the number of fixed telephone access lines was around 1 million, but this figure fell to 678,000 in 2022. During the 2011–2022 period, the number of fixed telephone access lines in the region decreased by 36%. Similarly, the capacity of fixed telephone exchanges, which was 2.8 million in 2011, dropped below 1 million in 2022, representing a 65% decline during the 2011–2022 period. The number of payphones, which stood at 5,700 in 2011, fell by approximately 45%, down to around 3,000 as of the year 2022 (Table 6.24).

TABLE 6.24. Telecommunications Statistics in İzmir Region by Year (2011–2022)

Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fixed Telephone Access Lines (Thousand)	1,063	922	946	866	787	749	790	747	733	768	745	678
Fixed Telephone Exchange Capacity (Million)	2.81	2.82	1.60	1.57	1.47	1.41	1.36	1.28	1.03	1.07	1.02	0.98
Payphones (Thousand)	5.70	6.03	5.97	5.93	5.85	5.83	5.81	5.91	4.31	4.03	3.39	3.08
Mobile Phone Subscribers (Million)	3.77	3.85	3.89	3.92	3.91	4.02	4.07	4.12	4.21	4.30	4.43	4.55
Broadband Internet Subscribers - Total (Million)	0.93	1.29	2.00	2.43	2.77	3.49	3.83	4.11	4.30	4.61	4.91	5.10
Fixed Broadband Internet Subscribers - Total (Million)	0.59	0.61	0.64	0.07	0.73	0.79	0.88	0.97	1.00	1.12	1.20	1.25
Fiber Subscribers (Thousand)	39	85	131	158	182	208	245	280	304	347	396	442
xDSL Subscribers (Thousand)	503	474	465	468	490	521	570	609	607	67	699	697
Cable Subscribers (Thousand)	44	46	43	48	52	59	64	69	77	84	85	86
Mobile Broadband Internet Subscribers - Total (Million)	0.34	0.68	1.35	1.76	2.05	2.70	2.95	3.15	3.30	3.50	3.71	3.85
Internet from Mobile Devices (Thousand)	96	113	115	91	110	86	55	41	44	30	28	43
Mobile Internet on Smartphones (Million)	0.24	0.57	1.24	1.67	1.94	2.62	2.90	3.11	3.26	3.47	3.69	3.81
Cable TV Subscribers (Thousand)	131	129	121	118	113	110	108	105	103	102	98	96
Fiber-Optic Cable Length (Thousand km)	-	9.56	11.18	11.90	13.10	14.31	15.88	17.63	19.19	20.8	22.56	24.62

Source: BTK, 2023

When mobile phone subscription figures are analyzed, a different growth trend is observed. The number of mobile subscribers, 3.77 million in 2011, rose to 4.55 million as of the year 2022. The total number of broadband internet subscribers in İzmir Region increased from 930,000 in 2011 to more than 5.1 million in 2022, representing a more than fourfold increase. The number of fixed broadband internet subscribers also more than doubled, rising from 590,000 in 2011 to 1.25 million in 2022.

The number of fiber internet subscribers, which stood at 39,000 in 2011, increased nearly elevenfold to 442,000 in 2022. Similarly, with the proliferation of mobile devices, the number of mobile broadband internet subscribers increased tenfold over eleven years, reaching 3.85 million in 2022. The number of mobile internet subscribers also rose similarly, reaching 3.81 million in 2022. The length of fiber-optic cables in İzmir Region, which was 9,556 km in 2012, increased to 24,622 km in 2022. During the 2011–2022 period, the length of fiber-optic cables in İzmir grew by approximately 157%. A robust fiber internet infrastructure is critical for the development of areas like Industry 4.0, digital transformation, big data, and IoT in the region. The opportunities and services offered by evolving and widespread technology continue to increase, and İzmir's technological infrastructure is advancing to meet this demand.

G. Evaluation

Empirical evidence in regional development literature demonstrates the positive effects of quality of life and infrastructure on growth and development. İzmir Region is one of Türkiye's most advantageous regions in terms of existing transportation facilities. However, its location in the westernmost part of the country increases the need for a fast, reliable and diversified transportation infrastructure. İzmir has historically been a port city, and the regional economy has been based for centuries on trade and service sectors supported by production. The region also has significant volume and potential in agriculture. The impacts of the recently completed Northern Aegean Motorway and İstanbul–İzmir Motorway on economic activity and settlement patterns have not yet fully materialized. Once the Aydın–Denizli Motorway, which is currently under construction, becomes operational, the region's terrestrial transportation facilities and accessibility will reach their highest level. When the Çandarlı Port is completed and integrated with road and railway connections, a highly advanced transportation system for the flow of goods will be established for İzmir Region. The planning of logistics and storage areas, which are vital for the system's operation, is critically important. Otherwise, it will not be possible for the system to function optimally and provide maximum benefits. With the completion of current and planned projects and İzmir's inclusion in the high-speed train network, a new chapter will open in passenger transportation between settlements in the region. However, the primary aim of these transportation infrastructure investments at the regional level is to improve welfare and quality of life. The construction pressure that will arise on natural, cultural and agricultural areas due to increased accessibility can only be mitigated through a meticulous planning process.

Another factor that directly affects urban quality of life is the ease and accessibility of intra-city transportation. The size of the population in İzmir's central city renders approaches focusing solely on wheeled transportation modes inadequate. In recent years, infrastructure investment planning and implementations at various scales (tram, metro, İZBAN) have positively contributed to urban transportation. Nevertheless, it is indisputable that the share of rail systems in urban transportation should increase in a metropolis the size of İzmir. Along with new lines, the number and diversity of transfer points between different transportation modes within the city must also be increased. Undoubtedly, the more the lines of different modes of transportation, including maritime transportation, intersect, the easier and more attractive transitions between modes will become. The efficient and holistic functioning of the system is only possible if transfer points are planned in sufficient numbers and appropriate locations. Furthermore,

urban planning approaches that ensure daily needs can be met within a short walking distance at the neighborhood level will alleviate the load on the urban transportation system and align with objectives to enhance individual mobility.

For maintaining a quality urban and rural life in the region, the complete management of wastewater and the accurate prediction of future water demand are essential. For Türkiye and İzmir Region, which are not rich in water resources, it is crucial to realistically determine future water needs and develop water usage plans. Another important component of quality of life is housing. Policies that eliminate housing issues for all segments of society must be sustained, and new policies must be developed and implemented when existing ones prove insufficient. The Aegean Sea earthquake on October 30, 2020, caused loss of life, particularly in central districts such as Bayraklı and Bornova, and reduced the housing stock in the city. Until the housing supply implemented by TOKİ following the earthquake is completed, the reduction in housing stock, combined with factors such as external migration and high inflation, has led to housing problems for a significant portion of society, particularly low-income families and students. If all institutions, from central to local governments, act together toward the same goal, the housing problem can cease to be a significant issue in İzmir Region. Every individual has the right to live in safe and durable buildings, with complete amenities, in areas with high environmental quality, both in urban and rural settings.

In addition to meeting basic needs, enriching urban and rural settlements with cultural and social spaces is essential to achieving a high quality of life. Increasing the number and diversity of social and cultural spaces is also necessary to make İzmir Region a hub of attraction for domestic and foreign tourists. In this context, the ongoing construction of a museum affiliated with the Ministry of Culture and Tourism in the region is both significant and valuable. However, initiatives relying solely on public resources are insufficient to create a rich cultural and social environment. Encouraging the private sector to invest in public-use facilities such as museums, libraries, theaters, performing arts halls and social facilities should be among the priorities in the region.

7. TOURISM, NATURAL AND HISTORICAL ASSETS

A. Tourism

According to the border entry-exit statistics of the Ministry of Culture and Tourism, the provinces with the highest number of foreign tourists entering Türkiye through border gates are İstanbul and Antalya, while İzmir is ranked after Edirne, Muğla and Artvin. (Table 7.1). On the other hand, when foreign tourists arriving by sea and air are considered, İzmir ranks fourth after İstanbul, Antalya and Muğla.

Foreign visitors to İzmir Region mostly arrive by air. The border gates accessed via sea routes are located in the districts of Çeşme, İzmir Central, Aliağa, Dikili, Foça, and Seferihisar.

TABLE 7.1. Distribution of Foreign Visitors to Türkiye by Provinces of Border Gates and Entry Routes

Province	Sea	Air	Land	Rail	Total	Ratio (%)
İstanbul	234,367	15,973,408	-	-	16,207,775	36.35
Antalya	60,998	12,658,561	-	-	12,719,559	28.53
Edirne	-	-	4,550,287	17,505	4,567,792	10.24
Muğla	533,457	2,425,338	-	-	2,958,795	6.64
Artvin	614	414	1,709,195	-	1,710,223	3.84
İzmir	126,145	1,355,960	-	-	1,482,105	3.32
Türkiye Total	1,668,358	33,932,465	8,966,718	19,026	44,586,567	100.00

Source: Ministry of Culture and Tourism, 2022

An examination of the number of foreign tourists visiting İzmir over the past three years reveals that the negative effects of the COVID-19 pandemic on tourism were largely mitigated in 2022. Due to pandemic restrictions, only 297,000 tourists visited the region in 2020, while 698,000 tourists visited in 2021. In contrast, 2022 saw 1.465 million foreign tourists visiting İzmir, marking a 110% increase compared to the previous year. The months of July and August are the busiest periods for foreign tourist arrivals in the region (Table 7.2).

TABLE 7.2. Distribution of Foreign Visitors to İzmir by Year and Month (2019-2022)

Month	2019	2020	2021	2022	Change Ratio 2021-2022 (%)
January	20,022	27,901	4,752	23,473	394
February	23,919	32,771	5,155	26,044	405
March	37,515	11,920	13,909	40,595	192
April	72,395	53	13,764	87,764	538
May	96,342	30	20,731	127,633	516
June	168,636	15,270	59,327	192,553	225

Month	2019	2020	2021	2022	Change Ratio 2021-2022 (%)
July	238,924	57,864	216,984	281,537	30
August	209,909	66,368	126,748	251,303	98
September	166,766	42,852	85,446	190,693	123
October	115,969	25,043	83,588	152,224	82
November	32,585	7,226	26,663	42,286	59
December	41,652	10,144	41,284	48,901	18
Total	1,224,634	297,442	698,351	1,465,006	110

Source: İzmir Provincial Directorate of Culture and Tourism, 2022

In December 2022, air arrivals to İzmir increased by 20% compared to the pre-pandemic levels of 2019, while total arrivals increased by 17%.

TABLE 7.3. Distribution of Foreign Visitors to İzmir by Entry Mode and Year (2019-2022)

Entry Mode	2019	2020	2021	2022	2019-2022 Change (%)
Air	35,848	9,663	40,109	43,156	20.4
Sea	5,804	481	1,175	5,745	-1.0
Total	41,652	10,144	41,284	48,901	17.4

Source: İzmir Provincial Directorate of Culture and Tourism, 2022

Approximately 1.3 million of the tourists arriving in İzmir entered via Adnan Menderes Airport, while 76,000 entered via Çeşme Port, 37,000 via Alsancak Port, 9,000 via Aliğa Port, 5,000 via Dikili Port, and 370 via Seferihisar Port.

TABLE 7.4. Number of Tourists Entering through Border Gates in İzmir Province (2019-2022)

Year	A. Menderes Airport	Alsancak Port		Aliğa Port		Çeşme Port		Dikili Port		Foça Port		Seferihisar Port		Total
	Entry	Entry	D.T.	Entry	D.T.	Entry	D.T.	Entry	D.T.	Entry	D.T.	Entry	D.T.	
2019	1,113,357	12,901	0	21,209	0	73,672	0	1,837	0	23	0	1,635	0	1,224,634
2020	281,944	2,814	0	7,318	0	5,145	0	221	0	0	0	0	0	297,442
2021	691,826	1,280	752	4,255	2,659	944	537	43	23	0	0	3	0	698,351
2022	1,337,186	3,504	33,572	8,968	0	68,319	7,771	643	4,673	0	0	370	0	1,465,006

Source: İzmir Provincial Directorate of Culture and Tourism, 2022 (D.T.: Day Tripper)

When the distribution of foreign tourists visiting İzmir in 2022 by country is examined, it is ascertained that Germans maintained their first-place position. Germany is followed by the UK, the Netherlands, France and Poland, respectively. More than 90% of visitors to İzmir come from European countries. When the distribution of foreign tourists by country over the past three years is analyzed, it can be observed that the shares of Switzerland, Azerbaijan and Poland have significantly increased (Table 7.5).

TABLE 7.5. Distribution of Foreign Tourists Visiting İzmir by Country (2019-2022)

Country	2019	2020	2021	2022	2019-2022 Change (%)
Germany	395,329	126,507	334,857	530,754	34
UK	119,495	34,371	9,090	158,661	33
Netherlands	78,528	20,511	55,291	99,973	27
France	53,461	13,538	32,061	67,407	26
Poland	41,542	3,042	28,821	66,162	59
Iran	62,333	1,543	39,323	61,629	-1
Belgium	46,133	6,336	21,852	44,841	-3
Azerbaijan	21,132	2,990	32,209	35,874	70
Switzerland	20.497	9.564	18.209	34.526	68
Russia	25.848	1.828	7.719	30.204	17

Source: İzmir Provincial Directorate of Culture and Tourism, 2022

According to the latest facility statistics from the Ministry of Culture and Tourism, İzmir Region hosts a total of 1,729 facilities, comprising 278 with operating licenses, 60 with investment licenses, and 1,391 basic accommodation facilities. The total bed capacity of all facilities is 91,943 (Table 7.6). Additionally, İzmir features 28 environmentally friendly certified facilities with a combined bed capacity of 11,349.

TABLE 7.6. Number of Facilities and Capacities in Türkiye, the Aegean Region, and İzmir Region (2023)

Region	Operating License		Investment License		Basic Accommodation		Total	
	Facility	Capacity	Facility	Capacity	Facility	Capacity	Facility	Capacity
Türkiye	4,969	1,100,139	715	168,604	15,147	676,883	20,831	1,945,626
Aegean Region	961	205,071	181	46,691	4,307	188,642	5,449	440,404
İzmir	278	42,968	60	11,401	1,391	37,574	1,729	91,943

Source: General Directorate of Investments and Operations, Ministry of Culture and Tourism (June 2023)

According to accommodation statistics, a total of 3.4 million domestic and foreign guests stayed in tourism operating-licensed facilities in İzmir Region during 2022, accounting for 7 million overnight stays. Within the same period, the occupancy rate of tourism operating-licensed facilities was 46.7%, falling behind the national average of 54.9% (Table 7.7).

TABLE 7.7. Accommodation Statistics for Tourism Operating and Municipality-Licensed Facilities in İzmir Region

Facility Type	Number of Arrivals (Thousand)			Overnight Stays (Thousand)			Average Stay Duration (Day)			Occupancy Rate (%)			
	Foreign	Domestic	Total	Foreign	Domestic	Total	Foreign	Domestic	Total	Foreign	Domestic	İzmir Total	Türkiye Total
Operating License	1,212	2,171	3,383	2,985	4,003	6,988	2.5	1.8	2.1	20.0	26.8	46.7	54.9
Municipality License	115	347	462	235	617	851	2.0	1.8	1.8	11.9	31.3	43.2	45.6

Source: General Directorate of Investments and Operations, 2022

B. Protected Areas

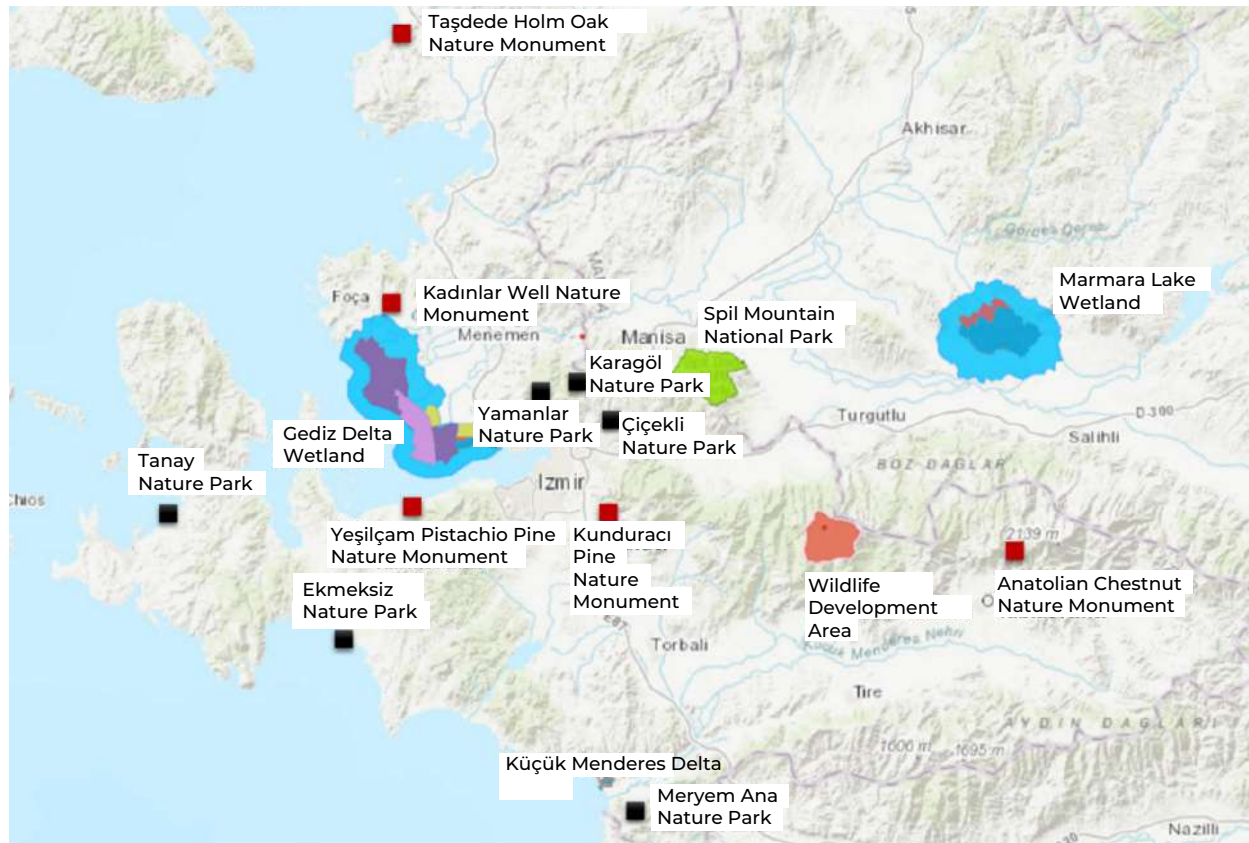
Protected areas are defined under the Regulation on Plans to Be Made in Protected Areas issued by the Ministry of Environment and Urbanization as “land or marine areas identified and managed under relevant legislation to preserve biodiversity, natural and associated cultural resources, ensuring their continuity.” These include national parks, nature parks, natural monuments, nature conservation areas, natural protected sites, wetlands, special environmental protection areas, and other areas with similar statuses (Ministry of Environment and Urbanization, 2012).

According to data from the General Directorate of Nature Conservation and National Parks under the Ministry of Agriculture and Forestry, although there are no areas with national park status within İzmir's provincial borders, 8 out of Türkiye's 262 nature parks are located in İzmir. These include Meryemana Nature Park in Selçuk, Ekmeksiz Beach in Seferihisar, Tanay in Çeşme, Çiçekli in Bornova, Efeoğlu in Torbalı, Gümüldür in Menderes, Yamanlar Mountain and Karagöl Nature Park (Figure 7.1).

10 out of Türkiye's 113 natural monuments are within İzmir Province. These include Anadolu Chestnut, Kunduracı Plane Tree, Taşdede Holm Oak, Teos Pistacia, Ovacık Village Sweet Chestnut (Anadolu Kestanesi), Yarendere Stone Pine, Yemişçi Plane Tree, Yemişçi Stone Pine, Kadınlar Kuyusu Pistacia Atlantica, and Dede Pistacia Atlantica Natural Monuments. Additionally, 3 of Türkiye's 85 Wildlife Development Areas (WDA) are in İzmir: Selçuk-Gebekirse Lake and Homa Lagoon for observing waterfowl and Bayındır-Ovacık WDA for observing roe deer.

İzmir's only wetland under protection, the Gediz Delta, also holds international Ramsar Site status, making it one of Türkiye's 14 Ramsar Sites. Known as İzmir Bird Paradise, the delta hosts the world's largest artificial flamingo breeding island.

FIGURE 7.1. Nature Conservation Areas, National Parks, and Wetlands



Source: Ministry of Culture and Tourism, 2022d

Areas with the status of Special Environmental Protection Area (SEPA) are designated under the Barcelona Convention on the Protection of the Mediterranean Sea against Pollution, which imposes obligations on signatory countries. These areas are ecologically significant but face risks of degradation or destruction due to pressures from industrial, tourism, and construction-related land use. Such areas are granted special protection by a decision of the Council of Ministers (Official Gazette, 2018).

Within the boundaries of İzmir Region, there are two SEPA-designated areas: Foça and Karaburun-Ildır Bay. Foça was declared a SEPA in 1990 due to its role as a habitat for the endangered Mediterranean monk seal (*Monachus monachus*). The second SEPA, declared in 2019 by Presidential Decree, covers a marine area and islands spanning 946.5 km² around Karaburun Peninsula and Ildır Bay.

C. Historical Conservation Areas

Throughout its ancient history, İzmir has hosted numerous civilizations, leaving behind a rich heritage of historical conservation areas. As of 2022, the region contains a total of 1,041 protected sites, including 950 archaeological sites, 48 urban sites, 25 historical sites, 5 urban archaeological sites, 5 mixed archaeological and historical sites, and 8 mixed archaeological and urban sites (Table 7.8). Significant sites within the İzmir Region are depicted in Figure 7.2. Prominent historical landmarks include the ancient cities of Erithrai on the Çeşme Peninsula, Pergamon in Bergama, Phokaia in Foça, and Klazomenai in Urla.

The “Bergama Multilayered Cultural Landscape Area” was inscribed on the UNESCO World Heritage List in 2014, followed by the “Ephesus World Heritage Site” in 2015. Sites such as the “Historical Town of Birgi” in 2012, “Foça and Çandarlı Castles” in 2013, and the “Historic Port City of İzmir” in 2020 have been included in the UNESCO Tentative World Heritage List. Efforts to transition these sites to the permanent list are ongoing.

TABLE 7.8. Distribution of Historical Conservation Areas in the İzmir Region (2022)

Type of Site	Number of Sites
Archaeological Site	950
Urban Site	48
Historical Site	25
Urban Archaeological Site	5
Mixed Archaeological and Historical Site	5
Mixed Archaeological and Urban Site	8
Total	1,041

Source: Ministry of Culture and Tourism, 2022e

TABLE 7.9. Distribution of Immovable Cultural Assets Requiring Conservation in the İzmir Region (2022)

Type of Cultural Asset	Sayı
Streets under Protection	6
Monuments	33
Administrative Buildings	257
Cultural Buildings	730
Martyrs' Cemeteries	2
Military Buildings	33
Industrial and Commercial Buildings	762
Religious Buildings	482
Cemeteries	253
Examples of Civil Architecture	5,219
Ruins	122
Total	7,899

Source: Ministry of Culture and Tourism, 2022g

Out of a total of 122,144 registered immovable cultural assets across Türkiye, 7,899 are located in İzmir Region (Table 7.9). Among these, structures categorized under civil architecture, encompassing architectural works other than religious and military structures—such as inns, caravanserais, fountains, pavilions, and bazaars—stand out in number (Ministry of Culture and Tourism, 2022g).

FIGURE 7.2. Protected Sites in İzmir⁹

D. Cultural Routes

Efforts are ongoing in the İzmir Region to create cultural routes to raise awareness of historical and natural wealth and enrich cultural and social life. The Ephesus-Mimas Route consists of sub-routes themed around history, olives, and vineyards, connecting Ionian ancient cities with Ottoman historical values via walking and cycling paths. The 709 km-long route starts from the Temple of Artemis in the Ancient City of Ephesus and ends in the Karaburun Peninsula after passing through the Ancient City of Erythrai (İzmir Metropolitan Municipality, 2022c).

The Olive Route passes through the districts of Güzelbahçe, Çeşme, Seferihisar, Menderes and Selçuk. Along this route, 68 monumental olive trees, aged between 300 and 2,000 years, as well as olive oil workshops, factories, pressing sites, and stones used in olive oil production, are marked (İzmir Metropolitan Municipality, 2022c). The Vineyard Route carries traces of viticulture and wine production, an ancient economic activity conducted for thousands of years on the Çeşme Peninsula, to the present day. The 151 km-long vineyard route includes 6 regional routes encompassing vineyards in Selçuk, Seferihisar, Menderes, Urla, Karaburun and Çeşme (İzmir Metropolitan Municipality, 2022c).

The Efeler Route starts from the Bornova district of İzmir and spans 500 km, passing through the Nif Mountain, Bozdağ Mountain ranges, and the plateaus of Kiraz before ending at the Virgin Mary's House in Selçuk. It is a multi-stage and marked trekking route (Efeler Yolu, 2022). The route connects villages, plateaus, and significant efe strongholds associated with the efe/zeybek culture, an important cultural element in the Aegean Region, via well-preserved natural trails.

⁹ Prepared using OpenStreetMap History and information from the Ministry of Culture and Tourism on private museums. Not all protected sites are shown on the map. For informational purposes only; not definitive.

E. Cultural and Tourism Conservation and Development Areas

Cultural and Tourism Conservation and Development Areas (CTCDA) are areas designated to ensure the planned development of locations with significant historical and cultural values and high tourism potential, balancing protection, utilization and development pressures (Ministry of Culture and Tourism, 2022f).

Tourism Centers are areas or sections within or outside the Cultural and Tourism Conservation and Development Areas, prioritized for the development of tourism activities and movements. In the region, there are 17 tourism centers and 2 CTCDAs with coastal themes in Çeşme and thermal themes in Dikili. Of the total 19 centers, 16 have a coastal theme, and 3 have a thermal theme, with 12 located in the Çeşme district (Table 7.10, Figure 7.3).

TABLE 7.10. Cultural and Tourism Conservation and Development Areas and Tourism Centers (2022)

Cultural and Tourism Conservation and Development Areas	Area (ha)	Type	District	Theme
İzmir Alaçatı Çakabey TC	1,083	TC	Çeşme	Coastal
İzmir Alaçatı Güvercinlik TC	575	TC	Çeşme	Coastal
İzmir Alaçatı Mersin Bay TC	1,254	TC	Çeşme	Coastal
İzmir Alaçatı TC	236	TC	Çeşme	Coastal
İzmir Alaçatı Yumru Bay TC	1,705	TC	Çeşme	Coastal
İzmir Balçova Thermal TC Extension	37	TC	Balçova, Narlıdere	Thermal
İzmir Çeşme Altinkum Northern TC	1,622	TC	Çeşme	Coastal
İzmir Çeşme Altinkum TC	275	TC	Çeşme	Coastal
İzmir Çeşme Ayasaranda TC	134	TC	Çeşme	Coastal
İzmir Çeşme CTCDA	16,143	CTCDA	Çeşme	Coastal
İzmir Çeşme Paşa Port TC	131	TC	Çeşme	Coastal
İzmir Çeşme Reisdere TC	85	TC	Çeşme	Coastal
İzmir Çeşme Şifne TC	420	TC	Çeşme	Coastal
İzmir Dikili Thermal CTCDA	30,406	CTCDA	Dikili, Bergama	Thermal
İzmir İnciraltı TC	579	TC	Balçova	Coastal
İzmir Özdere Kesre TC	381	TC	Menderes	Coastal
İzmir Seferihisar Doğanbey Thermal TC Extension	10,826	TC	Seferihisar	Thermal
İzmir Selçuk Pamucak II TC	3,124	TC	Selçuk	Coastal
İzmir Selçuk Pamucak TC	250	TC	Selçuk	Coastal

Source: Ministry of Culture and Tourism, 2022f



FIGURE 7.3. İzmir Region Cultural and Tourism Conservation and Development Areas and Tourism Centers¹⁰

¹⁰ Prepared for informational purposes and does not guarantee accuracy.

