Deprivation Analysis in Turkey and Its Provinces: Insights for Post-Growth Urbanism

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Abstract
This paper presents a multidimensional deprivation assessment across Turkey's 81 provinces by adapting the English Indices of Deprivation (EID) to national data. It builds a Turkish Composite Deprivation Index (TCDI) using 2023 statistics from TURKSTAT, covering seven domains: income, employment, education, health, crime and social distress, housing access, and the living environment. By weighting and scaling each indicator, the study allows meaningful comparison between provinces. The results highlight a persistent east–west divide, with places like Şanlıurfa, Ağrı, and Şırnak facing deeper disadvantage. The index offers a practical lens for spotting regional gaps and guiding fairer resource allocation. It also contributes to post-growth urbanism discussions by calling attention to the structural roots of inequality and the need for more grounded, socially responsive planning.

Keywords: Deprivation Index, Deprivation Index of Turkey, Index of Multiple Deprivation, Regional Disparities, Spatial Inequality.

Introduction

This research applies English Indices of Deprivation (EID) to national data to provide a holistic evaluation of deprivation across Turkey's 81 provinces. Based on TURKSTAT data for 2023, it constructs a Turkish Composite Deprivation Index (TCDI) consisting of seven fields: income, work, health, education, social distress and crime, access to housing, and living conditions. Analysis enables comparison of provinces on a balanced basis through balancing and scaling all variables. According to the findings, there exists a long-standing east-west gap, with provinces like Şanlıurfa, Ağrı, and Şırnak being underprivileged ones. The index can be an effective instrument to find areas of inconsistency between regions and prepare for more balanced allocation of resources. By bringing to mind the structural sources of inequality and the necessity for more embedded, socially oriented development, it also helps contribute to post-growth urbanism discussions.

Such indices allow decision-makers to design financial strategies and interventions more effectively. The overarching goal of this study is fourfold: (1) to identify provinces that require more focused development strategies, (2) to generate a province-level deprivation map for Turkey that encourages a more transparent and goal-oriented planning culture among regional authorities, (3) to promote the use of systematic, data-driven evaluation tools for policy design, and (4) to emphasise the value of using official TURKSTAT data in place of survey-based samples that may be subject to bias or limited accuracy.

As this study relies on relative comparisons, the ranking of provinces is contextual—not absolute. That is, a province ranked highest in deprivation is more deprived compared to others but may not be deprived in an absolute sense. If updated regularly, the map can foster a feedback loop of improvement and accountability among provinces. It also offers a multi-layered spatial representation of how Turkish provinces relate to one another in terms of development gaps.

The central research question is as follows: What would the spatial pattern of deprivation across Turkey's provinces look like if current TURKSTAT data were structured according to the English Indices of Deprivation (EID)? Answering this requires translating nationally available datasets into domain-specific indicators, applying a multi-criterion weighted sum method, and visualising the output to better understand inter-provincial disparities.

Conceptual Framework

The study's limitations stem primarily from differences between the data used in the English Indices of Deprivation (EID) and those provided by TURKSTAT. The EID framework comprises seven domains: income, employment, education, health and disability, crime, barriers to housing and services, and the living environment.

Each domain is supported by a set of published indicators and combined using defined weights to produce domain-specific scores. These are then aggregated into an overall deprivation index.

Deprivation, as defined in this study, is a multi-dimensional condition encompassing economic insufficiency, limited access to public services, and poor living standards (Payne & Abel, 2012). At the municipal, regional, and national levels, spatial disparities have long been identified using deprivation indices. Turkey's official statistics are produced in large part by TURKSTAT (Türkiye İstatistik Kurumu). It gathers information on a variety of subjects from homes, people, and organizations and releases it on a regular basis. For this study, TURKSTAT's online database was the primary source, providing province-level data which was extracted, filtered, and assessed according to each domain. Due to the lack of a one-to-one match between English and Turkish data, alternative indicators were chosen that closely reflect the meaning and function of the original ones. Due to the fact that this directly affects both domain-level and overall deprivation outcomes, it was imperative that all indicators chosen were in good alignment with the domains they represent.

The Provincial Well-Being Index, which covered 11 dimensions and 41 variables, was first released by TURKSTAT in 2015. Although comprehensive, it integrated both objective measures and subjective survey responses. Similarly, Çağlar (2020) recalculated the index using updated sources but retained some foundational aspects. These earlier efforts leaned towards general well-being and were partially based on dated or self-reported data. In contrast, this study focuses solely on deprivation and relies only on objective and current indicators. These distinctions make direct comparisons challenging.

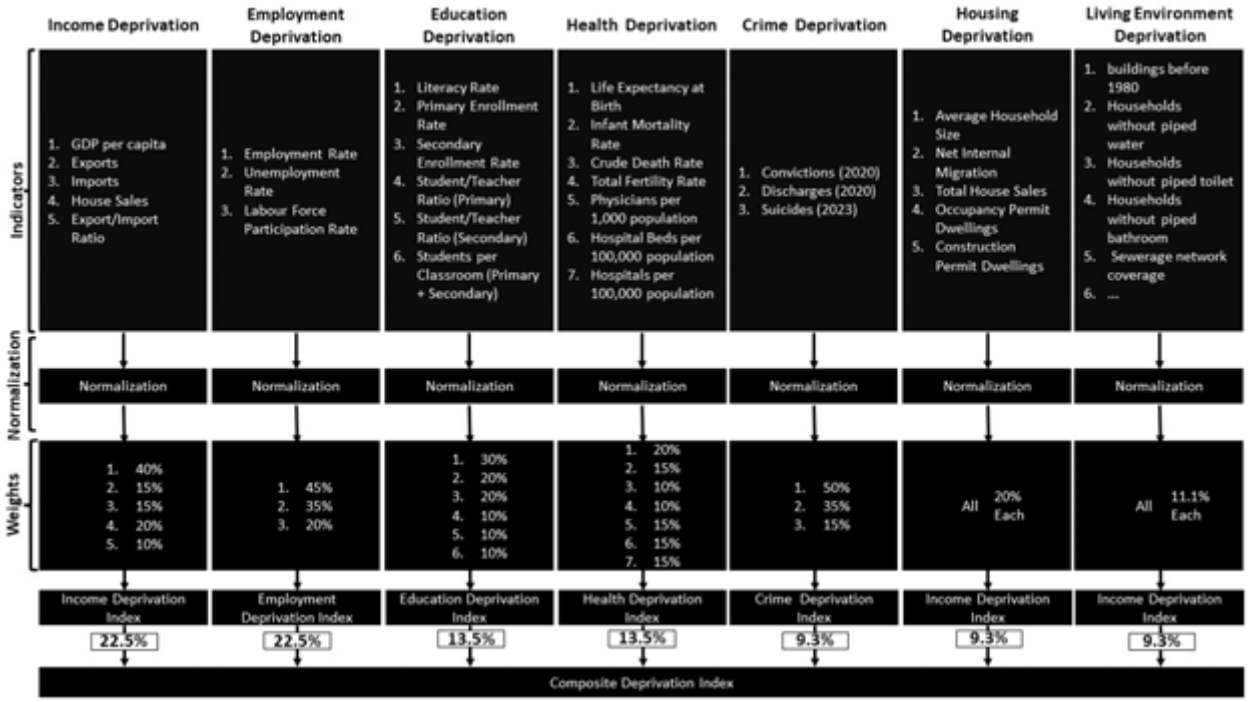

Figure 1. Framework for constructing the Turkish Composite Deprivation Index (TCDI), showing indicator selection, normalization, weighting, and aggregation into domain and composite indices across seven deprivation domains.

Income Deprivation

Captured through GDP per capita, trade volume (exports and imports), and housing market data—providing insights into regional economic capacity and household income levels. The goal of this analysis is to develop a province-level Income Deprivation Index (IDI) for Turkey by combining multiple economic indicators. The index is designed to reflect spatial disparities in economic wellbeing and to rank provinces from most to least deprived. All data used are official province-level statistics published by the Turkish Statistical Institute (TURKSTAT) for the year 2023, including:

Gross Domestic Product (GDP) per capita, Exports, Imports, Number of house sales, and Export/Import Ratio (calculated), see table 1. The reason of choosing the year 2023 is the limitations of GDP indicator's data in 2024 and 2025.

Table 1. Income Deprivation indicators and description

Indicator	Description
GDP per capita	Reflects the economic output and income potential per person.
Exports	Proxy for production capacity and global market integration.
Imports	Reflects consumption capacity but with mixed implications.
House Sales	Indicates internal economic activity and individual asset access.
Export/Import Ratio	Captures trade balance and economic self-sufficiency.

