



Research Article / Araştırma Makalesi

DETERMINATION OF PROBLEMS AND FINDING OF SOLUTION APPROACHES ON FOUNDATIONAL REAL ESTATE FROM OTTOMAN TIME

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ABSTRACT

In Turkey, property-based land management practices are being carried out intensively by many public institutions and private sector organizations. General Directorate of Foundations (GDF) is one of such public institutions. The purpose of this study is to identify existing problems in the management of foundation properties and develop concrete legal, technical and institutional proposals for solving these problems. Case study method was used in the study. The study sample consisted of 68 professional employees who work at GDF. A questionnaire, a semi-structured interview form and existing land management implementations were used to collect data in the study. The questionnaire was applied to 68 professional employees selected as the sample group. A semi-structured interview form was developed by considering the results and suggestions of the questionnaire. In the light of the conclusions and suggestions of the questionnaire and the interview, 31 sample practices were selected to deliver the current situation within the context of land management practices to the reader by explaining and interpreting such practices. At the end of the study, data obtained from the questionnaire, the interview and sample practices were blended, and solution approaches were developed for sustainable management of foundation properties.

Keywords: Fused, foundation, land management, validity and reliability analysis.

MAZBUT VAKIFLARA AİT GAYRİMENKULLERİN ARAZİ YÖNETİMİ İÇİNDE PROBLEMLERİNİ BELİRLEME VE ÇÖZÜM YAKLAŞIMLARI GELİŞTİRME

ÖZ

Türkiye'de taşınmaz tabanlı arazi yönetim uygulamaları, birçok kamu kurum kuruluşu ile özel sektör tarafından son yıllarda yoğun olarak sürdürülmektedir. Başbakanlığa bağlı Vakıflar Genel Müdürlüğü (VGM) bu gibi kamu kuruluşlarından biridir. Bu çalışmanın amacı, mazbut vakıflara ait olan vakıf taşınmazlarının yönetiminde var olan problemleri belirlemek ve bunlar çözümü için yasal, teknik ve kurumsal çözüm yaklaşımı olabilecek önerileri geliştirmektir. Araştırmada durum çalışması yöntemi kullanılmıştır. Araştırmada örneklem grubu olarak adlandırılan kitle VGM'de görev yapan ve alanında uzman nitelikli olduğu değerlendirilen 68 kişiden oluşmaktadır. Araştırmada öncelikli olarak geliştirilen anket formu, daha sonra yarı yapılandırılmış mülakat formu ve mevcut arazi yönetimi uygulamaları veri toplamak için veri toplama aracı olarak ayrı ayrı kullanılmıştır. Anket, örneklem grubu olarak seçilen 68 kişiye uygulanmıştır. Yarı yapılandırılmış mülakat formu, anket sonuçları göz önünde bulundurularak geliştirilmiş ve örneklem grubundan seçilen bazı kişilere uygulanmıştır. Anket ve mülakat sonuçları ve önerileri ışığında, 31 örnek uygulama mevcut sorunları yansıtması adına seçilmiştir. Çalışmanın sonunda anket, mülakat ve örnek uygulamalardan elde edilen veri birleştirilmiş ve mazbut vakıflara ait vakıf taşınmazlarının sürdürülebilir yönetimi için çözüm yaklaşımları geliştirilmiştir.

Anahtar Sözcükler: Mazbut, vakıf, arazi yönetimi, geçerlik ve güvenilirlik analizi.

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1. INTRODUCTION

Foundation (“Vakıf” in Turkish) is an Arabic word and defined in the dictionary of Turkish Language Institution as "property, money formally allocated under certain terms and conditions and handed down by a community or a person so that a service is also provided in the future"[1]. Foundation became very important, especially in the Ottoman Empire. Upon the establishment of the Republic of Turkey, this legacy has been kept alive. It is known that there were about 200,000 foundations in the Ottoman Empire, known as a civilization of foundations, and that almost all services, excluding the state's internal affairs, security and palace affairs, were conducted through foundations [2]. Foundation is one of the institutions which played an extremely important role within Turkish cultural system particularly during the Ottoman period. Foundations lived in the golden age during the Ottoman Empire period and also became widespread with the growth of the Ottoman Empire [3, 4, 5, 6]. Upon transition from the Ottoman Empire to the Republic of Turkey, all business and operations of the foundations were delivered to GDF management and control by Foundations Law on. Today, all transactions of properties owned by fused foundations and GDF are carried out by GDF under Law 5737 on Foundations [7]. Fulfillment of charities and requirements of Foundations is performed using the income derived from foundation properties. These properties are included in various land management practices according to the region in which they are located, and those which can be utilized are utilized by property development methods.