Source: Ministry of Culture and Tourism, 2022f

F. Evaluation

It is challenging to claim that İzmir's tourism potential, as one of Türkiye's prominent tourism centers, is being effectively utilized. According to data from the Ministry of Culture and Tourism, the number of domestic and foreign tourists visiting İzmir constitutes approximately 4% of the total number of tourists visiting Türkiye. By revitalizing urban tourism, which has significant potential due to its historical texture and cultural assets, developing alternative tourism types such as health, congress, and fair tourism, increasing public and private investments, and enhancing service quality, İzmir can achieve a higher ranking in terms of visitor numbers and revenue. Efforts must also be made to increase İzmir's recognition abroad and establish more direct transportation links to international destinations.

Undoubtedly, İzmir Region is one of Türkiye's richest regions in terms of natural and historical assets. Natural and historical sites in the region are protected under both national legislation and international conventions. Over the past decade, the number of areas with "site" status in İzmir has increased from 546 to 1,041, while the number of registered immovable cultural assets has risen from 5,115 to 7,899.

The province of İzmir, which has been revealed through scientific excavations to date back to 3,000 BCE and has been continuously inhabited for at least 5,000 years, hosts unique cultural assets. Seven of the twelve independent Ionian city-states, including the ancient city of Ephesus (Ephesos), are located within the borders of İzmir Province. Pergamon, another significant center of the ancient world, lies within the district of Bergama. The "Pergamon Multi-Layered Cultural Landscape" and the "Ephesus World Heritage Site" are included in the UNESCO World Heritage List, while the "Birgi Historical City," "Foça and Çandarlı Castles," and "İzmir Historical Port City" are listed in UNESCO's Tentative World Heritage List. The Gediz Delta, also known as Bird Paradise, is a highly significant wetland. The presence of two Special Environmental Protection Areas (SEPA) in Foça and Karaburun within İzmir Province further highlights the region's richness in terms of natural assets.

While İzmir's abundance of natural and cultural assets is a significant strength, these areas are sometimes perceived as thresholds that slow down or even hinder sectoral growth. These thresholds occasionally emerge as points of tension in tourism, industrial and energy investments, indicating that not every economic activity can be conducted in every area. Unfortunately, the strict provisions of conservation legislation in our country fail to prevent the irreversible damage and loss of natural and cultural assets. Compared to the previous planning period, a decline in wetlands in İzmir is evident. The Gediz Delta, currently the only wetland, faces significant challenges despite its multiple protection statuses, including urbanization, industrial activities and pollution. Thus, it is clear that some natural and historical areas in the region lack protection status, while areas with protection status are insufficiently safeguarded. On the other hand, sustainable development can only be achieved by fully preserving and transmitting natural and cultural assets to future generations. The core principle here is to ensure development and progress without compromising conservation, adopting this principle as a prerequisite in national, regional and local policies, and decision-making processes. A holistic approach by central and local governments is crucial in making planning decisions to protect, manage and sustainably utilize natural and historical areas.

8. ENVIRONMENT AND CLIMATE CHANGE

A. Air Quality

Cities, with their industrial zones, airports, highways, ports, production centers, and domestic heating fuels in metropolitan city centers, are often plagued by air quality problems. The key indicators used to detect air pollution, such as sulfur dioxide (SO₂), particulate matter (PM_{2.5} and PM₁₀), nitrogen oxides (NO, NO₂, and NO_x), volatile organic compounds, ozone (O₃), and carbon monoxide (CO), are monitored and published hourly/daily by the National Air Monitoring Network of the Ministry of Environment, Urbanization and Climate Change. In İzmir Region, there are a total of 23 monitoring stations located in the metropolitan center and various districts, measuring the pollutants affecting air quality as listed above.

PM₁₀, composed of a diverse and complex mixture of airborne particles, originates from sources such as factories, power plants, incinerators, construction activities, fires and wind, and is carried through the air. Particles with aerodynamic diameters smaller than 10 µm are classified as PM₁₀. Table 8.1 provides descriptive statistics on PM₁₀ particles at air monitoring stations in İzmir Region. When compared to the annual average limit value of 40 µg/m³ stipulated in air quality legislation, it is observed that the limit is exceeded in the districts of Aliağa, Alsancak, Bornova, Çiğli, Gaziemir, Karabağlar, Karaburun, Karşıyaka, Ödemiş, Torbalı and Kemalpaşa. Although the annual average particle pollution measurements at six stations fall within legal limits, the observed maximum values indicate serious air quality issues and health risks throughout İzmir (Table 8.1).

TABLE 8.1. Descriptive Statistics of Air Quality Parameters in İzmir Stations – PM₁₀ (2022) (µg/m³)

Station	Maximum	Minimum	Average
Aliağa	286.47	12.39	44.51
Aliağa Bozköy	206.07	7.85	54.81
Alsancak İBB	223.50	1.25	51.50
Bayraklı İBB	110.61	9.25	36.96
Bornova İBB	155.40	11.16	42.41
Çeşme	82.28	8.24	24.95
Çiğli İBB	146.69	11.20	43.51
Training Station (Bornova)	195.70	24.34	68.60
Gaziemir	163.89	14.73	49.87
Güzelyalı İBB	146.51	9.74	31.56
Karabağlar	194.51	11.87	42.92
Karaburun	133.86	12.60	43.02
Karşıyaka	164.89	21.93	66.30
Karşıyaka İBB	134.21	3.87	32.89
Menemen	131.33	11.29	46.96
Ödemiş	233.97	18.20	74.25
Şirinyer İBB	95.57	10.91	26.40
Torbalı	179.10	16.50	68.68
Yeni Foça	174.81	9.37	37.64
Kemalpaşa (new)	164.57	10.68	43.12

Source: UHKİA, 2022

Particles with aerodynamic diameters smaller than 2.5 μm are classified as $\text{PM}_{2.5}$, which can penetrate deeper into the respiratory system compared to PM_{10} and cause severe health problems. Although there is no legal limit for $\text{PM}_{2.5}$ in Türkiye's regulations, the World Health Organization (WHO) sets the limit at 25 $\mu\text{g}/\text{m}^3$. Table 8.2 presents descriptive statistics on $\text{PM}_{2.5}$ levels from air quality monitoring stations in İzmir Region. It is observed that the annual average values in Bornova and Alsancak exceed WHO standards, while pollution levels in Konak and Çiğli are near the threshold defined (Table 8.2).

TABLE 8.2. Descriptive Statistics of Air Quality Parameters in İzmir Stations – $\text{PM}_{2.5}$ (2022) ($\mu\text{g}/\text{m}^3$)

Station	Maximum	Minimum	Average
Aliağa	48.20	2.38	13.22
Alsancak İBB	128.67	0.83	25.22
Bornova	84.81	7.02	27.47
Çiğli İBB	94.31	6.39	22.69
Karşıyaka	58.59	5.76	18.91
Konak	105.76	7.87	22.95
Yeni Foça	33.66	3.01	12.09
Kemalpaşa (new)	56.51	4.10	19.46

Source: UHKİA, 2022

Sulfur dioxide (SO_2) is another major component affecting air quality and human health, typically resulting from the burning of high-sulfur fuels, coal and lignite, as well as metal smelting and other industrial activities. Thus, areas with heavy traffic congestion, industrial zones with large boilers, and thermal power plants tend to have high concentrations of SO_2 . Table 8.3 provides descriptive statistics on SO_2 levels from 16 air quality monitoring stations in İzmir Region. Based on the legal threshold of 20 $\mu\text{g}/\text{m}^3$, measurements at all stations except Ödemiş remain within the limits (Table 8.3). The low levels of SO_2 pollution in İzmir can be attributed to the presence of clean energy plants instead of polluting coal-fired plants.

TABLE 8.3. Descriptive Statistics of Air Quality Parameters in İzmir Stations – SO_2 (2022) ($\mu\text{g}/\text{m}^3$)

Station	Maximum	Minimum	Average
EMEP - İzmir Seferihisar	15.42	2.71	7.43
Aliağa	63.66	2.02	13.52
Aliağa Bozköy	24.21	2.35	8.01
Alsancak İBB	18.14	3.19	6.56
Bayraklı İBB	21.63	0.32	9.75
Bornova İBB	19.35	1.91	8.18
Çiğli İBB	24.02	4.11	11.28
Eğitim (Training Station - Bornova)	61.83	3.31	12.48
Gaziemir	18.91	3.31	9.34
Güzelyalı İBB	47.47	1.23	8.16
Karabağlar	73.61	2.40	12.31
Karşıyaka İBB	66.21	3.49	11.69

Station	Maximum	Minimum	Average
Menemen	30.20	2.08	10.22
Ödemiş	133.65	3.83	21.09
Şirinyer İBB	31.08	3.17	10.95
Torbalı	32.77	0.96	8.45

Source: UHKİA, 2022

Carbon monoxide (CO), a colorless, odorless, and tasteless gas, results from the incomplete combustion of carbon-containing fuels like coal and poses fatal risks by hindering oxygen intake in humans. CO levels are measured at 13 air quality monitoring stations in İzmir Region. Konak and Ödemiş districts rank highest in carbon monoxide pollution, yet both the annual averages and maximum observed values in all districts remain well below the legal limit of 10,000 $\mu\text{g}/\text{m}^3$ (Table 8.4).

TABLE 8.4. Descriptive Statistics of Air Quality Parameters in İzmir Stations – CO (2022) ($\mu\text{g}/\text{m}^3$)

Station	Maximum	Minimum	Average
Aliağa	1,455.39	417.09	651.82
Aliağa Bozköy	1,607.21	341.72	803.34
Bornova İBB	764.11	58.60	329.19
Eğitim (Training Station - Bornova)	2,211.10	229.83	818.68
Güzelyalı İBB	1,379.12	95.35	259.16
Karabağlar	2,447.62	106.19	725.43
Karşıyaka	2,089.69	234.86	797.34
Konak	3,812.04	446.51	1,290.16
Menemen	1,335.49	402.91	749.47
Ödemiş	5,216.03	236.86	1232.02
Torbalı	2,460.75	234.65	1,044.53
Yeni Foça	1,206.11	140.87	341.45
Kemalpaşa (new)	2,820.84	438.42	945.58

Source: UHKİA, 2022

The number of days on which PM_{10} concentrations reported by İzmir Region air monitoring stations exceeded the daily average limit value (50 $\mu\text{g}/\text{m}^3$) specified in the Regulation on the Assessment and Management of Air Quality was analyzed for the period 2010-2022 (Table 8.5). According to the regulation, the limit value must not be exceeded more than 35 times per year, yet currently, 16 out of 19 stations show excess of such limit. In Aliağa, Bornova (Eğitim Station), Karşıyaka, Torbalı and Ödemiş, particulate matter pollution reaches hazardous levels, exceeding the limit value for one-third of the year. Trends since 2010 indicate a gradual decrease in the number of exceedances at Bayraklı İBB, Bornova, Gaziemir, Karşıyaka İBB and Şirinyer İBB stations, suggesting that air pollution in these districts, while not yet at the desired level, is on a declining trend (Table 8.5).

TABLE 8.5. Number of Days with Daily Average PM10 Values Exceeding 50 µg/m³ at İzmir Air Monitoring Stations by Year (2010-2022)

Station	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Aliağa	0	0	0	0	0	0	0	0	4	3	153	79	89
Aliağa Bozköy	0	0	0	0	0	0	0	0	5	0	0	46	130
Alsancak İBB	0	0	0	0	0	0	0	0	0	36	75	94	84
Bayraklı İBB	206	201	192	140	188	146	154	137	135	95	80	84	44
Bornova İBB	150	136	105	75	80	103	98	88	123	93	67	101	68
Çeşme	0	0	0	0	0	0	0	0	0	0	0	1	9
Çiğli İBB	104	124	102	79	50	74	54	56	65	40	55	27	48
Eğitim (Bornova)	0	0	0	0	0	0	0	0	9	0	0	16	141
Gaziemir	191	113	30	12	2	82	137	217	103	51	121	101	91
Güzelyalı İBB	124	138	71	106	76	77	72	51	52	70	48	37	36
Karaburun	0	0	0	0	0	0	0	0	2	0	0	10	53
Karşıyaka	0	0	0	0	0	0	0	9	22	0	0	66	176
Karşıyaka İBB	101	84	48	56	70	31	14	50	36	33	49	14	20
Konak	0	0	0	0	0	0	0	9	11	0	0	0	0
Menemen	0	0	0	0	0	0	0	0	7	0	0	32	63
Torbalı	0	0	0	0	0	0	0	0	8	0	0	77	141
Ödemiş	0	0	0	0	0	0	0	5	33	0	0	110	101
Şirinyer İBB	167	169	189	144	93	91	92	82	81	32	46	6	11
Yenifoça	0	0	0	0	0	0	0	0	0	0	0	25	36
Kemalpaşa (new)	0	0	0	0	0	0	0	0	0	0	0	85	64

Source: UHKİA, 2022

B. Renewable Energy Plants

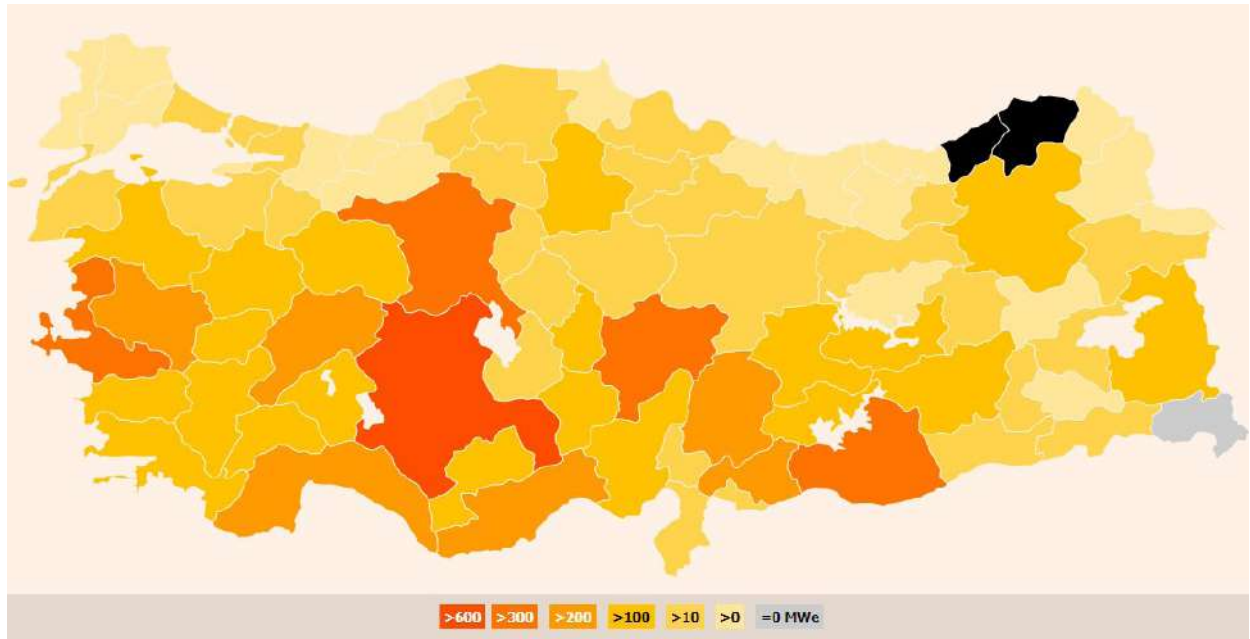
Rapidly increasing and urbanizing populations alter production quantities and distribution relationships, while growing demands cannot be met with existing non-renewable resources. Thus, the gap between energy production and consumption is steadily widening. According to the Energy Outlook 2021 report published by the Industrial Development Bank of Türkiye (TSKB), the global population is expected to rise by 2 billion to reach 10 billion by 2050, and the U.S. Energy Information Administration (EIA) predicts a 50% increase in energy consumption (TSKB, 2021; EIA, 2021). This situation underscores the necessity of utilizing renewable energy sources as traditional “non-renewable” energy sources such as oil, natural gas, coal and nuclear energy not only fail to meet energy demand but also increasingly threaten environmental and human health.

In Türkiye, the Renewable Energy Law was enacted in 2005 in order to define the necessary legal and administrative framework for the use of renewable energy sources, and the National Renewable Energy Action Plan (NREAP) was implemented in 2011. Investments have been made in Türkiye for energy

production from various renewable energy sources. The renewable energy sources actively used for energy production in Türkiye are solar, wind and geothermal energy.

According to data from the Ministry of Energy and Natural Resources, as of September 2022, the total installed capacity of solar power plants in Türkiye is 8,962 MW. Among the provinces, Konya has the highest installed capacity at 1,609.1 MW, followed by Ankara, Şanlıurfa and Kayseri. İzmir Region ranks fifth with an installed capacity of 322.8 MW. All provinces in the Aegean Region have solar power plants, with installed capacities ranging between 116 and 252 MW (Figure 8.1). İzmir Region accounts for 3.6% of the total installed capacity in Türkiye (Table 8.6).

FIGURE 8.1. Distribution of Installed Solar Power Plant Capacities in Türkiye (MW)



Source: Energy Atlas, 2022a

TABLE 8.6. Installed Capacities of Solar Power Plants by Province (MW) (2022)

Province	Installed Power	Share within Türkiye (%)
Konya	1,609.1	17.95
Ankara	451.7	5.04
Şanlıurfa	394.9	4.41
Kayseri	360.8	4.03
İzmir	322.8	3.60
Türkiye Total	8,962	100.0

Source: Ministry of Energy and Natural Resources, September 2022

İzmir Region is regarded as Türkiye's wind energy capital (İZKA, 2021). Over the past fifteen years, the region has seen rapid development in the wind energy sector. Analyzing the total installed capacity graph from 2006-2021 (Figure 8.2) reveals that the region's capacity has doubled in the last five years and increased nearly sixfold in the last decade (TÜREB, 2022). Given the estimated potential capacity of 12,000 MW, it is anticipated that the installed capacity of wind energy will continue to grow in the near future.

Türkiye has 273 licensed wind energy plants with a total capacity of 11,101.82 MW, generating over 31,000 GWh of electricity as of the year 2021. While most wind energy plants are located along the coasts of the Marmara and Aegean Regions, there are also plants in Central Anatolia and the Mediterranean Regions. İzmir, with a total installed wind capacity of 1,887 MW, accounting for 17% of Türkiye's total capacity, leads as the province with the highest number of wind energy plants. Balıkesir, Çanakkale, Manisa and İstanbul follow İzmir in this regard (Table 8.7).

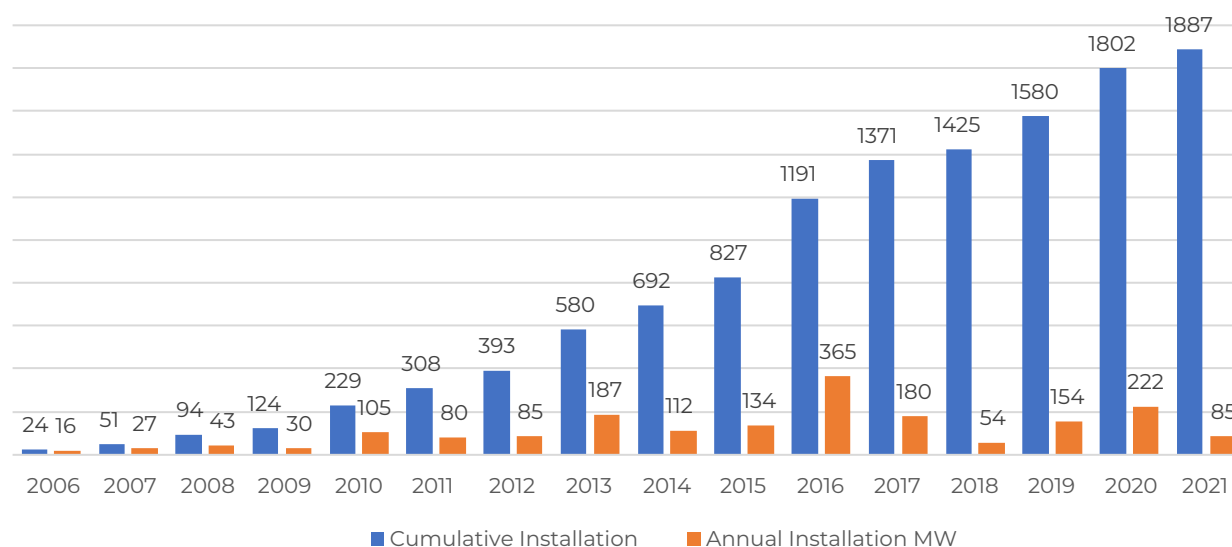
TABLE 8.7. Installed Capacities of Wind Power Plants by Province (MW) (2021)

Province	Installed Power	Share within Türkiye (%)
İzmir	1,887	17.0
Balıkesir	1,375	12.4
Çanakkale	917	8.3
Manisa	728	6.6
İstanbul	684	6.2
Kırklareli	482	4.3
Hatay	438	3.9
Afyon	368	3.3
Aydın	366	3.3
Konya	338	3.0

Source: TWEA, 2022

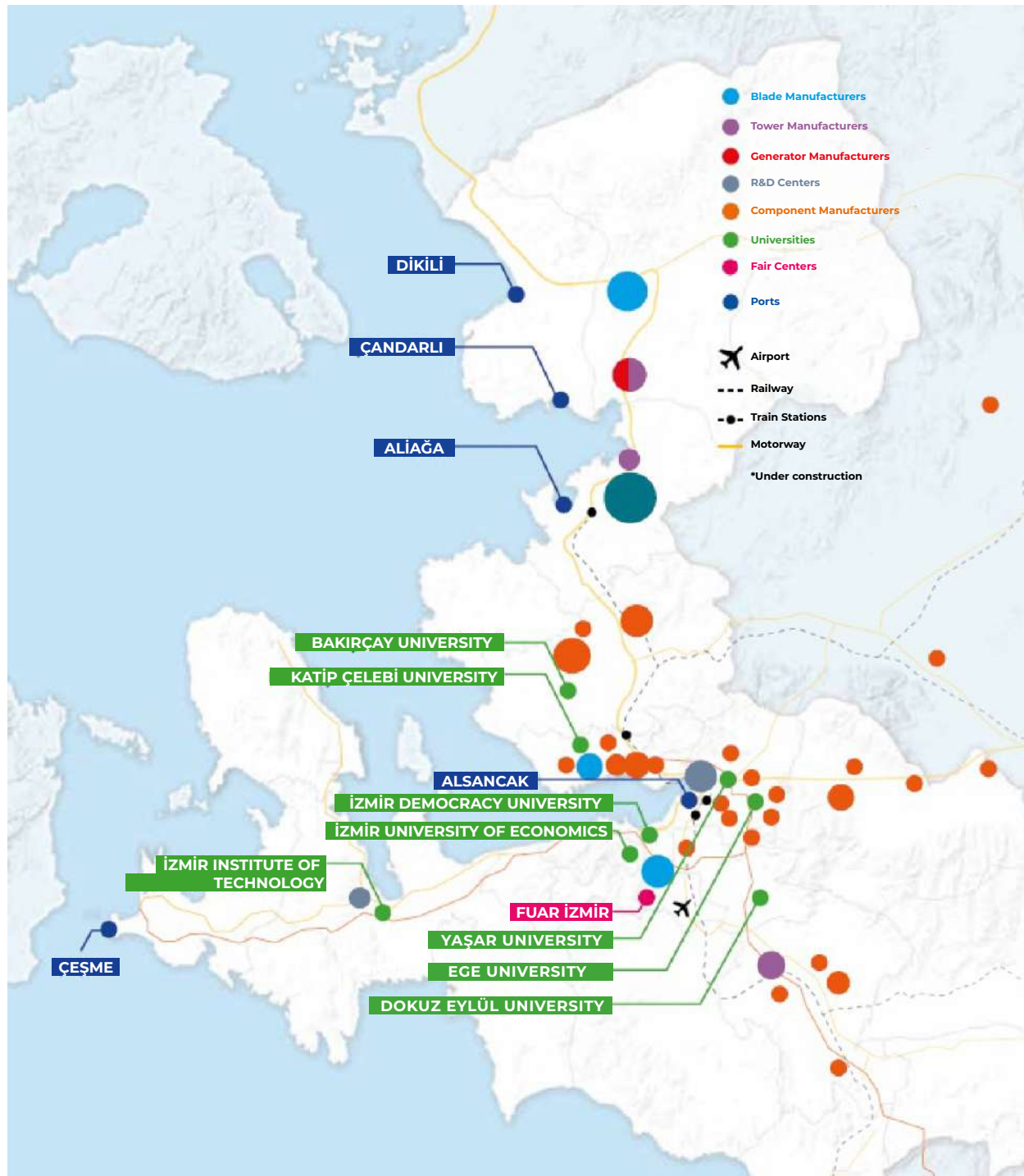
Analyzing the data on installed wind capacity in İzmir Region over the years (Figure 8.2) clearly demonstrates the region's steady growth in this sector. Over the past decade, with an annual average of over 150 MW of new installations, İzmir's installed wind capacity has increased sixfold (Figure 8.2).

FIGURE 8.2. Installed Wind Power Capacity in İzmir Region (MW) (2006-2021, TWEA)



Since 2006, with the support and activities carried out by İZKA, the wind energy sector has become a robust field in İzmir Region, creating employment in both production and R&D, and contributing significantly to exports. Hosting globally strong companies, İzmir has developed a multi-actor and competitive cluster in clean energy equipment production. Türkiye's first blade factory, tower factory, wind turbine maintenance and repair facility, wind energy R&D center, and nacelle factory were also established in İzmir Region (İZKA, 2021f). Currently, all components of a wind turbine, including the generator, nacelle, tower and turbine, can be produced in İzmir, and the spatial distribution of actors in the ecosystem is provided in Figure 8.3.

FIGURE 8.3. İzmir Wind Energy Ecosystem



Source: İZKA, 2022f

In Türkiye, there are a total of 63 geothermal power plants. Except for four, all geothermal power plants are located in the Aegean Region (4 in Çanakkale, 32 in Aydın, 15 in Manisa and 10 in Denizli) (Figure 8.4).

FIGURE 8.4. Distribution of Geothermal Power Plants by Province (# of plants)



Source: Energy Atlas, 2022c

The total installed capacity of geothermal energy in Türkiye is 1,691.07 MW. When examining the distribution of installed capacity by province, Aydın has the highest capacity with 885 MW. Manisa and Denizli each have a capacity of 380 MW, while İzmir has 12 MW, Çanakkale 12 MW and Afyon 3 MW (Figure 8.5). The geothermal installed capacity in İzmir constitutes 1% of Türkiye's total (Table 8.8).

FIGURE 8.5. Installed Capacity of Geothermal Power Plants by Province (MW)



Source: Energy Atlas, 2022c

In addition to its use in electricity generation, geothermal energy has potential applications in residential heating, health tourism, thermal tourism and agricultural practices. İzmir is a particularly important location for geothermal energy due to its geological and climatic characteristics, agricultural production and geographical position. Many geothermal sources have been formed in the region due to fault lines, especially in the area between the Bakırçay, Gediz and Büyük Menderes grabens. There are 192 geothermal sources, including wells and natural outlets, in İzmir Region. It is considered necessary to make more effective use of the region's high geothermal capacity. However, the cumulative impacts of geothermal energy production on agricultural output are also a critical issue that requires careful attention.

TABLE 8.8. Geothermal Power Plants and Total Installed Capacities by Province – MW (2022)

Province	# of Plants	Total Installed Power (MW)	Share within Türkiye (%)
Aydın	32	885.45	52
Denizli	10	380.16	22
Manisa	15	380	22
Çanakkale	4	30.7	2
İzmir	1	12	1
Afyonkarahisar	1	2.76	0
Total	63	1,691.07	100

Source: *Energy Atlas, 2022c*

Another clean energy source with significance in combating environmental pressure and climate change is biogas. The 2020 report Potential for Biogas and Organic Fertilizer Production in İzmir, published by İZKA, highlights the potential of biomass energy, especially for rural areas in İzmir, due to its geographical location, ecological structure and agricultural activities.