To allow meaningful comparison across different units and magnitudes, each indicator was normalized to a 0–1 scale using Min-Max scaling. This ensures that all indicators contribute proportionately to the index, regardless of their original scales, see equation (1). Higher exports usually reflect stronger economic activity, production capacity, and international market integration. It indicates more job opportunities and better industrial output thus reduces deprivation. High Imports, on the other hand, can reflect a healthy consumer market and purchasing power but if overly high relative to exports, they might indicate dependency or trade imbalance. For province-level analysis, high imports often align with urbanized, economically vibrant areas (like Istanbul or Kocaeli) so they can reduce deprivation in that context. Since the income index is based on the assumption that Higher GDP, exports, imports, and house sales equals to lower deprivation, then imports and exports have a negative contribution to deprivation in a sense.

$$Normalized_i = (X_i - X_{min}) / (X_{max} - X_{min})$$

Export/Import ratio as a separate indicator to reflect economic balance were calculated where a higher ratio (>1) indicates stronger export performance relative to imports (positive economic balance) and a lower ratio (<1) may suggest dependency on imports or a weaker production/export base. The Income Deprivation Index has been recalculated to include the Export/Import Ratio as a fifth indicator. Following the inclusion of the Export/Import Ratio, the top 5 provinces had the largest increases in rank: Hatay (46 → 30), Kırşehir (38 → 23), Tunceli (49 → 35), Edirne (50 → 38), and Zonguldak (47 → 28). These provinces have strong export/import ratios relative to their overall economic scale. Including this economic balance improves their standing, reflecting greater economic resilience or self-sufficiency. On other hand, Gümüşhane (6 → 74), Giresun (16 → 70), Rize (26 → 68), Ardahan (28 → 69), Şırnak (20 → 51). These provinces likely had low export/import ratios, suggesting weak export performance or high import reliance, this disproportionately affected their overall economic balance in the updated index.

Table 2. Income domain indicators and their weights

Indicator	Weight
GDP per capita	40%
Exports	15%
Export/Import Ratio	15%
House Sales	20%
Imports	10%

$$IDI_{(i)} = 1 - \Big(0.40 \times Normalized\ GDP\ per\ capita_i + 0.15 \times Normalized\ Exports_i + 0.15 \times Normalized \frac{Export}{Import} Ratio_i + 0.20 \times Normalized\ House\ Sales_i + 0.10 \times Normalized\ Imports_i\Big)$$

The top 5 provinces that improved most in rank after applying the custom weights are Giresun, Şırnak, Rize, Trabzon and Gümüşhane. The top 5 provinces that dropped the most in rank after applying the custom weights are Kırıkkale, Çanakkale, Zonguldak, Bolu and Düzce. These provinces likely benefited more from equal-weighted indicators (especially imports or exports) than the new GDP-dominant index. Each province received a final IDI score and was ranked from most deprived (Rank 1) to least deprived (Rank 81). The ranking directly corresponds to the descending order of the IDI score. According to the results, Gümüşhane, Hakkari, Kırıkkale, Şanlıurfa, and Edirne are the top 5 most deprived provinces. High degrees of economic deprivation were indicated by these provinces' consistently low GDP, export volume, housing activity, and economic balance numbers.

The regions of İstanbul, Ankara, Kocaeli, İzmir, and Bursa are the top five least deprived. These provinces displayed strong economic performance and trade balance, thus scoring lowest on the deprivation index.

Figure 2 illustrates the clear regional separation between the western and eastern regions in Turkey's income deprivation distribution. The eastern and northeastern provinces of the nation are the most economically deprived areas, which are represented by the darkest tones. Deprivation scores are high in provinces like Hakkari, Şırnak, Ağrı, Bitlis, and Gümüşhane. The provinces like Yozgat, Çorum, and Tokat also has a secondary cluster of high-income deprivation.

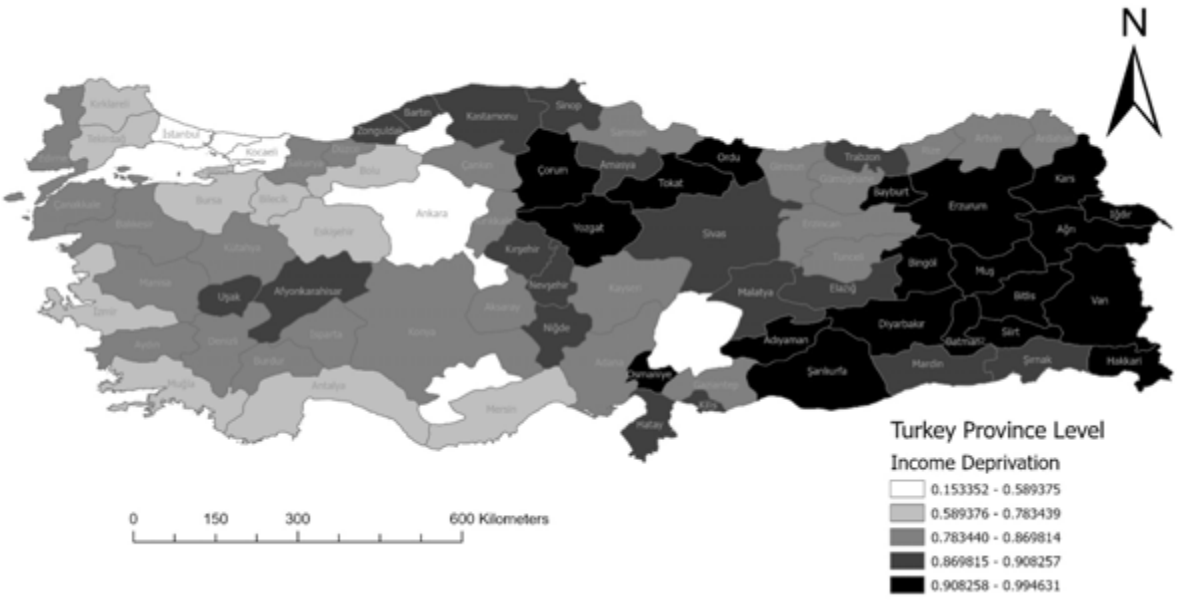

Figure 2. Income Deprivation Index by province in Turkey. Darker shades represent higher levels of income-related deprivation.

The coastal provinces of the Aegean and Mediterranean also have lower income deprivation ratings, most likely as a result of their diverse economic bases and tourism-driven economies. Despite being close to more affluent neighbors, some western interior provinces, such Afyonkarahisar and Uşak, have greater levels of deprivation, exhibiting an outlier pattern. This points to sectoral constraints impeding wider regional convergence or localized economic stagnation. Because of their varied economic bases and tourism-driven economies, the coastal provinces of the Mediterranean and Aegean also have lower income deprivation scores.

Some western interior provinces, including Afyonkarahisar and Uşak, have higher levels of deprivation while being near more prosperous neighbors; this is an outlier trend. This suggests either localized economic stagnation or sectoral restrictions preventing broader regional convergence.

Employment Deprivation

Employment Rate (the proportion of the working-age population that is employed), unemployment rate (the proportion of the labor force that is unemployed), and labor force participation rate (the proportion of the working-age population that is either employed or actively seeking employment) were chosen as indicators to aggregate the data for the Employment Deprivation Domain. These metrics offer a thorough summary of employment-related metrics for every Turkish province. Although the information provided is adequate to begin examining job deprivation, a more complete picture may be obtained by include other measures such as income inequality, gender inequalities, young unemployment, and informal work. But due to the limitations of data provided by TURKSTAT, which is the main focus of data in this study, the employment deprivation domain indicators are employment Rate, unemployment Rate, and labour Force Participation Rate. All data used are official province-level statistics published by the Turkish Statistical Institute (TURKSTAT) for the year 2023.

Table 3. Weights of employment domain indicators and their impact direction

Indicator	Weight	Impact Direction	Reasoning
Employment Rate	45%	Higher = Less Deprivation	Strongest predictor of economic inclusion
Unemployment Rate	35%	Higher = More Deprivation	Reflects labor exclusion and economic strain
Labour Force Participation Rate	20%	Higher = Less Deprivation	Signals labor market engagement, indirect

$$EDI_{(i)} = (1 - Normalized\ Employment\ Rate_i) \times 0.45 + (Normalized\ Unemployment\ Rate_i) \times 0.35 + (1 - Normalized\ Labour\ Force\ Participation\ Rate_i) \times 0.20$$

According to the job Deprivation Index, the provinces of Hakkari, Van, Diyarbakır, Hatay, and Şırnak have the worst job conditions in Turkey. The provinces have significant unemployment rates—23.3% for Hakkari and 19.1% for Van—and a consistently low employment rate, which ranges from 35.9% to 38.5%. Labour force participation is comparatively low in the provinces, particularly in Diyarbakır (40.8%) and Şırnak (42.5%). These factors, being interdependent, cause the deprivation scores to be higher, indicating low participation in formal labor markets and high economic vulnerability in these areas. At the other end of the scale, the least deprived in terms of employment are Ardahan, Tekirdağ, Antalya, Bartın, and Zonguldak. These provinces all have significantly higher employment rates—up to 58.2% in Ardahan—and relatively low unemployment rates, i.e., 5.8% for Ardahan and Balıkesir. Labour force participation is also high, especially in Ardahan (61.7%) and Tekirdağ (60.6%), indicating higher participation in the labour force. These positive figures in the three indicators reflect lower deprivation scores and place these provinces in the first rank of the employment well-being, see table (4).

