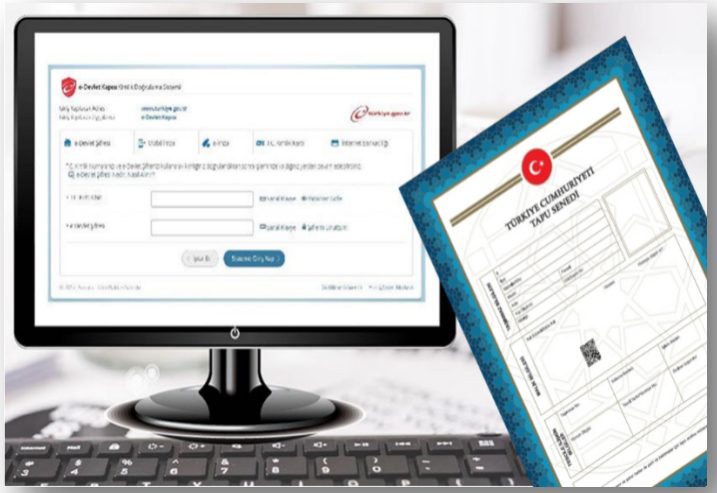
LAND REGISTRY AND CADASTRE INFORMATION THROUGH THE ANALYSIS OF BUSINESS INTELLIGENCE IN TURKEY

THE STRUCTURE OF GDLRC

General Directorate of Land Registry and Cadasre (GDLRC) is one of the most important contact points of the citizens with the state and consisting of 24 Regional Directorates, 972 Land Registry Directorates and 81 Cadastre Directorates. GDLRC serves a total over 30 millions people with a total of 19.655 employee with an annual transaction volume allmost 8 millions.



Each year, more than 25% of the population of the country benefits from Land Registry and Cadastre services and 1 land registry transaction is being done per second.

TASKS

To fulfill the services of land registry and cadastre under the responsibility of treasury,

To ensure updating of land registry (cadastre) plans,

To provide the services of geodetic infrastructure, aerial photography and produce 1/5000 and larger scale cadastral and topographic maps,

To create spatial data infrastructure.

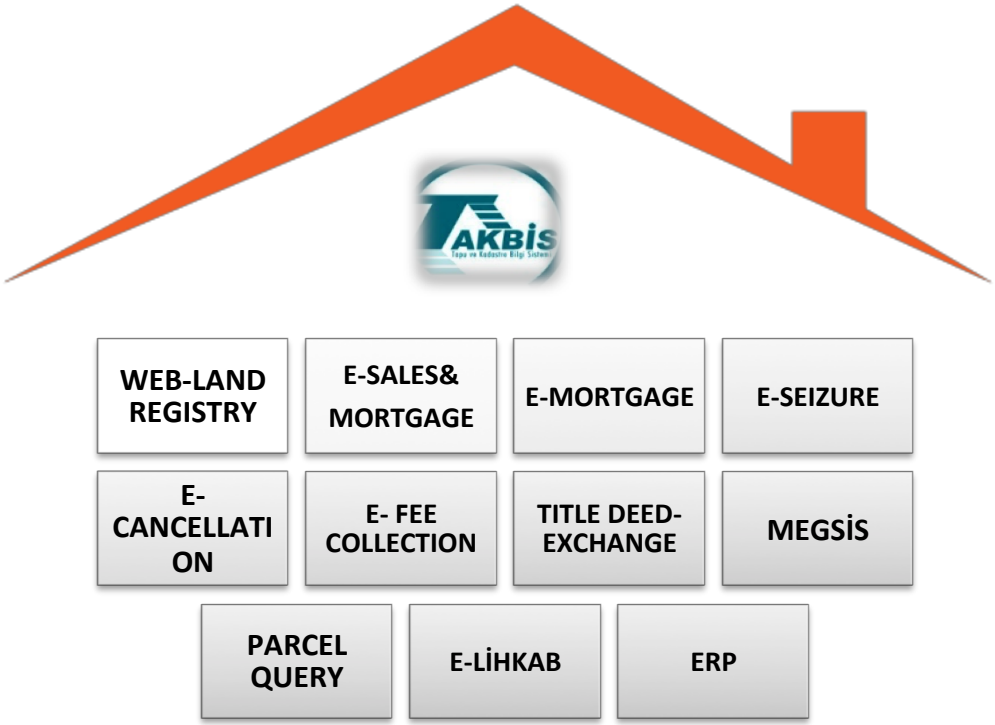
To carry out Land Registry and Cadastre transactions of real and legal foreign persons and corporations with foreign capital, to provide statistics and to share with related institutions.