Biogas, landfill gas and energy plants with installed capacities ranging from 0.3 MW to 32.3 MW are located in the districts of Bergama, Çiğli, Foça, Kemalpaşa, Menderes, Ödemiş and Tire. According to September 2022 data from the Ministry of Energy and Natural Resources, the total installed capacity of biomass energy plants in Türkiye is 2,215 MW, with İzmir ranking third after İstanbul (265.9 MW) and Ankara (143.9 MW) with 92.6 MW of installed capacity.

Biogas-based systems, which also produce heat and fertilizer in addition to energy and reduce environmental waste, are considered economically viable for small and medium-scale applications in İzmir, which has a significant livestock population, according to studies conducted by İZKA. It is evaluated that biogas plants should be expanded as they create employment in rural areas and encourage the production of local equipment for clean energy.

C. Energy Consumption

Electricity consumption in İzmir Region by usage category over the years is presented in Table 8.9. It is observed that in 2002, 232 GWh of electricity was consumed in public institutions. This figure rose to 391 GWh in 2021. However, when examining the period after 2013, it is revealed that energy consumption in public institutions has gradually declined. The largest increase in electricity consumption has occurred in industrial plants, commercial enterprises and residences. Particularly after the 2000s, with a steady increase, electricity consumption in industry nearly doubled and exceeded 10 terawatt-hours in 2014. Between 2014 and 2020, consumption remained stable, surpassing 11.5 terawatt-hours in 2021. Commercial consumption has increased more than fivefold over the past two decades, nearing 4.5 terawatt-hours in 2021. This indicates rapid industrial and commercial development in İzmir, along with an increased demand for electricity. Residential electricity consumption has shown a parallel increase with industrial and commercial consumption. Agricultural consumption and electricity use for street lighting have also risen by about 60% in the last decade. Overall, İzmir's total electricity consumption has shown a steady upward trend, doubling between 2002 and 2017, and remaining around 20 terawatt-hours in the subsequent period, likely influenced by the pandemic. In 2021, total consumption exceeded 22 terawatt-hours, marking a 10% increase from the previous year (Table 8.9).

TABLE 8.9. Electricity Consumption in İzmir by Usage Category (1995–2021) (Ten Thousand MWh)

Year	Public	Industrial	Commercial	Residential	Agricultural	Street	Other	Total
2002	2.32	61.77	7.15	16.61	2.47	2.54	6.75	99.61
2003	2.4	65.31	8.47	18.54	2.72	2.62	6.14	106.2
2004	2.83	68.95	9.48	20.29	2.88	2.66	6.61	113.7
2005	3.0	67.95	11.89	23.54	2.82	2.61	6.21	118.01
2006	3.94	80.16	12.72	27.75	2.94	1.34	6.47	135.33
2007	3.7	94.64	15.27	29.6	3.13	3.48	4.96	154.78
2008	4.23	92.61	15.64	31.64	3.35	3.73	6.09	157.29
2009	4.29	71.66	15.64	31.29	2.62	1.11	7.61	134.2
2010	4.51	82.56	17.2	32.15	2.63	1.43	8.53	149.03
2011	5.11	92.53	19.51	36.19	2.97	1.65	6.46	164.43
2012	5.73	93.46	21.93	37.08	3.36	1.82	6.54	169.93
2013	5.75	95.34	21.47	35.6	3.26	1.79	5.92	169.14
2014	5.69	104.82	20.41	35.62	3.29	1.81	7.29	178.94
2015	3.58	100.87	27.21	38.47	3.36	2.25	3.07	178.82
2016	4.78	106.72	30.26	41.31	3.81	2.1	3.44	192.42
2017	3.36	106.65	35.58	45.27	3.98	2.07	2.44	199.36
2018	4.73	110.27	36.23	45.54	3.98	2.4	6.68	209.82
2019	4.31	105.36	41.19	43.56	3.84	2.29	3.08	203.63
2020	3.85	100.5	39.72	46.37	4.34	2.28	3.71	200.78
2021	3.91	115.36	44.32	46.87	4.63	2.33	3.11	220.53

Source: TURKSTAT, 2022n

Examination of the change in the shares of electricity consumption by usage over the years in İzmir Region reveals that the consumption shares of commerce and residences have increased, whereas the shares of industry, public institutions and street lighting have decreased. While the share of public institutions was 2.33% in 2002, this ratio dropped to 1.77% in 2021. A similar trend is also evident in industrial enterprises. The share of industrial enterprises, which was 62.01% in 2002, decreased to 52.31% in 2021. The share of electricity consumed by commercial enterprises in İzmir Region was 7.18% in 2002, rising to 20.10% in 2021. Similarly, the share of residences increased from around 16% to 21% over twenty years. Currently, electricity consumption in industry, commercial enterprises and residences constitutes 93.7% of İzmir's total consumption (Table 8.10).

TABLE 8.10. Shares of Electricity Consumption by Usage in İzmir Region (2002–2021)

Year	Public (%)	Industrial (%)	Commercial (%)	Residential (%)	Agricultural (%)	Street (%)	Other (%)	Total (%)
2002	2.33	62.01	7.18	16.68	2.48	2.55	6.78	100
2003	2.26	61.50	7.98	17.46	2.56	2.47	5.78	100
2004	2.49	60.64	8.34	17.85	2.53	2.34	5.81	100
2005	2.54	57.58	10.08	19.95	2.39	2.21	5.26	100
2006	2.91	59.23	9.40	20.51	2.17	0.99	4.78	100
2007	2.39	61.14	9.87	19.12	2.02	2.25	3.20	100
2008	2.69	58.88	9.94	20.12	2.13	2.37	3.87	100
2009	3.20	53.40	11.65	23.32	1.95	0.83	5.67	100
2010	3.03	55.40	11.54	21.57	1.76	0.96	5.72	100
2011	3.11	56.27	11.87	22.01	1.81	1.00	3.93	100
2012	3.37	55.00	12.91	21.82	1.98	1.07	3.85	100
2013	3.40	56.37	12.69	21.05	1.93	1.06	3.50	100
2014	3.18	58.58	11.41	19.91	1.84	1.01	4.07	100
2015	2.00	56.41	15.22	21.51	1.88	1.26	1.72	100
2016	2.48	55.46	15.73	21.47	1.98	1.09	1.79	100
2017	1.69	53.50	17.85	22.71	2.00	1.04	1.22	100
2018	2.25	52.55	17.27	21.70	1.90	1.14	3.18	100
2019	2.12	51.74	20.23	21.39	1.89	1.12	1.51	100
2020	1.92	50.05	19.78	23.09	2.16	1.14	1.85	100
2021	1.77	52.31	20.10	21.25	2.10	1.06	1.41	100

Source: TURKSTAT, 2022n

When examining the annual per capita total electricity consumption values in İzmir Region by area of usage over the years, it is seen that per capita electricity consumption in industrial enterprises was 2,531 kWh in 2007. This figure increased to 2,607 kWh in 2021. Per capita electricity consumption in residences was 792 kWh in 2007, which rose to 1,059 kWh in 2021 (Table 8.11). The decrease in the share of electricity consumed in the industrial sector and the amount of electricity consumed per capita in industrial enterprises over the years, followed by an increase in 2021, provides information on changes in the industrial sector in İzmir Region. The fact that gross domestic product produced by the industry increased during periods when energy consumption indicators decreased indicates that resource efficiency practices have been effectively implemented in İzmir's industry to reduce energy consumption. The increase in electricity consumption in commercial enterprises can be explained by the shift of retail trade volume to large shopping centers. Comparing İzmir's per capita consumption values in the industrial, residential and total categories with Türkiye's values, it is observed that İzmir's consumption in all three indicators is approximately 50% higher. It is evaluated that practices aimed at reducing energy consumption could be extended across İzmir, particularly targeting commercial enterprises and residences.

TABLE 8.11. Per Capita Electricity Consumption by Usage Area (2007–2021) (KWh)

Year	İzmir			Türkiye		
	Industrial	Residential	Total	Industrial	Residential	Total
2007	2,531	792	4,139	1,045	517	2,198
2008	2,440	834	4,144	1,047	553	2,264
2009	1,852	809	3,469	971	540	2,162
2010	2,091	814	3,774	1,076	562	2,334
2011	2,334	913	4,147	1,177	592	2,490
2012	2,333	926	4,242	1,220	600	2,577
2013	2,348	877	4,165	1,216	587	2,583
2014	2,549	866	4,351	1,258	594	2,669
2015	2,420	923	4,290	1,315	608	2,760
2016	2,527	978	4,556	1,357	642	2,897
2017	2,492	1,058	4,658	1,441	671	3,082
2018	2,552	1,054	4,856	1,435	666	3,149
2019	2,412	998	4,663	1,391	676	3,094
2020	2,287	1,055	4,569	1,435	726	3,142
2021	2,607	1,059	3,666	1,622	726	2,348

Source: TURKSTAT, 2022n

D. Water, Wastewater and Waste Management

In İzmir Region, the total amount of water extracted by municipalities for drinking and utility water networks increased from 295,151 thousand m³/year in 2001 to 355,210 thousand m³/year in 2020. During the 2001–2020 period, the total amount of water extracted by municipalities for drinking and utility water networks increased by 20%. During this period, the amount of water extracted from wells and springs decreased by 4.9% and 18.3%, respectively. To meet İzmir's increasing water consumption, the amount of water drawn from dams has also been increased over the years. The amount of water drawn from dams increased by 131.7% during the data period (Table 8.12).

TABLE 8.12. Total Water Extracted by Municipalities for Drinking and Utility Water Networks in İzmir Region (2001–2020) (Thousand m³/year)

Year	Stream	Dam	Lake	Pond	Spring	Well	Total
2001		62,801	6,623	53	21,493	204,181	295,151
2002		73,838		110	167,788	60,961	302,697
2003		78,065		110	82,636	149,191	310,002
2004		84,976		110	158,062	56,229	299,377
2006	1,041	88,710		120	14,211	173,096	277,178
2008	382	71,927			7,006	138,069	217,384
2010	255	82,407			5,246	166,713	254,621
2012	226	95,143			4,061	200,619	300,049
2014		109,510			9,810	150,369	269,689
2016		103,338			9,551	154,545	267,434
2018		101,660			13,392	209,506	324,558
2020		145,528			17,571	194,111	355,210
2001-2020 (%)	-100.00	131.73	-100.00	-100.00	-18.25	-4.93	20.35

Source: Ministry of Environment, Urbanization and Climate Change, 2022

According to İzmir Metropolitan Municipality data, as of the year 2021, a total of 304 million cubic meters of water was produced in İzmir, 54.63% of which was obtained from groundwater and 45.37% from surface water sources. More than 90% of the water extracted from surface water sources came from the Tahtalı and Gördes Dams.

When examining the per capita daily amount of water drawn by municipalities for drinking and utility water networks in İzmir Region over the 2001–2020 period, it is observed that the value decreased from 282 liters/person-day in 2001 to 221 liters/person-day in 2020. For Türkiye, these values occurred to be 252 liters in 2001 and 228 liters in 2020. After 2004, İzmir's per capita water consumption remained lower than the national average (Table 8.13). This situation can be attributed to the spread of conscious consumer habits and the concept of sustainability, as well as infrastructure investments aimed at improving loss and leakage rates.

TABLE 8.13. Per Capita Daily Water Drawn by Municipalities for Drinking and Utility Water Networks (2001–2020) (Liters/Person-Day)

Year	İzmir	Türkiye
2001	282	252
2002	280	255
2003	285	259
2004	269	255
2006	227	245
2008	173	215
2010	192	216
2012	223	216
2014	180	203
2016	173	217
2018	208	224
2020	221	228

Source: Ministry of Environment, Urbanization and Climate Change, 2022

Examination of the amount of wastewater discharged from the network in İzmir by treatment status reveals that the amount treated was 195 thousand m³/year in 2001, increasing to 275 thousand m³/year in 2021. During the 2001–2012 period, there were untreated wastewater amounts ranging from 7 to 32 thousand m³/year, whereas, after 2019, all wastewater discharged has been treated. The amount of treated wastewater in İzmir Region increased by 41% between 2001 and 2021 (Table 8.14).

TABLE 8.14. Wastewater Discharged from the Network in İzmir Region by Treatment Status (2001–2021) (Thousand m³/year)

Year	Treated	Untreated	Total
2001	194,854	18,151	213,005
2002	208,985	18,786	227,771
2003	212,558	19,392	231,950
2004	216,733	21,652	238,385
2006	233,919	32,424	266,343
2008	230,122	11,441	241,563
2010	261,837	12,237	274,074
2012	273,718	7,523	281,241
2014	298,129	-	298,129
2016	301,087	-	301,087
2018	272,992	3,882	276,874
2019	278,532	-	278,532
2020	277,241	-	277,241
2021	275,263	-	275,263

Source: Ministry of Environment, Urbanization and Climate Change and İZSU, 2022

According to data from İzmir Metropolitan Municipality, there are a total of 66 wastewater treatment plants under its administration, including 23 advanced biological treatment, 37 biological treatment and 6 natural treatment plants. As of the year 2021, 96.68% of the treated wastewater underwent advanced biological treatment.

When examining the treated wastewater quantities by treatment plant type, biological treatment volumes increased from 1,337 thousand m³/year in 2001 to 4,319 thousand m³/year in 2021. For İzmir Region, the advanced treatment volume increased from 192 thousand m³ in 2001 to 265 thousand m³ in 2018 (Table 8.15).

TABLE 8.15. Volumes of Wastewater Treated in Wastewater Treatment Plants of İzmir (2001-2018)
(Thousand m³/year)

Year	Biological Treatment	Natural Treatment (Constructed Wetland)	Physical Treatment	Physical and/or Chemical Treatment	Advanced Treatment	Total
2001	1,337		1,892		191,625	194,854
2002	2,176		1,935		204,875	208,986
2003	2,026		2,482		208,050	212,558
2004	2,323		2,519		211,891	216,733
2006	1,787				232,132	233,919
2008	1,883	4,782			223,458	230,123
2010	1,986	3,735			256,116	261,837
2012	2,105	3,549			268,064	273,718
2014	11,253	2,699			284,178	298,130
2016	4,749	3,438			292,900	301,087
2018	4,319	3,541			265,132	272,992
2001-2018 (%)	223.04				38.36	40.10

Source: Ministry of Environment, Urbanization and Climate Change, 2022

When examining the daily per capita wastewater discharge rates of municipalities in İzmir Region, it is observed that 209 liters/person-day of wastewater was discharged in İzmir as of the year 2001. This value decreased to 174 liters/person-day in 2020. In Türkiye, the figure rose from 147 liters/person-day in 2001 to 189 liters/person-day in 2020. During the 2001-2020 period, while the daily per capita wastewater discharge increased in Türkiye, it decreased by 16.7% in İzmir (Table 8.16). This decline can be attributed to the reduction in daily per capita water drawn for drinking and utility purposes in İzmir during the same period.

TABLE 8.16. Daily Per Capita Wastewater Discharged by Municipalities in İzmir Region (2001-2020) (Liters/Person-Day)

Year	İzmir	Türkiye
2001	209	147
2002	220	154
2003	224	173
2004	224	174
2006	220	181
2008	203	173
2010	227	182
2012	230	190
2014	214	181
2016	195	183
2018	176	188
2020	174	189

Source: Ministry of Environment, Urbanization and Climate Change, 2022

When examining different waste disposal methods in İzmir Region, it is observed that open burning ceased after 2006. Waste deposited in municipal landfills decreased from 470 tons/year in 2008 to 52 tons/year in 2016. Conversely, waste deposited in metropolitan municipal landfills increased from 50 tons/year in 2014 to 121 tons/year in 2020. As of the year 2020, 284 tons/year of municipal waste was disposed of through other recovery methods. Municipal waste disposed of via sanitary landfilling increased from 815 tons/year in 2008 to 1,932 tons/year in 2020. The total municipal waste disposed of in İzmir Region rose from 1,351 tons in 2006 to 2,337 tons in 2020 (Table 8.17).

TABLE 8.17. Distribution of Municipal Waste by Disposal Method in İzmir Region (2006-2020) (Tons/Year)

Disposal Method	2006	2008	2010	2012	2014	2016	2018	2020
Open Burning	1.83							
Disposal in Other Municipal Landfills	10.18		28.01	57.54	5.00			
Disposal in Municipal Landfills		470.76	358.12	225.15	291.24	52.28		
Disposal in Metropolitan Municipal Landfills					50.00	64.89	137.70	121.04
Other Disposal Methods		1.10		2.92				1.20
Other Recovery Methods							188.91	284.31
Sanitary Landfilling		815.02	1,299.53	1,327.55	1,313.75	1,740.18	1,805.89	1,931.50
Sent to Composting Facility		64.50						
Total	1,341.90	1,351.38	1,685.66	1,613.17	1,659.99	1,857.35	2,132.49	2,336.95

Source: Ministry of Environment, Urbanization and Climate Change, 2022

The average per capita municipal waste amount was also examined as an indicator of environmental pollution and responsible production and consumption, one of the (12th) global goals. In İzmir Region, the average per capita municipal waste increased from 1.33 kg/person-day in 2001 to 1.46 kg/person-day in 2020. This can be associated with rising income levels. In Türkiye, this indicator value decreased from 1.35 kg/person-day in 2001 to 1.13 kg/person-day in 2020. While the per capita municipal waste amount decreased over the years in Türkiye, it exhibited a rapid increase in İzmir Region, particularly after 2014 (Table 8.18).

TABLE 8.18. Average Per Capita Municipal Waste Amount in İzmir Region (2001-2020) (Kg/Person-Day)

Year	İzmir	Türkiye
2001	1.33	1.35
2002	1.21	1.34
2003	1.21	1.38
2004	1.29	1.31
2006	1.06	1.21
2008	1.07	1.15
2010	1.26	1.14
2012	1.2	1.12
2014	1.12	1.08
2016	1.32	1.17
2018	1.36	1.16
2020	1.46	1.13

Source: Ministry of Environment, Urbanization and Climate Change, 2022

In 2009, the total amount of hazardous waste reported in İzmir Region was 160,000 tons, which increased to 217,000 tons in 2020. When examining hazardous waste disposal methods in İzmir Region, the most significant amount of disposal was conducted through recovery methods. In 2009, 115,000 tons of hazardous waste were sent for recovery, which increased to 196,000 tons by 2020. During the same period, the amount of waste disposed of directly rose from 5,000 tons to 20,000 tons. It is also observed that on-site disposal decreased over the years and ceased entirely, while the amounts of waste stored or exported were reduced to minimal levels (Table 8.19).

TABLE 8.19. Distribution of Hazardous Waste in İzmir Region by Treatment Method (2009-2020) (Excluding Mining Waste) (Ton/Year)

Year	Recovery	Disposal	On-Site	Storage	Export	Total
2009	115,130	4,939	39,585	899	0	160,553
2010	147,526	5,350	17,787	1,209	0	171,872
2011	148,381	9,390	17,499	387	0	175,657
2013	176,283	16,510	7,076	547	470	200,885
2014	192,260	28,071	16,837	360	676	238,204
2015	205,917	20,045	7,409	1,303	690	235,364
2016	169,552	28,006	0	344	795	198,698
2017	143,398	29,942	0	895	152	174,386
2018	138,390	22,506	0	1,132	518	162,546
2019	134,008	21,817	0	542	64	156,431
2020	196,407	20,739	0	189	105	217,440

Source: Ministry of Environment, Urbanization and Climate Change and İzmir Provincial Environmental Status Report, 2022

When examining the shares of declared waste by treatment method in İzmir Region, it is observed that the highest share belongs to recovery methods. While the share of recovery was approximately 71% in 2009, it exceeded 90% by 2020. The share of disposed hazardous waste was 3.1% in 2009, increasing to 9.5% in 2017. The shares of on-site treated and stored hazardous waste have decreased over the years.

Analysis of the financial aspects of environmental services such as water treatment, wastewater treatment and waste management reveals that the environmental expenditures of İzmir municipalities amounted to 171 million TRY in 2003, rising to 348 million TRY in 2016. During the 2003-2016 period, the real expenditures of İzmir municipalities doubled. Environmental investment expenditures of İzmir municipalities were 57 million TRY in 2003, increasing to 158 million TRY in 2016. During the same period, environmental investment expenditures increased approximately 2.8 times in real terms. Similarly, the total environmental expenditures of the municipalities showed a significant increase during this period. However, it is seen that the share of İzmir municipalities' environmental expenditures in Türkiye decreased from 7.2% in 2003 to 6.4% in 2016 (Table 8.20).

TABLE 8.20. Environmental Expenditures of İzmir Municipalities by Expenditure Type (2003-2016)
(Real Prices¹¹, Base Year 2003, Million TRY)

Year	Current Expenditure	Investment Expenditure	Total Environmental Expenditure of Municipalities in İzmir	Total Environmental Expenditure of Municipalities Across Türkiye	Share of Province's Total Environmental Expenditure (%)
2003	171.47	57.41	228.88	3,176.76	7.2
2004	189.23	25.88	215.11	3,493.70	6.16
2005	189.07	26.38	215.45	3,620.09	5.95
2006	204.31	39.54	243.85	4,320.26	5.64
2007	223.11	59.77	282.88	5,542.30	5.1
2008	243.61	78.37	321.98	5,029.74	6.4
2009	271.19	100.37	371.57	5,090.47	7.3
2010	284.04	82.28	366.33	4,672.44	7.84
2012	270.86	147.34	418.20	5,350.02	7.82
2013	358.94	134.96	493.90	5,728.54	8.62
2014	278.75	133.58	412.33	6,012.92	6.86
2015	292.54	137.66	430.20	7,122.27	6.04
2016	348.41	158.73	507.14	7,880.53	6.44

Source: Ministry of Environment, Urbanization and Climate Change, 2022

¹¹ To adjust the values of İzmir Municipalities' Environmental Expenditures by Type for inflation, the Türkiye Central Bank's price index series for İzmir, based on 2003 and categorized by statistical regions, was used (Central Bank, 2022).

E. Sensitive Areas

With the increasing population in urban areas and the abandonment of rural areas, the insufficient agricultural production to meet growing demands has brought the issue of food crises to the forefront of cities and regions. For this reason, the sensitivity of vulnerable areas will increasingly become a significant focus for decision-makers in the coming decades. As of 2021, Türkiye has approximately 23.5 million hectares of agricultural land. The Aegean Region accounts for about 12% of this, with İzmir Region comprising 1.37% of Türkiye's share and 11.52% of the Aegean Region's share. İzmir Region has a total of 322,000 hectares of agricultural land. When classified by type, cultivated areas amount to 141,000 hectares, fallow land 2,500 hectares, vegetable gardens 30,560 hectares, areas of perennial crops (mostly olive trees) 146,000 hectares, fodder crops 86,000 hectares, and ornamental plants 1,650 hectares (Table 8.21).

TABLE 8.21. Agricultural Land in İzmir Region by Type (2021) (Hectares)

Type of Agricultural Land	Türkiye	Aegean Region	İzmir
Total Cultivated Agricultural Land	19,881,533	1,945,066	175,794
Cultivated Agricultural Land / Sown	16,061,572	1,651,621	141,083
Cultivated Agricultural Land / Fallow	3,059,162	175,537	2,500
Cultivated Agricultural Land / Vegetable	755,335	116,101	30,564
Total Area of Perennial Plants	3,591,345	851,437	146,313
Perennial Plants / Fruits, Beverages, and Spices	2,311,956	247,776	42,232
Perennial Plants / Vineyards	390,221	135,248	10,404
Perennial Plants / Olive Trees	889,168	468,414	93,677
Fodder Crops	2,479,714	401,473	86,253
Ornamental Plants	5,464	1,807	1,647
Total Cultivated Agricultural Land and Perennial Plants	23,472,877	2,796,503	322,107

Source: TURKSTAT, 2022o

An analysis of the agricultural land types in İzmir Region as of 2021 shows that sown areas account for 43.80% of İzmir Region's agricultural land. When compared with Türkiye, İzmir stands out particularly for olives and ornamental plants. Approximately 10.5% of Türkiye's land planted with olive trees and 30% of its land planted with ornamental plants are located in İzmir. Within the Aegean Region, İzmir holds 91% of the total ornamental plant area. Additionally, İzmir also leads the Aegean Region in vegetables, fruits, beverages, spices and fodder crops (Table 8.22).

TABLE 8.22. Shares of Agricultural Land by Type in the İzmir Region (2021) (%)

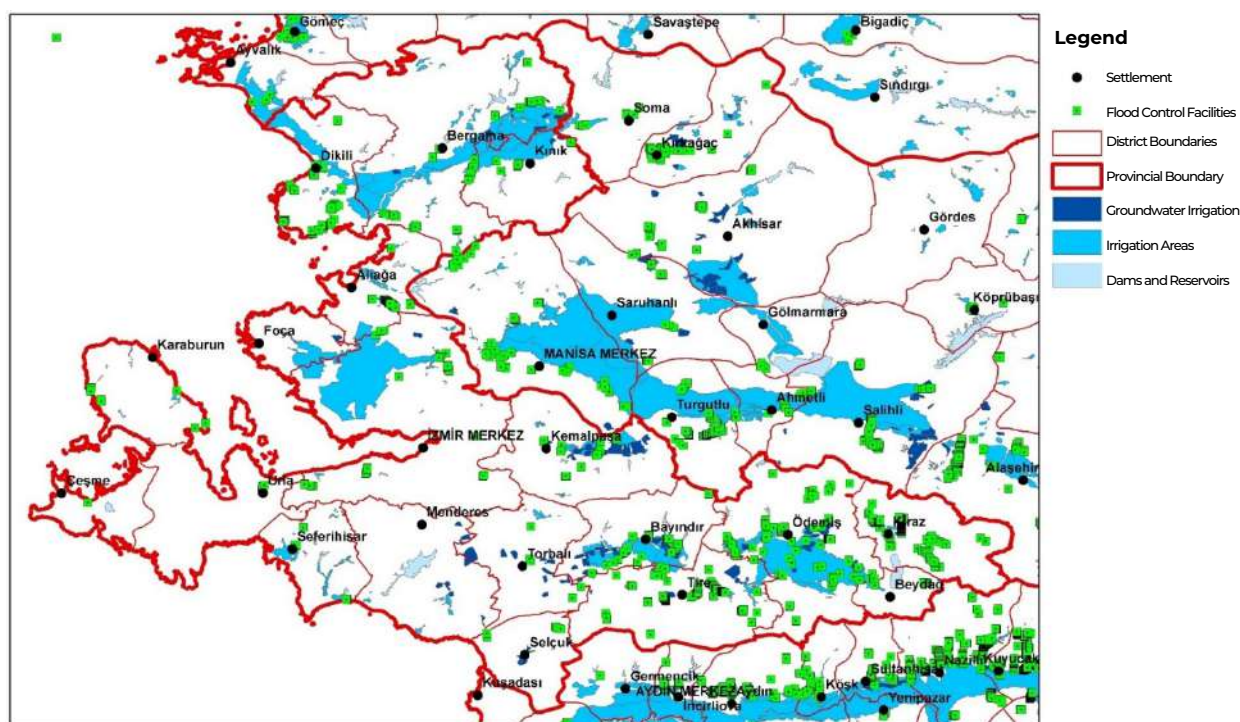
Type of Agricultural Land	Distribution within İzmir	İzmir / Türkiye	İzmir / Aegean
Total Cultivated Agricultural Land	54.58%	0.88%	9.04%
Cultivated Agricultural Land / Sown	43.80%	0.88%	8.54%
Cultivated Agricultural Land / Fallow	0.78%	0.08%	1.42%
Cultivated Agricultural Land / Vegetable	9.49%	4.05%	26.33%
Total Area of Perennial Plants	45.42%	4.07%	17.18%

Type of Agricultural Land	Distribution within İzmir	İzmir / Türkiye	İzmir / Aegean
Perennial Plants / Fruits, Beverages, and Spices	13.11%	1.83%	17.04%
Perennial Plants / Vineyards	3.23%	2.67%	7.69%
Perennial Plants / Olive Trees	29.08%	10.54%	20.00%
Fodder Crops	26.78%	3.48%	21.48%
Ornamental Plants	0.51%	30.14%	91.15%
Total Cultivated Agricultural Land and Perennial Plants	100.00%	1.37%	11.52%

Source: TURKSTAT, 2022o

The groundwater irrigation areas, irrigated lands, dams and ponds in İzmir Region are illustrated in Figure 8.6. Irrigation areas are concentrated in the districts of Dikili, Bergama, Bayındır, and Ödemiş.