Table 4. Top and least 5 deprived provinces, employment domain

Top 5 Most Deprived Provinces					
Rank	**Province**	**Employment Rate (%)**	**Unemployment Rate (%)**	**Labour Force Participation Rate (%)**	**EDI Score**
1	Hakkari	38.2	23.3	49.9	0.848
2	Van	38.5	19.1	47.5	0.783
3	Diyarbakır	35.9	11.9	40.8	0.757
4	Hatay	38.0	15.6	45.1	0.748
5	Şırnak	36.9	13.1	42.5	0.745
Top 5 Least Deprived Provinces					
Rank	**Province**	**Employment Rate (%)**	**Unemployment Rate (%)**	**Labour Force Participation Rate (%)**	**EDI Score**
81	Ardahan	58.2	5.8	61.7	0.199
80	Tekirdağ	56.2	7.3	60.6	0.244
79	Antalya	55.1	7.4	59.5	0.253
78	Bartın	50.7	8.1	55.2	0.259
77	Zonguldak	46.9	11.0	52.7	0.268

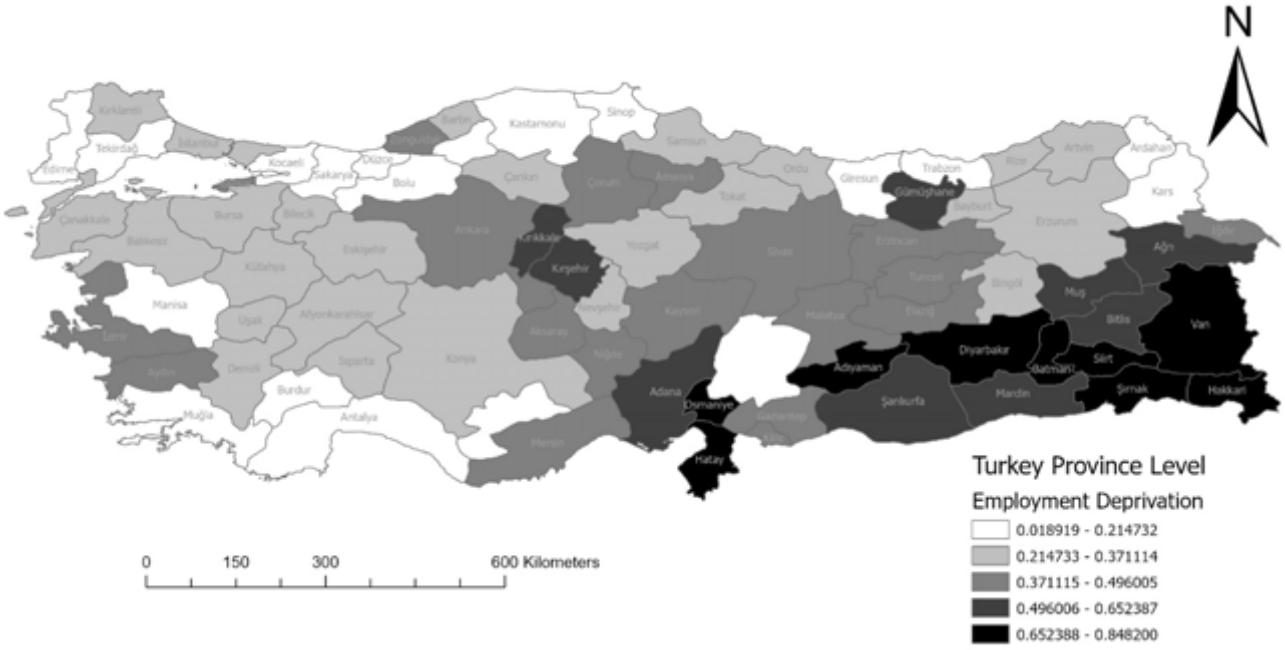

Figure 3. Employment Deprivation Index by province in Turkey. Darker shades represent higher levels of employment-related deprivation.

Education, Skills, and Training Deprivation Index (EDDI)
Quantified in terms of mean years of schooling, education attainment levels, and gender parity indices—indices of inequalities in access and attainment. The Education, Skills, and Training Deprivation domain measures geographical inequalities in access to education and educational attainment between Turkey's provinces. The domain is a key driver of long-term deprivation as educational attainment is strongly linked with labor market prospects, earnings levels, and general well-being. Statistics for this category are taken directly from the Turkish Statistical Institute (TURKSTAT) and include the following measures: literacy rate (%), primary and secondary school enrollment rate (net), student/teacher ratio for primary and secondary schools, and average number of students

per class. These measures are employed as proxies for both educational attainment and quality of educational facilities. All data used in this analysis are up to date as of 2023, and they provide temporal homogeneity for the province-level comparison.

In order to build a weighted Education, Skills, and Training Deprivation Index (EDDI), policy usefulness, data quality, and the influence of each indicator on education deprivation should be taken into account carefully. Literacy and enrollment are assigned 70% of the overall weight since they are direct indicators of the availability of and returns on education. Pupil/teacher and pupil/classroom ratios influence quality but are less direct and thus given a combined total of 30%. This allows output (literacy) and access (enrollment) to be emphasized, while infrastructural and resource indicators nevertheless weigh heavily on the deprivation index.

Table 5. Education domain indicators, impact direction and justification.

Indicator	Weight (%)	Impact Direction	Justification
Literacy Rate	30%	Higher = Less Deprivation	Literacy is the most fundamental education outcome. It reflects access to and success in basic education and influences employability and lifelong learning.
Primary Enrollment Rate (Net)	20%	Higher = Less Deprivation	Ensures foundational education access.
Secondary Enrollment Rate (Net)	20%	Higher = Less Deprivation	Indicates retention and progression in the education system. A key step toward skills training.
Student/Teacher Ratio (Primary)	10%	Lower = Less Deprivation	A proxy for learning quality. Lower ratios suggest better teacher attention and classroom interaction.
Student/Teacher Ratio (Secondary)	10%	Lower = Less Deprivation	Similarly important for quality education at later stages. Often varies more between regions due to specialization needs.
Students per Classroom (Primary + Secondary)	10%	Lower = Less Deprivation	Reflects school infrastructure and overcrowding, which affect learning conditions.

Min-Max scaling was used to normalize the chosen indicators so that they could be compared across various scales and units. The following were then weighted according to policy impact and relevance: literacy rate (30%), secondary school enrollment rate (20%), primary school enrollment rate (15%), secondary school student/teacher ratio (15%), primary school student/teacher ratio (10%), and pupils per classroom (10%). While larger classroom densities and student-teacher ratios suggest difficulties with educational accessibility and quality, higher enrollment and literacy rates suggest less disadvantage. The resulting Education Deprivation Index (EDDI) aggregates these weighted, normalized values to rank provinces from most to least deprived. This composite score captures both infrastructure strain and educational inclusion, revealing stark contrasts between regions in terms of educational opportunity and equity.

$$
\begin{aligned}
EDDI_{(i)} = {} & (1 - Normalized\ Literacy\ Rate_i) \times 0.25 + (1 \\
& - Normalized\ Primary\ Enrollment\ Rate_i) \times 0.20 + (1 \\
& - Normalized\ Secondary\ Enrollment\ Rate_i) \times 0.20 \\
& + Normalized\ Student/Teacher\ Ratio\ (Primary)_i \times 0.10 \\
& + Normalized\ Student/Teacher\ Ratio\ (Secondary)_i \times 0.10 \\
& + Normalized\ Students\ per\ Classroom_i \times 0.15
\end{aligned}
$$

Table 6. Top 5 most deprived, education domain.

Top 5 Most Deprived Provinces - Education Domain								
Rank	Province	Literacy Rate	Primary Enrollment Rate	Secondary Enrollment Rate	Student/Teacher Ratio (Primary)	Student/ Teacher Ratio (Secondary)	Students per Classroom	EDDI
1	Şanlıurfa	94.13	96.06	87.2	29	19	32	0.67
2	Mardin	93.76	95.39	88.74	21	15	25	0.53
3	Gümüşhane	96.92	81.61	76.78	13	9	13	0.51
4	Şırnak	95.11	94.37	86.14	21	15	22	0.49
5	Diyarbakır	94.97	96.17	90.35	20	15	29	0.47

Its eastern and southeastern provinces—Şırnak, Ağrı, Şanlıurfa, Muş, and Bitlis—are the five poorest in the nation. With a low secondary school enrollment rate of 86.14%, a low literacy rate of 94.85%, and a high student-teacher ratio of 21 primary and 16 secondary students per instructor, Şırnak has the lowest degree of deprivation. Comparably, Ağrı and Muş present alarming data, indicating severe infrastructure pressure with literacy rates ranging from 94.13% to 94.62% and average class sizes exceeding 30 pupils. Across all measures, the least disadvantaged provinces—Eskişehir, Rize, Trabzon, İzmir, and Ankara—show better educational achievement. With a literacy rate of 98.56%, enrollment rates for primary and secondary education above 95%, and a low average of 15 pupils per class, Eskişehir, the 81st (least disadvantaged) school, stands out. Similarly, Trabzon and Rize have low student-teacher ratios (usually less than 13 kids per teacher in primary school) and excellent literacy and enrollment rates.

Table 7. Top 5 least deprived, education domain.