In addition to provisions of the legislation to which foundation properties are subject to in terms of their qualities, there are issues of land management practices in cadastral works, zoning practices, property development works, property registration processes, and expropriation processes, applications regarding properties with foundation entry thereon, information system applications and legal processes. It is possible to classify these issues into technical issues, legal issues and institutional issues. These issues should be absolutely resolved for targets represented in GDF's strategic objectives for 2010-2014 [3]. In this context, the aim of this study was to identify existing problems in management of foundation properties and present concrete solutions to these problems.

2. MATERIAL AND METHOD

Case study method was used in the research. This method has been referred to in various ways as sample case, case studies, etc. in the literature. Case study method is a method that allows in-depth investigation of an event [8, 9]. This method allows in-depth analysis of a sample group, event or case by focusing on the particulars and complexity of the case [10, 11]. It emphasizes that this method will help researchers obtain in-depth knowledge in a short time [11]. Thus, this method allows use of a combination of various quantitative and qualitative data collection tools, including questionnaire, interview and observation [10, 11]. The validity of data is increased by supporting of data by different types of data collection tools, which thereby contributes to the validity of the research with data triangulation [8]. Indeed, the aim of this study was to perform a detailed examination of views and opinions regarding the current situation of foundation properties of the individuals working at GDF so it was decided to use case study method. The research process was determined in the following manner in (Figure 1).

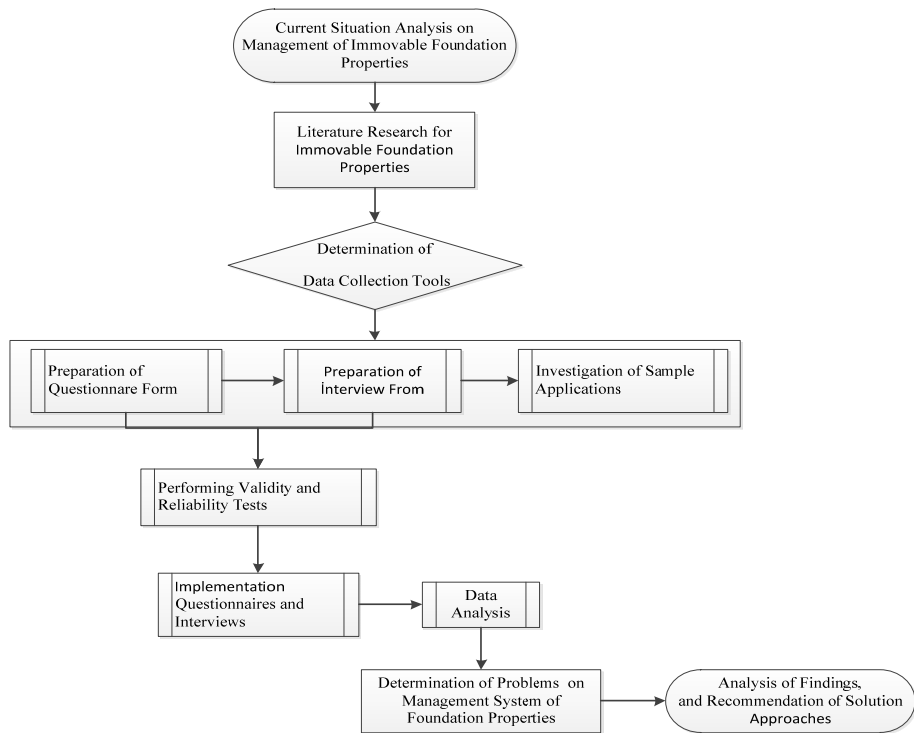


Figure 1. Process of the research

3. DATA COLLECTION TOOLS

In this study, various data collection techniques have been utilized within the scope of case study method. A questionnaire, a semi-structured interview and sample practice data were utilized as data collection tools in the study. Details of data collection tools used in the study are presented in Table 1. below.

Table 1. Data collection tools and sample group's information [3]

Data collection tool	Aim of data collection	Sample group	Number of group
Questionnaire	Determination of the current situation on Foundation Properties administered and represented by GDF	Geomatic Engineer	26
		Architect	11
		Civil Engineer	4
		City Planner	3
		Technician	3
		Department Manager	7
Semi-structured interview	Determination of the Experts' opinions and thoughts about Foundation Properties administered and represented by GDF	Others	14
		Geomatics Engineer	10

3.1. Questionnaire Method and Preparation of Online Questionnaire

Valid and reliable data collection tools are required to reach particularly large sample groups in a short time. One of these important tools is the questionnaire. The questionnaire is a means of collecting data used to reach many people and gather information in a short time [10, 11]. Using this data collection tool, information on the subject of investigation is gathered from a large sample group by directly asking people to provide information. The current situation can be revealed by reaching many people in a short time using questionnaires [11]. They can be used in many different ways according to their intended purpose, dimensions and appearance [8].