To regulate intermediation activities for immovable property,

LAND REGISTRY AND CADASTRE INFORMATION SYSTEM (TAKBIS)

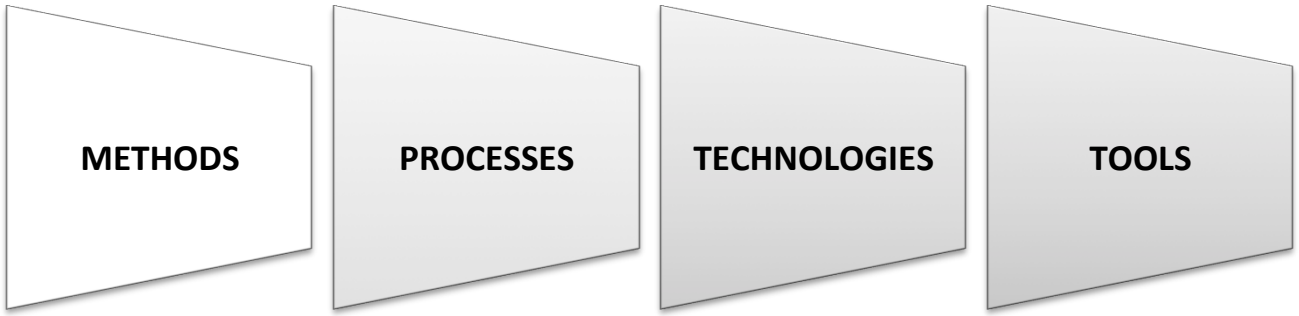
TAKBIS is one of the strategic e-government project that contains all real estate ownership data throughout the Country,

Real Estate transactions are conducted, monitored and shared through TAKBİS, and services provided to costumers are presented in a reliable, up-to-date and fast manner.



BUSINESS INTELLIGENCE

Business Intelligence is an umbrella term for a set of



And guides the organizations for its very betterment, traditionally known as Decision Support System (DSS)

EVOLUTION OF BI

-1980s
Executive Information Systems(EIS), Decision support Systems(DSS)

-1990s
Data Warehousing (DW), Business Intelligence (BI)

-2000s
Dashboards and scorecards, performance management

-2010+
Analytics, big data, mobile BI, in-memory cache, data science

THE STRUCTURE OF GDLRC BI SYSTEM

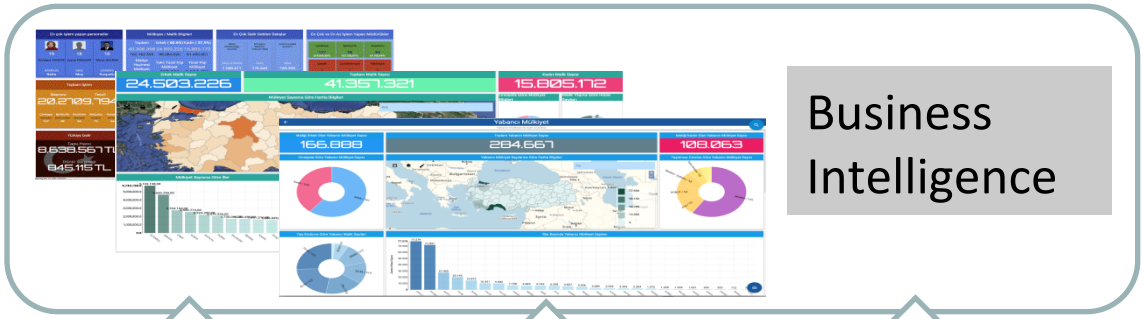
New and changing data from operational systems (TAKBIS and ERP) are periodically transferred to the data warehouse system.

Data that is consolidated in the data warehouse is associated with each other.

Subject-oriented Data Markets (Data Mart) is updated with new data

The consolidated and correlated data is provided to end users through the dashboards via Business Intelligence application, supported by Interactive and Map Analysis.

INFRASTRUCTURE OF GDLRC's BI SYSTEM



Business Intelligence

DATA WAREHOUSE

ETL (DATA EXTRACTION OPERATIONS)

