

# **Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey**

**Umit YILDIZ, Republic of Turkey, Jaap ZEVENBERGEN and Dimo TODOROVSKI, the Netherlands**

**Keywords:** governance, transparency, land governance, land markets, land administration

## **SUMMARY**

Land is a scarce resource, and has a big share in the economic and social life of both developing and developed countries. Efficiently operating land markets are vital in the development of countries. Information unavailability is one of the most crucial differences between land and other markets, which can lead to asymmetrical information among various parties. Land administration systems contain a vast amount of data regarding attributes of land and land markets, and the transparency of these systems control the efficiency of the land markets' operation. A case study from Turkey is presented in this study, exploring the relationship between transparency and efficiency. The transparency level of land administration functions has been increasing in Turkey concurrently with the evolution of its land market. However, the transparency level of value, use and development functions of land administration should be increased in order to improve the market efficiency. For the land tenure function, it is proposed that data kept in information systems should be distinguished as information associated with land, with persons, and spatial data in order to achieve a balance between personal data protection and transparency level. The transparency level of the land tenure information in Turkey should be re-evaluated based on this classification.

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

# Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey

**Umit YILDIZ, Republic of Turkey, Jaap ZEVENBERGEN and Dimo TODOROVSKI, the Netherlands**

## 1. INTRODUCTION

The scarcity as a resource and the big share in the economic and social aspects of life makes the land a crucial issue in both developing and developed countries. The perpetual evolution of the land markets has introduced new forms of complex tools, such as capital market instruments based on real properties, financial instruments based on land rights or backed by collateral in developed countries. In addition to the emergence of these complex tools, the scope of land markets has further expanded due to increased population, urbanisation, and globalisation. Land values have risen rapidly as a result of the enlargement and evolution of markets. Total global land and improvement value in the world was estimated as 228 trillion USD in 2017, with a 5 percent real term increase compared to the previous year (Savills, 2017). With the effect of globalisation, real property has been considered more importantly as an investment tool in a global manner. The global average in real property investments accounts for 32% of the overall investment portfolio (Rogers and Koh, 2017).

Gross domestic product (GDP) is an important economic indicator and land-related sectors have significant shares in GDPs worldwide. Thus, efficiently operating land markets are vital in the overall development of countries. Every transaction taking place in the formal land markets requires registration and storage of information, which are the main tasks of a land administration system.

The link between land administration and land markets has become a matter of opinion since the 2000s. Expanded scope of land markets results in an increased number of involved parties in operations. Digitalisation and user-friendly online systems ease the dissemination of the registered information, which, in turn, causes higher demand to access information. However, such data also contains personal data requiring access restrictions. Increased demand from and involvement of numerous parties in the land market stresses the need to re-evaluate the administration - market relationship in the land sector with a governance point of view.

Good land governance is essential for the protection of rights, in relation to transactions on land rights and complex commodities. Transparency, sharing information and acting in an open manner (Van der Molen and Tuladhar, 2006), is a widely recognised as the core principle of good governance, and the entry point to deal with other good governance principles (Zevenbergen and Paresi, 2009). Even though transparency is crucial from governance point of view, it poses a risk to personal data protection.

A recently established land administration system after 100 years of work and an ever-evolving land market makes Turkey an ideal case scenario to explore the relationship between transparency of land administration and the efficiency of land market. The aim of this study is to provide a benchmark example for countries targeting an efficiently-operating land market and development of land administration system. A model is suggested to control the transparency of the shared data in order to facilitate to solve the dilemma between personal data protection and transparency.

## 2. BACKGROUND

### 2.1 Land Markets and Transparency

The actual subject of land markets is land rights, since land -and also improvements on land- are immovable assets (Koroso, 2011). The activities of a conventional land market consist of buying, selling, developing, renting or securing. In addition to these activities, capital market instruments based on real properties or financial instruments based on land rights or backed by collateral of properties takes place in the daily lives of people. Creating and marketing abstract land rights and complex commodities made successful land markets gain vitality (Wallace and Williamson, 2006). With the effect of the increase in population, urbanisation, and globalisation, the scope of land markets has enlarged. This expansion brought on board a new range of parties and a variety of goods and services involved in markets (Dale and Baldwin, 2000), which makes transparency issues crucial.

Non-transparent nature of land markets can be translated to limited data availability for comparisons between countries. Therefore, OECD statistics about GDP components can be used as indirect indicators of size of the land market in a country. The share of real estate activities and land-related sectors in GDP in the EU can be seen in Figure 1 (OECD, 2018). Land and property-related sectors have significant shares in the economies of both developing and developed members of the EU. The average share of real estate activities (buying and selling, renting and operating activities, appraising and intermediary services) in GDPs is approximately 10 % in the EU (28).

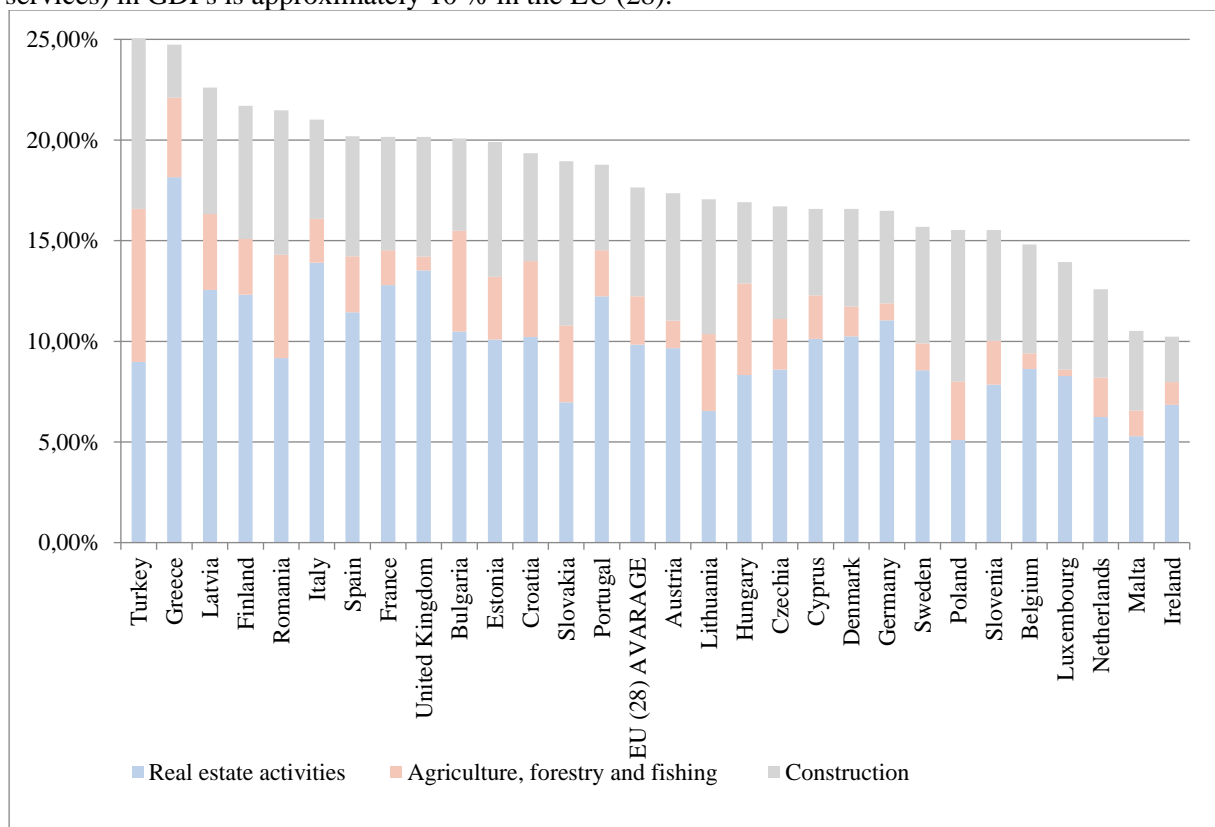


Figure 1 Average Share of Land-Related Sectors in GDPs in the EU and Turkey between 2012 and 2017 (%) (OECD, 2018)

According to Dale and Baldwin (2000), there are three regulatory pillars supporting land markets: land registry and cadastre, valuation, and financial services. They remarked transparency in all matters as one of the requisites for land markets. Wallace and Williamson (2006) suggested a fourth one, named as cognitive capacity, for supporting a complicated set of interrelated activities and outcomes.