In this study, it was thought that it would be more effective to conduct an online survey which will be applied to the sample group, which is the target population working in various positions in various provinces within DGF throughout Turkey. Considering that the Internet is the fastest tool adopted by people, it will soon be a necessity for researchers, statisticians to benefit from Internet technology. Preparation, printing and publishing processes involved in web-based surveys can be done easily on any computer with internet connection and a browser without any page edit program being required. Online surveys are easy to fill in and deliver, and avoid the problem of transferring printed data to a computer [12]. Online surveys offer many advantages to researchers, including dynamic design and screen design flexibility, savings in costs, access to numerous samples, and access to data in a short time, elimination of random error in data [13-18].

In order to identify the current situation on "Foundation Properties" owned by GDF, firstly, a literature review of studies on "Foundation Properties" and similar research were was made. As a result of such review, it was decided which parts to include in the questionnaire. In this process, survey engineers, civil engineers, architects, city planners working for DGF and directors or supervisors of branches incorporating these occupational groups and qualified personnel conducting property activities were consulted. Following all these interviews and the literature review, it was determined which sections to include in the questionnaire by considering the opinions of a total of 6 experts, 3 of whom were from Karadeniz Technical University (KTU), Department of Survey Engineering and Urban and Regional Planning and 3 of whom were from GDF.

It was decided that the questionnaire will consist of 8 parts. First part of the questionnaire includes questions related to personal details; second part includes 1 question regarding the current property activities; third part includes 7 questions under the heading of personal and institutional development; fourth part includes 7 questions related to property registration system and geographic information systems; fifth part includes 5 questions on land registry and cadastre applications; sixth part includes 7 questions related to property development; seventh part includes 7 questions on properties in dispute and eighth part includes 4 questions related to zoning plan practices.

Open-ended, itemized, categorized questions prepared for rating, which require ranking were included in the questionnaire. In the first part of the questionnaire, 4 questions were included to reveal personal details of the selected sample group.

In the second part of the questionnaire, 1 question was included to reveal existing property activities conducted by the selected sample group in their respective unit. This question was prepared according to classification method. By this question, it was intended to reveal the current situation related to property activities conducted in respective units of the sample group.

In the third part of the questionnaire, 7 questions were included to reveal personal and organizational development of the selected sample group. By the questions, it was intended to reveal the sample group's university education details, in-house training activities they have joined, methods to access information, how they professionally develop themselves, and their opinions on how in-house educational activities should be organized.

In the fourth part of the questionnaire, 8 questions were included to assess property registration system and geographic information systems the selected sample group conduct in

their respective units. All of these questions were prepared according to classification method. The questions allowed access to information related to inter-unit operation of the sample group and to what extent legislation, property registration system, (geographic) information systems satisfy current needs, to what extent geographic information systems are used and where they stand in e-government.

In the fifth part of the questionnaire, 5 questions were included to reveal the selected sample group's activities conducted in their respective units, their experiences and problems during their operations at land registry and cadastre offices. By the questions, it was intended to reveal the sample group's property cadastre operations, investigations carried out by them on title deeds of properties with foundation entry thereon, their problems at land registry and cadastre directorates and their suggestions for solving them.

In the sixth part of the questionnaire, 7 questions were included to reveal the current and desired state with regard to the selected sample group's property development activities carried out in their units. By the questions, it was intended to reveal challenges faced by the sample group during valuation of properties, how alternative valuations have to be done, the relationship of minimum property tax value with market value, study of minimum property tax value, the state of foundation properties which haven't been valued, and to what extent they are close to market value.

In the seventh part of the questionnaire, 8 questions related to proceedings of foundation properties in the case of the selected sample group's activities conducted in their units. By the questions, it was intended to reveal the sample group's opinions on expert reports, case information and documents, pursuit of lawsuits in proceedings of properties in dispute, establishment of alternative expropriation commissions, the reasons why foundation properties have become the subject of lawsuits, and suggested alternative solutions to properties in dispute.

In the eighth part of the questionnaire, 4 questions were included to reveal zoning implementation methods conducted by the selected sample group in their units, their problems and suggestions for sustainable zoning practices. By the questions, it was intended to reveal application of Article 18 and objections raised, evaluation of objections, application methods for zoning plans, and also create new suggestions for solving problems in zoning practices.

In addition, 1 further question was included at the end of the questionnaire to reveal other problems related to property-based activities conducted by the sample group in their units, which were not included in initial parts of the questionnaire [3].

3.2. Reliability and Validity Study of the Questionnaire

Validity and reliability analysis of the questionnaire will reveal to what extent the data obtained at the end of the survey can be used. Validity is the feasibility of measuring a quality without confusing it with other qualities [11],[19-22]. In other words, validity is a term used to describe to what extent the findings obtained cover the subject. The most important point on validity in surveys is that the questionnaire ensures content validity [11]. Content validity is also referred to as scope validity. What is important in content validity is that a questionnaire prepared serves the purpose of its preparation [23, 24], and whether the questions in the questionnaire fits the purposes of the study [11].