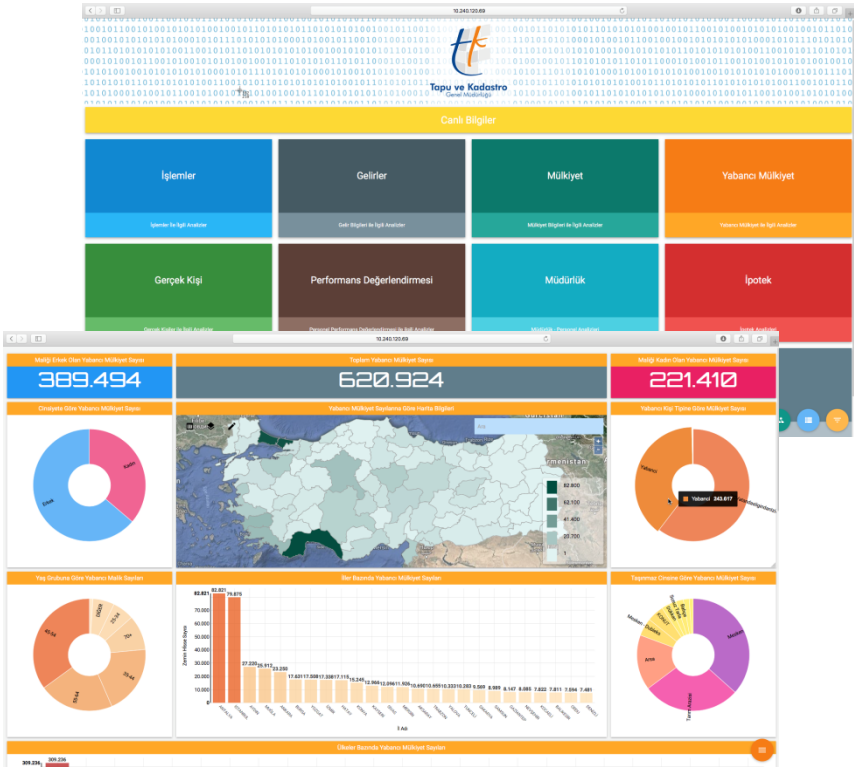
CADASTRE Data

LR Data

ERP

BUSINESS INTELLIGENCE DASHBOARD HEADLINES

- The unit, which make the most transactions
- The personnel, who make the most transactions
- Number of male / female owners
- The most costly(fee) transaction
- Daily Revolving Fund income
- Mortgaged Real Estate Distributions
- Real estate purchases of foreigners
- Increased buy/sell transactions in recent times
- Average sales price changes in the zone
- ....



DASHBOARD VIEW

Daily Information Summary information	**Annual Land Registry Transactions** Analysis of transactions	**Annual Income** Analysis of Income Info	**Property Statistics** Analysis of Property Info
Foreign Ownership Data Analysis of Foreign Property	**Workload Evaluation** Analysis of Performance Assessment	**e-Land Registry Survey** Analysis of Survey	**Housing Data (with MAKS data)** Type/ independent section information with MAKS data
Legal Entity Parcel Inquiry Analysis Parsel Inguiry	**Real Person** Analysis of Real Person	**Legal Entity** Analysis of Legal Entity	**Foreign Person** Analysis of Foreign Person
Web-based Transactions Web-based Transactions Data	**Land Registry Offices** Analysis of Land Registry Offices/ Personnel	**Mortgage** Analysis of Mortgage Transactions	**Duration of Transactions** Analysis of Duration of Transactions

Daily Information

Total Transaction

Başvuru	Tescil
36.469	22.376

Çankaya	Şahinbey	Esenyurt	Keçiören	Mamak
ANKARA	GAZİANTEP	İSTANBUL	ANKARA	ANKARA
306	223	205	190	149

Sale Transaction

Başvuru	Tescil
7.041	3.661

Keçiören	Osmangazi	Mamak	Çankaya	Bolu
ANKARA	BURSA	ANKARA	ANKARA	BOLU
43	36	35	34	31

MortgageTransaction

Başvuru	Tescil
4.777	2.819

Sincan	Esenyurt	Aksu(ANTALYA)	Keçiören	Nilüfer
ANKARA	İSTANBUL	ANTALYA	ANKARA	BURSA
35	31	26	26	25

Seize Transaction

Başvuru	Tescil
10.033	9.619

Şahinbey	Çankaya	Esenyurt	Tarsus	Seyhan
GAZİANTEP	ANKARA	İSTANBUL	MERSİN	ADANA
134	111	94	89	74

Turkey Income

Tapu Harcı
12.755.258 TL
Döner Sermaye
1.999.476 TL

İstanbul Income

Tapu Harcı
3.539.626 TL
Döner Sermaye
288.622 TL

Ankara Income

Tapu Harcı
1.294.609 TL
Döner Sermaye
154.906 TL

İzmir Income

Tapu Harcı
470.805 TL
Döner Sermaye
117.344 TL

The personnel who make the most transactions

102	43
tkweb tkweb	Yeşim YILMAZ
ANKARA	ANKARA
TAPU VE	Çankaya

Property/Owner Information

Toplam	Erkek (60.4%)	Kadın (38.2%)
43.769.267	26.773.852	16.995.415
Aktif Hisse Sayısı 165.314.394	Aktif Hisse Sayısı 99.805.981	Aktif Hisse Sayısı 63.107.749

Maliye Hazinesi Mülkiyet	Tekil Tüzel Kişi Mülkiyet	Tüzel Kişi Mülkiyet
3.759.869	492.672	9.476.220

The most costly (fee) transaction

AYŞİN SURÖZÜ	DÜNDARBEY HACISÜLEYMANOĞLU	
Satış	Satış	Satış
300.640 TL	282.620 TL	183.620 TL