Although land is a scarce resource, instruments created during the evolution of land markets are precluding this scarcity. While the need for cognitive capacity is increasing, the need for interoperability is coming into prominence. The evolution of land markets not only requires more organised institutional, administrative and technical capacity but also an increased number of parties involved in transactions. Increasing diversity affects the investment environment. As small amounts of investments can be done with fewer amounts of money thanks to technological developments, e.g. fractional investment tools via blockchain technology (Bennett et al., 2019), a large number of investments can be done globally without restrictions via investment funds based on land. Considering this point of view, it can be concluded that countries with more efficiently operating land markets have a better chance of securing more investment.

Given that the activity level of transactions does not necessarily mean efficiency in operations, a well-functioning land administration does not automatically guarantee an efficient land market (Zevenbergen, 2002). Transparency of land administration functions should be considered as a necessity for the evolution of land markets from rights to complex commodities. A market is considered as efficient when the prices always reflect available information fully (Malkiel and Fama (1970). The price in efficiently operating markets is determined through the activities of knowledgeably acting parties.

## **2.2. Transparency of Land Administration**

Land administration is defined as the processes of recording and disseminating information about the ownership, value, and use of land and its associated resources. Land administration further includes restrictions and responsibilities related to rights, land value, land use, and impacts of development processes (UNECE, 1996).

Functions of a land administration system, land tenure, land value, land use, and land development, can be extracted from the Land Management Paradigm (Enemark, 2004). In order to figure out the relation between transparency of land administration and land markets, all functions are evaluated separately. Due to the close link of land use and development in terms of transparency, two functions are evaluated together.

Definition of the transparency of land administration can be customised as sharing information about ownership, value and use of land and its associated resources among related institutions, right holders and stakeholders -including third parties- and acting on this information in an open manner. The shared information includes both the current situation and legal or administrative decisions about rights, restrictions, and responsibilities. Visibility of information and inferability are two necessary and sufficient conditions of transparency (Michener and Bersch, 2013). Therefore, while the shared information needs to be reasonably complete and accessible for all parties, inferability degree should be evaluated separately according to the capabilities of different groups of parties

### ***2.2.1. Transparency on Land Tenure Function***

Establishment of land registers, accessibility of records, transaction procedures, and the processed information are the essential matters of assuring transparency in land tenure.

Van der Molen (2007) stated that inventory of land tenure already contributes a lot to openness, transparency, and availability of information. Participation and creative solutions for disclosing the process and the results of the inventory activities can increase transparency. Parties can monitor and evaluate the process enhancing the trustworthiness of the adjudication works.

After the inventory, links between land and parties are established via recorded information. Since these links are not fixed, records about land tenure can be defined as living concepts. Therefore, all stakeholders need to get access to these records easily. Publicity, as a fundamental principle of property law, advances openness through the availability of information to provide legal certainty to third parties who might be affected by property rights or seek to acquire them (Berlee, 2018). However, defining a simple category of third parties is not a trivial task. Thus, after recording, the level of transparency on accessing information is varying according to legal systems and administrative regulations of different jurisdictions. Irrespective of the legal and administrative regulations of different jurisdictions, land tenure function contains a great deal of personal data. Therefore, different solutions for particular jurisdictions have been developed in order to respond to the question about how to deal with the protection of personal data and the transparency of land tenure function (Taus, 2017).

Transaction procedures about the hand-over of land rights need to be simple and cost-effective for both state and citizens (Biraro et al., 2015), and the transparency on these procedures is crucial for all market participants.

Data kept in these records with generally accepted names as land registries serve many different purposes. The increased digitisation of the facilities of the land registers showed the importance of the data stored in land registries. Although states have a monopoly over information on land transactions (Berlee, 2018), demand for processed information from various parts of societies is gradually increasing. For instance, real estate indices for different types of properties like residential or commercial are significant for all stakeholders of the land sector for monitoring the land market and figuring out the tendencies of different groups.

### ***2.2.2. Transparency on Land Valuation Function***

Concerning transparency on valuation function, the approaches, used criteria and the results of the valuation activities need to be taken into account. A well-functioning valuation system can lead to higher security of capital market instruments, fair and equitable taxation, fair compensation for expropriation, and better allocation of social aids.

International Valuation Standards Council defines market value as *“the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion”* (IVSC, 2017). Therefore, one of the assumptions of market value based valuation activity is knowledgeable action of the parties. So, parties need to get access to information about legal and physical attributes of properties, and also the current trends and tendencies of the market.

Transparency and appropriate valuation of assets, used as collateral for advanced financial products, can produce social and economic benefits, and reduce the probability of future financial crises.

The most important data source of market value based valuation exercise is market transactions and information on market values. It can be inferred that land tenure function is the main data source needed to make a market value based valuation of registered properties. Data is needed not only for the property in the valuation exercise but also with regards to arm's length transactions of other properties for comparison purposes. Hence, valuation activity requires the transparency of registered data. An important case of link between transparency and quality of valuation activities is the Netherlands. The transparency level of tax valuations of residential properties in the Netherlands was substantially increased by the government in 2013 to reduce the errors in correcting identified ones in a timely way (Munro-Faure and Palmer, 2018). So, it can be said that the valuation activity itself needs to be transparent in order to increase the quality of work.

### ***2.2.3. Transparency on Land Use and Development Functions***

Transparency during preparation, disclosure and implementation phases of land use and development plans are essential for land use and development functions. In addition to these phases, revision and modification of these plans need the same level of transparency in every step of the process.

The objective of land use planning is to determine the use of land (Evans, 2008b). Regulated spatial planning affects tenure rights by legally constraining their land use (UNFAO, 2012). Thus, during the preparation phase of land use and development plans competing interests of different parties should be reconciled by decision-makers (Lee-Jones, 2017). The decision-makers, such as professional planners, elected councilors, officials, and ministers of the central government (Evans, 2008a), involve in these reconciliation procedures. According to the Guidelines on Managing Conflicts of Interest in the Public Sector report published by the Organisation for Economic Co-operation and Development (OECD), supporting transparency and scrutiny is one of the four core principles for public officials to follow when dealing with competing interests (OECD, 2003).

Predictability and understandability are consequences of good land governance. Transparency is a key factor for not only increasing predictability and understandability of land use and development function, but also for reducing corruption and increasing public benefits during planning. The provision of information about land use and development plans in an accessible way is essential for ensuring that members of the public can understand all the phases of the preparation, approval, and implementation of these plans (Lee-Jones, 2017). The community participation and consultation requirements which can be obtained through transparent approaches can act as a counterbalance (Lee-Jones, 2017) in all phases of this function.

It is clear that permitted land use directly affects its value. A permitted land-use change can also generate an unpredictable value increase, especially in urban areas. Hence, the transparency level in the course of rezoning of the current plans should be on the same level with the preparation phase.

### ***2.2.4. Measuring Transparency Level of Land Administration Functions***

Land administration systems have grown in different ways in each country. Even though creating a single framework or common benchmarks to enable comparisons of each system and their functions based on standard measures has been tried by the related organisations, these attempts have not resulted in the aimed consensus yet (Lemmen et al., 2018).

Three different organisations have been calculating the transparency level of different functions of land administration systems, which can provide a conceptual insight and a basis for comparisons between countries

- JLL and LaSalle - Global Real Estate Transparency Index (GRETI) (JLL&LaSalle, 2018)
- World-Wide Web Foundation - Open Data Barometer (WorldWideWebFoundation, 2019).
- World Bank - Doing Business (Quality of Land Administration Index- Transparency of Information) (WorldBank, 2019b),

GRETI is based on a combination of quantitative market data and information gathered through a survey of the global business network of JLL and LaSalle Investment Management. Availability of price data and institutional strengths are some of the indicators GRETI using for measuring transparency (JLL&LaSalle, 2018). Open Data Barometer provides comparative data on 115 different countries. Map data and Land ownership data are two of the 15 key datasets (WorldWideWebFoundation, 2019).

In Doing Business ranking, transparency of information is considered under the quality of land administration index. Transparency of valuation or land use-land development functions of the land administration systems is not considered in the calculations. Although these functions are taken into account in GRETI ratings, some important aspects of a well-functioning land administration system, e.g. geographic coverage or reliability of infrastructure, are missing. In the open data barometer rankings data about land ownership are considered via adopting the

Open Data Charter Principles perspective. Indicators about the quality of the land administration system are not considered in this work. According to the Doing Business 2019 Survey, Quality of Land Administration Index and Transparency of Information in the EU members and Turkey can be seen in Figure 2.