FIGURE 8.6. Groundwater Irrigation Areas, Dams and Ponds in İzmir Region



Source: General Directorate of Forestry, 2020

Approximately 23 million hectares of forest area exist in Türkiye. Forest areas are categorized based on canopy density and productivity. In Türkiye, 13.7 million hectares are classified as closed forests, while 9.5 million hectares are open forests. İzmir has a total of 478.6 thousand hectares of forest, comprising 267.7 thousand hectares of closed forests and 210.9 thousand hectares of open forests (Table 8.23).

TABLE 8.23. Distribution of Forest Areas in Türkiye, Aegean Region, and İzmir Region (2022)
(Thousand Hectares)

Forest Area	Türkiye	Aegean Region	İzmir
Closed	13,707.8	2,326.9	267.7
Open	9,537.2	1,588.8	210.9
Total	23,245	3,915.7	478.6

Source: General Directorate of Forestry, 2023

The share of İzmir's forest areas within Türkiye's total forest resources is 2.06%. Within the Aegean Region, İzmir's share is calculated to be 12.22% (Table 8.24). Forests cover 40% of İzmir's total land area. Predominant species include red pine, black pine and oak.

TABLE 8.24. Distribution Shares of Forest Areas (2022)

Forest Area	Distribution within İzmir (%)	İzmir / Türkiye (%)	İzmir / Aegean Region (%)
Closed	55.93	1.95	11.50
Open	44.07	2.21	13.27
Total	100.00	2.06	12.22

Source: General Directorate of Forestry, 2023

In terms of productivity classification, Türkiye has 17.4 million hectares of functionally productive forests and 5.4 million hectares of functionally non-productive forests. The national rate of productive forests is approximately 76%. While specific data for İzmir is unavailable, 68% of forest areas under the jurisdiction of İzmir Regional Directorate fall within the functionally productive category. The spatial distribution of forest resources in İzmir Region is presented in Figure 8.7.

FIGURE 8.7. Forest Resources in İzmir Region



Source: General Directorate of Forestry, 2020

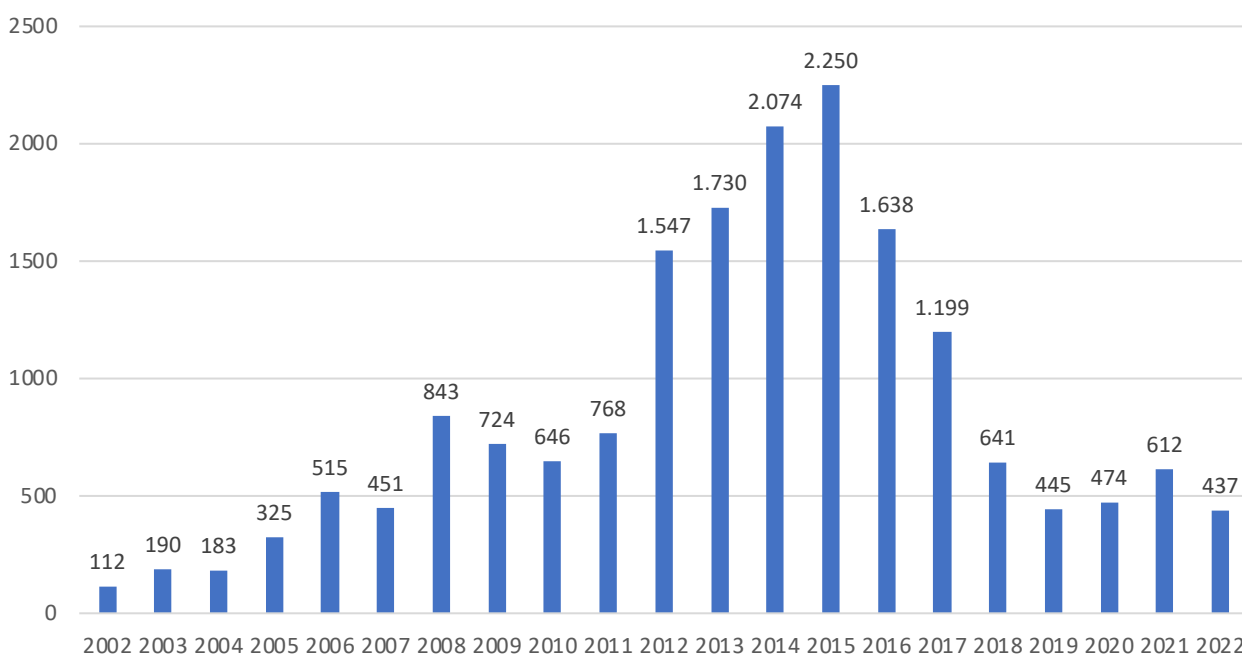
F. Marine and Coastal Areas

A significant portion of marine pollution originates from terrestrial sources. Wastewater, industrial pollutants and agricultural contaminants such as pesticides are transported to the seas via streams and rivers. The Gediz River, carrying the pollution load from industrial and agricultural activities in Kemalpaşa district and Manisa province, exemplifies this issue. Toxic metals and other pollutants harm all species within the marine ecosystem and, through their entry into the food chain, pose a threat to human health. Continuous monitoring is crucial for preventing pollution and enabling rapid intervention when necessary. İzmir Metropolitan Municipality has been regularly sampling and analyzing data from 11 stations in İzmir Bay since 2001. The data reveal that coliform bacteria levels exceed legal standards in many parts of the bay. Such high coliform levels indicate the presence of domestic wastewater discharge into the bay. The İzmir Provincial Environmental Status Report confirms that the inner sections of the bay fall into the “poor” category, the lowest class, in terms of ecological water quality. Despite the presence of coliform, nitrogen and phosphorus pollution in the bay, water quality in many marine areas around İzmir remains quite good.

At 144 monitored beaches in İzmir, swimming water quality has been classified as excellent. The number of Blue Flag beaches in İzmir increased from 36 in 2013 to 63 currently, ranking the province third after Antalya and Muğla. Additionally, four of Türkiye’s 23 Blue Flag marinas are located in İzmir. Consequently, investments and measures to protect these tourism-valuable areas from environmental pressures are of critical importance.

Another source of marine pollution is solid waste, particularly along coastal strips heavily used by people. According to İzmir Metropolitan Municipality data, 437,200 kg of marine litter was collected in İzmir province in 2021. The amount of marine litter collected has increased since the 2010s, peaking at 2,250 tons in 2015, before beginning to decline (Figure 8.8). This waste, collected via environmental vessels, marine sweepers, or land-based interventions, is disposed of on land.

FIGURE 8.8. Annual Amount of Waste Collected in İzmir Bay (2002–2022) (Tons)



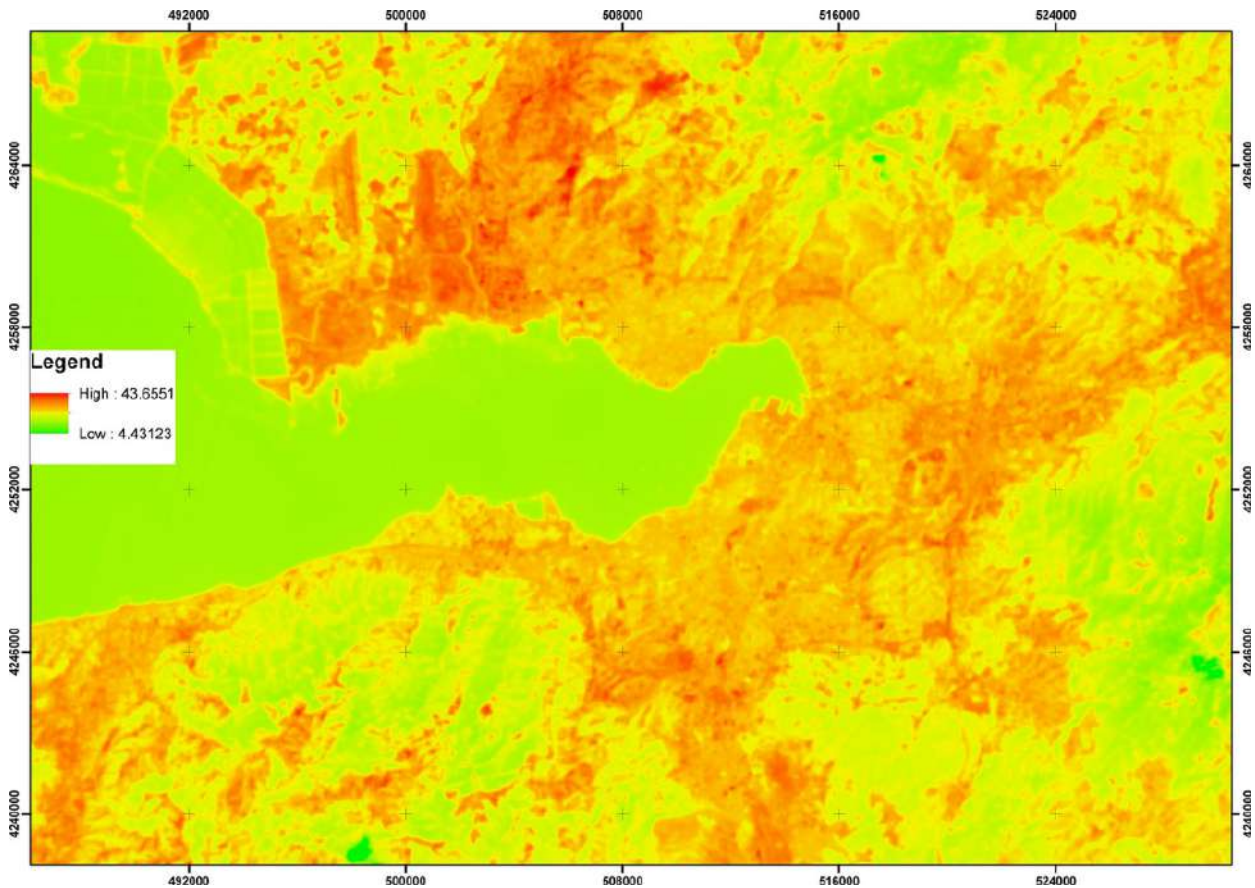
Source: İzmir Provincial Environmental Status Report, 2022

G. Urban Heat Island

The urban heat island (UHI) effect refers to the heat experienced within urban spaces and the temperature differences between urban areas and the surrounding rural areas. Various factors such as the geometric structure of cities, the heat retention of asphalt roads and concrete buildings, the scarcity of green areas that provide cooling through evaporation, and even air pollution contribute to the formation of heat islands over urban areas. The temperature difference between urban and rural areas is generally higher during nighttime and becomes more noticeable. The UHI effect has significant negative impacts on human health and quality of life.

According to a study that measured surface temperatures through an image-based analytical approach using data from the United States Geological Survey (USGS), surface temperatures in the metropolitan area of İzmir range from a minimum of 4°C to a maximum of 43.6°C (Erdem, Çubukçu, and Sharifi, 2021). It was observed that high heat is concentrated particularly in industrial and urban residential areas located in Çiğli district along the northern development axis of the metropolitan area (Figure 8.9). Another noteworthy finding is that large urban parks and recreational areas such as Kültürpark in Konak district serve as an oasis within the urban fabric, cooling their surroundings and offering users a low-temperature zone (Erdem, Çubukçu, and Sharifi, 2021).

FIGURE 8.9. Surface Temperatures in İzmir Region



Source: Erdem, Çubukçu, and Sharifi, 2021

H. Evaluation

In this era where the impacts of climate change, natural disasters, and global energy and food crises are deeply felt, İzmir's natural resources and sensitive ecosystems face increasing pressure. For the future of İzmir, which has a well-developed and diversified industrial sector, a wide variety of agricultural activities, and a population exceeding 4.4 million, protecting its clean water resources is of vital importance. As a region classified as "water poor" in terms of average available water per capita and with pollutant-heavy industrial sectors, İzmir requires interventions based on a comprehensive analysis of its existing problems and risks, along with a resilient development model centered on sustainability.

Air pollution, one of the environmental pressures, has reached hazardous levels in İzmir. Especially in industrially dense districts such as Aliağa, Torbalı, Kemalpaşa and Ödemiş, as well as in urban districts with high population densities like Alsancak, Bayraklı and Bornova, air pollution exceeds legal limits. Although a decline in pollution has been observed in central districts over the years, particulate matter pollution exceeding regulatory limits persists at 16 out of 19 monitoring stations, posing a threat to human health. Prolonged exposure to such air pollution increases the risk of respiratory diseases, including lung cancer. Strengthening inspections in industrial areas and transitioning to vehicles and heating methods powered by clean energy instead of fossil fuels in urban areas are expected to improve İzmir's air quality.

Through rapid developments in clean energy over the past fifteen years, İzmir has been moving away from fossil fuels, which contribute to climate change and widen the foreign trade deficit. The installed wind energy capacity in İzmir has increased sixfold over the past decade, reaching 1,887 MW. Leading Türkiye in this field, İzmir also boasts a strong position with its wind turbine and equipment manufacturing cluster, hosting international companies. Leveraging its historic port city advantage, İzmir is the fifth-largest producer in Europe, exporting wind turbines and equipment to 45 countries. Efforts to establish the İzmir Clean Energy Industry Zone, integrated with Çandarlı Port, and Türkiye's pioneering offshore wind energy plant are underway.

Another clean energy source that has gained momentum in İzmir over the past decade is solar energy. The total installed capacity has risen to 323 MW, positioning İzmir fifth in Türkiye in this sector. With reduced costs and increased energy efficiency of panels produced domestically, coupled with İzmir's high solar exposure throughout the year, solar energy usage and sector growth are expected to rise significantly in the near future. In addition to wind and solar energy, İzmir possesses strong potential for alternative clean energy sources such as geothermal energy, biogas energy and wave energy, due to its geographical and economic structure.

Agricultural activities, polluting industries, and a growing population place significant environmental pressure on İzmir's coastal areas, clean water resources and sensitive ecosystems. Against future threats such as global warming, natural disasters and the global energy crisis, the sustainable development of İzmir requires close collaboration among well-established public institutions, universities, industries and civil society organizations in the region.

9. DISASTER RISKS

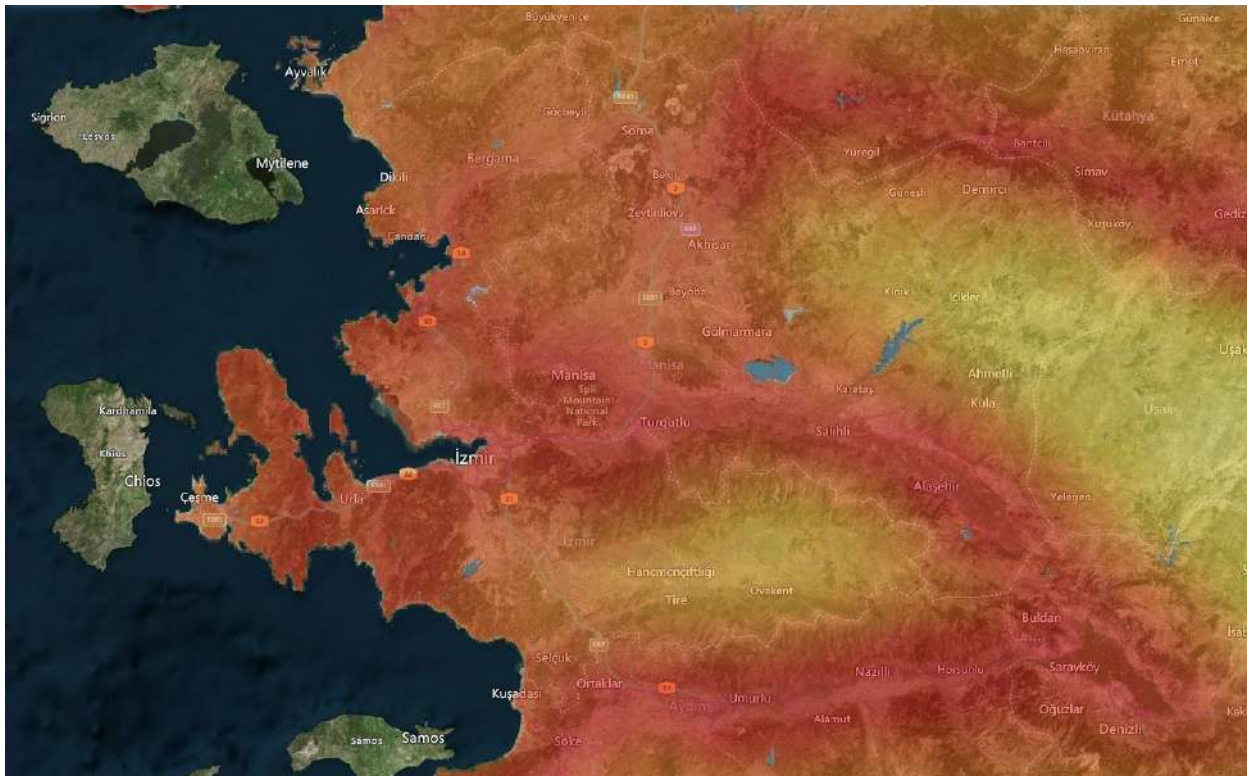
A. Seismicity, Fault Lines, Desertification, Forest Fires and Flooding

International organizations such as the International Decade for Natural Disaster Reduction (IDNDR), the United Nations Office for Disaster Risk Reduction (UNISDR), and the Organization for Economic Co-operation and Development (OECD) have shifted their policy focus to reducing disaster risks through pre-disaster measures due to the high cost of post-disaster relief and the aim of mitigating long-term consequences (Balamir, 2001; Orhan, 2010; Erdem, 2013).

According to the İzmir Provincial Disaster Risk Reduction Plan published by AFAD, İzmir Region is highly susceptible to disasters such as earthquakes, landslides, rockfalls, floods, meteorological and climatic disasters, fires, and industrial accidents. The same report states that between 2009 and 2020, a total of 200 disasters occurred in İzmir Region, comprising 131 earthquakes, 23 rockfalls, 2 avalanches, 57 landslides and 93 floods (İRAP, 2021).

İzmir Region is located in a high seismic hazard area (Figure 9.1). To minimize disaster risks, the İzmir Metropolitan Municipality has published the İzmir Earthquake Scenario and Earthquake Master Plan. Within the course of the 20th century, İzmir Region experienced several significant earthquakes that caused severe damage. These earthquakes affected settlements such as Karaburun-Chios Island area, Bayındır, Çeşme and Urla, as well as nearby settlements like Manisa and Akhisar.

FIGURE 9.1. AFAD Earthquake Hazard Map

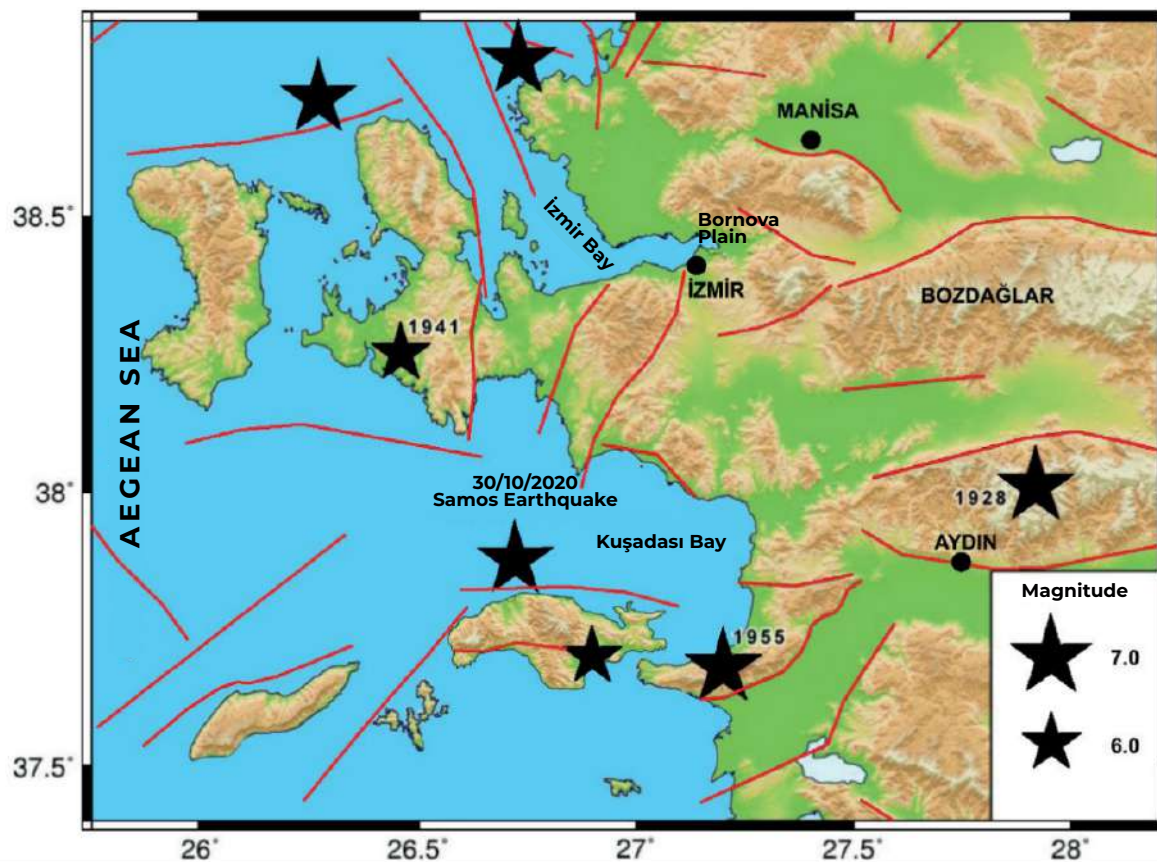


Source: ATLAS, 2022a

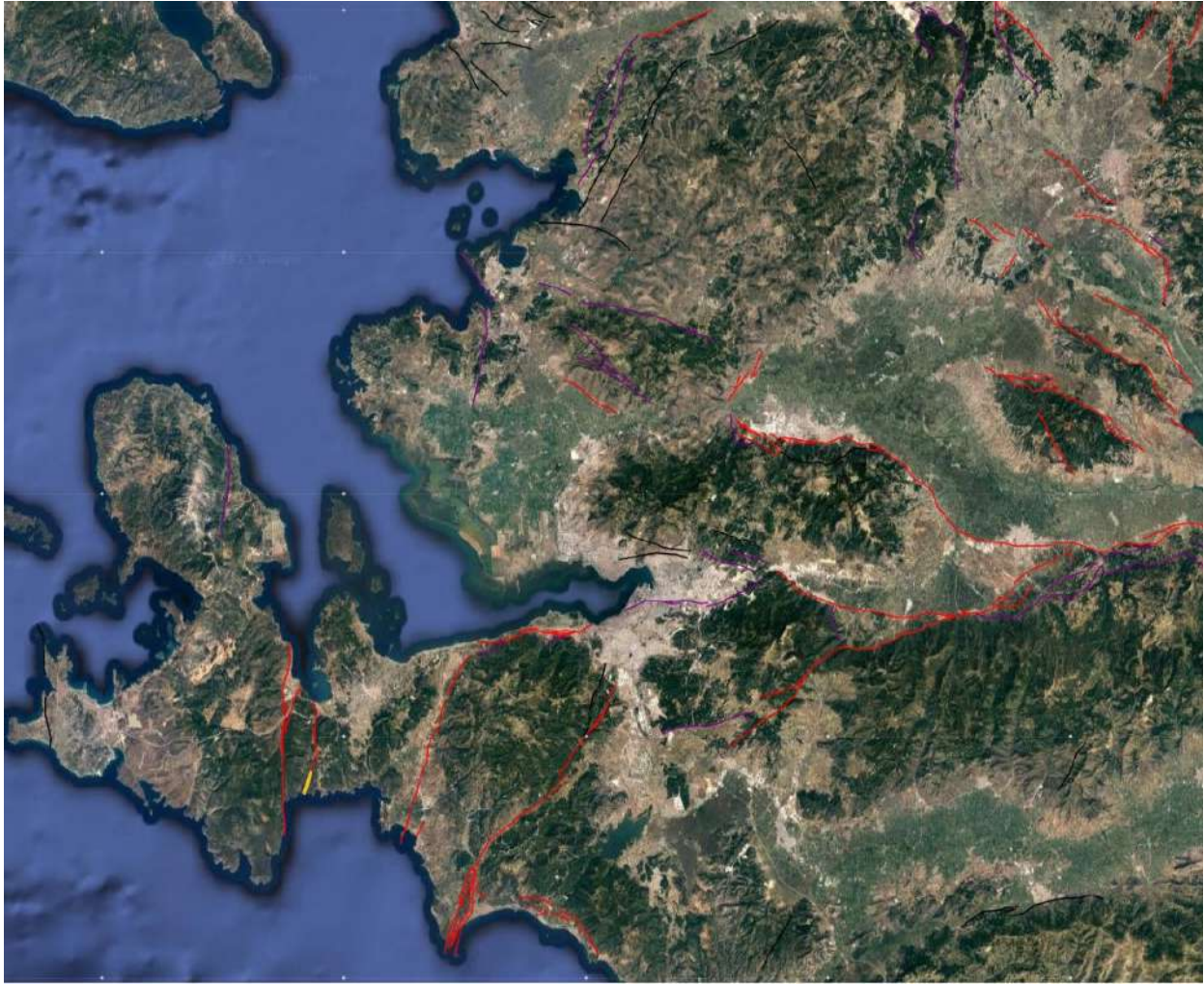
The earthquake referred to as the Samos Earthquake, which severely affected İzmir Region in 2020, causing loss of life, property damage, and severe destruction, occurred on a 30 km long, east-west oriented normal fault located 15 km deep and lasted for 15.68 seconds (Karadaş and Öner, 2021). The earthquake occurred on October 30, 2020, at 14:51 off the coast of Kuşadası Bay in the Aegean Sea. According to the Kandilli Observatory and Earthquake Research Institute, the magnitude of the earthquake was Mw 6.9, while AFAD recorded it as Mw 6.6 (Karadaş and Öner, 2021). The earthquake resulted in 117 fatalities, the collapse of 8 buildings, and the designation of 752 housing units as destroyed or heavily damaged across 27 districts (İRAP, 2021).

Figure 9.2 shows significant earthquakes that have occurred in and around İzmir. Notable earthquakes are observed along an arc extending from the tip of the Karaburun Peninsula through Urla, Samos Island, Kuşadası, and Aydın. Fault lines are indicated in red in Figure 9.2. The İzmir Region and its surroundings contain fault lines capable of producing dangerous earthquakes that could cause significant damage.