Top 5 Least Deprived Provinces - Education Domain								
Rank	Province	Literacy Rate	Primary Enrollment Rate	Secondary Enrollment Rate	Student/ Teacher Ratio (Primary)	Student/ Teacher Ratio (Secondary)	Students per Classroom	EDDI
80	Edirne	98.13	95.06	92.91	13	11	16	0.1205
79	Muğla	98.79	94.76	92.43	14	11	19	0.1271
78	Balıkesir	98.43	95.01	93.19	15	11	18	0.1309
77	Amasya	97.76	95.26	93.3	13	11	16	0.1311

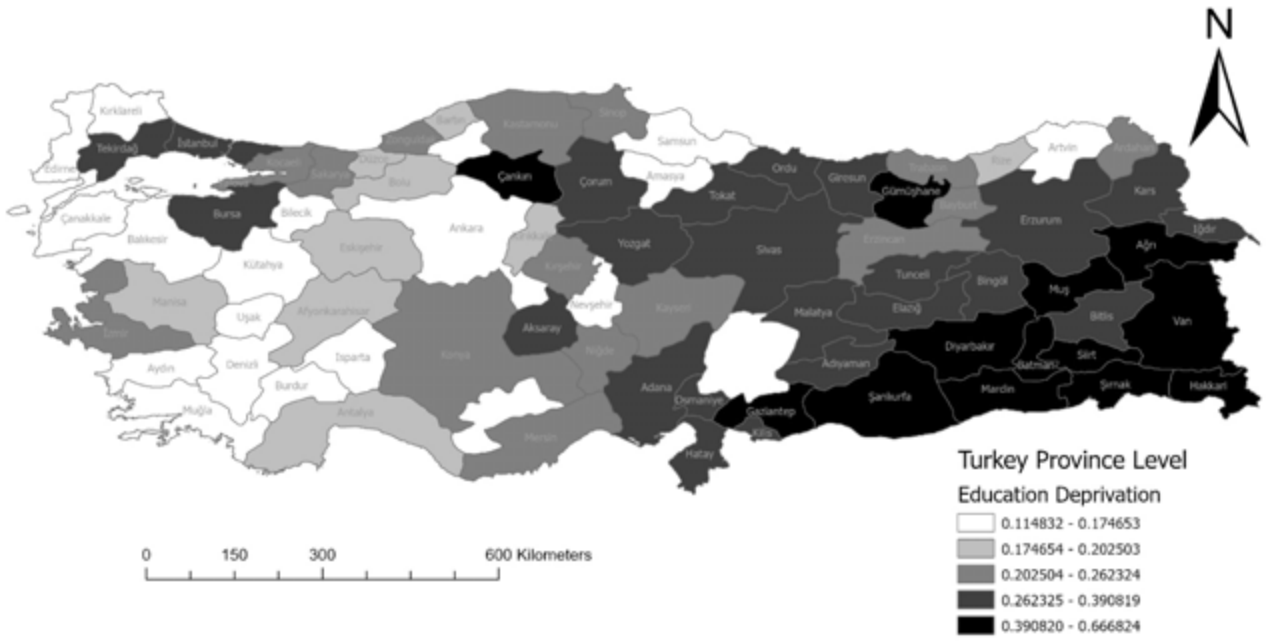

Figure 4. Education Deprivation Index by province in Turkey. Darker shades represent higher levels of education-related deprivation.

Health Deprivation

Across Turkey's 81 provinces, the Health Deprivation domain assesses regional differences in health outcomes and access to necessary medical treatments. Although some were formally published in early 2024–2025, this domain employs a set of indicators that are only taken from official 2023 datasets released by the Turkish Statistical Institute (TURKSTAT). The indicators that were selected include life expectancy at birth, hospital beds per 100,000 population, hospitals per 100,000 population, number of physicians per 1,000 population, infant mortality rate, crude death rate, and total fertility rate.

When taken as a whole, these indicators provide a comprehensive view of health-related deprivation at the provincial level by reflecting both infrastructural capacity (such as the availability of hospitals, beds, and medical professionals) and outcome-based health status (such as life expectancy, mortality, and fertility).

Each health indicator was normalized using Min-Max scaling, which converts results to a specified range between 0 and 1, in order to guarantee comparability and understandable aggregate. By doing this, the impact of several scales and measurement units is removed, enabling each indicator to make a proportionate contribution to the composite index. In order to ensure that higher normalized scores consistently reflect poorer deprivation, an inversion was used before weighting for indicators—specifically, Infant Mortality Rate, Crude Death Rate, and Total Fertility Rate—where larger values indicate worse health outcomes. By matching all indicators with the direction of well-being (greater is better), this guarantees conceptual clarity across the domain.

Even though it is less accurate, the crude death rate is useful for estimating regional mortality burdens, especially in older populations. In order to account for population dynamics and reproductive health, which can either alleviate or strain service demand, the total fertility rate was incorporated. Hospital beds per 100,000 people and hospitals per 100,000 people are used as stand-ins for the capacity and spatial distribution of medical institutions. The crude death rate is helpful for evaluating regional mortality burdens, particularly in elderly populations, despite its lower accuracy. The total fertility rate was included to take into consideration population dynamics and reproductive health, which can either reduce or increase service demand. Medical facilities' capacity and spatial distribution are represented as hospital beds per 100,000 people and hospitals per 100,000 people.

Each signal was given a unique weight according to how directly it affected health outcomes. Because it captures the combined impact of several health variables, life expectancy was given the greatest weight (20%). Because they have a significant impact on child survival and service access, respectively, the infant mortality rate (15%) and the number of physicians per 1,000 (15%) were also given priority. In order to recognize their importance and take into consideration potential demographic confounders, the crude death rate and total fertility rate were assigned somewhat lower weights (10% each). To represent their combined significance in healthcare system capacity, the three infrastructure indicators—physicians, beds, and hospitals per capita—were assigned equal weights (15 percent each), as shown in Table (7).

Table 8. Health domain indicators, weight, impact direction and justification.

Indicator	Weight (%)	Impact Direction	Justification
Life Expectancy at Birth	20	Higher = Less Deprivation	Captures overall longevity and long-term health outcomes; highly comprehensive.
Infant Mortality Rate	15	Higher = More Deprivation	Sensitive to maternal and infant care quality; reflects healthcare system performance.
Crude Death Rate	10	Higher = More Deprivation	Indicates general mortality burden; relevant in aging or high-risk regions.
Total Fertility Rate	10	Higher = More Deprivation	Reflects reproductive health and demographic pressure on health systems.
Physicians per 1,000 population	15	Higher = Less Deprivation	Measures accessibility to healthcare professionals and service availability.
Hospital Beds per 100,000 population	15	Higher = Less Deprivation	Indicates treatment capacity and readiness for inpatient care and emergencies.
Hospitals per 100,000 population	15	Higher = Less Deprivation	Represents infrastructure spread and geographic accessibility to services.

Adıyaman and Kilis both show low life expectancy (78.7 and 76.1 years), limited healthcare infrastructure (1–2 hospitals per 100,000), and high infant mortality and fertility rates—placing them at a disadvantage under a weighting scheme that emphasizes access and outcomes. Ağrı's placement is primarily driven by its low number of physicians, below-average life expectancy, and elevated fertility (2.20), which suggest regional service gaps despite a relatively low crude death rate. Under a weighting method that prioritizes access and results, Adıyaman and Kilis are at a disadvantage due to their short life expectancy (78.7 and 76.1 years), insufficient healthcare infrastructure (1–2 hospitals per 100,000), and high infant mortality and fertility rates. The main reasons for Ağrı's placing are its low physician population, below-average life expectancy, and high fertility rate (2.20), all of which point to regional service deficiencies even if the crude mortality rate is quite low.

$$
\begin{aligned}
HDI_{(i)} = {} & (1 - Normalized\ Life\ Expectancy_{(i)}) \times 0.20 \\
& + (Normalized\ Infant\ Mortality\ Rate_{(i)}) \times 0.15 \\
& + (Normalized\ Crude\ Death\ Rate_{(i)}) \times 0.10 \\
& + (Normalized\ Total\ Fertility\ Rate_{(i)}) \times 0.10 \\
& + (1 - Normalized\ Physicians\ per\ 1{,}000_{(i)}) \times 0.15 \\
& + (1 - Normalized\ Hospital\ Beds\ per\ 100{,}000_{(i)}) \times 0.15 \\
& + (1 - Normalized\ Hospitals\ per\ 100{,}000_{(i)}) \times 0.15
\end{aligned}
$$

Conversely, the five least health-deprived provinces—Tunceli, Ankara, Bolu, Isparta, and Trabzon—excelled across almost all indicators. Tunceli, the least deprived, reported the highest life expectancy (80.8 years), low infant mortality (6.4), and above-average health infrastructure, including 3 physicians per 1,000 population. Given the 20% weight assigned to life expectancy, this significantly contributed to its favorable index score. Ankara, as the capital, benefits from extensive healthcare coverage with 4 physicians per 1,000, 431 hospital beds per 100,000, and high life expectancy (79.2 years)—outperforming most provinces on service availability. Bolu, with 3 physicians per 1,000 and 425 hospital beds per 100,000, compensates for slightly less favorable fertility rates

by ranking strongly in infrastructure. Similarly, Isparta's high physician density, favorable infant mortality, and relatively low fertility help it score well despite a modest crude death rate. Last but not least, Trabzon regularly performs well on all metrics, including balanced health care delivery and an above-average life expectancy (79.0 years), which supports its classification as the least impoverished group (see table).