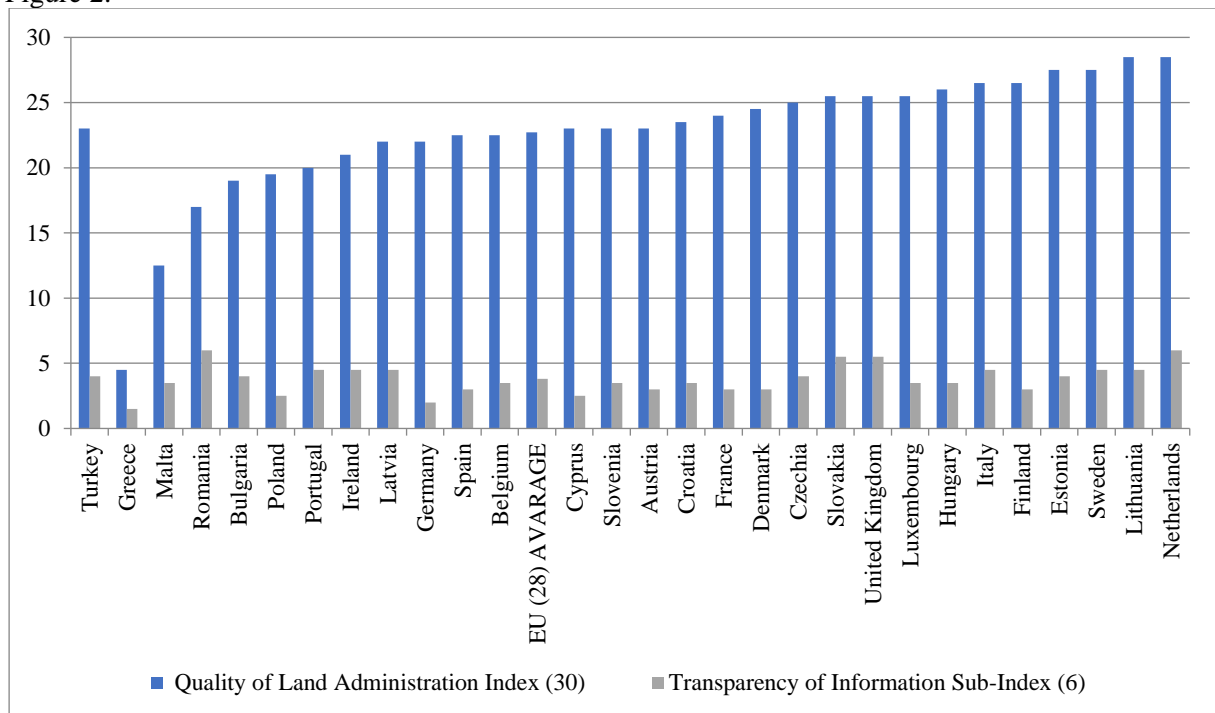


Figure 2 Quality of Land Administration and Transparency of Information in the EU and Turkey (WorldBank, 2019b)

The average score of the Quality of Land Administration Index of the 28 EU member countries is 22.71. The Netherlands and Lithuania have the best quality of land administration systems with 28.5 points, while Greece and Malta have the worst quality with 4.5 and 12.5 points, respectively. The most transparent country according to GRETI is the United Kingdom (UK). Six of the member countries were regarded as highly transparent and 13 of them as transparent, based on the composite scores. Luxemburg, Greece, Slovenia, and Bulgaria are ranked as semi-transparent countries (JLL&LaSalle, 2018). Regarding land ownership data scores published by Open Data Barometer, among the EU member countries, the United Kingdom is on the first floor with 70 points. Sweden and Denmark are following the UK by getting 65 and 60 points respectively (WorldWideWebFoundation, 2019). Open Data Barometer ranks the UK first among the EU member countries in land ownership data scores with 70 points, followed by Sweden and Denmark with 65 and 60 points, respectively.

### **2.3. Land Governance**

International organisations like the agencies of United Nations, European Union and World Bank are developing their own definitions of governance and tools for the measurement and comparison of the governance levels of countries. An important aspect of governance, included in almost every definition, is that governance is a process, which differentiates it from government or management. Participation in decision making, accountability of government, and reconciling competing priorities and interests of different groups are fundamentals of the governance concept (Grover, 2007; Grover and Grover, 2012).

A wide range of parties, such as right holders, banks, intermediaries, local and central governments, valuers, developers, non-governmental organisations, converge their interests on land as a resource. When a stakeholder analysis is done, land administration institutions have a vast number of stakeholders. As governance is characterised by the involvement of various bodies in decision-making processes, it is no coincidence that there is a link between the concepts of governance and land. Good governance in land can be adopted from the general principles of good governance or factors being used for measuring governance levels. Sustainability, efficiency, effectiveness, transparency, consistency, accountability, subsidiarity, participation, civic engagement, equity, fairness, legal security, and rule of law are among such measures (Basnet, 2012). The concept of transparency, as a core principle of good governance, can be applied to different components of land sector at various levels to reduce information uncertainty and information asymmetry among various parties.

## **3. METHODOLOGY**

This paper is based on literature reviews and desktop searches. Data collection comprising desktop research with secondary data sources are used for this study. Semi-structured interviews with relevant staff from Kadaster and the Netherlands Council for Real Estate Assessments were used for making comparisons between a developed member of the EU and the case country.

Expert opinions on land administration in the selected country with more than 15 years working in the land registry and cadastre agency were used for exploring the current situation. Since this study is supported by the Jean Monnet Scholarship Programme in order to help capacity-building activities in Turkey as a candidate country of the EU, comparisons between Turkey and EU members were performed. OECD statistics are used for quantitative analysis. After evaluating gathered information,



suggestions for the case country are made. Informal land market mobility, which consists of opacity in its nature, is left out of the scope of this work.

The selection of Turkey as the case study for this research are due to two main reasons. Firstly, land has an important share in the country's economy, which has the World's 17th-largest nominal GDP (IMF, 2019). Land market's evolution from land rights to complex commodities is still ongoing. Secondly, although it is a large transcontinental country between Asia and Europe with approximately 783.500 sq.km total surface area, full coverage of the land registration system with title registration has been implemented recently. Modernisation projects regarding land administration are still ongoing in the country, while some of them are financed by the World Bank. Therefore, it is possible to understand the nexus between transparency of land administration and land markets from this case study and outputs of this research can be used by countries that are trying to establish a land administration system and a well-functioning land market.

## **4. CASE STUDY: TURKEY CONCLUSIONS**

### **4.1. Land Markets and Transparency**

In this section, after the current status of land markets in Turkey is explained, the relation between transparency of land administration functions and land markets' evolution is explored.

#### ***4.1.1. Facts and figures***

Turkey has an active land market with over two million property sales transactions every year. Establishment of a modern housing finance system started with the Housing Finance System Law (No. 5582) in 2007, and after the entry into force of the new Capital Market Law (No. 6362) in 2012. Outstanding mortgage amount in Turkey was approximately 35 billion USD as of December 2018 (BDDK, 2019), which equals almost 4.5 percent of the GDP. The share of the total mortgage amount in GDP was only 0.2 percent in 2003 (Yalçiner and Coşkun, 2014).

The number of sales has started to increase after 2003 (cf. Figure 3). Completion of almost 25 percent of the systematic inventory works of the whole country between 2004-2010 (Ercan and Öz, 2019) and establishment of a modern-way housing finance system in 2007 (Yildiz and Gunes, 2018) can be argued as the two main reasons for this increase.

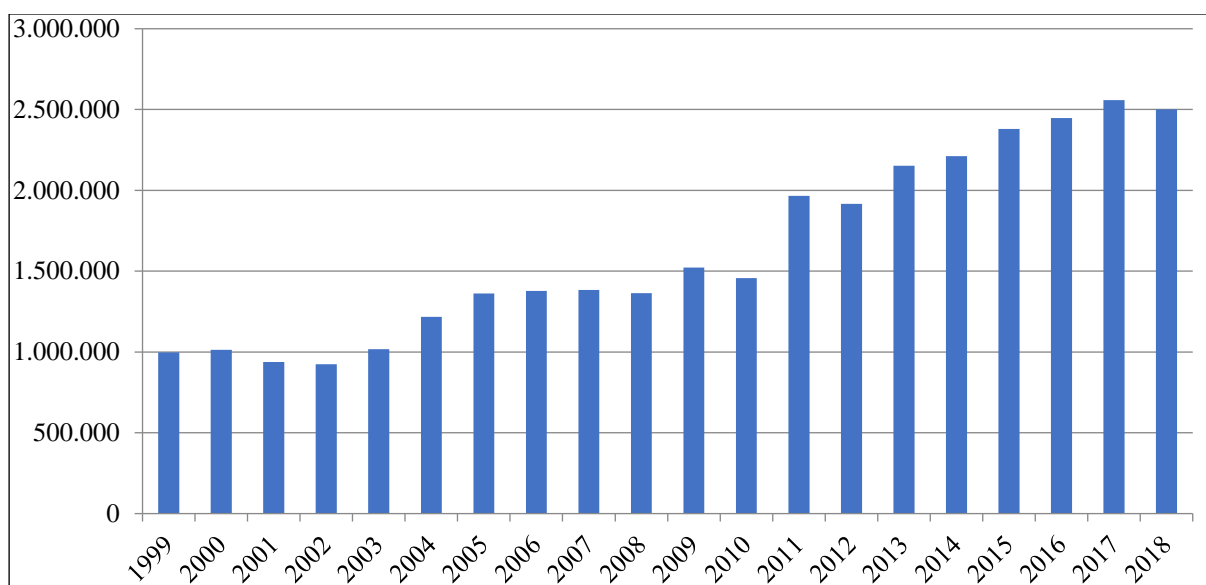


Figure 3 Number of Sales in Turkey (TKGM, 2019c)