FIGURE 9.2. Significant Earthquakes and Fault Lines in and Around İzmir



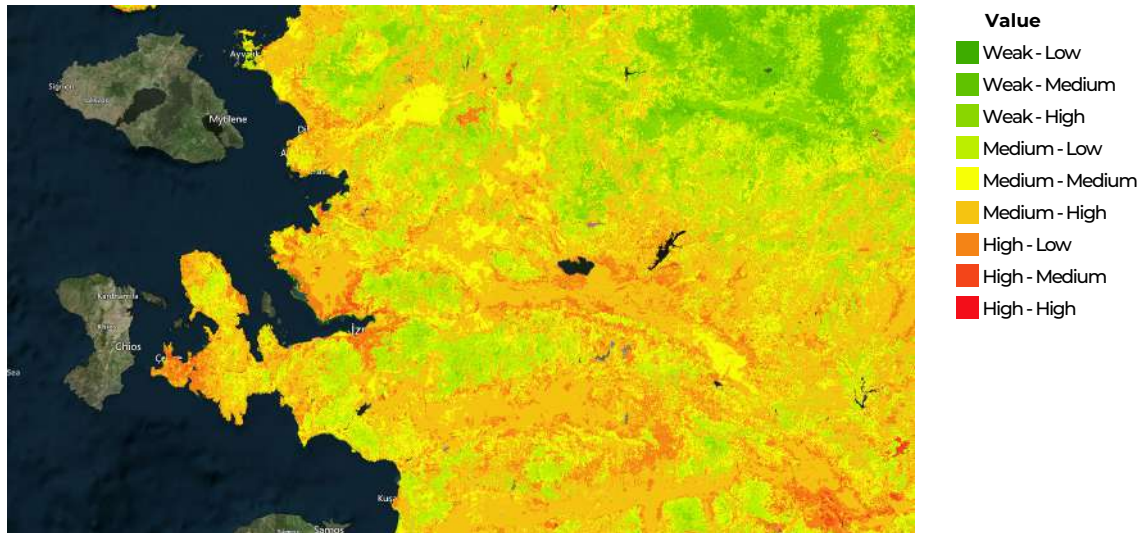
Source: Karadaş and Öner, 2021

FIGURE 9.3. Active Fault Lines in and Around İzmir

Source: General Directorate of Mineral Research and Exploration, 2023

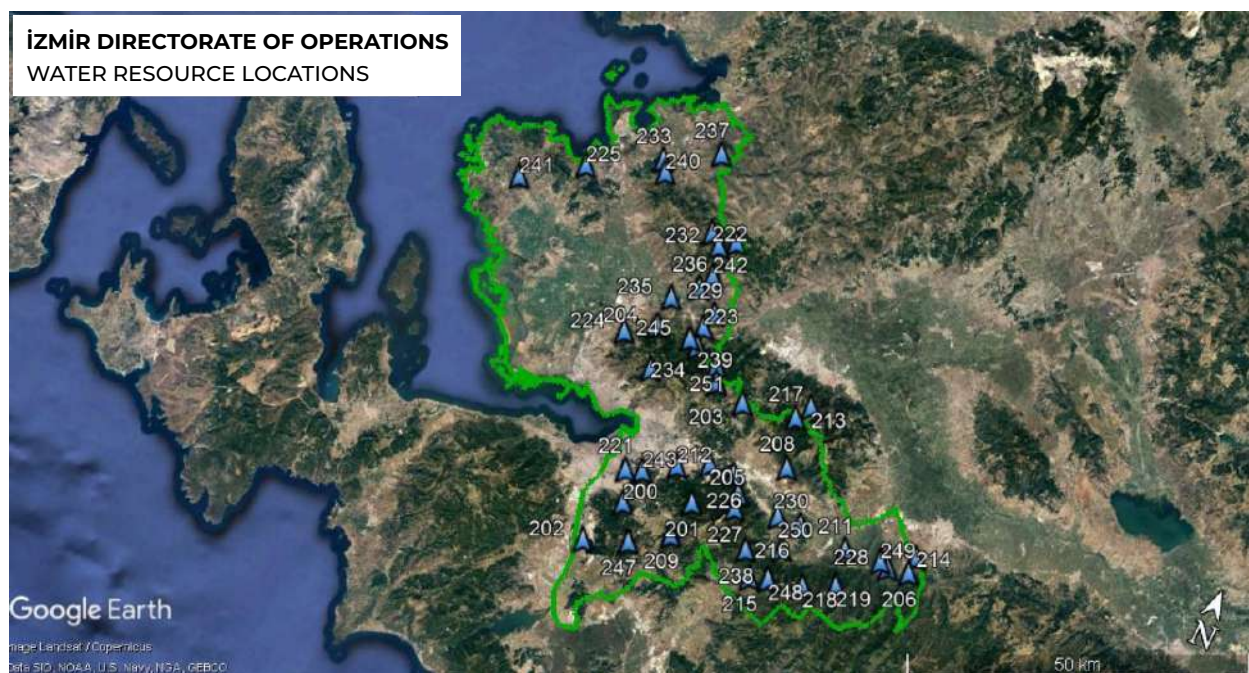
A visual from the General Directorate of Mineral Research and Exploration's geoscience map imaging system illustrates the active faults in İzmir Region (Figure 9.3). Notably, numerous structures are located along the fault line called the İzmir Fault, which extends across the city center in an east-west direction. Some of these include Basmane Train Station, Basmane Junction Viaduct, Agora Ruins, İzmir Metropolitan Municipality, İBB Traffic Control Branch Directorate, Hilal Metro Station, Gıda Çarşısı, 44th Maintenance Factory Directorate, and Çimentaş Cement Factory. Additionally, İzmir University of Economics, the Karşıyaka Bus Workshop, the Narlıdere Market Area, and some villages are also observed to be situated directly on active fault lines.

Desertification is as hazardous as earthquakes, but its effects manifest over the long term, and drought driven by climate change significantly increases the risk of desertification. Gediz Basin and Küçük Menderes Basin, key ancient agricultural basins in İzmir Region, are shown in colors corresponding to moderate to high desertification sensitivity (Figure 9.4).

FIGURE 9.4. Desertification Sensitivity Map of Türkiye

Source: ATLAS, 2022b

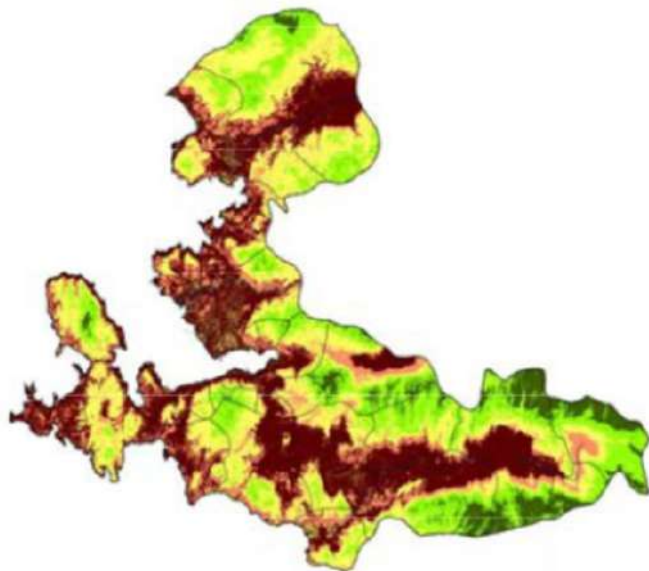
Forest fires, frequently caused by the planet's warming due to climate change, result in loss of life, property, and ecosystems and are among the disasters that occur particularly during the summer months in İzmir Region. İzmir Regional Directorate of Forestry published the Fire Action Plan in 2020. According to the 2020 Fire Action Plan, a total of 241 fires occurred within the İzmir PDF (Provincial Directorate of Forestry) boundaries during the 2016–2019 period. As stated in the report, a total of 524 hectares of forested land were damaged in this period. The locations of water sources for aerial and ground firefighting vehicles during forest fires in İzmir Region are presented in Figure 9.5.

FIGURE 9.5. Locations of Water Sources for Aerial and Ground Firefighting Vehicles

Source: General Directorate of Forestry, 2018

Another significant disaster risk causing loss of life, property, and ecosystems in İzmir Region is flooding, inundation and water overflows. The ancient agricultural basins in İzmir Region are at high risk of flooding and inundation (Figure 9.6) (Özkan and Tarhan, 2016). The flood disaster that affected Karşıyaka and Çiğli districts in 1995 exemplifies the risks the region faces from such disasters. It is noted that intense rainfall exceeding 100 kilograms per square meter and water overflows from riverbeds rendered thousands of homes uninhabitable and resulted in the loss of dozens of lives (Sezer, 1997).

FIGURE 9.6. Flood Risk in İzmir Region



Source: Özkan and Tarhan, 2016

B. Earthquake Building Inventory Classification

Earthquake building classifications were created as part of the İzmir Earthquake Scenario and Earthquake Master Plan, with 213,781 buildings in the İzmir Region assessed according to these classifications. Based on structural system classes, the number of 1-2 story reinforced concrete buildings is 91,086, accounting for 42.6% of the buildings examined in the inventory. The number of 3-5 story buildings is 82,097, representing 38.4%, while the number of buildings with six or more stories is 17,236, making up 8.1%. Among masonry structures, 1-2 story masonry buildings total 23,110, accounting for 10.8%, while masonry buildings with three or more stories number 252 (Table 9.1).

TABLE 9.1. Number of Buildings in the İzmir Region by Structural System Codes (2021)

Structural System Type	Number of Buildings	Share of Total (%)
BA1 – Reinforced concrete: 1-2 story	91,086	42.61
BA2 – Reinforced concrete: 3-5 story	82,097	38.40
BA3 – Reinforced concrete: 6+ story	17,236	8.06
YG1 – Masonry: 1-2 story	23,110	10.81
YG2 – Masonry: 3+ story	252	0.12
Total	213,781	100

Source: İzmir Metropolitan Municipality, 2022b

When evaluated by the construction/project date, the number of buildings constructed before 1975 occurs to be 80,920, representing 37.85% of the total. Buildings constructed after 1975 occurs to be 132,861, accounting for 62.2% of the inventory (Table 9.2).

TABLE 9.2. Number of Buildings in İzmir Region by Construction/Project Date Codes

Construction Date	Number of Buildings	Share in Total (%)
1975 and later (75=+)	132,861	62.15
Before 1975 (75-)	80,920	37.85
Total	213,781	100

Source: İzmir Metropolitan Municipality, 2022b

In terms of quality classification, the number of good-quality buildings in the inventory is 40,767, representing 19.1% of the total. Medium-quality buildings number 123,564, accounting for 58.80%. Poor-quality buildings total 49,450, making up 23.1% of the inventory stock (Table 9.3).

TABLE 9.3. Number of Buildings in İzmir Region by Quality Class Codes (2021)

Quality	Number of Buildings	Share in Total (%)
Good quality	40,767	19.07
Medium quality	123,564	57.80
Poor quality	49,450	23.13
Total	213,781	100

Source: İzmir Metropolitan Municipality, 2022b

Among the buildings in the seismic building inventory, the most at-risk group consists of reinforced concrete buildings with six or more stories, built before 1975, and classified as either poor or medium quality. In this group, the number of poor-quality buildings is 351, while there are 577 medium-quality buildings. The number of good-quality buildings in the same group is 1,239, with their shares in the seismic building inventory being 0.2% for poor quality and 0.3% for medium quality. The share of six or more story, reinforced concrete buildings, built before 1975, and classified as good quality in the seismic building inventory is 0.6%. In the high-risk group, the number of six or more story, reinforced concrete, post-1975 poor-quality buildings is 680, constituting 0.3% of the total seismic building inventory. Other high-risk groups include three- to five-story reinforced concrete buildings built before 1975, classified as poor and medium quality. Among this group, 5,311 buildings are classified as poor quality, representing 2.4% of the inventory. The number of three- to five-story, reinforced concrete, medium-quality buildings built before 1975 is 7,897, accounting for 3.6% of the inventory. The number of post-1975 three- to five-story poor-quality reinforced concrete buildings is 7,933, making up 3.6% of the inventory. There are 38,788 post-1975, medium-quality reinforced concrete buildings, which represent 17.8% of the inventory (Table 9.4).

TABLE 9.4. Number of Buildings Surveyed in İzmir Region (2021)

Building Structural System	Building Project/ Construction Date	Building Quality Classifications	Number of Buildings	Share (%)
BA1 – Reinforced Concrete: 1–2 stories	Post-1975 (75=+)	Good quality	5,894	2.71
BA1 – Reinforced Concrete: 1–2 stories	Post-1975 (75=+)	Medium quality	30,371	13.94
BA1 – Reinforced Concrete: 1–2 stories	Pre-1975 (75-)	Poor quality	12,076	5.54
BA1 – Reinforced Concrete: 1–2 stories	Pre-1975 (75-)	Good quality	2,330	1.07
BA1 – Reinforced Concrete: 1–2 stories	Pre-1975 (75-)	Medium quality	28,912	13.27
BA1 – Reinforced Concrete: 1–2 stories	Pre-1975 (75-)	Poor quality	11,503	5.28
BA2 – Reinforced Concrete: 3–5 stories	Post-1975 (75=+)	Good quality	18,771	8.62
BA2 – Reinforced Concrete: 3–5 stories	Post-1975 (75=+)	Medium quality	38,788	17.81
BA2 – Reinforced Concrete: 3–5 stories	Post-1975 (75=+)	Poor quality	7,933	3.64
BA2 – Reinforced Concrete: 3–5 stories	Pre-1975 (75-)	Good quality	3,397	1.56
BA2 – Reinforced Concrete: 3–5 stories	Pre-1975 (75-)	Medium quality	7,897	3.63
BA2 – Reinforced Concrete: 3–5 stories	Pre-1975 (75-)	Poor quality	5,311	2.44
BA3 – Reinforced Concrete: 6+ stories	Post-1975 (75=+)	Good quality	8,689	3.99
BA3 – Reinforced Concrete: 6+ stories	Post-1975 (75=+)	Medium quality	5,700	2.62
BA3 – Reinforced Concrete: 6+ stories	Post-1975 (75=+)	Poor quality	680	0.31
BA3 – Reinforced Concrete: 6+ stories	Pre-1975 (75-)	Good quality	1,239	0.57
BA3 – Reinforced Concrete: 6+ stories	Pre-1975 (75-)	Medium quality	577	0.26
BA3 – Reinforced Concrete: 6+ stories	Pre-1975 (75-)	Poor quality	351	0.16
YG1 – Masonry Building: 1–2 stories	Post-1975 (75=+)	Good quality	71	0.03
YG1 – Masonry Building: 1–2 stories	Post-1975 (75=+)	Medium quality	1,174	0.54
YG1 – Masonry Building: 1–2 stories	Post-1975 (75=+)	Poor quality	2,703	1.24
YG1 – Masonry Building: 1–2 stories	Pre-1975 (75-)	Good quality	372	0.17
YG1 – Masonry Building: 1–2 stories	Pre-1975 (75-)	Medium quality	9,979	4.58
YG1 – Masonry Building: 1–2 stories	Pre-1975 (75-)	Poor quality	8,811	4.05
YG2 – Masonry Building: 3+ stories	Post-1975 (75=+)	Good quality	-	-
YG2 – Masonry Building: 3+ stories	Post-1975 (75=+)	Medium quality	11	0.01
YG2 – Masonry Building: 3+ stories	Post-1975 (75=+)	Poor quality	-	-
YG2 – Masonry Building: 3+ stories	Pre-1975 (75-)	Good quality	4	0.00
YG2 – Masonry Building: 3+ stories	Pre-1975 (75-)	Medium quality	155	0.07
YG2 – Masonry Building: 3+ stories	Pre-1975 (75-)	Poor quality	82	0.04
Other			4,043	1.86
Total			217,824	100

Source: İzmir Metropolitan Municipality, 2022b

C. Disaster Gathering Areas

Gathering areas are safe spaces where the public can evacuate from hazardous zones after disasters and emergencies to prevent panic and ensure effective communication until temporary shelter centers are prepared (AFAD, 2021). There are 2,307 gathering areas in İzmir, with a total capacity of 6 million people, based on an allocation of 2.5 square meters per person. District-based data are presented in Table 9.5.

TABLE 9.5. Number and Capacity of Disaster Gathering Areas by District in İzmir Region (2021)

District	Number of Gathering Areas	Area (m2)	Capacity (person)
Aliağa	56	387,728	155,091
Balçova	23	137,748	55,099
Bayındır	77	293,342	117,337
Bayraklı	132	954,256	381,702
Bergama	139	474,330	189,732
Beydağ	37	93,797	37,519
Bornova	52	1,293,972	517,589
Buca	90	1,556,624	622,650
Çeşme	127	323,099	129,240
Çiğli	100	541,702	216,681
Dikili	41	228,057	91,223
Foça	51	164,007	65,603
Gazimir	38	385,211	154,084
Güzelbahçe	64	189,851	75,940
Karabağlar	108	611,458	244,583
Karaburun	23	173,089	69,236
Karşıyaka	117	866,137	346,455
Kemalpaşa	165	394,902	157,961
Kınık	57	238,556	95,422
Kiraz	64	139,054	55,622
Konak	67	829,740	331,896
Menderes	69	525,396	210,158
Menemen	99	1,208,768	483,507
Narlıdere	66	243,496	97,398
Ödemiş	125	510,228	204,091
Seferihisar	36	198,427	79,371
Selçuk	35	127,904	51,162
Tire	107	325,293	130,117
Torbalı	80	1,330,232	532,093
Urla	62	452,432	180,973
TOTAL	2,307	15,198,836	6,079,534

Source: İzmir Provincial Disaster and Emergency Directorate, Provincial Disaster Response Plan, 2021

According to the İzmir Disaster Response Plan and the Provincial Disaster Risk Reduction Plan, there are 29 temporary and emergency shelter areas across 17 of İzmir's 30 districts. These areas have a total capacity of 21,062 tents, providing shelter for 105,000 disaster victims. Including additional accommodations such as lodging facilities and sports halls, İzmir can provide temporary shelter for a total of 213,000 disaster victims.

TABLE 9.6. Temporary and Emergency Shelter Areas and Facilities in İzmir, and Their Capacities (2021)

Category	Facility Type	Capacity (person)
Shelter Areas	Tent City-Container City Area	105,309
	Tent Area (Without Social Amenities)	5,769
Private and Public Lodging Facilities	Investment-Certified Lodging Facilities	10,012
	Operation-Certified Lodging Facilities	39,723
	Public Guesthouses	1,017
	Dormitories Affiliated with KYK	17,227
	Private Dormitories Affiliated with MoNE	16,841
	Boarding Schools	8,057
	Teachers' Lodges	532
Sports Facilities	Sports Halls	8,500
TOTAL		212,987

Source: Provincial Disaster Risk Reduction Plan (İRAP), 2021

TABLE 9.7. Tent City and Container City Areas in İzmir and Their Capacities (2021)

No	District	Name	Area (m2)	Number of Disaster Victims Accommodated	Number of Tents
1	Bayraklı	South of Doğançay Cemetery	211,000	6,029	1,206
2	Bayraklı	Prof. Ekrem Akurgal Recreation Area	91,000	2,600	520
3	Bornova	Pınarbaşı Racetrack	150,000	7,143	1,429
4	Bornova	Ege University Football Field	15,000	429	86
5	Bornova	Above Bornova Anatolian High School Road	70,000	2,000	400
6	Bornova	West of Laka Avenue	77,505	2,214	443
7	Bornova	4th Industrial Site Northeast Truck Park	40,000	1,143	229
8	Buca	Forest Depot	63,000	1,800	360
9	Buca	Hippodrome	170,000	4,857	971
10	Buca	Tekel Depot	25,000	714	143
11	Buca	Water Wells	65,000	1,857	371
12	Çiğli	İzmir Katip Çelebi University Campus	200,000	5,714	1,143
13	Gaziemir	Provincial Administration Machinery Depot	35,000	1,000	200
14	Karabağlar	Old İzmir Street Highway Entrance	37,000	1,057	211
15	Karabağlar	Green Area Above Uzundere Garbage Road	220,000	6,286	1,257
16	Karşıyaka	Zübeyde Hanım Neighborhood Sports Facility Area-1	30,000	857	171
17	Karşıyaka	Zübeyde Hanım Neighborhood Sports Facility Area-2			
18	Karşıyaka	Recreation Area			
19	Konak	Atatürk Stadium and Surroundings	100,000	2,857	571
20	Menderes	Pirentepe Treasury Land	566,000	16,171	3,234
21	Aliağa	Atatürk Neighborhood	50,000	1,429	286
22	Beydağ	Sports Facilities	32,500	929	186
23	Dikili	İsmetpaşa Neighborhood, Çanakkale Highway	194,385	5,562	1,112
24	Karaburun	Karaburun Sports Field	22,063	630	126
25	Karaburun	Mordoğan Sports Field	58,820	1,681	336
26	Ödemiş	125th Year Culture Park	43,000	1,229	246
27	Seferihisar	Military Shooting Range	633,000	18,086	3,617
28	Tire	Below Kireli Village Area	166,800	4,766	953
29	Torbalı	Eğerci Pasture Area	219,450	6,270	1,254
TOTAL			3.685.823	105.309	21,062

Source: Provincial Disaster Risk Reduction Plan (İRAP), 2021

D. Evaluation

İzmir Region faces high disaster risks, including from earthquakes, landslides, rockfalls, floods, meteorological and climatic disasters, fires and industrial accidents. The existence of numerous fault lines capable of producing earthquakes ranging from 5.0 to 7.0 on the Richter scale, combined with İzmir's location in a first-degree seismic zone, underscores that the most critical disaster threat for İzmir is earthquakes. The presence of active fault lines beneath residential areas, the high groundwater levels, and the predominance of medium- to low-quality buildings in the inventory indicate the potential for significant loss of life and property in the event of a major earthquake. As evidenced by the adverse impacts of the October 30, 2020 earthquake, it is vital to enhance earthquake resilience, particularly in districts like Balçova, Bayraklı, Bornova, Buca, Karşıyaka and Konak, where urbanization is dense and the building stock is aging. Despite the high level of disaster awareness within institutions in İzmir, inter-institutional communication and coordination must be ensured at the highest level on issues such as analyzing the suitability of critical points for emergency intervention in potential crises in terms of transportation and infrastructure, carrying out necessary control and inspection processes, and enhancing public awareness.

Flooding is another significant natural disaster risk for İzmir. Due to insufficient vegetation cover, unprotected flood zones, combined sewer systems, and construction in streambeds and steep slopes, İzmir faces a high risk of floods and inundation. Additionally, mass movements such as landslides and rockfalls, triggered by earthquakes and heavy rainfall, pose risks, particularly in areas with informal settlements and fractured rocky terrains in rural regions.

With its advanced industry operating near residential areas, İzmir is also at risk of secondary environmental disasters following natural disasters. Being located in a highly fire-sensitive zone and hosting industries processing chemical and petroleum-based products further increases the secondary disaster risk. Climate change and its associated severe meteorological events, desertification, drought, and rising sea levels intensify the pressure on İzmir's clean water resources, agriculture and livestock. Although İzmir serves as a model city in Türkiye for its green transformation and robust clean energy-focused development, the negative impacts of climate change continue to affect İzmir, as they do globally.

In summary, İzmir Region has historically been exposed to natural disasters. One of the legitimate reasons for institutionalized planning is to make residential areas and regions more resilient to natural disasters and to ensure that spaces where life takes place are safer against natural phenomena at all scales. In this context, while determining all development axes in İzmir Region, both the individual and combined effects of disasters such as earthquakes, floods, inundation, fires and desertification should be considered. Designating gathering areas, earthquake container zones, and determining prioritized and alternative transportation routes for use during and after disasters at a regional scale will enhance preparedness for natural disasters. It is essential to consider the location, size and structural quality of living areas and access times to these spaces when determining these zones. Additionally, scenario and simulation studies can be conducted to ensure that healthcare facilities operate in an integrated manner with these centers.

10. RURAL DEVELOPMENT

A. Rural Population

The examination of İzmir Region's rural population has been made possible through the YER-SİS project. According to the YER-SİS database, a total of 613,625 people reside in 718 rural settlements across İzmir Region. The areas identified as rural settlements have been divided into the two categories of rural neighborhoods and neighborhoods based on whether the settlement is a village, neighborhood, rural neighborhood, or town. Within this scope, the number of rural neighborhoods has been determined as 654, while the number of settlements classified as neighborhoods is 64.

The 2018 neighborhood populations based on the rural settlement tiers¹² identified under the YER-SİS project, including the neighborhood (town) and rural neighborhood populations in İzmir Region, are presented in Table 10.1. When the rural neighborhood and neighborhood populations are analyzed based on the rural settlement tiers in the İzmir Region, it is observed that approximately 143,000 people live in rural settlements classified under the lowest rural tier, the "Non-Serving" category, which does not serve any other settlement. The next tier, first-tier rural centers, constitutes the category with the highest total population. These areas host 166,000 people, accounting for 27% of the rural population, of which 48,000 are neighborhood residents and 118,000 are rural neighborhood residents. The total populations of second, third, and fourth-tier settlements are 115,000 (18.7%), 76,000 (12.3%), and 114,000 (18.6%), respectively (Table 10.1).

TABLE 10.1. Population of Rural Neighborhoods and Neighborhoods in Rural Settlement Hierarchies (2019)

Tier	Rural Neighborhood	Neighborhood	Total	Rural Neighborhood (%)	Neighborhood (%)	Total (%)
1	118,039	47,936	165,975	26,51	28.47	27.05
2	90,368	24,153	114,521	20,30	14.34	18.66
3A	37,623	15,225	52,848	8,45	9.04	8.61
3B	13,944	8,864	22,808	3,13	5.26	3.72
4A	60,336	22,020	82,356	13,55	13.08	13.42
4B	15,116	16,940	32,056	3,40	10.06	5.22
Non-Serving	109,804	33,257	143,061	24,66	19.75	23.31
Total	445,230	168,395	613,625	100	100	100

Source: General Directorate of Development Agencies, 2020

When examining the population distribution across districts and rural settlement hierarchies, Menemen emerges as the district with the highest rural population. According to YER-SİS data, Menemen's rural population stands at 102,744 individuals. Following Menemen are Torbalı with 89,448 people and Kemalpaşa with 57,448 people. Within the first-level rural settlements, the districts with the highest population are

¹² Details regarding the rural settlement hierarchy developed under the YER-SİS project are provided in Section 1.d.ii.

Menemen (29,105), Torbalı (18,290), and Ödemiş (16,515). Conversely, the districts with the lowest population in this category are Karaburun (2,066), Çeşme (2,492), and Dikili (2,591). Details of district populations by hierarchies are presented in Table 10.2.

TABLE 10.2. Population in Rural Settlement Hierarchies by Districts (2019)

District	Non-Serving	1	2	3A	3B	4A	4B	Total
Aliağa	13,632	3,333	3,026	-	1,891	5,121	-	27,003
Bayındır	8,108	8,337	4,698	1,281	703	1,094	273	24,494
Bergama	15,471	7,674	3,577	3,288	-	3,524	1,105	34,639
Beydağ	2,810	3,589	-	-	-	-	-	6,399
Çeşme	1,290	2,492	686	10,085	-	-	-	14,553
Dikili	4,220	2,591	6,343	-	-	6,945	-	20,099
Foça	2,159	2,842	1,569	10,758	-	-	2,642	19,970
Karaburun	1,048	2,066	4,546	-	-	-	-	7,660
Kemalpaşa	11,284	14,188	18,829	3,531	6,224	2,716	676	57,448
Kınık	5,007	3,550	-	7,350	-	-	-	15,907
Kiraz	16,364	5,098	10,262	-	1,480	1,277	-	34,481
Menderes	9,031	14,820	8,746	5,216	-	5,688	5,062	48,563
Menemen	24,594	29,105	13,172	2,333	5,165	17,625	10,750	102,744
Ödemiş	12,803	16,515	2,315	4,560	3,201	5,745	4,963	50,102
Seferihisar	1,358	5,420	2,062	2,543	2,737	-	1,312	15,432
Selçuk	-	2,611	3,422	-	-	-	-	6,033
Tire	7,829	9,299	4,070	-	1,073	928	550	23,749
Torbalı	6,053	18,290	27,198	1,903	-	31,693	4,311	89,448
Urla	-	14,155	-	-	334	-	412	14,901
Total	143,061	165,975	114,521	52,848	22,808	82,356	32,056	613,625

Source: General Directorate of Development Agencies, 2020

B. Cooperatives

The cooperatives in İzmir Region were examined in order to determine the strategic importance of cooperatives operating in the province of İzmir in terms of regional development. Cooperatives are critically important due to their role in addressing service and development issues, particularly in rural areas.