The units that make the most and the least transactions

Çankaya	Şahinbey	Esenyurt
306	223	205
348.013,47TL	204.585,79TL	181.899,58TL

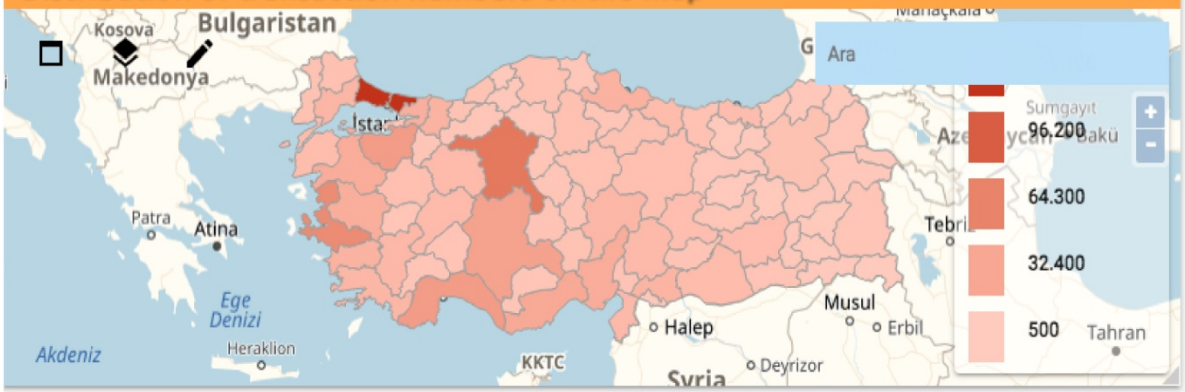
Özvatan	Yayladere	Yalıhüyük
1	1	1
0TL	0TL	0TL

Annual Land Registry Transactions

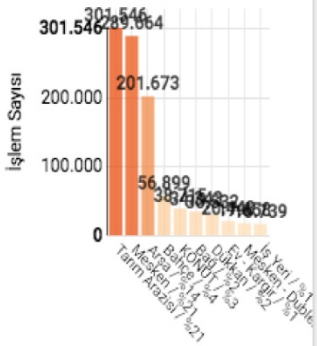
Total Tansaction numbers

1.018.081

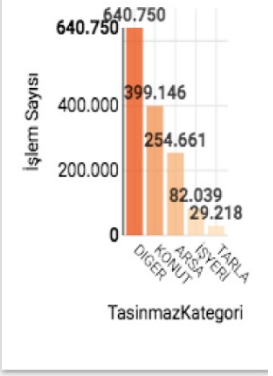
Distribution of transaction numbers on the map



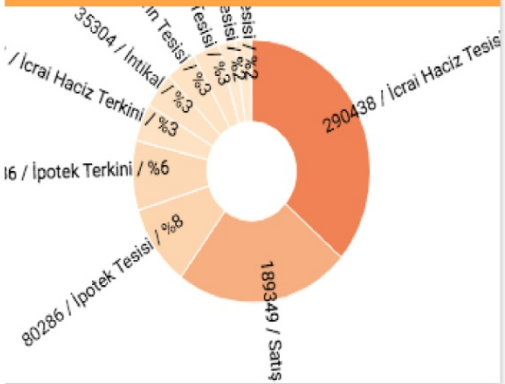
Number of transactions by type of property



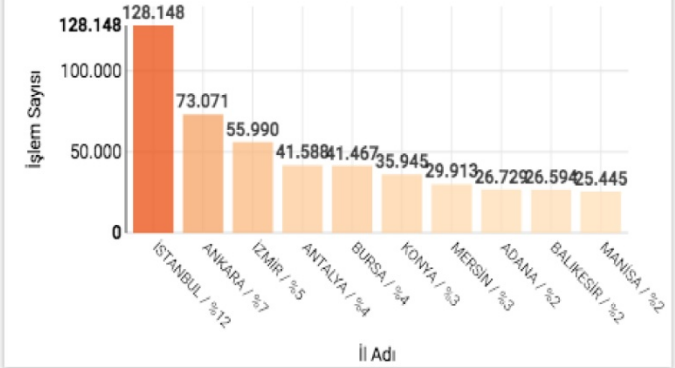
Number of transactions by category of property



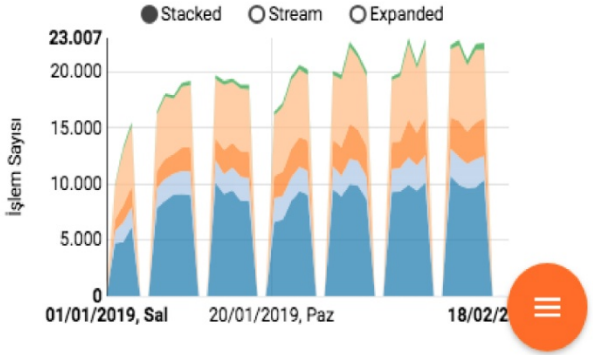
Number of transactions by transaction type



Cities by number of transactions



Number of daily transactions according to the process type



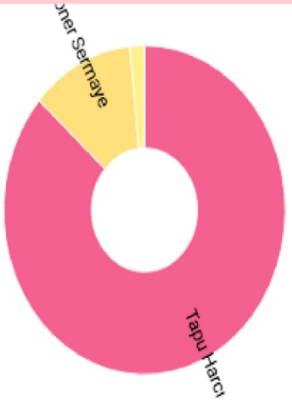
Annual Income

Total Revenue (Title deed fee + revolving fund)