Twenty percent of the house sales in Turkey were sales with mortgages in 2018, while this ratio has risen up to 40 percent in 2013 (TURKSTAT, 2019b). Share of mortgaged sales in total sales varies in the country from 45 percent in metropolitan cities to 15 percent in smaller ones (Grover et al., 2019).

Although instruments like mortgaged bonds and annuity bonds were defined in the Civil Code, these tools do not have been put into practice. In addition to the implementations in the housing system, regulations on real estate investment trusts, real estate certificates, real estate investment funds, and secondary market instruments have been brought into force by Capital Market Board of Turkey by the end of the 1990s. As a result of reforms for the EU accession process, some of the limitations for foreign land acquisition were abolished. In order to increase the activeness of land markets by improving the investment environment, regulations about granting Turkish Citizenship via real estate acquisition were made in 2017 (TKGM, 2019b). According to official statistics disclosed by GDLRC, 2843 people from 76 different countries have granted Turkish Citizenship via real estate acquisition from 29 different provinces (TKGM, 2019e).

The average of the share of real estate activities, construction, and agriculture forestry and fishing sectors in GDP between 2012 and 2017, as shown in Figure 1, are 8.98 %, 9.25 %, and 7.60 %, respectively (OECD, 2018). The total share of land-related sectors is covering approximately one-fourth of the economic activities in the country.

#### ***4.1.2. Rising transparency level with the evolution of the land market***

Improvement of land market instruments is culminating in various kinds of consequences, e.g. diversification of the resources for land acquisition, development of sectors like finance, construction, and insurance. However, transparency of land administration functions mentioned in. is a prerequisite for these kinds of instruments' development and implementation phases.

The development of real estate based capital market instruments has started after the 2000s in Turkey. In order to ensure the reliability and traceability of these instruments, the regulation of valuation system, which was needed in applications such as taxation and expropriation until that day, has been added to the agenda. The first step of the regulation of a private valuation system in Turkey is the issuance of two communiqués by the Capital Market Board of Turkey (CMB, 2001). Requirements for being a valuation expert licensed by the Capital Market Board and necessities about the establishment of valuation companies are regulated with these communiqués. The private valuation experts and valuation companies, who became active after these regulations, have begun to take part in banking and mortgage activities. As a result of legal arrangements, private valuation sector has become an important party in Turkey, which getting into the act in a wide spectrum from expropriation to foreign real estate acquisition for citizenship purposes. The number of reports prepared by the members of the association in 2017 and 2018 is 1.16 and 0.87 million, respectively (TDUB, 2019). While 95.36 percent of these reports have been prepared for the banking sector 0.52 percent have been prepared for capital market needs.

One of the biggest parts of valuation activities carried out by the valuation experts and companies is gathering data from public agencies, such as land registry and cadastre and municipalities.. Accessing the land registry and cadastre data was a big challenge for a valuer in the beginning of the development of the valuation sector due to the interpretation of the article 1020 of the Civil Code. Valuers generally were asked to submit contracts and license certificates to land registry officials, and there was no standard procedure for this inspection across the country. Then, the push for lifting restrictions on access to land registry and cadastre data had started to get results. The establishment of the professional association of valuers in 2009 made the process more efficient, and a protocol between the two organisations was signed in 2013 (Yildiz and Gunes, 2018). Licensed valuation experts and companies have been authorized to access the electronic registers and supplementary documents via web-services with the support of this protocol. Furthermore, land registry agency gains an important financial resource from the official fees paid per query made by valuation experts. Accessing the construction files, consisting of architectural plans, building permits, and all correspondences, stored at local authorities has become much easier and via a standardized procedure over the last 17 years.

The transparency level of land administration functions in Turkey has been increasing gradually with the press of sector participants. According to the latest published presidential decree, the approaches, data used in valuations and results of the valuation reports will be kept in the valuation data center which will be maintained by GDLRC integrated with land registry and cadastre information system (PoROT, 2019).

## **4.2. Transparency of Land Administration Functions in Turkey**

### ***4.2.1. Transparency on Land Tenure Function in Turkey***

The establishment of land registries in Turkey covering the whole country under state guarantee could have been accomplished considerably with the results of approximately 100 years of work. Systematic inventory works have been carried out under different laws and legal and technical regulations from 1911 until today. The main purpose of cadastre is always defined as the establishment of land registries under state guarantee which was mentioned in the Civil Code (TurkishCivilCode, 2001). The technical and legal aspects of cadastre have been amended from time to time to ensure the alignment of the administrative, technical and economic capacity with the purpose set in the Civil Code. Public disclosures of the results of the adjudication works are one of the common implementations among these regulations. While these disclosures which enable people exploring all the results with cadastral maps

and lists, used to be made on paper format, they started to be announced via institutional web site since the end of 2018 (TKGM, 2019a).

Publicity is one of the main principles of the Civil Code and according to article 1020, the land registry records are open to and accessible by any person who holds a persuasive interest (TurkishCivilCode, 2001). Transparency of the land registry in Turkey has always been evaluated under this article. Since the information about the land registry and cadastre is needed for numerous purposes by different parties, transparency limits have always been pushed by them. Technological developments have also affected the transparency level of land information data in Turkey. A total number of, 43.3 million people, out of approximately 82 million are using e-government applications in Turkey. Querying land ownership data is the 7th most used service in the Turkish e-government (RepublicOfTurkey, 2019) with approximately 6 million queries per month (Öz and Ekmel Hatipoglu, 2019). Information kept in Land Registry and Cadastre Information System is being shared with stakeholders like ministries and local governments via web services. The monthly average use of such services is 66 million (Öz and Ekmel Hatipoglu, 2019). Regulation about Sharing Land Registry and Cadastre Data issued in 2015 (Official\_Gazette, 2015) covers the procedures and principles regarding sharing the data produced or archived by the General Directorate of Land Registry and Cadastre with 'persons' and 'institutions' as softcopy or hardcopy documents. While some institutions like banks are used to pay an official fee per query, ministries and government organisations can access information at no cost. Some mechanism for registering and monitoring logs of the queries are defined in the regulations as well. According to Article 15 of the Land Registry Regulation, all logs about electronic queries have to be kept for at least two years. On the other hand, parcel shapes with coordinates and some descriptive information like registered areas are freely accessible via the internet for everyone in the World. This information can be downloaded without any charge in various formats (TKGM, 2019d). Besides, density maps and cluster maps for land sales and individual unit sales for a particular area and a year which directly ensures monitoring land market activities can be accessed via this system. Table 1 shows the summary of information kept in Turkish land registration system.