There are 235 cooperatives affiliated with the Ministry of Agriculture and Forestry in İzmir Region, serving primarily in rural areas, with a total of 32,349 members. The average number of members per cooperative is 126. When the number of cooperatives is analyzed by type, it is observed that there are 127 agricultural development cooperatives and 69 irrigation cooperatives. Additionally, there are 39 fisheries cooperatives with a total of 2,275 members. Thus, it can be stated that more than half of the cooperatives provide services with a focus on agricultural development. Although the number of agricultural development cooperatives exceeds that of irrigation cooperatives, the latter tends to have more members per cooperative (Table 10.3).

TABLE 10.3. Cooperatives Affiliated with the Ministry of Agriculture and Forestry in İzmir and Their Number of Members

Cooperative Type	Number of Cooperatives	Total Members	Average Number of Members
Agricultural Development Cooperative	127	17.417	137
Irrigation Cooperative	69	12.657	183
Fisheries Cooperative	39	2.275	58
Total	235	32.349	126

Source: İZKA Cooperative Analysis, 2023

There are also certain cooperatives in İzmir Region that are not affiliated with the Ministry of Agriculture and Forestry but are indirectly related to rural development. İzmir Region has 4 Agricultural Sales Cooperatives Unions and 22 Agricultural Sales Cooperatives (Table 10.4).

TABLE 10.4. Cooperatives Related to Rural Development in İzmir (2021)

Cooperative Type	Number of Cooperatives
Production and Marketing Cooperative	27
Agricultural Sales Cooperative	22
Agricultural Sales Cooperatives Union	4
Fresh Fruit and Vegetable Marketing Cooperative	2

Source: İZKA Cooperative Analysis, 2023

When the number of cooperatives affiliated with the Ministry of Agriculture and Forestry is analyzed by district and type, it is seen that the highest number of cooperatives are located in areas with intensive agricultural and livestock activities. Ödemiş District has 28 cooperatives, Bergama District has 19, and Tire and Kemalpaşa Districts each have 16 cooperatives. No cooperatives affiliated with the Ministry of Agriculture and Forestry are found in the metropolitan districts of Buca, Gazıemir, Karabağlar and Konak. Districts located inside the metropolitan area but closer to the periphery are observed to house a low number of cooperatives (Table 10.5).

Although the highest number of cooperatives is found in Ödemiş district, when the number of cooperatives per 100,000 people is examined, Karaburun district ranks first with 109 cooperatives, followed by Bayındır district with 32.5 cooperatives. Although the population and the number of rural neighborhoods in Bayındır are significantly higher than in Karaburun, the latter has a notably high number of cooperatives affiliated with the Ministry of Agriculture and Forestry (Table 10.5).

TABLE 10.5. Number of Cooperatives Affiliated with the Ministry of Agriculture and Forestry, and Their Members by District (2021)

District	Number of Members	Agricultural Development Cooperatives	Irrigation Cooperatives	Aquaquulture Cooperatives	Total Number of Cooperatives	Members per Cooperative	Cooperatives per 100,000 People
Aliağa	920	3	4	3	10	92	9.7
Balçova	20	-	-	1	1	20	1.2
Bayındır	1,610	9	4	-	13	124	32.5
Bayraklı	304	1	-	-	1	304	0.3
Bergama	1,565	14	5	-	19	82	18.1
Beydağ	97	2	-	1	3	32	24.6
Bornova	272	3	-	-	3	91	0.7
Çeşme	327	1	-	6	7	47	14.5
Çiğli	256	-	-	1	1	256	0.5
Dikili	579	3	3	3	9	64	19.3
Foça	459	4	1	2	7	66	20.8
Güzelbahçe	160	1		2	3	53	8.0
Karaburun	1,076	4	3	6	13	83	109.0
Karşıyaka	221	1	-	2	3	74	0.9
Kemalpaşa	4,630	7	9	-	16	289	14.3
Kınık	280	4	1	-	5	56	17.5
Kiraz	4,599	10	4	-	14	329	32.1
Menderes	1,303	5	6	2	13	100	12.5
Menemen	592	3	3	1	7	85	3.6
Narlıdere	173	-	1	1	2	87	3.2
Ödemiş	5,459	20	8	-	28	195	21.1
Seferihisar	1,894	8	4	3	15	126	28.6
Selçuk	335	3	1	-	4	84	10.6
Tire	3,517	10	6	-	16	220	18.4
Torbalı	866	7	5	-	12	72	6.0
Urla	835	4	1	5	10	84	13.7

Source: İZKA Cooperative Analysis, 2023

C. Rural Infrastructure

Within the scope of the YER-SİS project, the facilities and activities in rural settlements were identified. These facilities and activities in rural settlements in the districts İzmir were evaluated under four categories: communication infrastructure, economic infrastructure, social infrastructure and technical infrastructure, as presented in the following tables.

There are a total of 52 PTT branches across the 718 rural settlements in İzmir Region. The districts with the highest number of branches in rural areas are Ödemiş and Torbalı, with eight PTT branches each in their respective 83 and 51 rural settlements. The districts with the fewest PTT branches in rural areas are Karaburun and Kınık, with only one branch each. Regarding the number of ATMs in rural areas, only 44 out of the 718 rural settlements in İzmir Region have ATMs. Kemalpaşa and Ödemiş have the highest number of ATMs in rural areas, with 7 and 6 ATMs, respectively, located in 45 and 83 settlements. The rural settlements in Beydağ, Kiraz, Selçuk and Urla districts have no ATMs.

When examining the number of broadband internet access points by district, it is observed that 324 out of 718 rural settlements in İzmir Region have broadband internet access. Most of the rural settlements with broadband internet access are located in Bergama district, where 51 out of 119 rural settlements have broadband internet. Similarly, in Ödemiş, 51 out of 83 rural settlements have broadband internet access. The districts with the least broadband internet access in rural settlements are Çeşme, Selçuk and Urla. The distribution of mobile internet access is similar to that of broadband internet. Mobile internet access is available in 534 out of 718 rural settlements across İzmir Region. It is observed that rural settlements without mobile internet access are located in districts such as Bergama, Kiraz, Kemalpaşa and Ödemiş. These rural settlements are primarily located in the northern and eastern parts of İzmir Region, where agricultural activities are predominantly carried out (Table 10.6).

TABLE 10.6. Communication Infrastructure in Rural Settlements in the Districts of İzmir (2019)

District	Rural Settlements	PTT Branches	ATMs	Broadband Internet Access	Mobile Internet Access
Aliağa	23	2	2	13	23
Bayındır	45	2	3	24	41
Bergama	119	3	2	51	99
Beydağ	21	-	-	7	15
Çeşme	5	1	1	4	5
Dikili	26	3	2	13	17
Foça	13	2	4	12	12
Karaburun	14	1	1	12	11
Kemalpaşa	45	5	7	28	33
Kınık	31	1	1	16	24
Kiraz	52	-	-	16	35
Menderes	34	4	5	20	24
Menemen	51	6	5	27	37
Ödemiş	83	8	6	51	57
Seferihisar	15	3	1	12	13
Selçuk	9	-	-	2	2
Tire	66	-	1	31	49
Torbalı	51	8	3	27	33
Urla	15	3	-	8	4
Total	718	52	44	374	534

Source: General Directorate of Development Agencies, 2020

When rural settlements are evaluated based on their economic infrastructure, 496 out of 718 rural settlements are seen to have grocery stores/markets, while 68 have chain markets. The district with the most grocery stores/markets in rural areas is Bergama (62), followed by Ödemiş and Torbalı. Menemen has the most chain markets in rural areas (15), followed by Kemalpaşa and Torbalı (Table 10.7).

Out of 718 rural settlements, only 8 have livestock markets. 7 districts have rural settlements with livestock markets, with Kemalpaşa having 2, and other districts having 1 each. Additionally, 94 rural settlements have marketplaces, while 11 have handicraft product sales areas (Table 10.7).

When examining the distribution of rural settlements with marketplaces by district, it is observed that 14 marketplaces are located in rural settlements within Kemalpaşa district, while 12 marketplaces are in rural settlements within Menemen district. The number of rural settlements with handicraft product sales points is quite low, as such points are found in only 9 districts. The district with the highest number of rural settlements having producer unions or cooperatives is Ödemiş, with 18 such settlements. There are 12 rural settlements with producer unions or cooperatives in Bergama district and 10 in Tire district. The total number of rural settlements with producer unions or cooperatives is 108. Furthermore, only 33 rural settlements have village/town promotion and development associations (Table 10.7).

TABLE 10.7. Economic Infrastructure in Rural Settlements in the Districts of İzmir (2019)

District	Number of Rural Settlements	Number of Grocery Stores/ Markets	Number of Chain Markets	Number of Livestock Markets	Number of Marketplaces	Number of Handicraft Product Sales Areas	Number of Producer Associations/ Cooperatives	Number of Village/Town Promotion and Development Associations
Aliağa	23	16	4	-	3	1	4	1
Bayındır	45	34	1	-	5	-	9	1
Bergama	119	62	-	1	6	-	12	5
Beydağ	21	11	-	-	1	-	-	-
Çeşme	5	4	2	1	3	1	2	-
Dikili	26	17	3	-	2	1	2	2
Foça	13	10	5	-	5	1	4	-
Karaburun	14	8	1	-	3	1	6	1
Kemalpaşa	45	39	9	2	14	2	9	1
Kınık	31	18	1	1	2	-	3	1
Kiraz	52	30	1	-	3	-	8	3
Menderes	34	30	8	1	9	-	4	2
Menemen	51	42	15	1	12	-	3	6
Ödemiş	83	58	2	-	5	1	18	-
Seferihisar	15	11	5	-	2	-	5	-
Selçuk	9	7	-	-	3	2	1	1
Tire	66	42	-	-	6	-	10	2
Torbalı	51	46	8	1	9	-	4	5
Urla	15	11	3	-	1	1	4	2
Total	718	496	68	8	94	11	108	33

Source: General Directorate of Development Agencies, 2020

When rural settlements are examined in terms of social infrastructure by district, it is observed that 4 of the 718 rural settlements in İzmir Region have boarding regional primary schools; 34 rural settlements have gendarmerie or police stations; 76 rural settlements have social facilities; and 50 rural settlements have amateur sports clubs. Boarding regional primary schools are located in the Menemen and Seferihisar districts. Bergama district has the highest number of social facilities. According to YER-SİS data, 24 of the 119 rural settlements in Bergama district have social facility areas. Following Bergama, Menemen has 15 rural settlements and Torbalı has 11 rural settlements with social facilities. Regarding rural settlements with amateur sports clubs, Kemalpaşa district has the highest number, with 12 rural settlements. In Menemen district, 11 rural settlements have amateur sports clubs (Table 10.8).

One of the most important activities for ensuring rural development in rural areas is vocational training in agricultural and livestock production. Vocational courses or related activities are available in 36 rural settlements in İzmir Region. Menemen district stands out for having the highest number of vocational courses. In 10 of the 51 rural settlements in Menemen, vocational courses or related activities are conducted (Table 10.8).

TABLE 10.8. Social Infrastructure in Rural Settlements by District in İzmir (2019)

District	Number of Rural Settlements	Number of Vocational Courses or Activities	Number of Boarding Regional Primary Schools	Number of Gendarmerie/Police Stations	Number of Vocational Schools	Number of Social Facilities	Number of Amateur Sports Clubs
Aliağa	23	2	1	1	-	2	2
Bayındır	45	-	-	1	-	1	1
Bergama	119	2	-	1	-	24	-
Beydağ	21	-	-	-	-	-	1
Çeşme	5	1	-	2	-	-	1
Dikili	26	2	-	1	-	7	1
Foça	13	-	-	2	-	3	4
Karaburun	14	2	-	1	-	-	-
Kemalpaşa	45	7	-	4	-	8	12
Kınık	31	1	-	-	-	-	1
Kiraz	52	-	-	-	-	-	-
Menderes	34	3	-	3	-	-	4
Menemen	51	10	2	2	2	15	11
Ödemiş	83	4	-	4	-	-	-
Seferihisar	15	-	1	1	-	2	-
Selçuk	9	-	-	1	-	-	-
Tire	66	-	-	4	-	1	1
Torbalı	51	2	-	5	-	11	9
Urla	15	-	-	1	-	2	2
Total	718	36	4	34	2	76	50

Source: General Directorate of Development Agencies, 2020

When rural settlements are analyzed in terms of technical infrastructure capacity by district, it is observed that 25 of the 718 rural settlements in İzmir Region have cold storage facilities, 469 have wastewater and sewage infrastructure, 642 have network water infrastructure, 7 have licensed warehouses, 31 have industrial estates, 7 have slaughterhouses, and 104 have poultry farms. Cold storage facilities are predominantly located in the districts of Kemalpaşa and Torbalı. The number of districts with licensed warehouses in rural settlements is 5. An examination of wastewater and sewage infrastructure in rural settlements shows that 249 rural settlements lack such infrastructure. Bergama district has the most extensive wastewater and sewage infrastructure, with 90 rural settlements, followed by Ödemiş with 54 and Menemen with 43. On the other hand, Kiraz district has no wastewater and sewage infrastructure in 42 rural settlements, while Ödemiş and Tire lack such infrastructure in 29 and 28 rural settlements, respectively (Table 10.9).

Regarding network water infrastructure, 76 rural settlements in İzmir Region lack network water infrastructure. Among rural settlements, 11% do not have network water infrastructure. Bergama district has the most extensive network water infrastructure, covering 114 rural settlements, followed by Ödemiş with 80 rural settlements. Kiraz district has the least sufficient network water infrastructure, with only 10 rural settlements equipped (Table 10.9).

TABLE 10.9. Technical Infrastructure in Rural Settlements by District in İzmir (2019)

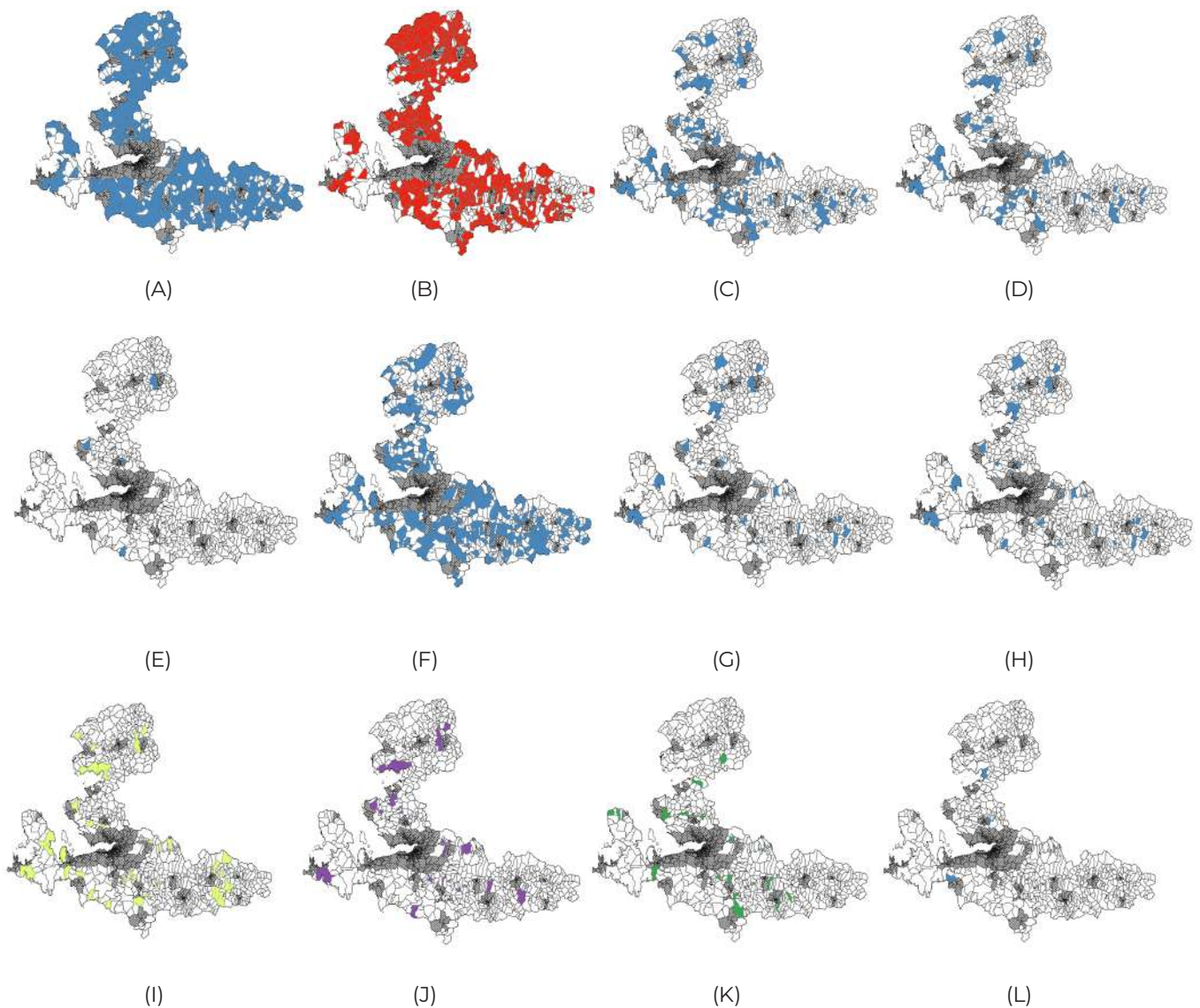
District	Number of Rural Settlements	Number of Cold Storage Facilities	Number of Wastewater and Sewage Infrastructures	Number of Network Water Infrastructures	Number of Licensed Warehouses	Number of Industrial Sites	Number of Slaughterhouses	Number of Poultry Farms
Aliağa	23	1	19	22	-	2	-	6
Bayındır	45	3	33	45	-	4	2	4
Bergama	119	-	90	114	-	3	1	9
Beydağ	21	-	13	19	-	-	-	1
Çeşme	5	-	3	3	-	1	-	1
Dikili	26	-	19	20	-	1	-	2
Foça	13	1	12	13	-	2	-	5
Karaburun	14	2	7	11	-	-	-	2
Kemalpaşa	45	5	30	39	3	7	1	10
Kınık	31	1	27	30	-	1	-	4
Kiraz	52	-	10	42	-	-	-	3
Menderes	34	1	23	27	1	2	1	2
Menemen	51	2	43	45	-	2	-	11
Ödemiş	83	-	54	80	-	2	1	10
Seferihisar	15	-	9	15	-	-	-	5
Selçuk	9	1	5	9	1	-	-	1
Tire	66	3	38	58	-	-	1	6
Torbalı	51	4	32	41	1	4	-	17
Urla	15	1	2	9	1	-	-	5
Total	718	25	469	642	7	31	7	104

Source: General Directorate of Development Agencies, 2020

The number of rural settlements with industrial sites highlights Kemalpaşa district, which houses such sites in 7 of its settlements. There are 6 rural settlements with slaughterhouses, 2 of which are located in Bayındır, where bovine livestock farming is prevalent. In terms of poultry farms, Torbalı district ranks highest, with 17 rural settlements hosting poultry farms, followed by Menemen (11), Ödemiş (10) and Kemalpaşa (10) (Table 10.9).

Figure 10.1 presents spatial distribution maps for communication, economic, social and technical infrastructure indicators in the 718 rural settlements of İzmir Region. Figure 10.2 displays the spatial distribution of the types of infrastructure requested to be established in region. The findings from the joint evaluation of Figure 10.1 and Figure 10.2 provide critical insights that can significantly contribute to the formulation of strategies related to rural development during the regional planning process.

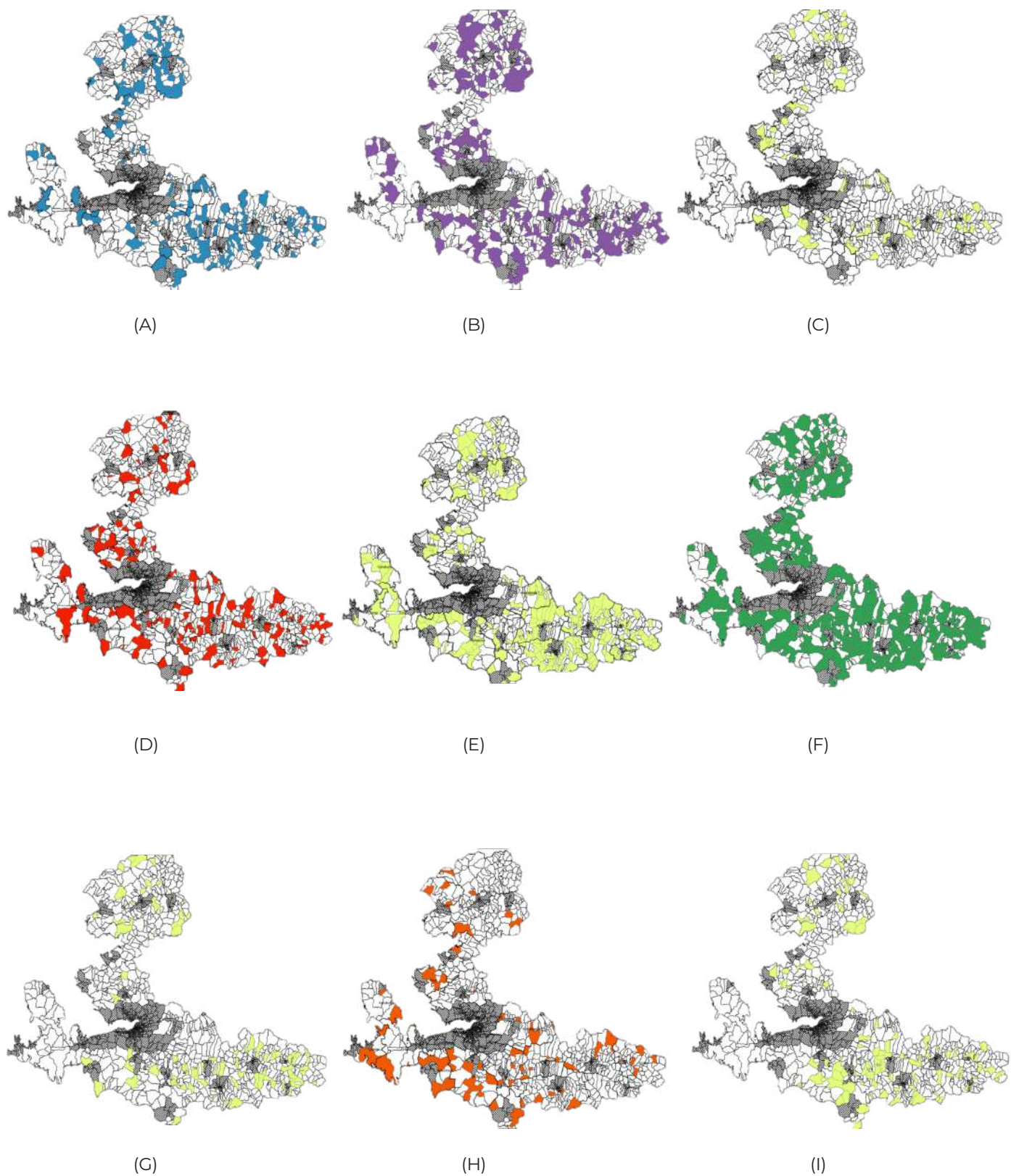
FIGURE 10.1. Infrastructure in Rural Settlements (2019)



Source: General Directorate of Development Agencies, 2020

A - Mobile Internet Access, B - Wastewater and Sewage Infrastructure, C - Distribution of Health Centers, D - Distribution of Pharmacies, E - Distribution of Hospitals, F - Primary Schools, G - High Schools, H - Vocational High Schools, I - PTT Branches, J - Industrial Estates, K - Cold Storage Facilities, L - Secondary Schools

FIGURE 10.2. Rural Settlements in the İzmir Region Where Infrastructure Facilities Are Requested to Be Established



(A) Waste Treatment Facility, (B) Factory Workshop, (C) Slaughterhouse, (D) Local Market, (E) Cold Storage Facility, (F) Social Facilities, (G) Milk Collection Center, (H) Tourism Facility, (I) Product Collection Center (2019)

Source: General Directorate of Development Agencies, 2020

D. Rural Livelihoods

The primary livelihoods in rural areas are concentrated in agriculture and livestock. Other main sources of income include tenant farming, paid agricultural labor, factory work and mining. Factory work is carried out in 258 areas, and mining in 79 areas. The district with the highest number of tenant farming activities is Bergama, with 44 rural settlements, followed by Torbalı, with 33 rural settlements. The number of rural settlements generating income from livestock activities is higher than those engaging in tenant farming. Districts with organized industrial zones and industrial estates have a high number of rural settlements that derive income from factory work. For example, factory work serves as a source of income in 40 rural settlements in Menemen, 36 in Torbalı and 32 in Kemalpaşa (Table 10.10).

TABLE 10.10. Sources of Livelihood in Rural Settlements by District in İzmir I (2019)

District	Number of Rural Settlements	Tenant Farming	Livestock	Factory Work	Mining Work	Paid Agricultural Labor
Aliağa	23	11	23	20	3	8
Bayındır	45	15	44	14	2	32
Bergama	119	44	118	27	33	56
Beydağ	21	4	21	3	3	13
Çeşme	5	4	5	1	-	4
Dikili	26	12	26	3	2	18
Foça	13	9	13	9	-	8
Karaburun	14	4	14	3	-	6
Kemalpaşa	45	10	45	32	1	30
Kınık	31	17	31	13	24	14
Kiraz	52	15	52	3	-	36
Menderes	34	15	32	16	5	26
Menemen	51	29	47	40	-	33
Ödemiş	83	29	83	11	1	54
Seferihisar	15	6	14	4	1	11
Selçuk	9	4	9	1	-	7
Tire	66	23	66	20	2	41
Torbalı	51	33	50	36	2	33
Urla	15	9	15	2	-	4
Total	718	293	708	258	79	434

Source: General Directorate of Development Agencies, 2020

The districts where mining is a prominent source of income are Bergama and Kınık. Paid agricultural labor is an important income source in the rural settlements of Bergama, Ödemiş, and Tire (Table 10.10).

In 62 of the 718 rural settlements in the İzmir Region, forestry serves as an important income source, while mushroom farming is significant in 21 rural settlements, construction work in 173, and transportation activities in 81. Bergama has the highest number of rural settlements where forestry is a key livelihood,

with 21 rural settlements engaged in forestry activities. Mushroom farming is primarily found in the rural settlements of Foça and Kemalpaşa, with 4 settlements each. Service activities are important income sources in rural settlements located in Foça, Menderes, Selçuk, Menemen and Dikili (Table 10.11).

The districts with the highest number of rural settlements where construction work is an income source are Torbalı, with 23 rural settlements, Menemen with 21, and Kemalpaşa and Menderes, each with 6 rural settlements. Notably, these districts are close to urban centers. In terms of transportation activities, Torbalı leads with 15 rural settlements, followed by Kemalpaşa and Menemen, each with 11 rural settlements (Table 10.11).

TABLE 10.11. Sources of Livelihood in Rural Settlements by District in İzmir II (2019)

District	Number of Rural Settlements	Forestry	Mushroom Farming	Services	Construction Work	Transportation
Aliağa	23	-	1	1	5	1
Bayındır	45	5	-	4	6	-
Bergama	119	21	-	2	10	8
Beydağ	21	-	1	-	3	-
Çeşme	5	-	-	2	4	1
Dikili	26	2	1	6	8	3
Foça	13	1	4	7	8	4
Karaburun	14	-	-	-	3	2
Kemalpaşa	45	6	4	4	16	11
Kınık	31	1	1	1	8	3
Kiraz	52	5	1	-	12	-
Menderes	34	6	2	7	16	7
Menemen	51	1	1	6	21	11
Ödemiş	83	4	2	3	3	4
Seferihisar	15	3	2	4	8	2
Selçuk	9	-	-	6	5	1
Tire	66	5	-	3	8	7
Torbalı	51	2	1	4	23	15
Urla	15	-	-	2	6	1
Total	718	62	21	62	173	81

Source: General Directorate of Development Agencies, 2020

In İzmir Region, while agricultural production constitutes the main source of income for all rural settlements, in some areas, activities such as livestock farming are prioritized as the main livelihood. The determining factors for the sources of livelihood in rural settlements are generally the geographical structures and environmental conditions of the areas. When the land characteristics of İzmir Region are examined, it is observed that only 29.5% of the total land is arable. The remaining land consists of forests and scrublands, settlement areas, pastures and other lands (Table 10.12).