Top 5 Most Deprived Provinces - Health Domain		
Rank	**Province**	**HDI**
1	Şanlıurfa	0.801657
2	Hatay	0.72846
3	Adıyaman	0.726333
4	Kilis	0.685363
5	Ağrı	0.683439
Top 5 Least Deprived Provinces - Health Domain		
Rank	**Province**	**HDI**
81	Trabzon	0.35297
80	Isparta	0.338067
79	Bolu	0.304313
78	Ankara	0.297139
77	Tunceli	0.292462

The Health Deprivation map reveals a stark concentration of health-related challenges in the southeastern provinces of Turkey, where the darkest tones indicate the highest levels of deprivation. Provinces such as Şanlıurfa, Hatay, Adıyaman, Kilis, and Ağrı are among the most deprived, consistently reflecting poor outcomes across key health indicators—including high infant mortality rates, low life expectancy, limited access to physicians, and inadequate healthcare infrastructure such as hospital beds and treatment facilities. This southeastern cluster, extending into neighboring provinces like Mardin, Şırnak, and Van, highlights a persistent structural deficit in both health service delivery and health outcomes.

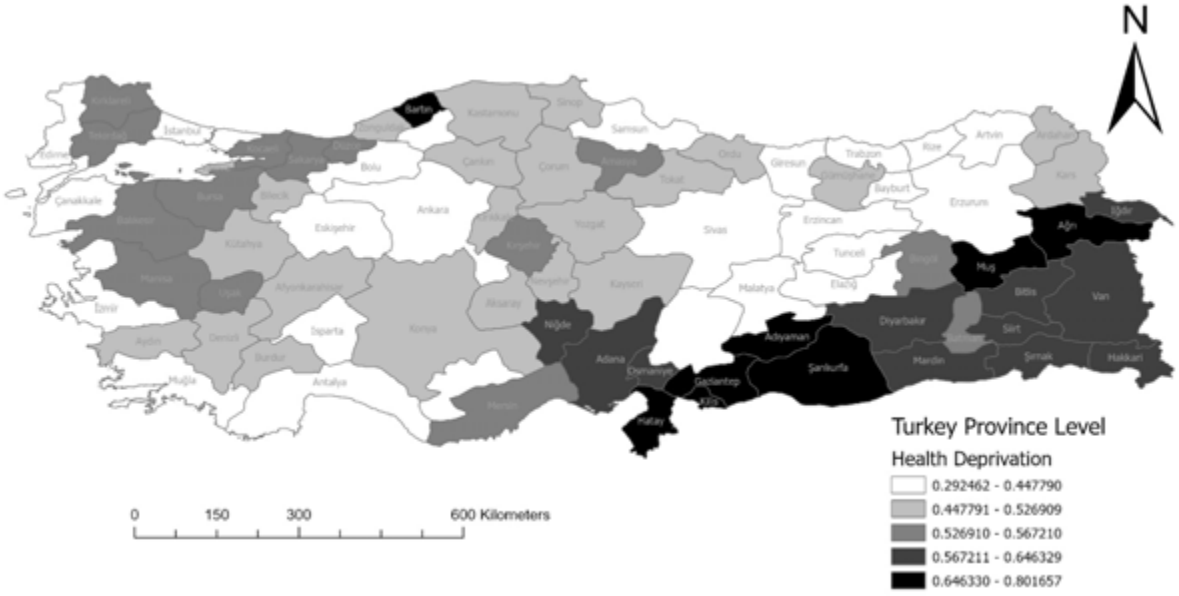

Figure 5. Health Deprivation Index by province in Turkey. Darker shades represent higher levels of health-related deprivation.

In contrast, provinces with the lowest levels of health deprivation—depicted in the lightest shades—are largely located in the central and northern parts of the country. Provinces such as Ankara, Eskişehir, Bolu, and Trabzon perform strongly across both health outcome and infrastructure metrics. These regions benefit from higher physician-to-population ratios, better hospital access, and lower mortality indicators, contributing to their favorable deprivation scores. Notably, Bartın appears as an outlier in the highest deprivation class despite its relatively peripheral location in the western Black Sea region.

Crime and Social Distress Deprivation

The Crime and Social Distress Deprivation domain evaluates regional disparities in criminal activity, justice system, and extreme social distress across Turkey's provinces. This domain integrates three core indicators: (1) the number of convicts received by penal institutions based on the province where the crime was committed, (2) the number of convicts discharged from prisons by province, and (3) the number of suicides reported per province. All data were obtained from the Turkish Statistical Institute (TURKSTAT) and correspond to the most recent available years—2020 for crime-related indicators and 2023 for suicides. These indicators jointly reflect both direct criminal activity and broader social instability. While the inclusion of suicides—legally not a crime—is conceptually distinct, it serves as a proxy for psychological and socio-economic distress. For this reason, the domain name was expanded to "Crime and Social Distress" to more accurately reflect the indicators used.

A major limitation of this domain is the scope and recency of publicly available data. Unlike economic or health indicators updated annually, crime and justice statistics from TURKSTAT are more limited in coverage and often lagged. Consequently, this domain relies on 2020 prison records and the 2023 suicide dataset, which, while still useful, may not fully capture current trends in crime or institutional burden. Nonetheless, the available indicators provide meaningful insights into spatial patterns of deprivation linked to criminality, recidivism, and societal breakdown.

Each indicator was normalized using Min-Max scaling, allowing for comparability across different magnitudes and measurement units. Since all indicators represent negative outcomes (i.e., higher values suggest worse conditions), no inversion was necessary during normalization.

To construct a composite Crime and Social Distress Deprivation Index (CSDDI), weights were assigned based on each indicator's conceptual importance. The number of convictions was assigned the highest weight (50%) as it directly measures criminal acts reported and processed through the legal system. Discharges from prison received a moderate weight (35%), representing the burden on penal institutions and potential recidivism in provinces with high release rates. Suicides were included with a lower weight (15%), acknowledging their indirect but critical connection to social distress and deprivation without equating them to crime. The final CSDDI was calculated by aggregating the weighted normalized scores of the three indicators for each province. Provinces were then ranked from most to least deprived based on their CSDDI scores. The five least deprived provinces in the Crime and Social Distress Deprivation Index—Bayburt, Tunceli, Gümüşhane, Ardahan, and Çankırı—are characterized by relatively low values across all three indicators, resulting in the lowest composite deprivation scores nationwide.

Table 9. crime domain indicators, weight, impat direction and justification.

Indicator	Weight (%)	Impact Direction	Justification
Convictions (2020)	50	Higher = More Deprivation	Represents direct measure of criminal offenses by location of crime; highest indicator of crime burden.
Discharges (2020)	35	Higher = More Deprivation	Reflects the burden on the penal system and potential re-entry of convicts into society; moderately weighted.
Suicides (2023)	15	Higher = More Deprivation	Acts as a proxy for extreme psychological and societal distress; included to capture broader deprivation but with lower weight as it is not legally categorized as a crime.

$$CSDDI_{(i)} = (Normalized\ Convictions_{(i)} \times 0.50) + (Normalized\ Discharges_{(i)} \times 0.35) + (Normalized\ Suicides_{(i)} \times 0.15)$$

Table 10 Top 5most and least deprived, crime domain.

Top 5 Most Deprived Provinces - CSDDI		
Rank	**Province**	**CSDDI**
1	İstanbul	1
2	İzmir	0.478677
3	Ankara	0.35499
4	Antalya	0.302759
5	Bursa	0.217504
Top 5 Least Deprived Provinces - CSDDI		
Rank	**Province**	**CSDDI**
82	Bayburt	0.003241
81	Tunceli	0.005252
80	Gümüşhane	0.006778
79	Ardahan	0.007452
78	Çankırı	0.009148

The Crime and Social Distress Deprivation map reveals a distinctive spatial distribution that diverges from the patterns seen in other deprivation domains. High levels of deprivation—indicated by the darkest shades—are most concentrated in major metropolitan and industrialized provinces, including İstanbul, Ankara, İzmir, Bursa, and Konya. These areas exhibit elevated levels of recorded convictions, prison discharges, and suicide rates, reflecting the complex interplay between urban density, socio-economic stressors, and institutional burden.

This urban-centric deprivation pattern suggests that crime and social distress are more acute in larger cities where population pressure, income inequality, and systemic strain may contribute to higher incidences of criminal behavior and psychosocial distress. It also underscores the challenge of balancing urban prosperity with inclusive safety and well-being.