<b>Information Type</b>	<b>Shared Through Parcel Query Application</b>	<b>Shared Through e-government(citizens) and web-services (stakeholders)</b>
<b>Identifiers</b> (Province /District/Neighbourhood Names, Number of Sheet, Block and Parcel Number)	X	X
<b>Land Area</b> (Calculated and Registered )	X	X
<b>Spatial Information</b> (Parcel Geometry, Adjacent Parcels Geometry, Orthophotes/Satellite Images, Transaction Analyses)	X	X
<b>Condominium Information</b> (Individual Unit Identifiers, Individual Unit Type, Land Share)		X
<b>Architectural Plans for Condominiums</b> (Individual Unit Geometry, Individual Unit Size, Location, Individual Unit Attributes (Number of Rooms, etc)		Partly
<b>Coordinates of Corner Points</b> (Temporary Coordinates, Exact Coordinates)	X	X
<b>Property Type</b> (Registered)	X	X

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

<b>Annotations for rights associated with a person</b> (E.g. Rental contracts, Preemption right, Expropriation decision, Family dwelling annotation, Construction agreements in return for land share, Promise for sale)		X
<b>Court/execution decisions</b>		X
<b>Ownership</b> (Owners' name, surname, Owners' father's name, Owners' identification number, Deed and complementary documents (Archive), Reason for acquisition (sales, exchange, expropriation, cadastre, etc.), Date of Acquisition, Declared Transaction Value)		X
<b>Easements and Incumbrances</b> (Type of Easement, Independent and Continuous Rights (Superficies, Construction Right, Spring Right etc.), Rights Associated with person (e.g. Usufruct, right of habitation), Rights Associated with land (e.g. Right of way) , Date and document number of easement , Type of Incumbrance, Date and document number of incumbrance )		X
<b>Liens</b> ( Type of Lien (hypothec, mortgaged bond, annuity bond), Name of the right holder, Amount of lien, Date and document number of lien )		X
<b>Special Explanations</b> (Requested by owner/public authorities)		X

Table 1 Summary of Information Kept and Shared by GDLRC in Turkey

The regulation about the procedures and principles to be followed in the provision of public services came into force in Turkey in 2009 (Official\_Gazette, 2009). GDLRC has adopted public service standards that contain information about transaction procedures, required documents and maximum completion period for each service. These standards have been disclosed in both local and central offices and in institutional websites (TKGM, 2009).

Within the framework of the transparency concept mentioned in previous sections, the transparency level of land tenure function is considerably high in Turkey. Nevertheless, some problems regarding the quality of data like the registered prices do not reflect actual prices, are limiting the possible usage of the data, especially for economic purposes. On the other hand, due to informal development on housing (Grover et al., 2019) and general construction sector in the country, building records could not be completely reflected in the registers of GDLRC. Tracing the history of transactions can only be ensured by investigating ledgers in local offices.

#### ***4.2.2. Transparency on Valuation Function in Turkey***

In terms of the valuation function of land administration in Turkey, there is not a holistic structure. Valuation approaches and authorised experts are varying according to taxation, expropriation or capital market regulations. The existence of private valuation sector and an association of appraisers, which was regulated as a public occupational organisation, can be evaluated as positive contributors for transparency level of this function in the country. The International Valuation Standards, which endorses transparency, are adopted by the national union in Turkey as the basis for the valuations carried out (TDUB, 2019).

The Central Bank of Turkey is publishing house price indexes based on valuation reports prepared for mortgage loans within the context of the housing finance system. Association of Appraisers of Turkey

is releasing valuation sector analysis reports. Valuation reports prepared for capital market regulations have to be published via the website of the related organisation and public disclosure platform. On one hand, these disclosures have been made in pdf format which makes queries harder, on the other hand, valuations made by private valuers for other purposes like housing finance do not need to be published. Although the results of valuation for taxation purposes need to be announced properly, they are not reflecting the current market situation (Yildiz and Gunes, 2018). The valuation process for expropriation cases neither carried out by public institutions nor by courts can be evaluated as "transparent".

#### ***4.2.3. Transparency on Land Use and Development Functions in Turkey***

While the central government is responsible for the preparation of all national and regional plans, local governments are responsible for preparation of municipal master plans and zoning plans in Turkey (OECD, 2017). All elements in the planning hierarchy from national development plans to zoning plans include some public disclosure approaches in related laws and regulations.

Land use and development plans must be public in Turkey according to Article 8 of the 'Zoning Law' (Nr. 3194). Public announcement and appeal procedures during the preparation and implementation phases of the plans are identified in the law. All zoning plans, revisions, and the results of the implementation works are obliged to be announced electronically according to the aforementioned law, as well. However, due to the fact that the authority for introducing and implementing zoning plans in Turkey is in more than one institution, this obligation generally has not been fulfilled. For instance, a municipality has the same authority as the Ministry of Environment and Urbanisation, The Privatisation Administration or the Housing Development Administration in terms of preparation and implementation or revision of zoning plans in a particular area. Besides, other effects like causing conflicts and precluding holistic approaches due to this legal pluralism, transparency of land use and development functions are affected. Since permitted land use directly affects the value and land markets, the value increases resulted by development plans and their revisions are put on the agenda in the 10th Development Plan (Ministry\_of\_Development, 2013) as well. According to the Article 949 of the aforementioned plan "*Value increases resulted by development plans and their revisions will be assessed by objective valuation criteria and the public will be ensured to benefit more from this increase to provide for basic social infrastructure and spaces of common use*" (Ministry\_of\_Development, 2013).

#### ***4.2.4. Transparency level of Land Administration Functions***

Turkey is on the 39th rank with 76.58 points in 2019 according to the Doing Business- Registering Property rankings of 2019 Turkey (WorldBank, 2019a). Concerning with "Quality of Land Administration Index" of the registering property ranking, Turkey gets 23 points out of 30. Regarding transparency of information sub-indicator, Turkey is getting 4 points out of 6 for 2019 while it was 2.5 in 2017.

Turkey, with 2.8 composite score, is on the 41st position out of 100 countries and evaluated as "semi-transparent level" in the Global Real Estate Transparency Index-2018 (JLL&LaSalle, 2018). In "regulatory and legal" sub-index which land registry and land planning regulations are taken into account as sub-indicators, Turkey gets 2.2 points and ranked on the 35th level.

In terms of "open data barometer" scores of 2016, Turkey gets 65 points out of 100 for map data and 60 points for land ownership data (WorldWideWebFoundation, 2018) while map data score for 2013 was 15 and land ownership data score was only 5.

### 4.3. Land Governance in Turkey

According to the results of the World Wide Governance Indicators for 2017, Turkey is on the lowest position among the 28 EU Member Countries (WGI, 2017). The average rank of 6 indicators of Turkey is 40.32. The lowest-ranked indicator for Turkey is Political Stability and Absence of Violence/Terrorism with only 7.14 while the highest one is Regulatory Quality with 57.21(WGI, 2017).

As mentioned, the high standard of land governance is directly related to the quality of governance in a country. The Republic of Turkey was established in 1923 after an independence war. Land related regulations were one of the first regulations which the new Republic tried to apply. Introducing a modern cadastre law in 1925 and adoption of Turkish Civil Code from Switzerland in 1926 which includes major regulations about land rights and land registers can be given as examples to these regulations. Therefore, it can be stated that regulatory quality on land issues are the strongest pillar as mentioned about Worldwide Governance Indicators above.

Land governance can be evaluated as a spatial dimension of governance (Williamson et al., 2009). The inevitability of concepts of governance and land's coming together in Turkey can be explained by giving an example from land registry and cadastre agency in the country. General Directorate of Land Registry and Cadastre (GDLRC) is a public institution that is monopolizing establishing, keeping and maintaining records related to land defined in the Turkish Civil Code. Three institutional strategic plans have been prepared and published by GDLRC since 2010 for four years periods. When the stakeholder analyses explored in these three strategic plans, it can be seen that 7 different ministries, 25 different government agencies, universities, local governments, real estate agencies, valuation experts, professional chambers, courts, and law societies were determined as stakeholders (TKGM, 2018). According to the press releases made by Director General of the Institution, 20 million people have been served in a year (TKGM, 2015). The population of the country is approximately 82 million in 2018 (TURKSTAT, 2019a). When these numbers are taken into consideration it can be said that land governance in the country is vital for increasing the overall governance level of it.

## 5. DISCUSSION

The general governance level in Turkey needs to be improved in the wake of the EU membership process, considering the definitions and information presented in Section 2.1, and due to the explanations made in Section 4.1. As regulatory quality contributed to the improvement of land administration functions in the country, increasing land governance via transparency can leverage the governance level. The definitions of the transparency of land administration functions made in Section 2.2 and the current situation in Turkey explained in Section 4.2 are summarised in Table 2.

	<b>Phases of land administration functions about transparency</b>	<b>Transparency level in Turkey (High - Medium - Low)</b>	<b>Explanations</b>
<b>Land Tenure function</b>	Inventory of land tenure	High	The systematic registration has almost been completed.

	Publicity of registers (Accessibility of records and information)	Medium	The data model needs to be improved, and a balance between personal data protection and publicity needs to be established.
	Transaction procedures	High	Regulated and well implemented.
	Processed information derived from land registries	Medium	Processed information is not sufficient due to data accuracy and standardisation.
<b>Land Value function</b>	Valuation approaches	Medium	Regulations and standards exist. However, implementation level can be classified as "medium".
	Used Criteria	Low	Not transparent as regulated.
	Results of the valuation activity	Low	Transparent only for those who conduct the valuation and who demand it.
<b>Land Use-Development Function</b>	The preparation phase of land use and development plans	Low	Low participation in this phase causes non-transparency.
	Disclosure and implementation phase	Medium	Weak implementation of legislation.
	Revision and modification phase	Low	Legal pluralism is the main problem behind transparency.