TABLE 10.12. Land Distribution in İzmir Region (2022)

Land Resources and Distribution	Area (Ha)	Share (%)
Arable Land	353,318	29.5
Pastureland	42,119	3.4
Forest and Scrubland	376,710	31.5
Settlement Areas, Non-Agricultural Land, and Others	425,153	35.5
Total	1,197,300	100

Source: İzmir Provincial Directorate of Agriculture and Forestry, Provincial Briefing Report, 2022

The arable lands in the region are used for the cultivation of various agricultural products. A small portion of the arable lands has been left fallow and remains unused (Table 10.13).

TABLE 10.13. Distribution of Arable Lands in İzmir Region (2022)

Distribution of Arable Land	Area (Ha)	Share (%)
Farmland (Including Fallow and NUAA)	170,118	48.1
Vegetable Land (Including Greenhouse)	28,150	8.0
Land for Fruits and Spice Plants	153,410	43.4
Ornamental Plants Land	1,640	0.50
Total	353,318	100

Source: İzmir Provincial Directorate of Agriculture and Forestry, Provincial Briefing Report, 2022

When compared to the national average of arable land, İzmir Region hosts only a small portion of the country's total arable land. However, it is noteworthy that ornamental plant lands hold significant weight within Türkiye (Table 10.14). In this regard, Bayındır and Menderes districts hold an important position in Türkiye.

TABLE 10.14. Distribution of Arable Lands in Türkiye and İzmir Region (2022)

Distribution of Arable Land	Türkiye (ha)	İzmir (ha)	İzmir / Türkiye (%)
Farmland (Including Fallow and NUAA)	19,446,216	158.630	0.81
Vegetable Land (Including Greenhouse)	717,680	28.150	3.9
Land for Fruits and Spice Plants	3,675,480	153.410	4.2
Ornamental Plants Land	5,672	1.640	28.9
Total	23,845,048	341.830	37.81

Source: İzmir Provincial Directorate of Agriculture and Forestry, Provincial Briefing Report, 2022

An analysis of agricultural products produced and their quantities in İzmir Region as of the year 2022 reveals that the highest production volume is in the category of cereals and other crops. The region produced 1.1 million tons of fruits, beverage and spice plants; 1.6 million tons of vegetables; and 6.1 million tons of cereals and other crops. The number of ornamental plants grown exceeded 450 million (Table 10.15).

TABLE 10.15. Agricultural Production by Districts (2022)

District	Fruits, Beverage and Spice Plants (tons)	Vegetables (tons)	Cereals and Other Crops (tons)	Ornamental Plants (units)
Aliağa	16,883	1,011	30,261	-
Balçova	3,763	99	25	9,006,448
Bayındır	85,492	158,358	588,935	118,488,630
Bayraklı	41	37	-	-
Bergama	40,507	110,562	391,795	-
Beydağ	23,674	3,741	166,525	-
Bornova	2,455	400	416	39,363,800
Buca	3,217	14,803	8,545	-
Çeşme	6,516	15,015	781	-
Çiğli	50	393	5,411	-
Dikili	28,941	18,349	154,363	-
Foça	10,452	14,327	53,054	-
Gazimir	965	84	536	-
Güzelbahçe	7,738	1,204	191	9,100,000
Karabağlar	2,667	-	-	-
Karaburun	18,077	1,390	33	10,304,000
Karşıyaka	543	161	-	-
Kemalpaşa	129,432	7,921	58,376	80,000
Kınık	34,984	98,967	76,517	-
Kiraz	6,988	51,590	682,926	2,508,000
Menderes	92,612	203,619	109,101	95,637,800
Menemen	94,386	89,721	180,407	-
Narlıdere	2,838	-	-	325,000
Ödemiş	85,278	146,808	1,985,480	55,972,500
Seferihisar	118,554	2,272	12,021	30,102,700
Selçuk	93,642	22,840	23,296	150,000
Tire	73,425	161,059	1,032,280	9,260,000
Torbalı	28,941	430,179	553,347	23,934,825
Urla	11,564	16,933	15,717	46,767,000
İzmir Total	1,104,503	1,571,843	6,130,689	451,000,703

Source: TURKSTAT, 2022g

Within the scope of YER-SİS project studies has been conducted on the population distribution according to production activities in rural settlement areas. The averages by district were used to create Tables 10.16 and 10.17. The values in the tables represent the averages of the percentages of populations in rural settlements engaged in the production of specific products within each district. Since part of the population is involved in the production of multiple product types, the total percentages may exceed one hundred. In some regions, the total may fall below one hundred as some of the population is not

engaged in any of the listed production activities.

Fruit and vegetable production are the most common production activities throughout İzmir Region. Grain and forage crop production, as well as root and tuber crop cultivation, are also widely practiced. However, activities such as the cultivation of high-value-added crops, greenhouse farming, and ornamental plant production generally involve only a small proportion of the population (Table 10.16).

TABLE 10.16. Ratio of Population by Product Type in Rural Settlements I (2019)

District	Grains and Legumes (%)	Root and Tuber Crops (%)	Fiber Crops (%)	Forage Crops (%)	Vegetables (%)	Fruits (%)	Greenhouse (%)	Ornamental Plants and Saplings (%)	Tobacco Products (%)
Aliağa	28.26	2.17	3.26	19.78	37.17	41.09	0.87	-	-
Bayındır	25.33	10.89	2.67	23.78	54.33	71.22	0.53	5.22	-
Bergama	23.82	34.03	11.09	16.09	54.16	53.99	1.76	0.17	5.61
Beydağ	17.14	3.57	-	14.52	65.71	71.19	-	-	-
Çeşme	33	4	-	4	64	88	8	2	-
Dikili	11.73	10.38	8.08	10.38	40.12	47.5	0.38	3.85	-
Foça	16.92	11.15	19.15	12.31	15.38	52.31	0.38	0.77	-
Karaburun	9.29	5.71	-	5	41.93	80.71	-	22.14	-
Kemalpaşa	18.11	1	-	6	32.67	64.33	-	-	-
Kınık	32.42	51.94	12.42	13.55	49.03	49.84	0.65	1.94	30.32
Kiraz	31.29	27.79	-	32.98	64.04	57.88	0.19	-	5.48
Menderes	33.82	33	8.38	19.12	52.65	54.56	12.94	1.62	7.06
Menemen	16.57	5	23.63	17.84	36.2	38.75	5.98	0.2	
Ödemiş	20.36	36.19	-	35.33	58.06	63.25	0.36	5.24	0.48
Seferihisar	13.87	1.33	2	11	19	35.67	4.33	-	-
Selçuk	4.44	23.33	-	-	5	74.44	-	1.11	-
Tire	24.62	22.05	4.77	20.98	62.5	70.68	0.45	1.52	-
Torbalı	20.78	9.61	9.29	14.8	37.27	37.25	7.75	0.82	-
Urla	27.47	6.33	-	9.33	55.67	32.8	1.33	5.33	-

Source: General Directorate of Development Agencies, 2020

In addition to agricultural production, activities such as fisheries, livestock breeding and forestry are also intensively carried out in the rural settlements of İzmir Region. In Karaburun District, an average of 31% of the rural population engages in fisheries and aquaculture. In Kiraz District, approximately 67% of the rural population is involved in bovine livestock breeding. Similarly, in Ödemiş District, 59% of the rural population is engaged in bovine livestock breeding (Table 10.17).

TABLE 10.17. Ratio of Population by Product Type in Rural Settlements II (2019)

District	Fisheries and Aquaculture (%)	Bovine Livestock (%)	Ovine Livestock (%)	Apiculture (%)	Poultry (%)	Milk and Dairy Products (%)	Forestry Products (%)
Aliağa	3.04	36.96	29.87	6.52	28.04	35.17	-
Bayındır	0.22	41.51	32.33	10.89	60.24	49.18	2.78
Bergama	-	43.19	30.3	8.9	50.7	45.71	11.71
Beydağ	-	54.29	25.71	5	61.43	51.9	-
Çeşme	28	22	17	12	38	25	-
Dikili	4.23	21.35	26.81	9.23	30.77	31.77	3.46
Foça	7.31	13.85	13.85	8.85	21.54	13.08	2.31
Karaburun	31.43	13.93	38.93	27.86	33.21	47.36	-
Kemalpaşa	-	20.44	18.11	13.47	32.33	27.44	3.73
Kınık	-	42.26	23.42	8.71	58.06	40.97	0.97
Kiraz	0.19	67.42	20.38	9.27	77.1	72.6	3.94
Menderes	1.91	34.59	27.53	17.32	42.06	19.59	4.41
Menemen	1.57	20.61	18.73	5.98	20.88	17.76	0.78
Ödemiş	0.12	58.49	29.76	9.58	63.31	56.39	2.77
Seferihisar	-	8.2	18.2	9	18.6	13.07	5.33
Selçuk	2.22	14.44	12.22	14.44	38.33	13.89	-
Tire	-	46.21	27.35	10.23	64.47	50.08	2.95
Torbalı	0.2	18.9	18.55	8.24	32.43	11.27	0.24
Urla	8.67	18.8	20.13	9.53	12.67	13.67	-

Source: General Directorate of Development Agencies, 2020

Ovine (small ruminant) breeding is most prevalent in Karaburun District, where approximately 39% of the rural population is engaged in this activity, followed by 32% in Bayındır District. Apiculture (beekeeping) is most prominent in Karaburun, with 28% of its rural population engaged in the activity. Poultry farming is most prevalent in Kiraz, where 77% of the rural population participates. In terms of milk and dairy production, Kiraz leads with 73%, while forestry products are most prominent in Bergama at 12% (Table 10.17).

Regarding livestock presence, the region hosts 778,000 bovines, 878,000 ovines, 20 million poultry, and 287,000 beehives. Bovine livestock is predominantly concentrated in Bergama in the north and in Ödemiş, Tire, Bayındır, and Kiraz in the south. Ovine livestock is concentrated in the northern districts of Bergama and Dikili (Table 10.18).

TABLE 10.18. Livestock Population by Districts in İzmir Region (2022)

District	Bovine	Ovine	Poultry	Beehives
Aliağa	8,250	49,785	1,175,532	4,151
Balçova	144	2,059	150	1,174
Bayındır	94,080	39,339	344,648	10,500
Bayraklı	64	599	250	5,294
Bergama	64,783	105,100	2,063,811	75,107
Beydağ	30,997	7,765	5,915	2,012
Bornova	30	14,200	4,082	4,850
Buca	5,802	8,600	86,127	5,231
Çeşme	1,657	12,956	3,883	1,175
Çiğli	2,093	13,093	-	3,013
Dikili	10,079	79,096	140,107	4,868
Foça	10,497	11,200	2,247,370	2,335
Gazimir	398	3,293	188	1,062
Güzelbahçe	586	10,242	21,750	1,983
Karabağlar	21	7,366	1,481	2,738
Karaburun	175	28,484	3,048	20
Karşıyaka	189	3,250	285	2,726
Kemalpaşa	37,366	34,817	4,245,863	45,714
Kınık	16,269	61,130	1,249,515	3,435
Kiraz	106,746	35,484	175,731	5,774
Konak	-	-	-	252
Menderes	23,796	43,292	379,230	11,766
Menemen	22,520	60,040	1,889,250	11,930
Narlıdere	22	768	1,075	526
Ödemiş	178,543	56,971	989,701	32,852
Seferihisar	3,546	46,530	133,773	9,165
Selçuk	3,402	11,279	90,663	5,329
Tire	116,538	54,817	1,210,503	11,146
Torbalı	33,460	55,234	3,812,575	15,881
Urla	3,145	21,445	111,640	3,190
Total	778,468	878,234	20,388,146	287,179

Source: İzmir Provincial Directorate of Agriculture and Forestry, Provincial Briefing Report, 2022

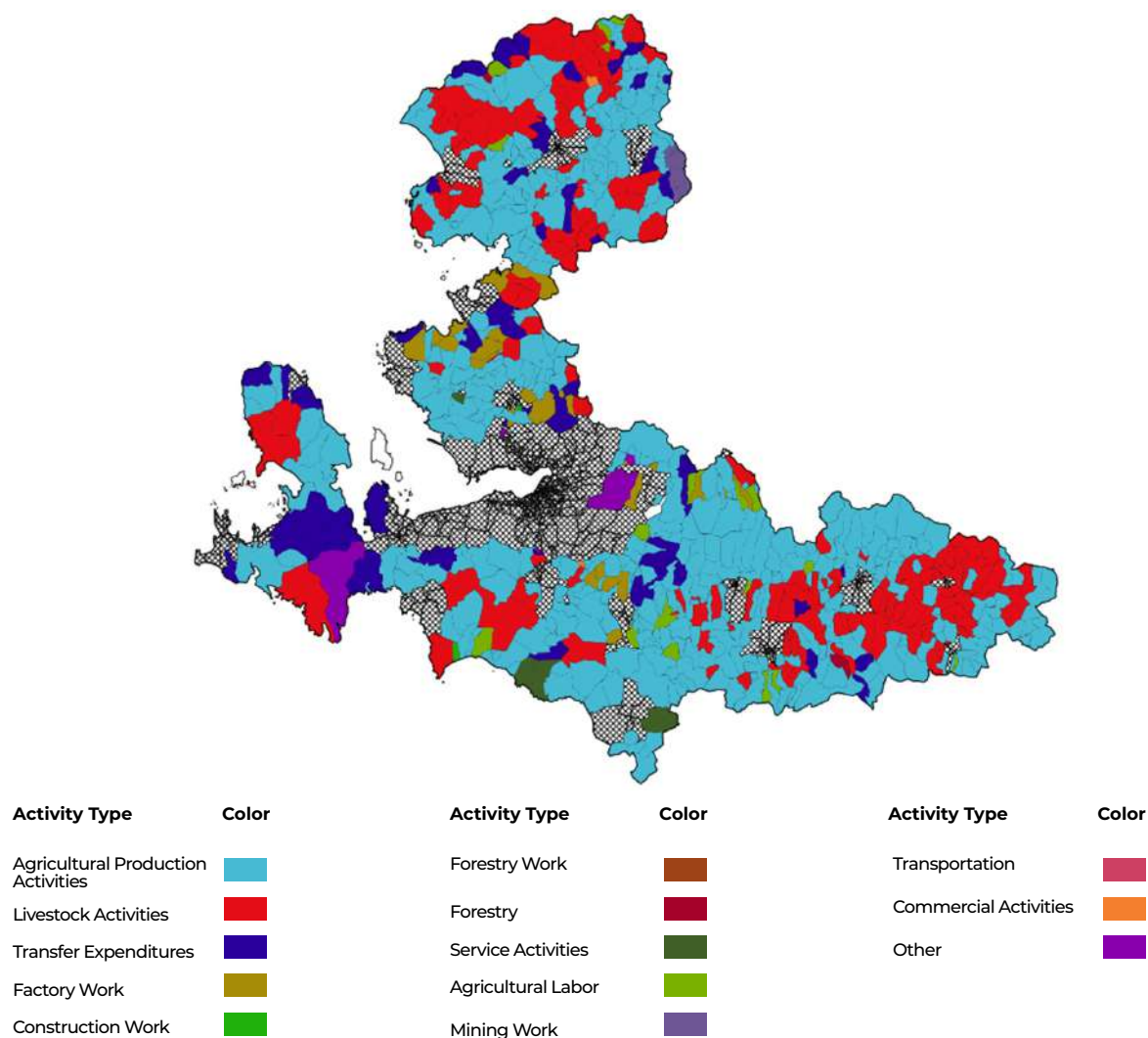
The spatial distribution of primary livelihoods generalized for rural settlements in İzmir Region is presented in Figure 10.3. Figure 10.4 provides maps indicating whether each economic activity exists in each rural settlement. In İzmir Region, agricultural production activities are indisputably the primary source of livelihood in rural areas. Due to the region's fertile agricultural lands, agricultural production activities are

prevalent in rural settlements located in the north, east and south of the region, including the coastal areas. In most of these settlements, agricultural production is the main source of livelihood.

In terms of primary livelihoods for rural settlements, livestock farming can be considered the second most significant activity. Although it is spatially widespread, the number of settlements where livestock farming surpasses agricultural production as the main source of livelihood is not high. Rural settlements where livestock farming is the main source of livelihood do not form distinct clusters on the map; rather, they intermingle with settlements where agricultural production is the primary income source. Transfer payments, although fewer in number, serve as a complementary income source to these two activities.

Factory work has become a primary livelihood for rural settlements close to the peripheries of densely populated urban areas. In these settlements, the pressure of construction on agricultural lands and activities must be carefully monitored and controlled through planning decisions. Although the number of rural settlements engaging in forestry activities is not insignificant in İzmir Region, it is noteworthy that few rural settlements rely on forestry as their primary source of livelihood. Economic activities such as construction work, agricultural labor, mining, transportation and tenant farming are frequently observed in rural settlements, yet the number of rural settlements where these activities are the main source of livelihood is low (Figures 10.3 and 10.4).

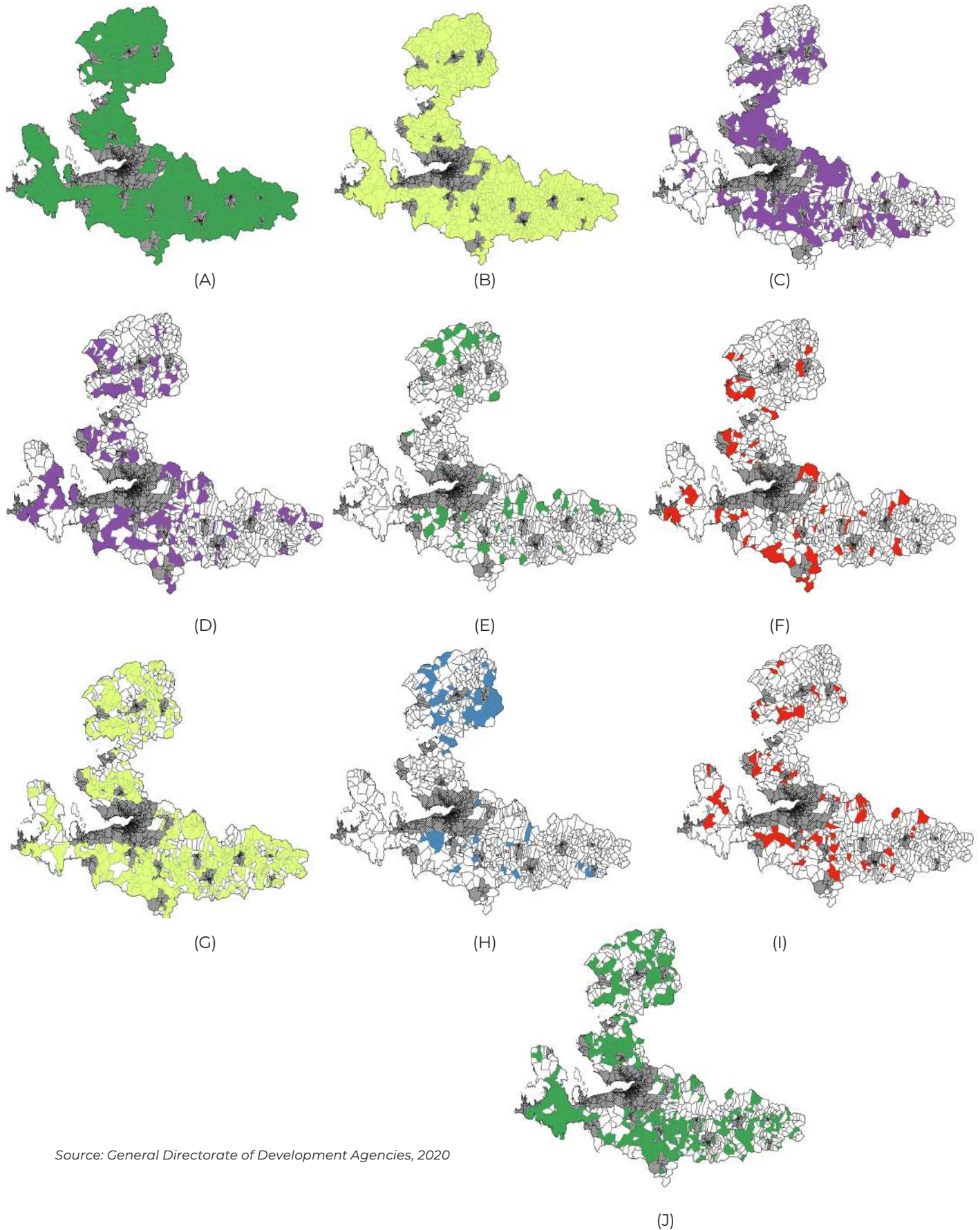
FIGURE 10.3. General Overview of Primary Livelihoods in Rural Settlements (2019)



Source: General Directorate of Development Agencies, 2020

FIGURE 10.4. Economic Activities in Rural Settlements in İzmir Region

(A) Agricultural Production, (B) Livestock Farming, (C) Factory Work, (D) Construction Work, (E) Forestry, (F) Services, (G) Agricultural Labor, (H) Mining, (I) Transportation, (J) Tenant Farming



Source: General Directorate of Development Agencies, 2020

E. Forest Villages

Another type of rural settlement whose status was changed under Law No. 6360 is forest villages. According to 2013 data, there are 21,549 forest villages in Türkiye, with a population of 7,332,264 residing in forest villages that year. By 2022, the number of forest villages in Türkiye increased to 23,236, while the total population in forest villages decreased to 6,958,122. In the Aegean Region, there were 3,048 forest villages in 2013, and this number increased to 3,284 in 2022. In İzmir Region, the number of forest villages decreased from 542 in 2013 to 538 in 2022, and the population residing in forest villages fell from 247,000 to 233,000 (Table 10.19).

The share of the total population of forest villages in the Aegean Region within Türkiye's total forest village population increased from 17.25% in 2013 to 18.14% in 2022. İzmir's share within Türkiye remained steady at around 3.4% during the 2013-2022 period. However, İzmir's share within the Aegean Region's forest village population decreased from 19.5% in 2013 to 18.5% in 2022 (Table 10.19).

TABLE 10.19. Number of Forest Villages, Population of Forest Villages, and Their Shares (2013-2022)

Year	Indicator	Türkiye	Aegean Region	İzmir	Share of Aegean Region within Türkiye (%)	Share of İzmir within Türkiye (%)	Share of İzmir within Aegean Region (%)
2013	Villages	21,549	3,048	542	14.14	2.52	17.78
	Population	7,332,264	1,265,078	246,837	17.25	3.37	19.51
2014	Villages	21,723	3,071	539	14.14	2.48	17.55
	Population	7,157,826	1,214,327	235,750	16.97	3.29	19.41
2015	Villages	22,343	3,135	540	14.03	2.42	17.22
	Population	7,096,483	1,271,197	228,738	17.91	3.22	17.99
2016	Villages	22,661	3,187	540	14.06	2.38	16.94
	Population	7,114,577	1,233,554	233,083	17.34	3.28	18.90
2017	Villages	22,712	3,177	537	13.99	2.36	16.90
	Population	7,013,592	1,233,445	233,083	17.59	3.32	18.90
2018	Villages	22,847	3,201	535	14.01	2.34	16.71
	Population	6,827,500	1,231,744	223,830	18.04	3.28	18.17
2019	Villages	22,941	3,235	541	14.10	2.36	16.72
	Population	6,970,077	1,253,948	228,488	17.99	3.28	18.22
2020	Villages	23,100	3,271	543	14.16	2.35	16.60
	Population	7,034,738	1,258,507	232,478	17.89	3.30	18.47
2021	Villages	23,111	3,261	538	14.11	2.33	16.50
	Population	7,451,124	1,412,053	251,368	18.95	3.37	17.80
2022	Villages	23,236	3,284	538	14.13	2.32	16.38
	Population	6,958,122	1,262,190	233,402	18.14	3.35	18.49

Source: General Directorate of Forestry, 2023

When the number of forest villages and their populations in İzmir Region are examined by district, Bergama district stands out with the highest number of forest villages, totaling 100 as of the year 2020. The population of forest villages in this district is nearly 29,000. Following Bergama, Tire has the second-highest number of forest villages, with 57 villages. The population of forest villages in Tire is approximately 23,000. Despite having fewer villages, Kiraz has a higher population density, with over 33,000 residents in its forest villages (Table 10.20).

TABLE 10.20. Number of Forest Villages by Districts in İzmir (2020)

District	Villages	Population	Population (%)
Aliağa	17	8,462	3.43
Bayındır	33	17,914	7.27
Bergama	100	28,620	11.61
Beydağ	21	7,778	3.16
Bornova	12	5,942	2.41
Buca	4	3,123	1.27
Çeşme	4	1,815	0.74
Dikili	19	6,836	2.77
Foça	4	3,469	1.41
Güzelbahçe	3	1,064	0.43
Karaburun	10	2,265	0.92
Karşıyaka	2	267	0.11
Kemalpaşa	29	18,447	7.48
Kınık	28	8,418	3.41
Kiraz	50	33,323	13.52
Konak	2	817	0.33
Menderes	17	12,740	5.17
Menemen	16	7,378	2.99
Ödemiş	63	26,802	10.87
Seferihisar	7	3,108	1.26
Selçuk	8	4,460	1.81
Tire	57	22,780	9.24
Torbalı	22	10,468	4.25
Urla	15	10,233	4.15
Total	543	246,529	100

Source: ARDSI, 2022

According to data published by the General Directorate of Forestry, it is observed that rural forest village households in İzmir Region have been supported in apiculture, livestock farming, and facility establishment and conversion. Families in forest villages in other provinces of the Aegean Region have benefited from various types of solar energy use, including electricity generation, heating and cooking, and production mechanization.

In 2022, a total of 5.2 million TRY in economic-purpose support was provided to 105 forest village households in İzmir Region. Families primarily benefited from livestock support. In 2022, nearly 4 million TRY in livestock support was provided to 66 families living in forest villages in İzmir Region. While forest villages in İzmir Region benefit from economic-purpose support, they do not receive social-purpose support (Table 10.21).

TABLE 10.21. Distribution of Individual Support Provided to Forest Villagers (2022)

Support Type				Türkiye	Aegean Region	İzmir
Social-Purpose Support	Roof Covering	Family	Qty.	890	-	-
		Value	TRY	7.119.996	-	-
	Electrical Installation for Village Houses	Family	Qty.	89	-	-
		Value	TRY	1.066.108	-	-
	Electrical Installation for Village Houses	Family	Qty.	89	-	-
		Value	TRY	1.066.108	-	-
	Grid-Connected Rooftop Solar Power Systems	Family	Qty.	686	263	-
		Value	TRY	22.773.505	8.135.680	-
	Heating-Cooking Systems	Family	Qty.	1.003	39	-
		Value	TRY	24.232.232	1.149.951	-
Economic-Purpose Support	Modern Beekeeping	Family	Qty.	349	74	8
		Value	TRY	11.613.425	2.252.000	272.000
	Livestock Farming	Family	Qty.	5.614	1.052	66
		Value	TRY	305.033.097	52.296.868	3.986.677
	Production Mechanization	Family	Qty.	1.506	171	-
		Value	TRY	143.132.679	13.017.000	-
	Handicrafts and Home Crafts	Family	Qty.	64	-	-
		Value	TRY	1.017.300	-	-
	Facility Establishment and Conversion	Family	Qty.	217	39	31
		Value	TRY	6.406.315	1.164.000	980.000
Total		Family	Qty.	10.418	1.638	105
		Value	TRY	522.394.657	78.195.499	5.238.677

Source: General Directorate of Forestry, 2023

F. Evaluation

One of the most critical factors in achieving local development is rural development. In regions like İzmir Region, where agriculture, livestock farming, and related sectors are prevalent, rural development becomes increasingly important to ensure sustainable growth. Similar to many regions in Türkiye, the rural population in İzmir Region is declining and aging. This situation poses risks of a potential supply deficit in agricultural production in the future. It is crucial to take necessary measures to prevent this in rural settlements where agricultural activities are prevalent.