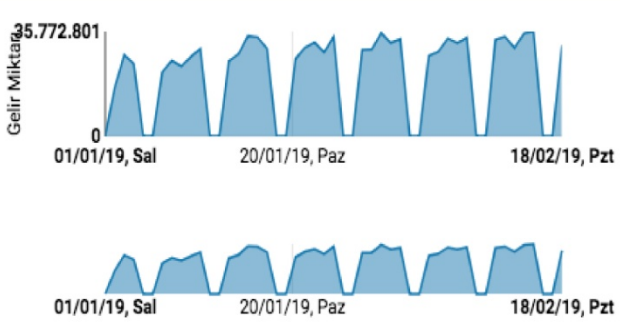
1.015.451.604

Map display according to fee income

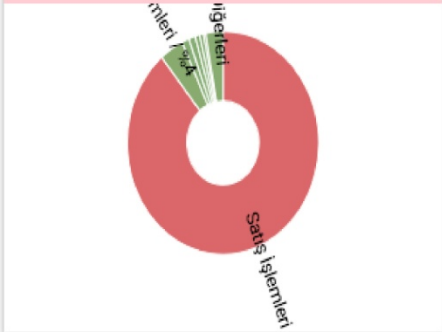
Amount of income by type of fee



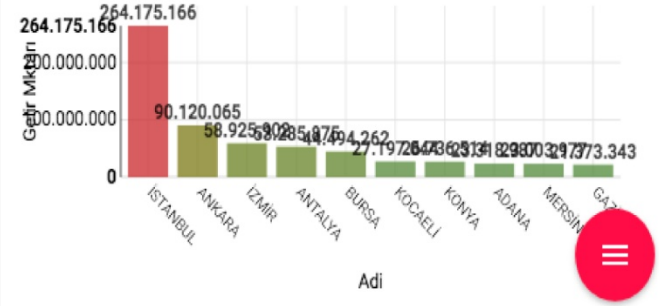
Total revenue by date



Total amount of revenue



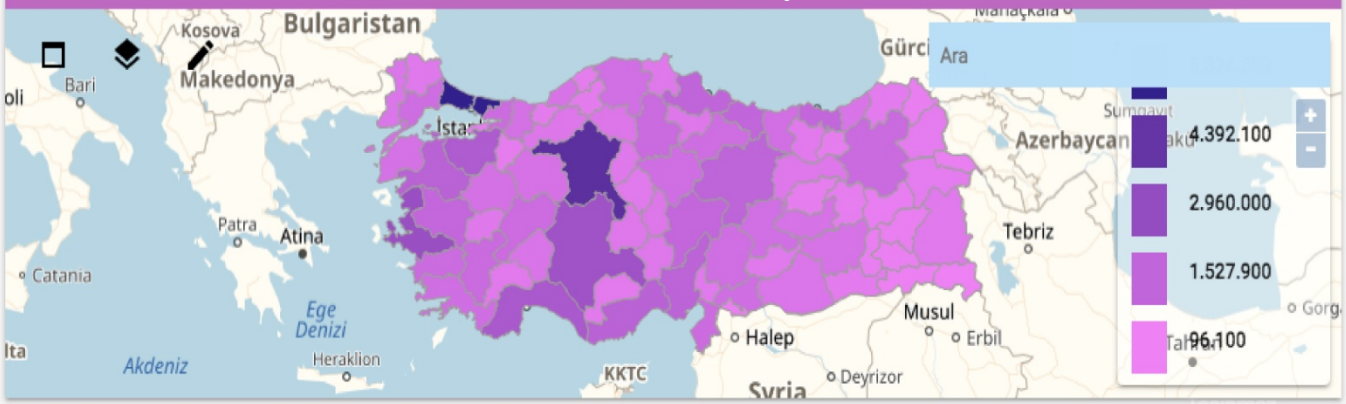
Provinces according to the amount of income