Internal validity of the questionnaire developed in this study was ensured by getting expert opinion. Indeed, it indicates that one of the most important factors in improving the internal validity of a questionnaire is to consult experts [11]. Required work was done to adapt survey questions to suit the purpose of the study using expert opinions. The final version of the questionnaire was obtained by removing some of the questions found to be incompatible with the purpose of the study and taking account of the expert group's suggestions on the design and layout of the questionnaire.

Reliability is the stability between independent measurements of the same thing. In other words, it is the fact that something one wants to measure gives the same results for each measurement and is free from random error [19, 20, 22]. Another method used to determine the overall reliability of a questionnaire is to calculate Cronbach's alpha coefficient. Cronbach's alpha reliability coefficient is mainly used when there are no dichotomous items and when items are weighted or items are scored in multiple answer categories [20]. Cronbach's alpha coefficient was calculated after open-ended questions and ranking questions were removed from the questionnaire. For this, the data from the survey was first entered in statistical analysis program and then Cronbach's alpha coefficient was calculated. Cronbach's alpha reliability coefficient takes values between 0 and 1 [11, 20, 21]. As a result of the statistical analyses, Cronbach's alpha coefficient calculated for the questionnaire was 0.838 seen in Table .

Table 2. Cronbach Alpha [3]

Reliability Statistics

Cronbach's Alpha	N of Items
,838	71

Possible range of alpha coefficients and accordingly, the reliability of the scale are given below. Accordingly;

- If $0.00 \leq \alpha < 0.40$, the scale is not reliable,
- If $0.40 \leq \alpha < 0.60$, the scale has low reliability,
- If $0.60 \leq \alpha < 0.80$, the scale is quite reliable,
- If $0.80 \leq \alpha < 1.00$, the scale is highly reliable.

Indeed, an alpha coefficient being between 0.80 and 1 demonstrates that the questionnaire is highly reliable [21, 25]. Thus, it was demonstrated that the items of the questionnaire are both valid and statistically reliable.

3.3. Implementation of the Questionnaire Prepared and Data Analysis

Development, implementation and analysis processes of the questionnaire are shown in the following figure. In this way, after the sample group had access to the questionnaire and the target participation rate was ensured, all the data were evaluated to be analyzed. Column and pie charts as well as tables which include frequency and percentage values were used to present qualitative data obtained from the study. Preparation of questionnaire form and its implementation to group is seen below in (Figure 2).

3.4. Interview Method

An interview is a data collection tool used to obtain information about people's feelings thoughts, perspectives, beliefs and perceptions about a subject [9, 11]. However, interviews allow direct access to individuals' opinions and thoughts [26-29]. Data which cannot be obtained by other methods can be obtained by interviews. There are many ways to design and structure interviews. Interviews are divided into 3 by their degree of structure as structured, unstructured and semi-structured [8, 11, 30].

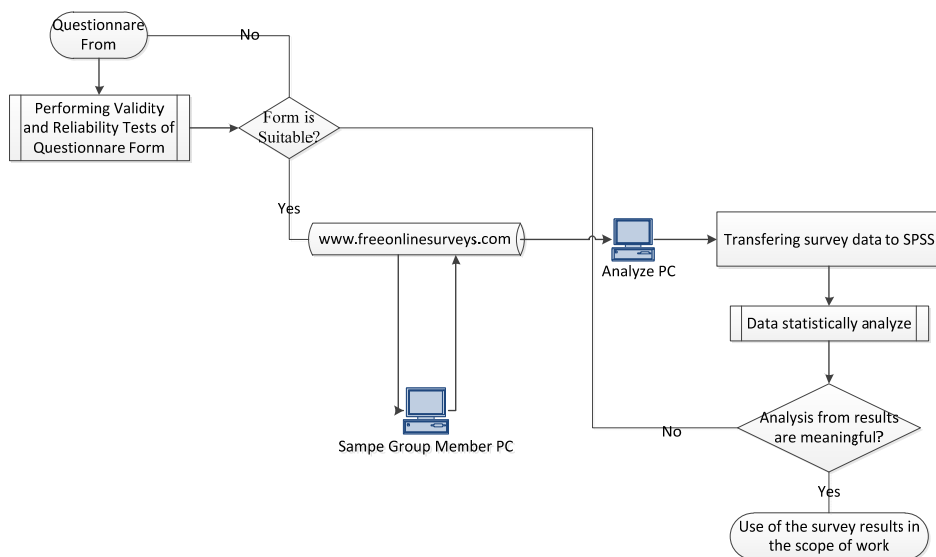


Figure 2. Process of Questionnaire Form

The structured interview is a type of interview in which the interviewer organizes interview questions and answers in advance, reads them to interviewees during the interview and marks the answers, revealing similarities, differences and contradictions between emerging opinions [8, 11]. The semi-structured interview is a type of interview in which the interviewer organizes interview questions in advance, however, some changes can be made in interview questions during the process [30, 31]. The unstructured interview is a means of data collection in which the interviewer does not organize interview questions in advance and which is mostly based on discussion and discovery [8, 11].