In İzmir Region, 613,623 people reside in 718 rural settlement centers. The districts with the highest rural populations are Menemen, Torbalı, Kemalpaşa and Ödemiş. The total rural population in these districts exceeds 50,000. A common characteristic of these districts is their fertile lands suitable for agricultural production, which helps retain their rural populations. However, particularly Menemen, Torbalı and Kemalpaşa are under significant construction pressure. Menemen, due to its proximity to İzmir city, is under urban development pressure and has become an attraction point for residential and non-residential areas with improved transportation options. Industrial production in Kemalpaşa and Torbalı also subjects these areas to construction pressure. Recent and ongoing highway investments have further increased the accessibility of these regions, exacerbating the pressure for development. Torbalı lies on the İzmir-Aydın Motorway, Kemalpaşa on the İzmir-İstanbul Motorway, and Menemen on the Northern Aegean Motorway route.

If increased accessibility leads to enhanced flow of goods and services between rural and urban areas, reduced storage time for produced goods, expanded market areas, increased product diversity, improved infrastructure and education facilities, and improved living standards and welfare in rural areas, its impact on rural development will be highly positive. However, if fertile agricultural lands and pastures are allocated for non-agricultural activities, achieving rural development and preserving rural populations will not be possible. This would weaken the fundamental (dominant) sectors of agriculture and livestock farming in rural areas and, eventually, lead to the weakening of local sectors that thrive due to these primary sectors, resulting in employment losses over time.

Another issue negatively affecting agricultural and livestock activities is pollution caused by excessive and improper use of water and fertilizers in agriculture and manure from livestock farming. These risks can be minimized, and the sustainability of agricultural and livestock activities ensured by enhancing educational opportunities for production, promoting modern irrigation techniques, and evaluating waste as a clean energy source. Additionally, given the limited agricultural land in the region, protecting these lands from pollution, desertification and development pressures is essential. Moreover, it is important to utilize these lands for high-value-added products. Diversifying the product pattern is also crucial to prevent potential income losses and damages caused by natural events and market shocks. As the data examined in this section indicate, many rural settlements in the region face various deficiencies. Improving accessibility, technical infrastructure, and social infrastructure in these areas is highly important for the region's rural development and for retaining the rural population in rural areas.

11. EVALUATION OF THE 2014-2023 İZMİR REGIONAL PLAN

A. Structure and Preparation Process of the Regional Plan

The 2014-2023 İzmir Regional Plan (İZBP), prepared under the coordination of İzmir Development Agency, was approved by the High Council for Regional Development with its decision dated 30/12/2014 and numbered 2014/1. The İZBP serves as the fundamental policy document aimed at comprehensively outlining İzmir's development strategy in economic, social and cultural domains. It provides guidance for the work programs, strategic plans and investment programs of public, private and civil society sectors, as well as for sub-scale planning studies conducted by various organizations.

According to the Development Law No. 3194, regional plans are prepared to determine socioeconomic development trends, the development potential of settlements, sectoral objectives, and the distribution of activities and infrastructures. They guide spatial plans at lower tiers in terms of economic and social dimensions.

The vision of the İZBP, shaped by the participation and shared wisdom of relevant institutions and organizations, civil society organizations, universities, and the private sector, is defined as: "İzmir as The Centre of Attraction of the Mediterranean, Producing Information, Design and Innovation." To realize İzmir's vision, the relevant strategic priorities are addressed under three fundamental development axes. These axes and their explanations are as follows:

Strong Economy: Leveraging the leap capacity created by regional economic diversity through a high-value-added and sustainable production approach.

High Quality of Life: Enhancing resident satisfaction by supporting the economic and social activities in the region and ensuring sustainable urban development that respects human life and is sensitive to the environment.

Strong Society: Strengthening the integration of individuals and all societal groups by improving education, employment conditions, and other societal processes such as social services, healthcare, urbanization, transportation, and institutional decision-making mechanisms, thereby creating a robust societal framework.

The development axes defined in line with national strategies and the region's needs, together with the associated priorities and objectives, form the strategic framework aimed at achieving the vision set for İzmir (Figure 11.1).

FIGURE 11.1. İzmir Regional Plan Vision, Development Axes, and Strategic Priorities

2014-2023 İZMİR REGIONAL PLAN VISION

İzmir as The Centre of Attraction of the Mediterranean, Producing Information, Design and Innovation.

DEVELOPMENT AXES

STRONG ECONOMY

- I. High Technology, Innovation, and Design Capacity
- II. Advanced Entrepreneurship Ecosystem
- III. Advanced Clusters
- IV. Sustainable Production and Service Delivery
- V. İzmir as The Centre of Attraction of the Mediterranean

HIGH QUALITY OF LIFE

- I. Health for All
- II. Sustainable Environment
- III. High-Quality Urban Life
- IV. Accessible İzmir

STRONG SOCIETY

- I. Quality Education for All
- II. High Employment Capacity
- III. Social Inclusion for Social Cohesion
- IV. Good Governance and Strong Civil Society

The performance indicators of the regional plan and the progress made in the region were evaluated based on strategic priorities. Contributions from institutions and organizations were included in this evaluation.

B. Development Axis 1: Strong Economy

The purpose of the Strong Economy development axis is “to leverage the leap capacity created by regional economic diversity through a high-value-added and sustainable production approach.” This axis is broadly categorized into five main areas: innovation, entrepreneurship, clusters, production, services, and tourism.

I. High Technology, Innovation, and Design Capacity

There are two performance indicators associated with this priority of the Regional Plan (Table 11.1).

TABLE 11.1. Performance Indicators for High Technology, Innovation, and Design Capacity

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Number of İzmir Universities Ranked in the Top 10 of the Inter-University Entrepreneurship and Innovation Index (2013)	Ministry of Industry and Technology	1	3	1	2022	TÜBİTAK
Number of R&D Centers (2012)	Ministry of Industry and Technology	12	22	97	2022	Ministry of Industry and Technology

The number of İzmir universities ranked in the top 10 of the Inter-University Entrepreneurship and Innovation Index was 1 in 2013, with a target of 3 for 2023. According to the 2021 rankings by TÜBİTAK, only one university from İzmir (İzmir Institute of Technology) remains in the top 10. However, three universities from İzmir are within the top 16. The insufficient progress on this indicator highlights the need to improve the performance of academics, researchers, and TTOs at regional universities.

The number of R&D centers in İzmir increased from 12 in 2012 to 97, far exceeding the 2023 target of 22 before the end of the planning period. This progress is attributed not only to the strong inclination of regional firms to establish R&D centers but also to facilitative regulatory changes in defining R&D centers. The increase in R&D centers is promising as it significantly contributes to the institutionalization of R&D efforts, the growth of R&D personnel, and the enhancement of project generation capacity.

Over the past decade, İzmir Region’s innovation capacity and ecosystem have seen notable advancements in many areas targeted by the regional plan. During this period, research and technology development infrastructures have improved, the effectiveness of existing university-industry interface organizations has increased, and the potential for university research to transform into economic value has grown. The number of universities in İzmir Region has reached 10, the number of design centers has risen to 26, and a new technology development zone has been established, with infrastructure works completed for existing zones. By 2021, the annual export volume of companies in these zones, which drive technological development in the region, exceeded 48 million USD. Parallel to these developments, patents obtained by regional universities have begun to be commercialized, generating a total revenue of 1,630,000 TRY in 2020 and 2021. The number of İzmir universities included in the TÜBİTAK Innovation and Entrepreneurship Index has risen to 5.

II. Advanced Entrepreneurship Ecosystem

There are two performance indicators associated with the Advanced Entrepreneurship Ecosystem priority (Table 11.2).

TABLE 11.2. Performance Indicators for Advanced Entrepreneurship Ecosystem

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Number of Patent Applications (2012)	TURKPATENT	264	2.000	451	2022	Turkish Patent and Trademark
Number of Companies in Fortune 500 (2010)	Fortune 500	27	50	32	2022	Fortune Journal

The number of patent applications increased from 264 in 2012 to 451 by the end of 2022 but did not reach the target of 2,000 patents. Similarly, while the target for the number of İzmir-based companies in the Fortune 500 list was set at 50, this number rose from 27 in 2010 to 34 in 2020 but fell to 32 in 2022.

Regional observations reveal that İzmir, Türkiye's third-largest entrepreneurship ecosystem, has consistently developed over the past decade. The number of patent applications, registered patents, revenues from patents, and firms established in technology development zones has increased, as has their export volume. In addition to long-standing public institutions contributing to the entrepreneurship ecosystem, the region has seen a growing number of startup centers, technoparks, technology transfer offices, incubators, coworking spaces, angel investor networks, and mentor networks.

İzmir Region has both the necessary physical conditions for entrepreneurship and a qualified workforce well-suited to its entrepreneurial culture. However, it will take a long-term effort to activate the region's significant potential and achieve greater development outcomes. To fulfill the regional plan's objectives, it is essential to continue inclusive efforts to strengthen collaboration among regional stakeholders.

III. Advanced Clusters

The 2014–2023 İzmir Regional Plan does not include a specific performance indicator directly related to the Advanced Clusters priority.

Current data indicate that İzmir Region now hosts 14 established clusters. These include clusters in clean energy, industrial ventilation, air conditioning and cooling, aerospace, plastic industry, organic food, boat and yacht, wine and viticulture, olive and olive oil, petrochemicals, ceramics, software and IT, machinery and metal casting, shoemaking, and jewelry.

Efforts by the sectors themselves, as well as projects and initiatives led by institutions, have enhanced the capacities of existing clusters and supported the formation of new ones. Consequently, the region has demonstrated solid progress in achieving the goals set for the Advanced Clusters strategic priority in the regional plan. It is suggested that some indicators for monitoring cluster development could be defined in future regional plans.

IV. Sustainable Production and Service Delivery

There are four performance indicators associated with the Sustainable Production and Service Delivery priority (Table 11.3).

TABLE 11.3. Performance Indicators for Sustainable Production and Service Delivery

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Installed Renewable Energy Capacity – Wind (MW, 2012)	EMRA	382,4	1.500	1.887	2021	TWEA Statistics
Installed Renewable Energy Capacity – Geothermal (KW)	İzmir Jeotermal A.Ş.	31.500	175.000	40.410	2022	The Study on Determining the Potential, Utilization Areas, Economic and Environmental Impacts of Geothermal Resources in İzmir Province
Installed Renewable Energy Capacity – Biomass (MW)	EMRA	4,1	100	92,6	2022 Eylül	Ministry of Energy and Natural Resources
Proportion of Organic Agriculture Areas to Total Agricultural Land (%)	Provincial Directorate of Agriculture	4,1	10	5,1	2022	Provincial Directorate of Agriculture Briefing

İzmir Region has shown rapid development in wind and biomass installed capacities over the past decade. İzmir exceeded the 2023 target of 1,500 MW for installed wind power capacity in 2019 and came close to the target for biomass. Although the target for geothermal energy usage has not been fully met, geothermal energy capacity as a renewable energy source increased by 28%, which is significant. However, the proportion of organic agricultural land to total agricultural land has not reached the target as of 2022, remaining at 5.1%. Considering all developments, sustainable production and service delivery is evaluated as one of the areas where significant progress has been made.

V. İzmir as The Centre of Attraction of the Mediterranean

The İzmir as The Centre of Attraction of the Mediterranean priority is associated with the city's tourism and investment potential. Within the scope of this priority, there are four performance indicators (Table 11.4).

TABLE 11.4. Performance Indicators for İzmir as The Centre of Attraction of the Mediterranean

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Share of foreigners visiting İzmir within total foreign visitors to Türkiye (%) (2012)	Ministry of Culture and Tourism	4.4	9	3.3	2022	Ministry of Culture and Tourism, Tourism Statistics
Number of visitors to İzmir museums and archaeological sites (2012)	İzmir Provincial Directorate of Culture and Tourism, 2010	3,255,689	8,500,000	3,438,540	2022	Ministry of Culture and Tourism, Tourism Statistics
İzmir tourism revenue (average spending per person, USD) (2011)	Provincial Directorate of Culture and Tourism	700	850	666	2019	Ministry of Culture and Tourism, Tourism Statistics
Number of foreign-capital companies investing in İzmir (2012)	Ministry of Economy	1,800	3,625	2,901	2022 June	Ministry of Industry and Technology, General Directorate of Incentive Implementation and Foreign Investment

The share of foreigners visiting İzmir within the total number of foreigners visiting Türkiye was 4.4% in 2009, with a target to increase this figure to 9% by 2023. However, this rate declined to 2.8% in 2021. It is evaluated that the global standstill in tourism and travel industries caused by the Covid-19 pandemic significantly contributed to such decline. The number of visitors to İzmir museums and archaeological sites was targeted to rise from its 2010 figure of 3.2 million to 8.5 million by 2023. As of the most recent data, the number of visitors exceeded 3.4 million by the end of 2022, reflecting partial recovery from the pandemic. Additionally, the region aimed to increase its tourism revenue by raising the average spending per person from 700 USD in 2011 to 850 USD by 2023, but this value dropped to 666 USD in 2019.

The number of foreign-capital companies investing in İzmir was targeted to be increased from 1,800 in 2012 to 3,625 by 2023. By 2022, this number reached 2,901, indicating an upward trend and nearing the target.

Despite these developments, the targets set for tourism-related indicators in İzmir Region have not been met. However, it is assessed that there has been no adverse development related to the region's tourism; on the contrary, the region's tourism products and infrastructure are improving daily. In this regard, the declines in tourism indicators can be attributed to global factors beyond the scope of the region.

Efforts to diversify tourism, such as creating the İzmir Underwater Cultural Heritage Inventory, have been implemented towards the aim of promoting regional tourism. İzmir has entered UNESCO's World Heritage List with two cultural assets and the Tentative List with five cultural assets. In determining current statuses and future targets for tourism indicators in the upcoming period, it should be considered that tourism indicators are significantly influenced by annual environmental and global factors, leading to notable fluctuations. As a solution, comparing multi-year average values rather than annual figures could be preferred. Given its sensitivity, it is suggested that tourism be approached carefully when defining regional targets.

C. Development Axis 2: High Quality of Life

The purpose of the High Quality of Life development axis is to increase resident satisfaction, ensure sustainable urban development that respects human life, and is sensitive to the environment. This axis is divided into four main categories: health, environment, quality of life, and accessibility.

I. Health for All

Within the scope of the Health for All priority, there are four performance indicators (Table 11.5).

TABLE 11.5. Performance Indicators for Health for All

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Reduction in infant mortality rate (per thousand)	Ministry of Health	7,4	5	8,9	2022	TURKSTAT
Reduction in maternal mortality rate (per hundred thousand live births)	Ministry of Health	15,3	8	14,7	2019	İzmir Provincial Directorate of Health
Increase in the number of hospital beds per hundred thousand people	Ministry of Health	274	350	279	2021	TURKSTAT
Increase in the number of nurses per hundred thousand people	Ministry of Health	201	350	283	2021	Ministry of Health/ TURKSTAT Population Data

The target was to reduce the infant mortality rate from 7.4 per thousand to 5 per thousand by 2023. However, in 2022, this rate increased to 8.9. The maternal mortality rate was aimed to decrease from 15.3 to 8 per hundred thousand live births, but it fell to 14.7 in 2019. The number of hospital beds per hundred thousand people was targeted to increase from 274 to 350, which was recorded to be 279 as of 2021. Similarly, the number of nurses per hundred thousand people was projected to rise from 201 to 350, with the figure standing at 283 in 2021.

Although efforts have been made in line with the targets, it is seen that significant progress has not been achieved in this area. It is anticipated that the main reason for not reaching the desired point in this priority is the population growth due to migration into the region.

II. Sustainable Environment

There are five performance indicators within the scope of the Sustainable Environment priority (Table 11.6).

TABLE 11.6. Performance Indicators for Sustainable Environment

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Per capita water consumption (liters/person/day)	İZSU	175 (2012)	150	221	2021	TURKSTAT Regional Statistics
Share of population served by wastewater treatment plants within municipal population (%)	TURKSTAT	77 (2010)	100	72	2020	TURKSTAT Regional Statistics
Share of population served by wastewater treatment plants (WWTPs) within municipal population (%)	TURKSTAT	85 (2010)	100	100	2020	TURKSTAT Regional Statistics
Urban solid waste recovery rate (%)	İzmir Metropolitan Municipality	2,5 (2012)	20	12	2020	TURKSTAT
PM10 Concentration ($\mu\text{g}/\text{m}^3$)	İzmir Metropolitan Municipality	57 (2012)	50	48	2021	Ministry of Environment, Urbanization and Climate Change

When the indicators are examined, it is observed that the indicators for per capita water consumption and the share of the population served by treatment plants within the municipal population are far from the 2023 targets and present a more negative picture compared to the time the regional plan study was conducted. It is evaluated that the reason for this is the increasing population and consumption habits. On the other hand, it has been observed that the indicators for the share of the population served by wastewater treatment plants (WWTPs) within the municipal population and PM10 concentration ($\mu\text{g}/\text{m}^3$) have met the 2023 targets. Although the urban solid waste recovery rate is far from the 2023 target, its 380% increase compared to 2012 has been evaluated very positively. In this regard, the efforts of local administrations, especially İzmir Metropolitan Municipality, have played a significant role.

Infrastructure progress under the Sustainable Environment priority has been achieved particularly through the efforts of institutions and organizations, while İzmir Development Agency has contributed especially in the fields of renewable energy and energy efficiency.

III. High-Quality Urban Life

The 2014-2023 İzmir Regional Plan does not contain a performance indicator directly related to the High-Quality Urban Life priority.

It is observed that the targets under this priority are mostly linked to activities to be carried out by local administrations. Related activities include urban transformation projects conducted by İzmir Metropolitan Municipality, study reports prepared concerning disaster management, the development of large-scale green areas such as İzmir Wildlife Park, the renewal of the maritime transport fleet in urban transportation, the development of metro and tram transportation networks, and the Sustainable Urban Mobility Plan. Due to the rapidly growing population, it is necessary to ensure the continuity of these activities.

IV. Accessible İzmir

There are four performance indicators under the Accessible İzmir priority (Table 11.7).

TABLE 11.7. Performance Indicators for Accessible İzmir

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Number of international destinations with direct flights	DHMi	103	120	64	2023	Adnan Menderes Airport Website
Share of maritime transport in urban public transportation (%)	İBB	3	5	3	2022	İBB, ESHOT
Share of rail systems in urban public transportation (%) ¹³	İBB	23	30	36	2022	İBB, ESHOT
Volume of containers handled at İzmir Port (TEU)	TCDD	705,000 TEU	2,500,000 TEU	406,000 TEU	2022	TCDD

The number of international destinations with direct flights, the share of maritime transport in urban public transportation, the share of rail systems in urban public transportation, and the container handling volume at İzmir Port are the performance indicators under the Accessible İzmir heading. The number of international destinations with direct flights decreased from 103 in 2012 to 64 in 2021, failing to reach the target of 120, due to adverse developments in tourism. Similarly, the share of maritime transport in urban public transportation remained constant at 3%, falling short of the target of 5%. However, during the same period, the share of rail systems increased from 23% to 36%, surpassing the target of 30%. Rail systems have gained significant prominence in İzmir's transportation policies.

The container handling volume at TCDD İzmir Port dropped from 705,000 TEUs to 406,000 TEUs, falling short of the target of 2,500,000 TEUs. The inability to undertake necessary investments in the port due to the adverse effects of the privatization process, alongside delays in dredging works and the aging of superstructure elements, has been a major factor in the port's substantial loss of cargo and market share.

During the period addressed in the regional plan, significant investments in transportation were realized in İzmir Region. The Çiğli-Aliağa-Çandarlı Motorway and İzmir-Istanbul Motorway were completed during this period through the efforts of the Ministry of Transport and Infrastructure. The Konak Tunnel, which reduced travel time between Şirinyer and Konak to 10 minutes with a length of 1,674 meters, was commissioned in 2015. The Sabuncubeli Tunnel, which significantly shortened the distance between İzmir and Manisa with a length of 4,070 meters, was inaugurated in 2018. The Adnan Menderes Airport Domestic Terminal, renewed with an investment of 266 million Euros, became operational in 2014. Further progress could be achieved with the realization of investments in Çandarlı Port and Kemalpaşa Logistics Center in line with current needs.

Ongoing projects such as the Karabağlar-Gaziemir metro, Üçyol-Buca metro, Fahrettin Altay-Narlıdere metro, and Çiğli tramway are expected to contribute to the development of rail systems. The total length of bicycle paths in the İzmir Region has reached 89 kilometers, with the number of BİSİM bicycle stations increasing to 60 and the number of bicycles in service reaching 890.

It is considered beneficial to monitor the values of the domestic flight sector in the new period, which has shown significant progress recently, in addition to international flights. In maritime transport, tracking not only İzmir Port but also all ports in the İzmir Region collectively, including the Aliağa port area, would better reflect regional developments. Furthermore, defining indicators related to bicycle paths and environmentally friendly transportation modes is deemed suitable for the regional plan objectives and the sustainable development of the İzmir Region.

¹³ Since the 2020 public transportation data pertains to the pandemic period, it is 25-50% lower compared to other years. Taking this into account, the figures for 2019, which was the last pre-pandemic year, have been used in public transportation data.

D. Development Axis 3: Strong Society

The objective of the Strong Society development axis is to strengthen the integration of individuals and all societal groups by improving education, employment conditions, and other societal processes such as social services, healthcare, urbanization, transportation and institutional decision-making mechanisms, thereby creating a robust societal framework. This axis is categorized into four areas: education, employment, social cohesion, and governance.

I. Quality Education for All

There are three performance indicators within the scope of the Quality Education for All priority (Table 11.8).

TABLE 11.8. Performance Indicators for Quality Education for All

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Gross enrollment rate in preschool education (4-5 years, %)	İzmir Provincial Directorate of National Education, 2013	62.69	95	64.91	2022	Ministry of National Education Statistical Yearbook
Gross enrollment rate in secondary education (%)	İzmir Provincial Directorate of National Education, 2013	111.98	100	120.53	2022	Ministry of National Education Statistical Yearbook
Number of private vocational and technical schools established in OIZs	İzmir Provincial Directorate of National Education, 2013	1	3	3	2020	İzmir Provincial Directorate of National Education

While the gross enrollment rate in preschool education (4-5 years) was targeted to increase from 62.7% to 95%, it only reached 64.91%. However, a significant increase was observed in the gross enrollment rate in secondary education, rising from 111.9% in 2013 to 120.5% in 2021, surpassing the target of 100%. The number of private vocational and technical schools in Organized Industrial Zones (OIZs) was targeted to increase from 1 to 3, and this target has been achieved.

The İzmir Provincial Directorate of National Education continues its efforts toward achieving its objectives as outlined in its strategic plans. Currently, the literacy rate for individuals over 6 years old in the region has reached 98.8%, net enrollment rates for primary, secondary and high school levels have increased, and the number of students per classroom has decreased. The number of students per teacher is 16 for primary school, 13 for secondary school, and 11 for high school.

Regarding performance indicators related to education, continuing efforts to improve the international rankings of universities in the region is deemed important to achieve the İzmir Region's goal of becoming an international university city, as stated in the regional plan.

II. High Employment Capacity

There are four performance indicators within the scope of the High Employment Capacity priority (Table 11.9).

TABLE 11.9. Performance Indicators for High Employment Capacity

Indicator	Source	Initial Status	Target (2023)	Current Status	Date	Source
Employment rate of women (%)	TURKSTAT	24.5	35	31.2	2022	TURKSTAT
Youth unemployment rate	TURKSTAT	25.8	< 20	24.4	2022	TURKSTAT
Informal employment rate in non-agricultural sectors (%)	TURKSTAT	24.5	15	21.2	2019	TURKSTAT
Unemployment rate (%) (2012)	TURKSTAT	14.8	7.2	13.0	2022	TURKSTAT

The employment rate of women was targeted to increase from 24.5% to 35% by 2023, and progress has been made, reaching 31.2% as of 2022. The youth unemployment rate was aimed to decrease from 25.8% to below 20%, and in 2022, this rate dropped to 24.4%. The informal employment rate in non-agricultural sectors was targeted to decline from 24.5% to 15%, and it decreased to 21.2% in 2019. The unemployment rate in İzmir Region was aimed to drop from 14.8% to 7.2% within ten years. However, due to the negative impacts of the pandemic, this rate exceeded 17% in 2020. Although the unemployment rate in the region has shown a declining trend post-pandemic, as of the end of 2022, it has not yet approached the target value.

Efforts have been made in line with the objectives of the High Employment Capacity priority, leading to improvements in areas such as increasing women's employment and reducing the informal employment rate in non-agricultural sectors. Nevertheless, it is assessed that only partial achievement of the objectives has been realized. No significant reduction has been observed in the youth unemployment rate and overall unemployment rate indicators. Although the unemployment rate in the region mirrored the trends in Türkiye between 2012 and 2022, it has consistently remained higher than the national average.

III. Social Inclusion for Social Cohesion

There are no performance indicators directly associated with the Social Inclusion for Social Cohesion priority in the 2014–2023 İzmir Regional Plan.

It is assessed that various projects and aid implemented by institutions and organizations have had positive effects on social inclusion. In İzmir, Türkiye's third-largest metropolitan area, it is deemed necessary to continue relevant projects and support initiatives.

IV. Good Governance and Strong Civil Society

There are no performance indicators directly associated with the Good Governance and Strong Civil Society priority in the 2014–2023 İzmir Regional Plan.

Efforts have been undertaken in the region to achieve the objectives defined under the Good Governance and Strong Civil Society priority. The number of volunteers working in associations in İzmir Region increased from 553 in 2012 to 1,815 in 2022 (Ministry of Interior, 2023).

In the new period, it will be necessary to continue collaborative efforts on topics such as governance and civil society, where achieving tangible outcomes is challenging.

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13. ANNEXES

Annex-1 Nomenclature of Territorial Units for Statistics (NUTS)

NUTS Level 1 Code	NUTS 1 Region Name	NUTS Level 2 Code	Provinces Covered NUTS 2 Regions (NUTS 3)
TR1	İstanbul	TR10	İstanbul
TR2	Western Marmara	TR21	Tekirdağ, Edirne, Kırklareli
		TR22	Balıkesir, Çanakkale
TR3	Aegean	TR31	İzmir
		TR32	Aydın, Denizli, Muğla
		TR33	Manisa, Afyonkarahisar, Kütahya, Uşak
TR4	Eastern Marmara	TR41	Bursa, Eskişehir, Bilecik
		TR42	Kocaeli, Sakarya, Düzce, Bolu, Yalova
TR5	Western Anatolia	TR51	Ankara
		TR52	Konya, Karaman
TR6	Mediterranean	TR61	Antalya, Isparta, Burdur
		TR62	Adana, Mersin
		TR63	Hatay, Kahramanmaraş, Osmaniye
TR7	Central Anatolia	TR71	Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir
		TR72	Kayseri, Sivas, Yozgat
TR8	Western Black Sea	TR81	Zonguldak, Karabük, Bartın
		TR82	Kastamonu, Çankırı, Sinop
		TR83	Samsun, Tokat, Çorum, Amasya
TR9	Eastern Black Sea	TR90	Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TRA	Northeastern Anatolia	TRA1	Erzurum, Erzincan, Bayburt
		TRA2	Ağrı, Kars, Iğdır, Ardahan
TRB	Middle Eastern Anatolia	TRB1	Malatya, Elazığ, Bingöl, Tunceli
		TRB2	Van, Muş, Bitlis, Hakkâri
TRC	Southeastern Anatolia	TRC1	Gaziantep, Adıyaman, Kilis
		TRC2	Şanlıurfa, Diyarbakır
		TRC3	Mardin, Batman, Şırnak, Siirt



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