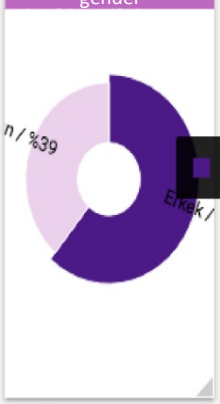
Property Statistics

Male Owner	Total Owner	Female Owner
26.713.857	44.832.368	16.995.415

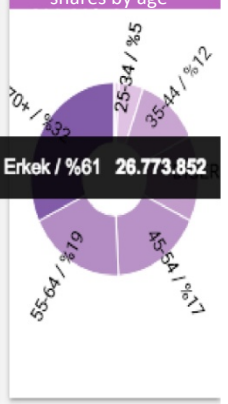
Owner number by cities



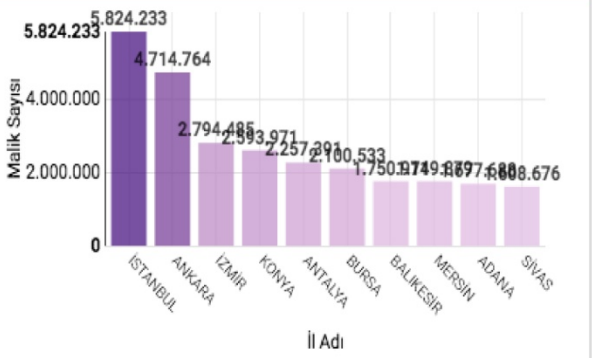
Owner Information by gender



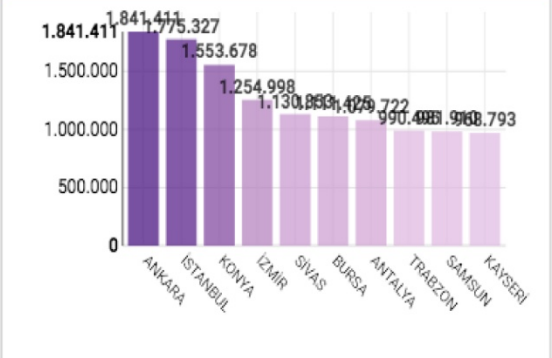
Number of owner's shares by age



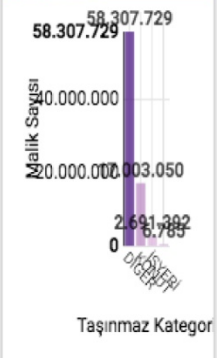
Cities by number of ownership



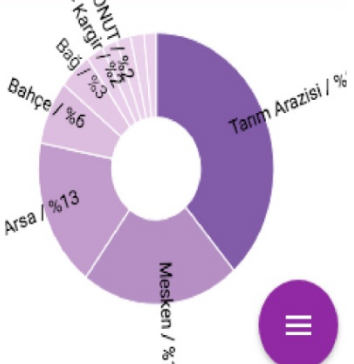
Owner numbers according to the provinces where the population is registered