The aim of this study was to identify opinions and thoughts of survey engineers working at district offices of Directorate General of Foundations on the basis of land management of "Foundation Properties" owned or managed by Directorate General of Foundations so it was decided to use semi-structured interview questions. Semi-structured interview questions were directed to each interviewee. Interviews were performed with a total of 10 survey engineers with knowledge on property-based activities. Before the interview, the interviewees were told that their identities would be kept confidential in order to encourage them to easily express their opinions. Individuals who participated in the interviews were encoded using letters (A, B, C, O).

3.5. Preparation of Interview Questions

The interviewees were asked a total of 17 open-ended questions, including 2 under the heading of powers and responsibilities in current work items conducted on the basis of properties within GDF, 4 under the heading of property registration system and geographic information systems, 5 under the heading of land registry and cadastre practices, 3 under the heading of property development activities, 1 under the heading of proceedings and legislation, 1 under the heading of zoning practices, and 1 under the heading of investigation of general problems regarding properties. All land management activities are seen in table 3 both used in questionnaire form and also used in semi-structured interview from.

During the semi-structured interview, the interviewees were asked 2 questions under the heading of powers and responsibilities in current work items within GDF. By these questions, it was intended to reveal the interviewees' opinions on which activities should be undertaken by which professional disciplines in the case of property based operations conducted within GDF, the problems in workflows and the solutions to these problems, who conducts work in the units and competence of technical staff in the units.

During the semi-structured interview, the interviewees were asked 4 questions about implementations of property registration system and geographic information systems. By these questions, the interviewees' opinions and suggestions about functioning between senior and lower units, legislation, and adequacy of property registration system as well as geographic information system were identified.

During the semi-structured interview, the interviewees were asked 5 questions about land registry and cadastre practices. By these questions, inter-agency coordination during cadastral work, problems in cadastral work, problems of Land Registry Offices, current status and problems of Land Registry and Cadastre Information System (TAKBIS) in the sense of e-government and Foundation Information Systems were revealed.

Table 3. Chi-square test data on current land implementations activities [5]

No	Implementation	General Evaluation			Evaluations according to Geomatics Engineers		
		Chi-square	P	Comment	Chi-square	P	Comment
1	Determination foundation property on the ground	36.302	<0.05	Effective	9.846	<0.05	Effective
2	registration the foundation's properties to foundation records	32.348	<0.05	Effective	1.385	>0.05	Ineffective
3	Forming foundation property file	40.241	<0.05	Effective	5.538	<0.05	Effective
4	Cadastral Activities	26.915	<0.05	Effective	9.846	<0.05	Effective
5	Allotment	36.678	<0.05	Effective	9.846	<0.05	Effective
6	merging	40.105	<0.05	Effective	12.862	<0.05	Effective
7	Application	29.689	<0.05	Effective	3.846	>0.05	Ineffective
8	Voluntary land acquisition	36.891	<0.05	Effective	9.846	<0.05	Effective
9	Acquisition of cadastre bases	22.435	<0.05	Effective	3.846	>0.05	Ineffective
10	Coordinate transformation	32.472	<0.05	Effective	3.846	>0.05	Ineffective
11	Digitization	29.484	<0.05	Effective	2.462	>0.05	Ineffective
12	Zoning applications	11.820	>0.05	Ineffective	3.846	>0.05	Ineffective
13	Voluntary Method based on Law numbered 3194 article 15 and 16	27.587	<0.05	Effective	5.538	<0.05	Effective
14	Land Readjustment based on Law numbered 3194 article 18	17.413	<0.05	Effective	2.462	>0.05	Ineffective
15	Zoning applications based Law numbered 2981 article 10/c	14.612	<0.05	Effective	2.462	>0.05	Ineffective
16	Requests for zoning plan change	20.291	<0.05	Effective	3.846	>0.05	Ineffective
17	Building License and Occupancy Permit	8.361	>0.05	Ineffective	3.846	>0.05	Ineffective
18	Land registry applications	16.934	<0.05	Effective	0.615	>0.05	Ineffective
19	Forming Base Map for foundation properties	11.329	>0.05	Ineffective	3.846	>0.05	Ineffective
20	Administration Foundations Forestry	7.387	>0.05	Ineffective	22.154	<0.05	Effective
21	Acquiring money to be deleted foundation comment on title deeds	18.870	<0.05	Effective	0.615	>0.05	Ineffective

Continuation of Table 3. Chi-square test data on current land implementations activities [5]