Table 2 Summary of definitions of land administration functions and the current situation in Turkey

Turkey's scores in transparency related indexes are almost at the average of the EU members, as shown in Figure 1. However, in order to improve the current situation presented in Table 2, further steps need to be taken.

Land markets operating at national level have their own characteristics. Greece and Italy have the biggest share of real estate activities in GDPs. (c.f. Figure 1). However, Greece has the worst quality of land administration with the least transparency of information in the EU according to Doing Business-Registering Property Indexes. Share of the real estate activities in the Netherlands' GDP, with the highest quality of land administration index score with fully transparent information in Doing Business Index, is almost at the lowest tier in the EU. Nevertheless, anyone can reach data and analyses about real property in a wide spectrum from the housing market to commercial properties and agricultural or rural lands thanks to the transparency level of the system in the Netherlands. For instance, by investigating the report The Dutch Property Market in Focus Facts and Figures in 2017 prepared by Dutch Association of Real Estate Agents and Valuers, number of available houses for sale and transaction prices, the differences between actual and asking prices, private investors' tendencies on housing market, changes in rental prices, and realised average profits from selling houses can be accessed (NVM, 2019).



The total amount of real estate activities in GDP per capita for the Netherlands in 2018 is almost 3300 USD, whereas this value is approximately 950 US Dollars in Bulgaria (IMF, 2019). Thus, differences between GDP per capita among EU members and also Turkey are constraining comparisons in this way. Reliable information about commodities can serve as building blocks for resilient markets (Michener and Bersch, 2013), and acting as a party in a market like the Netherlands', which has eliminated asymmetrical information between different parties through information availability, can be evaluated as less risky.

Land markets have a major place in the economies of all EU member states. However, there is not a relationship between the ratio of land-related markets in the economy and the transparency of land administration systems due to the unique structure of the land markets. The activeness of a land market may depend on many reasons. An extreme example is money laundering. Land related investments are often a preferred destination for illegal money laundering operations (JLL&LaSalle, 2018; Molina, 2018). Activeness either can be a consequence of such kind of operations or any other similar ones. However, the key concept for land markets to be accessible and traceable by all segments of society is efficiency. The efficiency of land markets requires access to information about attributes affecting the value of land and its associates. What is important for the market is the value, which can be defined as the sum of the contributions of attributes of the land. Although land markets largely operate outside the *acquis* (Grover, 2006) of the EU, the efficiency of land markets is vital for the accession process of Turkey due to the need for the free market economy.

Hood and Heald (2006) state that the optimal level of transparency can be identified as a result of trade-off works between transparency and other governance principles. Privacy or personal data protection is the biggest complexity behind the fully transparent land tenure function of a country's land administration system and cannot be left to the initiatives of the individual government officials. Transparency should not be considered as opening all public registers without restrictions. Land data can be stripped of personal information (Cadasta, 2019).

In order to ensure the balance between personal data protection and transparency in land tenure function in Turkey, the first step should be distinguishing data in the information systems as shown in Figure 4.

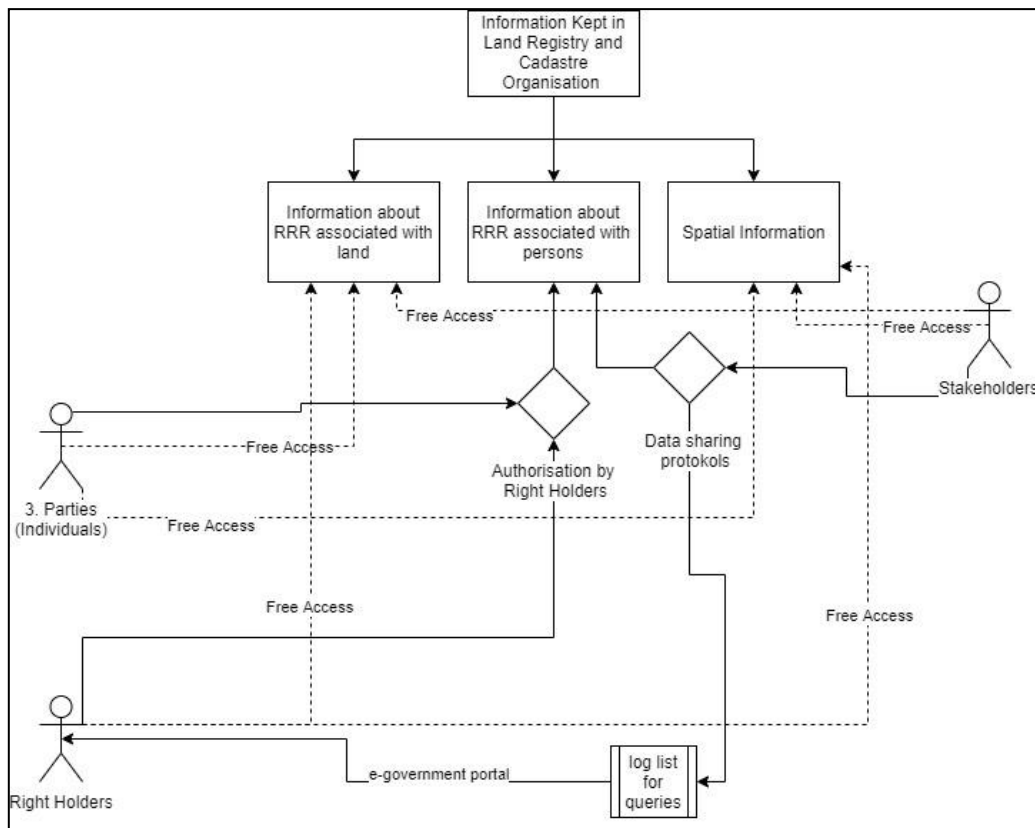


Figure 41 Suggested Model for Transparency of Land Registry and Cadastre Data in Turkey (RRR stands for Rights, Restrictions and Responsibilities)

Right holders and legal representatives have the right to access data kept in information systems of GDLRC at the moment. Stakeholders who have signed data sharing protocols with GDLRC can also access all data, as well. All parties including right holders, representatives, third parties, and all stakeholders should have a right to freely access spatial data and information about rights, restrictions, responsibilities (RRR) associated with land. On the other hand, in order to ensure personal data protection, third parties who want to access information about RRR associated with persons need to be authorised by right holders. Although, millions of queries are made by stakeholders in a month via web-services, as explained in Subsection 4.2.1, right holders do not have systematic knowledge about who is inquiring about their information containing personal data. As e-government in Turkey has a huge amount of users, this portal can be used for giving information to right holders about who has inquired their registers and when. Thus malicious reach to personal data can be controlled by people themselves. Legislation about the protection of personal data which can be evaluated a step towards harmonizing Turkey legislation with the EU regulations came into force in 2016 in Turkey (Karaduman, 2019). Protective mechanism and also complaining authorities are defined in this law. The model suggested above can not only help individuals to use these mechanisms easily but also increase inferability of the presented information.

Land valuation which serves as a bridge between land markets, financial sector, and state need other land administration functions as data resources as explained in subsection 4.2.2. Transparency of this function can be ensured through reciprocal data-sharing regulations. Data sharing with different actors is not only enriching the information source in terms of data diversity but also data quality and accuracy

can be increased. To give an example for increasing accuracy, erroneous numbering for individual units in architectural plans which are considered as spatial plans for condominium units in Turkey could have only been noticed during valuation works for housing finance needs after the 2000s in Turkey.

Legislative regulations about accessing information about land use and development plans are made properly in Turkey as explored in subsection 4.2.3. However, there is still opacity in this field in the country. Legal pluralism on the planning authority is the main reason for this non-transparency which directly affects the level of land governance in Turkey. On the other hand, the transparency level during the preparation phase of the mentioned plans needs to be improved for ensuring participation and accountability.

The story about the valuation sector's coming to existence and pushing to increase the transparency level of land registry and cadastre data in Turkey, explained in subsection 4.3.2 can be evaluated as a demonstration that land market's evolution needs transparent land administration. Land markets need risk mitigation tools and the best way of avoiding risks is rising estimation capacity by understanding the current situation.

## **6. CONCLUSIONS AND RECCOMENDATIONS**

The relation between transparency of land administration and land markets is explored in this study by presenting a case study from Turkey. It is suggested that land tenure function in Turkey needs some limits on transparency for personal data protection, but other functions should be fully transparent for the aim of an efficient land market. It is emphasized that transparency of land administration systems and the improvement of land markets are reciprocatively supportive concepts. On one hand, improving transparency level has an important influence on land markets in terms of increasing efficiency, on the other hand, the improvement of land markets opens a road for a more transparent land administration system.