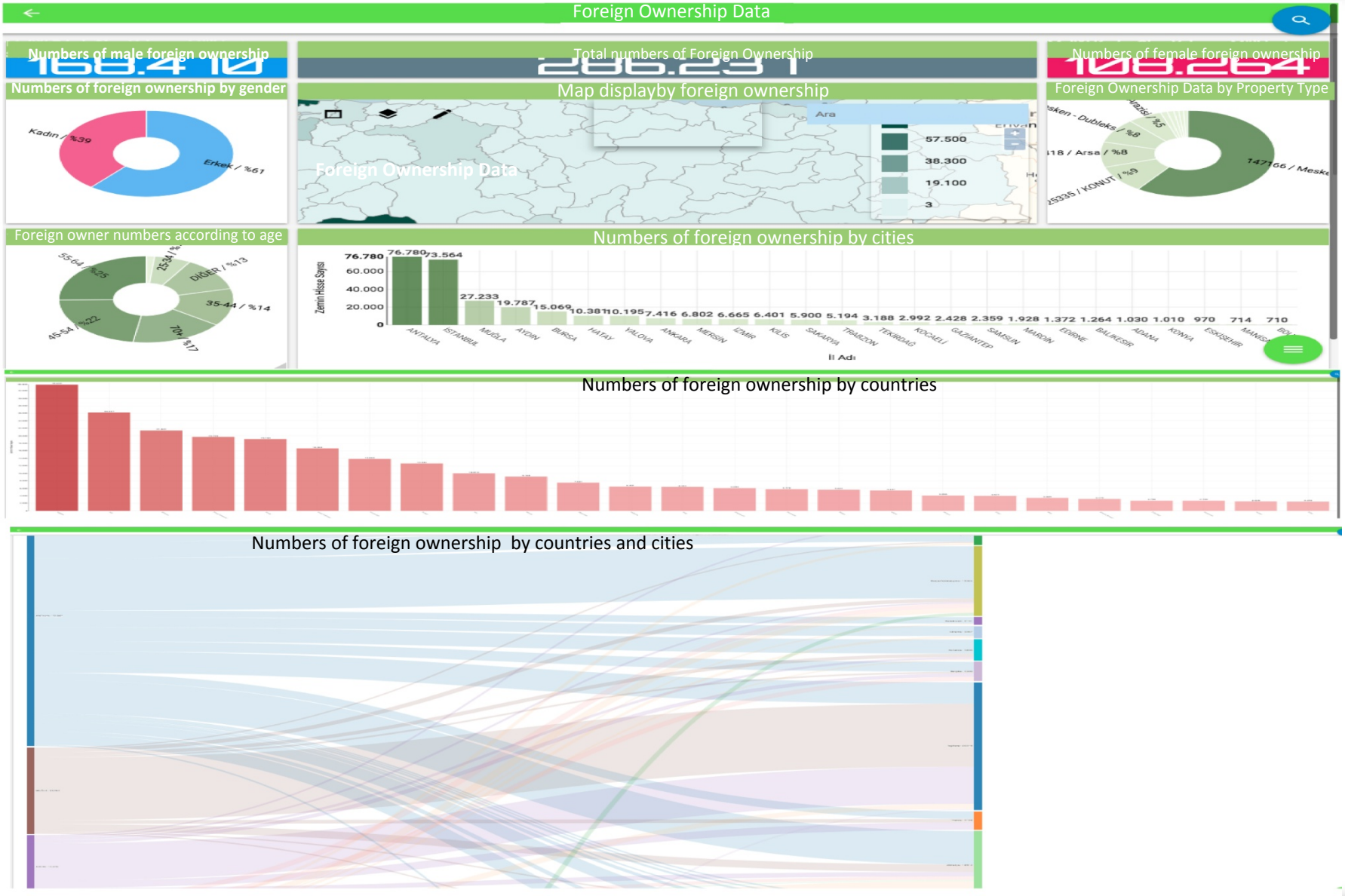


Ownership numbers by property category



Owner numbers by property type

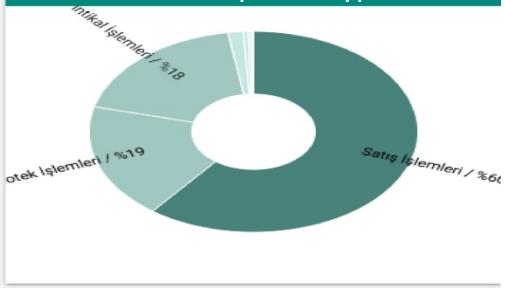



Foreign Ownership Data
Numbers of male foreign ownership
168.410
Total numbers of Foreign Ownership
286.291
Numbers of female foreign ownership
108.264
Numbers of foreign ownership by gender
Kadın / %39
Erkek / %61
Map displayby foreign ownership
Ara
57.500
38.300
19.100
3
Foreign Ownership Data
Foreign Ownership Data by Property Type
Foreign owner numbers according to age
DİĞER / %13
35-44 / %14
Numbers of foreign ownership by cities
Zemin Hisse Sayısı
76.780
60.000
40.000
20.000
0
ANTALYA
İSTANBUL
MUĞLA
AYDIN
BURSA
HATAY
YALOVA
ANKARA
MERSİN
İZMİR
KIRIS
SAKARYA
TRABZON
TEKİRDAĞ
KOCAELİ
GAZİANTEP
SAMSUN
MARDİN
EDİRNE
BALIKESİR
ADANA
KONYA
ESKİŞEHİR
İl Adı
Numbers of foreign ownership by countries
Numbers of foreign ownership by countries and cities

Workload Evaluation

Workload Evaluation Map Display

Workload by work type



Cities by number of transactions

Cities according to the workload density ratio (0%)