No	Implementation	General Evaluation			Evaluations according to Geomatics Engineers		
		Chi-square	P	Comment	Chi-square	P	Comment
22	Preparing Commission Decision based on properties	10.057	>0.05	Ineffective	2.462	>0.05	Ineffective
23	Preparing expert report	18.491	<0.05	Effective	12.462	<0.05	Effective
24	Allocation of charity properties	12.571	>0.05	Ineffective	12.462	<0.05	Effective
25	Build Operate and Transfer Model	7.485	>0.05	Ineffective	2.462	>0.05	Ineffective
26	Build Operate and Transfer Model for historical properties	7.250	>0.05	Ineffective	0.000	>0.05	Ineffective
27	Repair Operate and Transfer Model	6.667	>0.05	Ineffective	0.000	>0.05	Ineffective
28	Evaluating the property with foundation's Money	7.524	>0.05	Ineffective	0.615	>0.05	Ineffective
29	Evaluating with sales	16.164	>0.05	Ineffective	5.538	<0.05	Effective
30	Evaluating with rents	3.018	>0.05	Ineffective	0.154	>0.05	Ineffective
31	Expropriation Studies	13.209	<0.05	Effective	5.538	<0.05	Effective
32	Expropriation from foundations	22.240	<0.05	Effective	7.538	<0.05	Effective
33	Expropriation by foundations	18.324	<0.05	Effective	3.846	>0.05	Ineffective
34	Expropriation based on cultural properties	14.216	<0.05	Effective	0.154	>0.05	Ineffective
35	(Geo) Information Systems Applications	38.621	<0.05	Effective	7.538	<0.05	Effective
36	Infoanalystpro (CAD) Applications	41.555	<0.05	Effective	7.538	<0.05	Effective
37	Web-GIS Applications	41.799	<0.05	Effective	9.846	<0.05	Effective
38	Applications on Management System of Foundation Property	17.717	<0.05	Effective	0.000	>0.05	Ineffective
39	Properties operations for foundations comment	24.134	<0.05	Effective	0.154	>0.05	Ineffective
40	Bidding process based on State Bidding Law numbered 2886	3.815	>0.05	Ineffective	0.615	>0.05	Ineffective
41	Bidding process based on Public Procurement Law numbered 4734	14.637	<0.05	Effective	12.463	<0.05	Effective
42	Administration of Foundations' Cultural Heritage	6.310	<0.05	Effective	15.385	<0.05	Effective
43	Detection of properties whether Cultural Heritage or not	17.783	<0.05	Effective	9.846	<0.05	Effective
44	Forming Approximate cost for foundations' buildings	26.502	<0.05	Effective	22.154	<0.05	Effective
45	project acquisition for both cultural heritage and new construction	32.074	<0.05	Effective	22.154	<0.05	Effective

Continuation of Table 3. Chi-square test data on current land implementations activities [5]

46	Repairs and controls for new constructions	32.886	<0.05	Effective	22.154	<0.05	Effective
47	Repairing Foundations' cultural properties	30.764	<0.05	Effective	18.615	<0.05	Effective
48	Controlling Allocated cultural heritage properties	14.593	<0.05	Effective	12.462	<0.05	Effective

During the semi-structured interview, the interviewees were asked 3 questions about property development work. By these questions, deficiencies in determinations of current market rates and precedent properties, determinations of minimum tax value were assessed and problems and suggested solutions to these problems were identified.

During the semi-structured interview, the interviewees were asked 1 question about legal processes and legislation. By this question, proceedings, expert selection, adequacy of expert reports, current problems and opinions on solutions were identified.

During the semi-structured interview, the interviewees were asked 1 question about zoning practices. By this question, problems originating from enforcement agency and suggested solutions were identified.

3.6. Validity Study of Interview Questions

Validity is the feasibility of measuring a property without confusing it with other properties [11],[19-22]. Regardless of how an interview is carried out, first content validity should be ensured [11]. In this study, content validity on whether the semi-structured interview questions developed fit the purpose of the research was investigated. At this point, the interview questions prepared were submitted to 3 experts from KTU Department of Survey Engineering and City and Regional Planning for their analysis in terms of fitness for purpose of this study. In this way, some changes were made in the interview questions and 2 questions found to be unfit for purpose of the study were removed from the interview questions. An engineer, an architect and an expert from Trabzon Regional Directorate of Foundations were asked to analyze the interview questions in terms of readability and comprehensibility, and the final version of interview questions was obtained after re-organizing them in line with shortcomings identified. A pilot practice of interview questions was performed with two engineers in order to avoid problems that may arise in actual practice.

Data check by interviewees has been suggested as another means to increase internal validity of interview questions [11]. In this study, interviewees' confirmation was ensured by sending the data obtained from semi-structured interviews to them after such data was documented. In this way, contribution to increasing the validity of the research was made.

3.7. Sample Data for Land Management Practice

Another data collection tool used in the study was sample practice data. Workflow diagrams in land management practices of properties owned or managed by GDF were examined and assessed on legal and technical aspects. While selecting samples, attention was paid to selecting samples containing various subjects intended to be studied particularly in terms of the results of the questionnaire and the interview based on their subject matter seen in table 4.