The key to a fully transparent land sector lies in the principle that private sector and NGOs should be as transparent as government agencies. An up-to-date land registry can be used as an information and data sharing environment for this purpose. The establishment works for the valuation data center which will be integrated into the land registry and cadastre information system in Turkey can be thought of as a model for such kind of mutual transparency improvement which can be used even by developed countries.

Transparency of land administration can also help parties to increase data quality and accuracy in registers. Registering market value or actual prices during transactions can be obtained via transparent land tenure and valuation functions of land administration.

Turkey's leapfrog up the charts in transparency indexes in the coming years will be able to realised only by increasing governance level of a country the advantages of being an official candidate for the EU can be a strong incentive to improve standards of governance for the country (Grover and Grover, 2011). As the land markets cover an important share of the economy in Turkey, improving land governance through well-designed transparency level of land administration for all participants can contribute to increasing governance in the country.

Transparency is a key factor for efficient land markets. In order to consider the transparency of land administration as a panacea for land markets, other good governance principles have to be taken into account, as well.

## Acknowledgments

This research was supported by the Jean Monnet Scholarship Programme for Turkey. The authors appreciate the time and contributions provided by all the people during the research activities. Lastly, we thank the anonymous reviewers for their valuable and insightful comments.

## REFEERNCES

Basnet, S., 2012. Lease as an alternative approach for access to land for infrastructure development. University of Twente Faculty of Geo-Information and Earth Observation (ITC).

BDDK. 2019. 'Monthly Banking Sector Data (Basic Analysis)', <https://www.bddk.org.tr/BultenAylik/en>, Accessed 15-02. <https://www.bddk.org.tr/BultenAylik/en>.

Bennett, R.M., Pickering, M., Sargent, J., 2019. Transformations, transitions, or tall tales? A global review of the uptake and impact of NoSQL, blockchain, and big data analytics on the land administration sector. *Land Use Policy* 83, 435-448.

Berlee, A., 2018. Access to personal data in public land registers: Balancing publicity of property rights with the rights to privacy and data protection. *Boom Juridisch*.

Biraro, M., Bennett, R.M., Lemmen, C., 2015. Accelerated Land Administration Updates, *Advances in Responsible Land Administration*. CRC Press.

Cadasta. 2019. 'Land Debate on Open Data and Land Governance', Cadasta Foundation and Land Portal Foundation, Accessed 02-03. <https://cadasta.org/land-debate-on-open-data-and-land-governance/>.

CMB, 2001. Communiqués about Real Estate Valuation Capital Market Board of Turkey, <http://www.spk.gov.tr/Sayfa/AltSayfa/419>.

Dale, P., Baldwin, R., 2000. Lessons learnt from the emerging land markets in Central and Eastern Europe, *International conference proceedings, FIG working week 2000*, pp. 21-26.

Enemark, S., 2004. Building land information policies, *Proceedings of Special Forum on Building Land Information Policies in the Americas*. Aguascalientes, Mexico. Citeseer, p. 2004.

Ercan, O., Öz, M.Y., 2019. Public Private Partnership Applications And Cost Recovery In Cadastre Establishment, Turkey Experience, *World Bank Annual Land and Poverty Conference*, Washington D.C. .

Evans, A.W., 2008a. *Economics and land use planning*. Wiley Online Library.

Evans, A.W., 2008b. *Economics, real estate and the supply of land*. John Wiley & Sons.

Grover, R., 2006. European Union accession and land tenure data in Central and Eastern Europe. *FAO*.

Grover, R., 2007. *Good governance in land tenure and administration*. Food & Agriculture Organisation of the UN (FAO).

Grover, R., Grover, C., 2011. Modelling indicators of land governance, *FIG Working Week*.

Grover, R., Grover, C., 2012. Valuation and land governance. *Journal of Property Investment & Finance* 30, 88-98.

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

Grover, R., Walacik, M., Buzu, O., Gunes, T., Raskovic, M., Yildiz, U., 2019. Barriers to the use of property taxation in municipal finance. *Journal of Financial Management of Property and Construction*.

Hood, C., Heald, D., 2006. *Transparency: The key to better governance?* Oxford University Press for The British Academy.

IMF. 2019. 'World Economic and Financial Surveys - World Economic Outlook Database', International Monetary Fund, Accessed 15-05. <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>.

IVSC, 2017. *International Valuation Standards, Bases of Value*. International Valuation Standards Council, United Kingdom.

JLL&LaSalle, 2018. *Global Real Estate Transparency Index 2018, Transparency: Data, Disclosure and Disruption* Global Research.

Karaduman, O., 2019. *The New Personal Data Protection Law in Turkey*, <https://gun.av.tr/wp-content/uploads/the-new-personal-data-protection-law-in-turkey.pdf>.

Koroso, N.H., 2011. *Assessment of urban land market from good governance perspectives*. University of Twente Faculty of Geo-Information and Earth Observation (ITC).

Lee-Jones, K., 2017. *Good Practices in Preventing Corruption in Planning and Zoning at the Local Level*. Transparency International, [https://www.transparency.org/whatwedo/answer/good\\_practices\\_in\\_preventing\\_corruption\\_in\\_planning\\_and\\_zoning\\_at\\_the\\_local](https://www.transparency.org/whatwedo/answer/good_practices_in_preventing_corruption_in_planning_and_zoning_at_the_local).

Lemmen, C., van Oosterom, P., Kalantari, M., 2018. *Towards a new working item proposal for Edition II of LADM, 7th International FIG Workshop on the Land Administration Domain Model 2018*.

Malkiel, B.G., Fama, E.F., 1970. *Efficient capital markets: A review of theory and empirical work*. *The Journal of Finance* 25, 383-417.

Michener, G., Bersch, K., 2013. *Identifying transparency*. *Information Polity* 18, 233-242.

Ministry\_of\_Development, 2013. *10th Development Plan of Turkey (2014-2018)*, in: *Development*, M.o. (Ed.).

Molina, F., 2018. *Prevention of the Use of The Financial System For The Purposes of Money Laundering or Terrorist Financing*. ELRA- European Land Registry Association.

Munro-Faure, P., Palmer, D., 2018. *Valuing land tenure rights. Governance of Tenure Technical Guide (FAO) eng no. 11*.

NVM. 2019. 'The Dutch property market', Accessed 01-15. <https://www.nvm.nl/overnvm/about/marketinformation>.

OECD, 2003. *Managing Conflict of Interest in the Public Service Organisation for Economic Co-operation and Development* Paris.

OECD, 2017. *The Governance of Land Use: Country Fact Sheet Turkey*. OECD.

OECD. 2018. 'Gross domestic product (GDP)', OECD, Accessed 15-01. <https://stats.oecd.org/index.aspx?queryid=60702>.

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

Official\_Gazette, 2009. Regulation on the Procedures and Principles to be Followed in the Provision of Public Services, Official Gazette, Turkey, <http://www.resmigazete.gov.tr/eskiler/2009/07/20090731-1.htm>.

Official\_Gazette, 2015. Regulation about Sharing Land Registry and Cadastre Data. General Directorate of Land Registry and Cadastre, <http://www.resmigazete.gov.tr/eskiler/2015/03/20150307-6.htm>.

Öz, M., Ekmel Hatipoglu, C., 2019. Spatial Property System as a Basic Indicator of Geospatial Maturity in Turkey

PoROT, 2019. Presidential Decree, in: Presidency\_of\_the\_Republic\_of\_Turkey (Ed.), <http://www.resmigazete.gov.tr/eskiler/2019/02/20190205-7.pdf>.

RepublicOfTurkey. 2019. 'The most used services in [www.turkiye.gov.tr](http://www.turkiye.gov.tr) (e-government)', Accessed. <https://www.turkiye.gov.tr/cok-kullanilan-hizmetler>.

Rogers, D., Koh, S.Y., 2017. The globalisation of real estate: the politics and practice of foreign real estate investment. International Journal of Housing Policy 17, 1-14.

Savills, M.R.E. 2017. 'How Much Is The World Worth?', Accessed 15-05. <http://www.mcguire.com/blog/2017/04/savills-world-worth/>.

Taus, M., 2017. Protection of Personal Data In the Context of Registration of the Real Rights ELRA - European Land Registry Association.