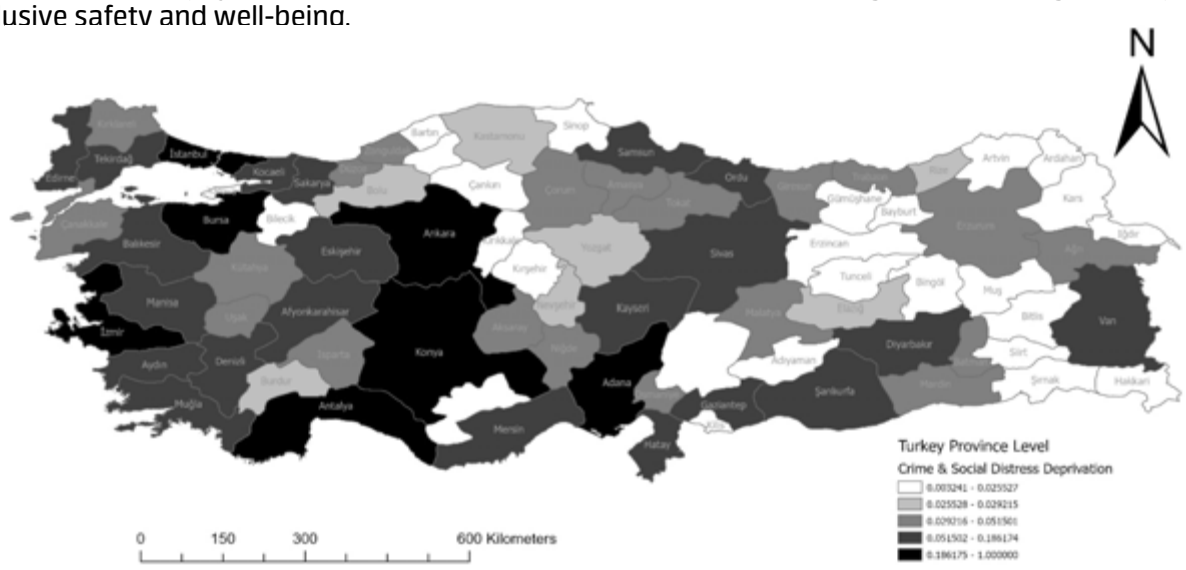

Figure 6. Crime Deprivation Index by province in Turkey. Darker shades represent higher levels of crime-related deprivation.

In contrast, the least deprived provinces are located predominantly in the northeastern and eastern parts of the country, particularly in Bartın, Ardahan, Bayburt, Tunceli, and Gümüşhane. These provinces are characterized by relatively low recorded crime rates and minimal prison system throughput. The lighter shades in these regions suggest more stable social environments with lower institutional crime burdens and fewer indicators of extreme distress.

A notable pattern is the relatively moderate-to-low levels of deprivation observed in many southeastern provinces such as Şırnak, Hakkari, and Mardin. Despite high deprivation in economic and education domains, these provinces report lower crime and social distress scores, possibly due to underreporting, demographic factors, or differing social dynamics compared to urban centers.

Barriers to Housing Deprivation

The Barriers to Housing Deprivation domain assesses spatial inequality in housing accessibility, adequacy, and supply pressure across Turkey's 81 provinces. The indicators selected aim to capture both demand-side pressures and supply-side limitations using datasets published by the Turkish Statistical Institute (TURKSTAT) for the year 2023. The final set of indicators includes average household size, internal migration (population inflow), total house sales per province, occupancy permit dwellings, construction permit dwellings. Each indicator reflects a specific challenge: larger household size implies overcrowding or under-housing; internal migration increases demand on existing stock, and high housing sales can indicate market stress or reduced affordability. On the supply side, low occupancy or construction permit approvals point to limited available or future housing stock.

This dual-perspective approach captures the tension between housing demand growth and infrastructure lag, which often results in barriers to decent housing access.

Table 11. Housing domain indicators, weight, impact direction and justification

Indicator	Weight (%)	Impact Direction	Justification
Average Household Size (2023)	20	Higher = More Deprivation	Larger household sizes often indicate overcrowding and limited housing access, especially in low-income areas.
Net Internal Migration (2023)	20	Higher = More Deprivation	High levels of in-migration increase pressure on local housing supply, leading to accessibility and affordability challenges.
Total House Sales (2023)	20	Higher = More Deprivation	Elevated housing sales may reflect overheating markets, pricing out low- and middle-income populations.
Occupancy Permit Dwellings (2023)	20	Lower = More Deprivation (inverted)	Low numbers of occupancy permits signal insufficient current housing stock; values were inverted to reflect deprivation.
Construction Permit Dwellings (2023)	20	Lower = More Deprivation (inverted)	Low issuance of construction permits indicates limited future housing provision and development; values were inverted.

$$HDI_{(i)} = (Normalized\ Household\ Size_{(i)} \times 0.20) + (Normalized\ In - Migration_{(i)} \times 0.20) + (Normalized\ Housing\ Sales_{(i)} \times 0.2) + (Normalized\ Occupancy\ Permits_{(i)} \times 0.2) + (Normalized\ Construction\ Permits_{(i)} \times 0.2)$$

The top five most deprived provinces in the HDI ranking—Şanlıurfa, Kilis, Gaziantep, İstanbul, and Mardin—demonstrated consistently high scores across multiple indicators. Şanlıurfa, ranked as the most deprived, reported both a high average household size (6.34) and a significant number of in-migrants (33,373), paired with low construction (2,696) and occupancy permits (1,685), signaling infrastructure lag amid growing demand. Kilis followed with one of the smallest housing stocks in terms of permits (384 occupancy, 245 construction) despite recording substantial in-migration (7,383), contributing to its elevated deprivation score. Gaziantep ranked third due to intense market activity—housing sales (45,139) and internal migration (39,412) were both among the highest nationally—combined with a household size above 5, stressing capacity. İstanbul and Mardin completed the top five, both reflecting extreme population pressure. İstanbul reported the highest internal migration (271,169) and house sales (240,145), while Mardin recorded high household size (5.69) and relatively low new housing provision (1,602 construction permits), reinforcing the supply-demand imbalance.

Table 12. Top 5 most and least deprived, housing domain.

Top 5 Most Deprived Provinces - HDI		
Rank	**Province**	**HDI**
1	Şırnak	0.63357
2	Kırşehir	0.627328
3	Siirt	0.586963
4	Şanlıurfa	0.5814
5	Diyarbakır	0.577848
Top 5 Least Deprived Provinces - HDI		
Rank	**Province**	**HDI**
81	İstanbul	0.264585
80	Balıkesir	0.385355
79	İzmir	0.390831
78	Çanakkale	0.396982
77	Ankara	0.408613

Conversely, the five least deprived provinces—Bartın, Karabük, Amasya, Eskişehir, and Kırklareli—ranked lowest in HDI due to a more favorable balance of demographic pressure and housing provision. Bartın and Karabük, ranked 81st and 80th respectively, had among the lowest household sizes (2.91 and 2.93), low in-migration figures (2,206 and 2,640), and modest but adequate housing permit numbers. Amasya showed moderate performance across all indicators with no extremes, which kept its deprivation low. Eskişehir and Kırklareli also maintained moderate household sizes (2.98 and 3.03) and managed a balance between sales activity and new construction, avoiding the housing market volatility seen in more deprived provinces.

The spatial distribution of housing deprivation in Turkey shows a strong concentration of high-deprivation scores across the southeastern and eastern provinces, as well as parts of Central Anatolia. Provinces such as Şırnak, Hakkari, Mardin, Adıyaman, and Gaziantep appear in the darkest shades, indicating the highest levels of deprivation. These areas are characterized by a combination of high household density, strong internal migration pressures, and insufficient housing stock as reflected by low occupancy and construction permit volumes. A secondary axis of high deprivation extends through central provinces such as Yozgat, Kırşehir, and Aksaray, where structural housing shortages and limited urban expansion contribute to constrained housing access. These provinces highlight inland challenges that differ from those found in high-growth coastal or metropolitan regions.

Unexpectedly, some industrialized or otherwise economically stronger provinces, such as Kocaeli and Antalya, also appear in the highest deprivation class. This likely reflects intense demand-side pressures—such as high internal migration and elevated housing sales—that outpace available housing supply, creating affordability and accessibility barriers. Their inclusion in this category underscores the fact that housing deprivation is not solely a function of poverty or underdevelopment but can also stem from overheating urban markets. Conversely, the least deprived provinces—represented in the lightest tones—are found in the western and northwestern regions, including Bartın, Kırklareli, and Çanakkale. These areas maintain a more balanced housing dynamic, with moderate population pressures and relatively sufficient housing stock. Similarly, select provinces in Central Anatolia and the Black Sea region—such as Çankırı and Gümüşhane—register low housing deprivation, likely due to lower in-migration rates and slower urban growth.