Table 4. Highlighted problems in selected sample applications

The number of samples	Deficiencies, Problems									
	Title-deed	Cadastr	Zoning plan	Expropriation information system	Valuation	Legislation	Coordination	Court	Expertise	Process
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
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29										
30										
31										

4. DATA ANALYSIS

4.1. Analysis of survey data

In many cases, the results obtained from samples turn out to be different from results expected according to the rules of probability. Mostly, it is a concern whether observed frequencies are different from expected frequencies to a large extent. Chi-square (χ^2) distribution is important since it is applicable to both parametric and non-parametric tests. χ^2 statistics is usually used to test to what extent a data set fits a theoretical distribution [32-34].

- *Chi-Square Test*

Suppose that a sample set with n number of elements is selected from a main set consisting of an infinite number of elements. After standardization of the elements of the sample set, it is divided into (k) number of classes according to the equation:

$$k = \sqrt{n} + 1 \tag{1}$$

Class width is calculated as:

$$d = \frac{x_{\max} - x_{\min}}{k} \tag{2}$$

After theoretical value of relative class concentration is calculated as:

$$P_i = \phi\left(z_i + \frac{d}{2}\right) - \phi\left(z_i - \frac{d}{2}\right) \tag{3}$$

Chi-square fitness test relation is obtained from the equation:

$$\chi_0^2 = \sum_{i=1}^k \frac{(n_i - np_i)^2}{np_i} \tag{4}$$

This value is compared with values in the chi-square table. If the value is less than the value in the table, the data has normal distribution, otherwise, it doesn't have normal distribution. The number of data analyzed by chi-square fitness test should be more than 30 and classes with theoretical class concentrations less than 4 should be combined with one of the neighboring classes [35].

In order to carry out a statistical analysis of the sample group's answers to the survey questions, the answers are encoded, entered in statistical analysis program, and tested for normal distribution. In this procedure, it is determined whether the answers given to a question have normal distribution by writing "there is no homogeneity among the answers given to this question, there is a difference (Chi-square = p < 0.05 or > 0.05)".

4.2. Analysis of interview data

In analysis of interviews, two different types of analysis, including descriptive and content analyses can be utilized [11, 30]. Descriptive analysis is mostly based on directly taking individuals' statements and presenting them to the reader. Indeed, in analysis of interview data, it is deemed beneficial to identify similar and different points and directly taking statements from the individuals' statements [10, 11]. In this study, descriptive analysis was used to analyze some of the interview questions. The points on which interviewed surveyors reached a consensus or had disagreement were determined separately, and, where necessary, the opinions of individuals are quoted and presented to the reader in the results section.

Content analysis is based on associating the interviewees' opinions with matrices. Matrices are tables used to show the correlation between two or more variables in interview analysis [11, 36]. In the matrix, the interviewees' codes are written on one side of the table, and main concepts derived from interviews and codes are written on the other side. In this study, the opinions of survey engineers were coded and presented as matrices in the analysis of interview questions.

5. FINDINGS

There were a total of 35 questions in the questionnaire and a total of 16 questions in the interview form in the PhD thesis on which the study was based, and these were further enriched

with 31 sample practices. Thus, all this data was presented in the PhD thesis. However, it was deemed somewhat impossible in terms of presentation format of the paper to present all data in the PhD thesis in results and discussion part of this paper derived from the PhD thesis. Therefore, some examples of questions and answers from survey and interview data will be presented. Results and discussion will be given as a table at the end of this part.

1. Questionnaire Form and Answers from Sample Group Members

Questionnaire Form

Personal information

A-Up-To-Date Land Management Implementations for GDF

Given in table 3.

B-Immovable Registration System and (Geographical) Information Systems

1- Do you think that communication, between foundation offices and general directorate and branch management, based immovable foundation properties are adequate/enough? Answer of this question with options are seen in below (Figure 3).

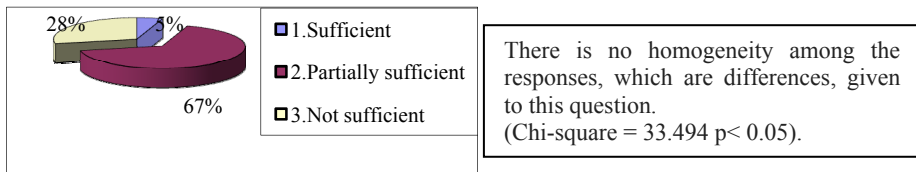


Figure 3. Graphic of question 1 in part A from questionnaire form

2- Do you think that immovable property registration system in GDF is enough? Answer of this question with options are seen in below (Figure 4).

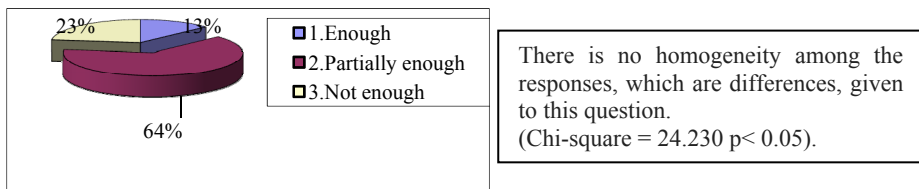


Figure 4. Graphic of question 2 in part A from questionnaire form

3- Does the geographic information system both CAD and webGIS based which was put into practice in 2006 in GDF, is actively used? Answer of this question with options are seen in below (Figure 5,6).