TDUB, 2019. Valuation Sector Analysis - 2018 [https://www.tdub.org.tr/Images/Uploads/TGBM%20rapor%202018\\_4%20CEYREK\(12AY\)%20revize%20v5\\_AKT\\_01\\_03\\_2019.pdf](https://www.tdub.org.tr/Images/Uploads/TGBM%20rapor%202018_4%20CEYREK(12AY)%20revize%20v5_AKT_01_03_2019.pdf).

TKGM, 2009. Kamu Hizmet Standartları. General Directorate of Land Registry and Cadastre, <https://www.tkgm.gov.tr/tr/sayfa/kamu-hizmet-standartlari>.

TKGM, 2015. "Hatay' da Tapu Heyecanı". General Directorate of Land Registry and Cadastre, <https://www.tkgm.gov.tr/tr/icerik/hatayda-tapu-heyecani>.

TKGM, 2018. 2019-2023 Strategic Plan. General Directorate of Land Registry and Cadastre, [https://www.tkgm.gov.tr/sites/default/files/icerik/ekleri/strateji\\_bsk\\_baski.pdf](https://www.tkgm.gov.tr/sites/default/files/icerik/ekleri/strateji_bsk_baski.pdf).

TKGM. 2019a. 'Aski İlanı Sorgulama', Accessed 15-02. <http://e-ilan.tkgm.gov.tr/#/>.

TKGM, 2019b. <https://www.tkgm.gov.tr/tr/icerik/turk-vatandasligi-kanununun-uygulanmasina-iliskin-yonetmelik-hk-20195-sayili-genelge>, in: General Directorate of Land Registry and Cadastre, T. (Ed.).

TKGM. 2019c. 'Land Registry Statistics', General Directorate of Land Registry and Cadastre, Accessed 15-02. <http://uygulamalar.tkgm.gov.tr/ybs/ybs/Tabuistatistik/iller/Tabuistatistik.htm>.

TKGM. 2019d. 'Parcel Inquiry Application', General Directorate of Land Registry and Cadastre, Accessed 15-01. <https://parselsorgu.tkgm.gov.tr/>.

TKGM. 2019e. 'Statistics about granting citizenship via real estate acquisition', Ministry of Environment and Urbanisation, General Directorate of Land Registry and Cadastre, Turkey, Accessed 15-08. <http://www.yourkeyturkey.gov.tr/vatandaslik-istatistik.php>.

TurkishCivilCode, 2001. Turkish Civil Code. <https://www.mevzuat.gov.tr/MevzuatMetin/1.5.4721.pdf>, Turkish Official Newspaper 08/12/2001.

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

TURKSTAT. 2019a. 'Main Statistics - Population and Demography', Accessed 15-03. <http://web.turkstat.gov.tr/UstMenu.do?metod=temelist>.

TURKSTAT. 2019b. 'Main Statistics: Housing Sales Statistics', Accessed 15-03. <http://web.turkstat.gov.tr/UstMenu.do?metod=temelist>.

UNECE, 1996. United Nations Economic Commission for Europe Land Administration Guidelines: with special reference to countries in transition. United Nations Pubns.

UNFAO, 2012. Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. United Nations Food and Agriculture Organisation, Rome.

Van der Molen, P., 2007. Some measures to improve transparency in land administration, Unknown.

Van der Molen, P., Tuladhar, A., 2006. Corruption and land administration, FIG 2006: Proceedings of the conference: Shaping the change, XXIII FIG Congress, Munich, Germany, 8-13 October 2006. Frederiksberg: International Federation of Surveyors (FIG), 2006. ISBN 87-90907-52-3. 16 p. International Federation of Surveyors (FIG).

Wallace, J., Williamson, I., 2006. Building land markets. Land use policy 23, 123-135.

WGI. 2017. 'Worldwide Governance Indicators', the World Bank, Accessed 05/03. <http://info.worldbank.org/governance/wgi/index.aspx#doc>.

Williamson, I., Enemark, S., Wallace, J., Rajabifard, A., 2009. Land Administration for Sustainable Development.

WorldBank, 2019a. Doing Business 2019 Training For Reform Economy Profile: Turkey.

WorldBank. 2019b. 'Registering Property Methodology', Accessed 15-05. <https://www.doingbusiness.org/en/methodology/registering-property>.

WorldWideWebFoundation, 2018. Open Data Barometer Leaders Edition From Promise to Progress, <https://opendatabarometer.org/doc/leadersEdition/ODB-leadersEdition-Report.pdf>.

WorldWideWebFoundation. 2019. 'The Open Data Barometer', Accessed 2019. [https://opendatabarometer.org/?\\_year=2017&indicator=ODB](https://opendatabarometer.org/?_year=2017&indicator=ODB).

Yalçiner, K., Coşkun, Y., 2014. İpotekli Konut Finansmanı Sisteminin Gelişme Koşulları: Türkiye İçin Ampirik Bir Analiz. İktisat İşletme ve Finans 29, 27-68.

Yildiz, Ü., Gunes, T., 2018. Data: The Unhidden Mystery of Turkish Property Valuation System, International Federation of Surveyors. FIG, Istanbul.

Zevenbergen, J., 2002. Systems of land registration aspects and effects. Publications on Geodesy, 51.

Zevenbergen, J., Paresi, C., 2009. Transparency in land administration and pro poor land tools: powerpoint.

## **BIOGRAPHICAL NOTES**

**Umit Yildiz, MSc**, graduated from Yildiz Technical University, Geomatics Engineering Department in 2005. He got his MSc Degree from Ankara University Real Estate Development Department. After being awarded by an EU funded program named Jean Monnet as a scholar, he studied at the University of Twente, Faculty of ITC as a visiting scientist in 2019. He has been working at the General Directorate

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey (10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020

of Land Registry and Cadastre (GDLRC) since 2002. He has worked as a land registry and cadastre expert in Land Registry and Cadastre Modernisation Project which was funded by the World Bank, he has also worked in Afghanistan on the preparation of Institutional Development Plan for Land Administration. He is currently working at Property Valuation Department in GDLRC.

**Prof. Jaap Zevenbergen** obtained master degrees in geodetic engineering from Delft University of Technology and in law from Leiden University. In 2002 he received a PhD from Delft University of Technology on the topic of systems of land registration. He is currently professor land administration and management at the University of Twente, Faculty ITC (Geoinformation Science and Earth Observation), Enschede, the Netherlands. He sits among others on the Board of Cadasta Foundation, Washington DC, USA.

**Dr. Dimo Todorovski**, is Portfolio Holder Education of PGM department, M-GEO Masters coordinator and lecturer within land administration specialization at Faculty of Geo-Information Science and Earth Observation (ITC), the University of Twente, in Enschede, the Netherlands. Dimo is FIG Commission 2 Chair Working Group 2.1: Developing Academic Networks (term 2019-2022). Holds a PhD from University of Twente and he obtained MSc degree in Geo-Information Management at ITC, in 2006. Over the 19 years of professional engagement (1992-2011) in the Agency for Real Estate Cadastre in the Republic of Macedonia, last 12 years were on different managerial positions. His research interest focuses on land administration and land governance, and on land administration in post-conflict contexts.

## CONTACTS

Umit Yildiz  
General Directorate of Land Registry and Cadastre  
Property Valuation Department  
Ankara, Turkey  
Tel: +90 312 551 46 81  
Mobile : +90 541 388 35 30  
[uyildiz@tkgm.gov.tr](mailto:uyildiz@tkgm.gov.tr)  
[umityildiz1981@gmail.com](mailto:umityildiz1981@gmail.com)  
web site : [www.tkgm.gov.tr](http://www.tkgm.gov.tr)

Jaap Zevenbergen and Dimo Todorovski  
University of Twente  
Faculty for Geo-Information Sciences and Earth Observation – ITC  
Department of Urban and Region Planning and Geo-Information Management  
P.O. Box 217  
7500 AE Enschede,  
THE NETHERLANDS  
Tel: +31 (0)53 4874444  
Fax: +31 (0)53 4874575  
[j.a.zevenbergen@utwente.nl](mailto:j.a.zevenbergen@utwente.nl); [d.todorovski@utwente.nl](mailto:d.todorovski@utwente.nl);  
web site: [www.itc.nl](http://www.itc.nl)

---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey  
(10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020  
Smart surveyors for land and water management  
Amsterdam, the Netherlands, 10–14 May 2020



---

Exploring the Relation Between Transparency of Land Administration and Land Markets: Case Study of Turkey  
(10333)

Umit Yildiz (Turkey), Jaap Zevenbergen and Dimo Todorovski (Netherlands)

FIG Working Week 2020

Smart surveyors for land and water management

Amsterdam, the Netherlands, 10–14 May 2020