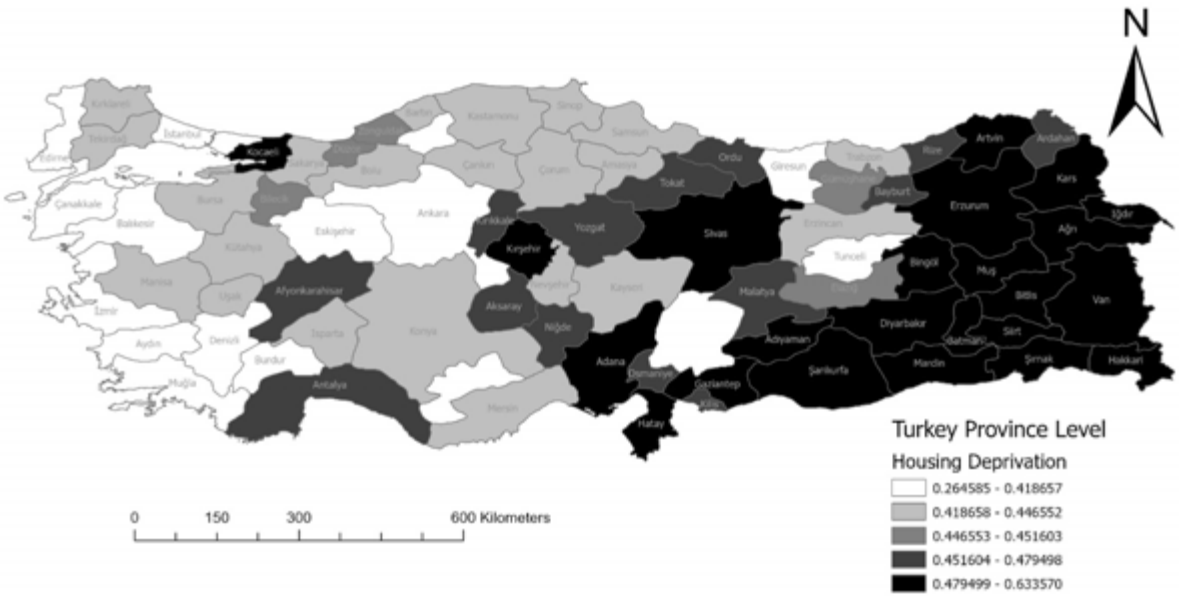

Figure 7. Housing Deprivation Index by province in Turkey. Darker shades represent higher levels of housing-related deprivation.

Living Environment Deprivation

The Living Environment Deprivation domain evaluates disparities in environmental quality, municipal infrastructure, and housing safety across Turkey's 81 provinces. This domain relies on indicators derived from official datasets provided by the Turkish Statistical Institute (TURKSTAT), reflecting both service provision and exposure to environmental or infrastructural risks. The selected indicators include traffic accident counts, the proportion of municipal populations served by sewerage networks, drinking water supply, drinking water treatment, and wastewater treatment plants, as well as the rate of electricity connections and the number of cars per 1,000 people. Additionally, three household-level indicators were incorporated: the proportion of housing stock built in or before 1980, and the share of households lacking access to piped water, toilets, or bathrooms. These indicators together offer a comprehensive view of the physical and infrastructural living conditions at the provincial level.

Each of these variables reflects a distinct dimension of deprivation. Traffic accident counts serve as a proxy for urban stress and road safety risks, while the proportions of municipal service coverage highlight regional disparities in basic infrastructure. The electricity connection rate indicates access to essential utilities, and car ownership serves as a loose proxy for mobility and transport accessibility. The absence of piped water, toilet, or bathroom facilities within dwellings reflects deeply embedded housing inadequacies that affect dignity and hygiene. Finally, the percentage of buildings constructed before 1980 acts as a proxy for outdated and potentially unsafe housing stock, particularly relevant in a country with considerable earthquake vulnerability.

To ensure comparability, all indicators were normalized using Min-Max scaling, rescaling their values between 0 and 1. For indicators where a higher raw value indicated better living conditions—such as sewerage access or water network coverage—values were inverted so that higher normalized scores consistently represented worse conditions. This allowed for a unified interpretation of deprivation across the dataset. Each indicator was assigned an equal weight of approximately 11.1%, reflecting a balanced approach to measuring deprivation across infrastructure, environmental health, and safety. The final Living Environment Deprivation Index (LEDI) for each province was calculated as the sum of all weighted normalized indicators, where higher LEDI values correspond to greater environmental deprivation.

$$LEDI_{(i)} = (\sum Normalized\ Weighted\ Indicators_{(i)}) \times 0.111$$

Table 13. Living environment domain indicator, weight, impact direction and justification.

Indicator	Weight (%)	Impact Direction	Justification
Proportion of buildings built before 1980	11.1	Higher = More Deprivation	Acts as a proxy for outdated or potentially unsafe housing, especially in earthquake-prone regions.
Households without piped water (%)	11.1	Higher = More Deprivation	Reflects inadequate access to basic in-home water infrastructure, indicating serious deprivation.
Households without toilet (%)	11.1	Higher = More Deprivation	Signals severe sanitation deprivation, affecting both dignity and public health outcomes.
Households without bathroom (%)	11.1	Higher = More Deprivation	Indicates fundamental infrastructure deficiency within the home environment.
Sewerage network coverage (%)	11.1	Lower = More Deprivation	Captures disparities in urban sanitation infrastructure and its public health implications.
Drinking water network coverage (%)	11.1	Lower = More Deprivation	Reflects accessibility of clean, piped water supply—a critical public health and welfare concern.
Water treatment plant coverage (%)	11.1	Lower = More Deprivation	Represents the quality of water service provision and regional health safeguards.
Wastewater treatment plant coverage (%)	11.1	Lower = More Deprivation	Addresses environmental and hygiene quality through wastewater management capacity.
Electricity subscription coverage (%)	11.1	Lower = More Deprivation	Measures access to electricity, a basic necessity in modern living; lower variation, but essential.
Cars per 1,000 people	11.1	Lower = More Deprivation	Used as a proxy for economic status and transport infrastructure; limited mobility can signal isolation.
Traffic accident count	11.1	Higher = More Deprivation	Indicates infrastructural stress and safety risks in the physical environment.

The five most environmentally deprived provinces—Ağrı, Şırnak, Iğdır, Ardahan, and Van—consistently scored poorly across multiple indicators. Ağrı reported one of the highest proportions of households living in buildings constructed before 1980, combined with significant percentages of homes lacking basic facilities such as piped water, toilets, and bathrooms. Similarly, Şırnak showed poor infrastructure coverage, including low rates of access to treated water and sewerage networks, alongside elevated deprivation in household-level sanitation access. Iğdır and Ardahan both exhibited critical deficiencies in basic in-home utilities and sanitation facilities, with Ardahan standing out for an exceptionally high share of households without bathrooms. These provinces also reported very low levels of car ownership per 1,000 people and limited access to wastewater and drinking water treatment systems. Van's placement was mainly driven by aging housing stock and lower than average environmental infrastructure scores, especially in treated water services, which compounded its LEDI value.

Table 14. Top 5 most and least deprived, living environment domain.

Top 5 Most Deprived Provinces - LEDI		
Rank	**Province**	**HDI**
1	Ardahan	0.597509
2	Iğdır	0.543384
3	Mardin	0.502147
4	Kars	0.458331
5	Sinop	0.434612
Top 5 Least Deprived Provinces - LEDI		
Rank	**Province**	**HDI**
5	İstanbul	0.099773
4	Yalova	0.129202
3	Kocaeli	0.132782
2	Eskişehir	0.141178
1	Ankara	0.152081

On the other hand, the five least deprived provinces—Ankara, Eskişehir, Kocaeli, Yalova, and İstanbul—ranked best due to strong performance across nearly all environmental indicators. Ankara and İstanbul, as major metropolitan areas, benefit from near-universal coverage of electricity, sewerage, water networks, and water treatment systems, along with high car ownership rates. Eskişehir also performed well, particularly in its urban infrastructure and low proportion of households lacking piped water or toilets. Kocaeli and Yalova demonstrated similarly high levels of access to urban services and modern housing stock, with minimal percentages of households in buildings built before 1980 and strong access to treated water and sanitation. These provinces consistently reported lower rates of deprivation in both household and municipal indicators, which is reflected in their low LEDI scores.

The Living Environment Deprivation map demonstrates a predominantly peripheral distribution of environmental and infrastructural challenges across Turkey. The most deprived provinces—represented in the darkest shades—are concentrated in the eastern and southeastern regions, particularly Ardahan, Iğdır, Muş, Mardin, and Şanlıurfa. These provinces face multiple deficits in basic infrastructure and environmental conditions, including aging housing stock, low access to sewerage systems, untreated water, and limited utility coverage such as piped water and electricity. This high-deprivation pattern also extends to select northern provinces such as Çankırı, Kastamonu, and Sinop, highlighting that environmental deprivation is not limited to socioeconomically underdeveloped regions but may also reflect insufficient investment in infrastructure maintenance or modernization in less urbanized northern areas.