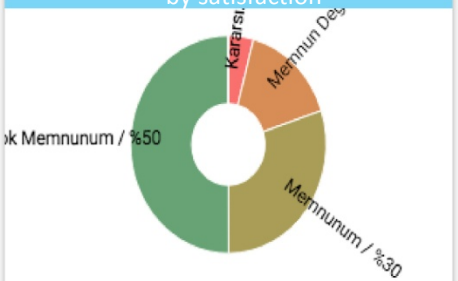
Personnel by number of transaction

Personnel by workload ratio

e-Land Registry Survey

Total number of Survey
2.304.525

Number of survey responses
49.698

Number of survey responses by satisfaction


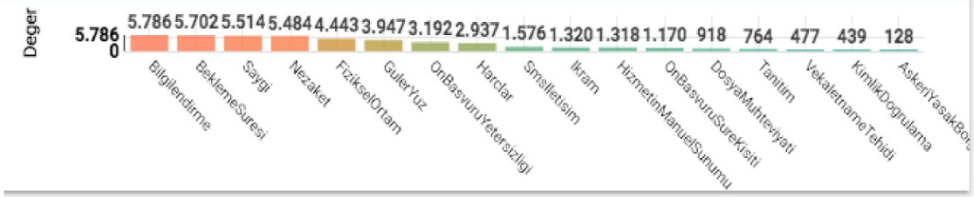
Very Satisfied
24.863

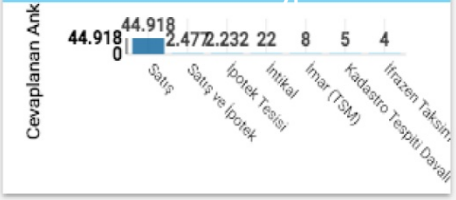
Satisfied
14.915

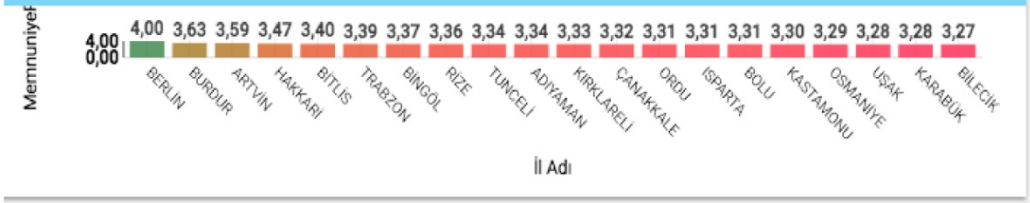
Neutral
2.058

Unsatisfied
7.860

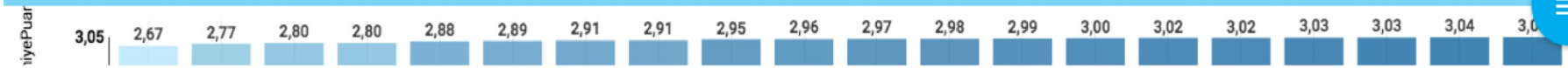
Number of survey responses by cities

Factors affecting dissatisfaction


Number of survey responses by transaction type


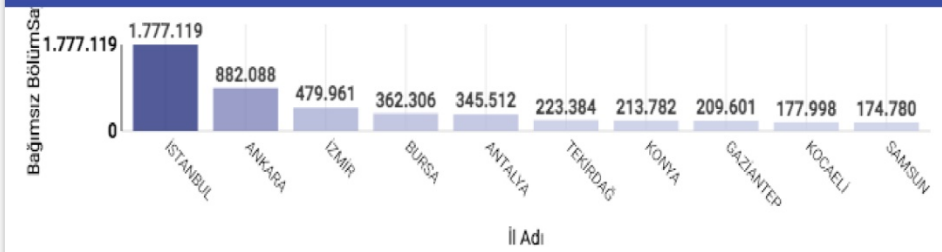
Cities according to satisfaction score


Number of survey responses by date
Stacked Stream Expanded

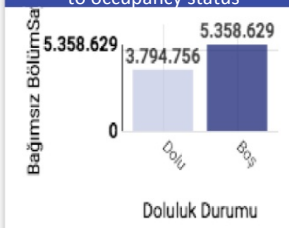
Cities according to unsatisfaction score


Housing Information

Number of independent sections by cities



Independent section according to occupancy status



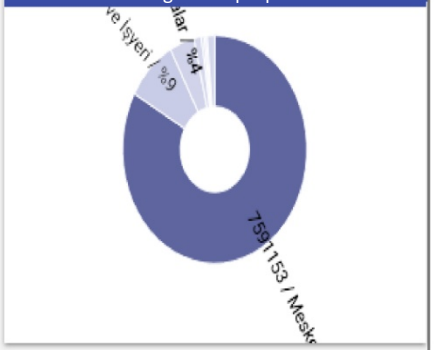
Total number of buildings

2.105.931

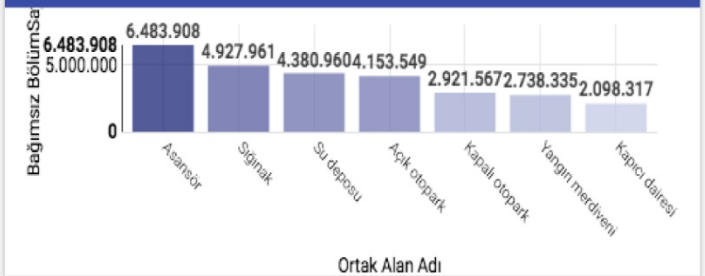
Total number of independent sections

9.153.385

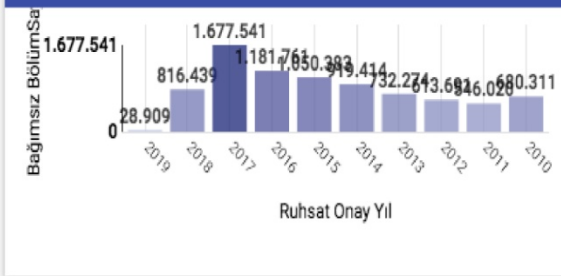
Number of independent sections according to the purpose of use



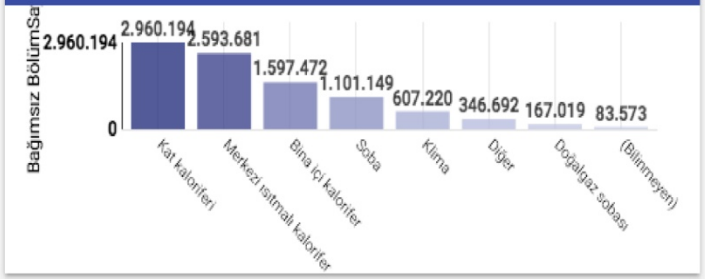
Number of lidependent sections according to common area information



Number of independent sections by building license year

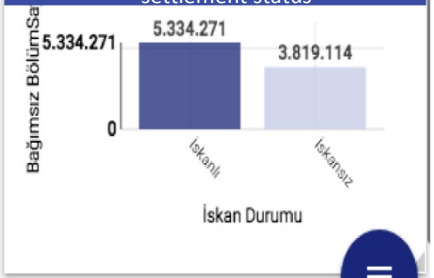


Number of independent sections according to heating system



Number of independent sections by heating fuel type

Number of independent sections by settlement status



BENEFITS

As a result of the digital age, data is growing steadily and quickly

Data sources are multiplying and relationships are growing

Multidimensional analysis of data is needed to ensure that strategic decisions are taken quickly and accurately

In case of need; access to information is expected to be fast, flexible and easy

Data Security = Information Security = Public Security Access to data needs to be as secure and traceable as it is fast

As new data sources are created, their analysis and reporting should be fast.

Sedat BAKICI

Head of IT Department

General Directorate of Land Registry and Cadastre