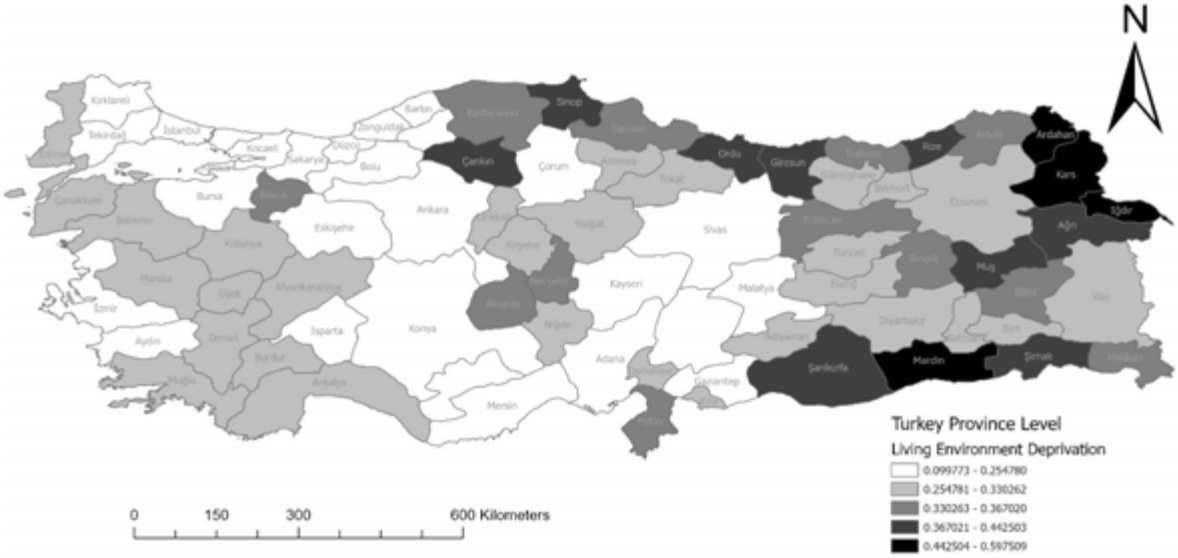

Figure 8. Living environment Deprivation Index by province in Turkey. Darker shades represent higher levels of living environment-related deprivation.

In contrast, the least deprived provinces are concentrated in the west and central-west of the country. Regions like Ankara, Eskişehir, Kocaeli, and Muğla show strong environmental conditions, marked by high access to treated water, electricity, modern housing, and municipal services. These provinces also benefit from better waste and water management systems, higher vehicle ownership, and stronger disaster-resilient infrastructure. Interestingly, several mid-performing provinces across Central Anatolia and the Aegean—such as Afyonkarahisar, Kütahya, and Aydın—display moderate levels of deprivation, indicating a relative balance between infrastructure availability and environmental pressure. These regions may have adequate municipal services but still face challenges related to older housing stock or regional population growth.

Turkish Composite Deprivation Index

The Turkish Composite Deprivation Index (TCDI) offers a multidimensional evaluation of regional deprivation across Turkey's 81 provinces. It combines seven domain-specific indices: Income, Employment, Education, Health, Crime and Social Distress, Barriers to Housing, and Living Environment. Each domain reflects a distinct dimension of socioeconomic well-being and infrastructure access, capturing both individual and structural determinants of deprivation. Weights for each domain were assigned in alignment with the English Indices of Deprivation (EID) model, emphasizing economic and labor-related domains more heavily. Specifically, Income and Employment domains each account for 22.5% of the overall index, Education and Health domains for 13.5% each, and the remaining three domains—Crime, Housing Barriers, and Living Environment—each contribute 9.3%. These weights were applied to the normalized domain scores for each province, producing a final composite index value (TCDI) and associated rank, where higher values correspond to greater deprivation.

The five most deprived provinces—Şanlıurfa, Ağrı, Şırnak, Mardin, and Iğdır—consistently exhibited high deprivation across multiple domains. Şanlıurfa, which ranked first overall, recorded elevated deprivation in health (rank 1), education (rank 1), housing (rank 4), and crime (rank 5), reflecting multidimensional structural disadvantage. Ağrı followed with top-five placements in education, health, and environmental deprivation. Şırnak also scored among the highest in deprivation across health, education, and employment, underscoring persistent developmental challenges. Mardin and Iğdır demonstrated widespread infrastructure gaps, particularly in environment and housing domains, alongside socioeconomic stress reflected in employment and crime data.

In contrast, the least deprived provinces—Istanbul, Ankara, Kocaeli, Tekirdağ, and Eskişehir—ranked consistently low on the deprivation scale due to strong performance across all seven domains. Istanbul and Ankara benefit from high income levels, extensive infrastructure, and service access, though Istanbul shows slight vulnerability in crime-related indicators. Kocaeli and Tekirdağ exhibit robust labor market and industrial metrics, with strong

educational and health outcomes. Eskişehir rounds out the least deprived group with uniformly favorable indicators across education, environment, and health, reinforcing its long-standing reputation as a well-performing mid-sized urban province.

The spatial pattern of the Composite Deprivation Index (CDI) map provides a holistic view of multidimensional deprivation across Turkey's provinces, combining all seven individual domains. The highest levels of overall deprivation—marked in the darkest shades—are concentrated in the southeastern and eastern provinces, notably Şanlıurfa, Hakkari, Şırnak, Mardin, and Ağrı. These provinces consistently scored high on multiple domain-specific indices, particularly income, education, health, and housing deprivation. Their composite scores reflect persistent structural disadvantages and underscore the cumulative effect of overlapping deprivation. This core high-deprivation zone extends westward through a belt of central and inner Anatolian provinces such as Adıyaman, Osmaniye, Niğde, and Aksaray, suggesting that deprivation is not confined to the geographical periphery but also affects provinces with constrained development trajectories and limited access to diversified economic opportunities.

Conversely, the lowest levels of composite deprivation—shown in the lightest shades—are predominantly found in the northwestern and western regions, particularly in provinces such as İstanbul, Ankara, Kocaeli, Eskişehir, and Muğla. These areas benefit from strong economic performance, well-established infrastructure, high service provision, and better education and health outcomes. Their consistently low scores across most domains place them at the opposite end of the deprivation spectrum. A noticeable mid-deprivation band cuts through western Central Anatolia and parts of the Mediterranean and Aegean regions, encompassing provinces like Afyonkarahisar, Manisa, and Denizli. While not as severely deprived as the southeastern regions, these provinces face challenges in select domains such as employment, education, or housing, which prevent them from ranking among the least deprived.

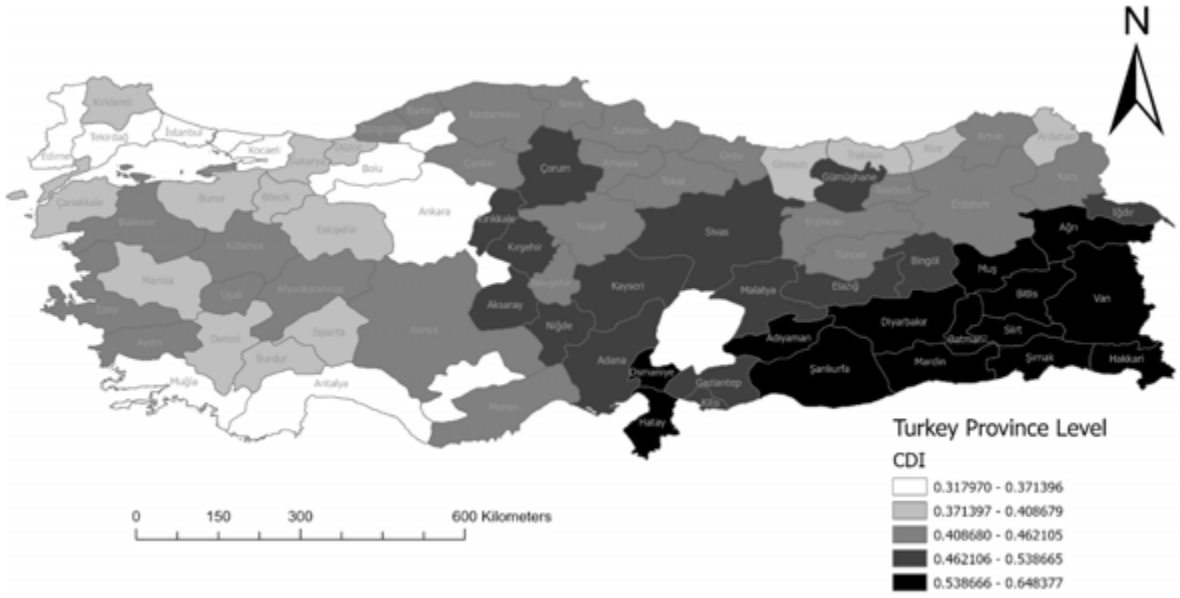

Figure 9. Turkish Composite Deprivation Index by province. Darker shades represent higher levels of composite deprivation.

Conclusion

This study presents a comprehensive, province-level analysis of multidimensional deprivation in Turkey, combining seven distinct domains—Income, Employment, Education, Health, Crime and Social Distress, Housing, and Living Environment—into a single Composite Deprivation Index (CDI). By leveraging the most recent TURKSTAT datasets and adapting the English Indices of Deprivation framework, the analysis provides a nuanced understanding of regional inequalities and spatial disparities in socio-economic and infrastructural well-being.

The results reveal a persistent and deeply embedded east–west divide, with the southeastern and eastern provinces consistently ranking among the most deprived across multiple domains. Provinces such as Şanlıurfa, Ağrı, Şırnak, and Mardin exhibit high composite deprivation scores, reflecting structural disadvantages in access to income, employment, quality education, and health services. Conversely, the least deprived provinces—including İstanbul, Ankara, Kocaeli, and Eskişehir—benefit from strong economic performance, developed infrastructure, and broader access to essential services.

It is highly recommended to agree on a specific mechanism for data collection, combination and agreement on weightings that reflect deprivation indicators that are specific to Turkey. It is also highly recommended to conduct this research at a constant annual rate in order to easily track changes in the development of the Turkish provinces and the sustainability of the spirit of competition among decision-makers in the Turkish provinces.

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