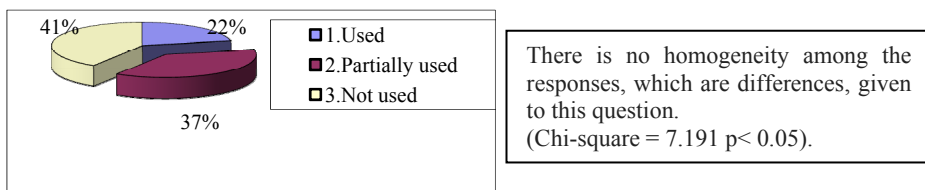
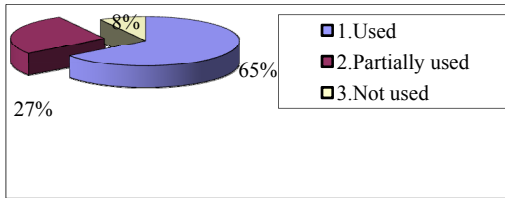


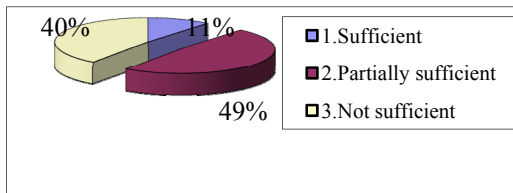
Figure 5. Graphic of question 3 on CAD based in part A from questionnaire form



There is no homogeneity among the responses, which are differences, given to this question.
(Chi-square = 34.478 $p < 0.05$).

Figure 6. Graphic of question 3 in part A from questionnaire form

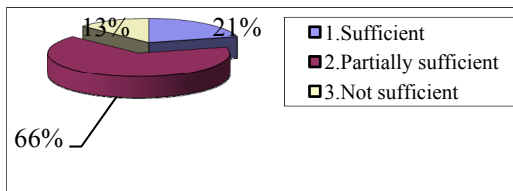
4- Do you think that CAD-based geographic information system in GDF is enough to draw and register both land (rural and urban) and condominium data? Answer of this question with options are seen in below (Figure 7).



There is no homogeneity among the responses, which are differences, given to this question.
(Chi-square = 14.778 $p < 0.05$).

Figure 7. Graphic of question 4 in part A from questionnaire form

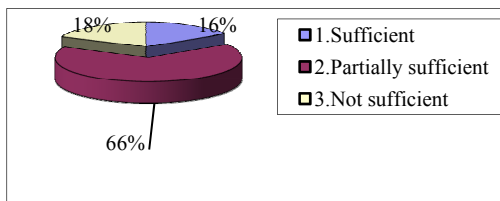
5- Do you think that webGIS-based geographic information system in GDF is enough to draw and register both land (rural and urban) and condominium data? Answer of this question with options are seen in below (Figure 8).



There is no homogeneity among the responses, which are differences, given to this question.
(Chi-square = 28.945 $p < 0.05$).

Figure 8. Graphic of question 5 in part A from questionnaire form

6- Do you think that other web based information system studies carried out by GDF (VTYS, VAYS, etc.), are enough in terms of both our dry E-turkey policy? Answer of this question with options are seen in below (Figure 9).



There is no homogeneity among the responses, which are differences, given to this question.
(Chi-square = 28.945 $p < 0.05$).

Figure 9. Graphic of question 6 in part A from questionnaire form

7- Do you think that other (geographic) information systems carried out by other public institutions are useful for GDF in case integration of them, in terms of the context of e-turkey strategy? Answer of this question with options are seen in below (Figure 10).

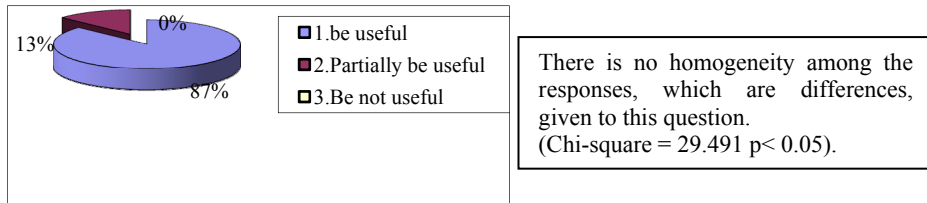


Figure 10. Graphic of question 7 in part A from questionnaire form

C-Land Registry and Cadastre Implementations

1- What should be done in a healthy way in the conduct of cadastral works and cadastre based courts in order to minimize them in terms of foundation properties? Answer of this question with options are seen in below (Figure 11).

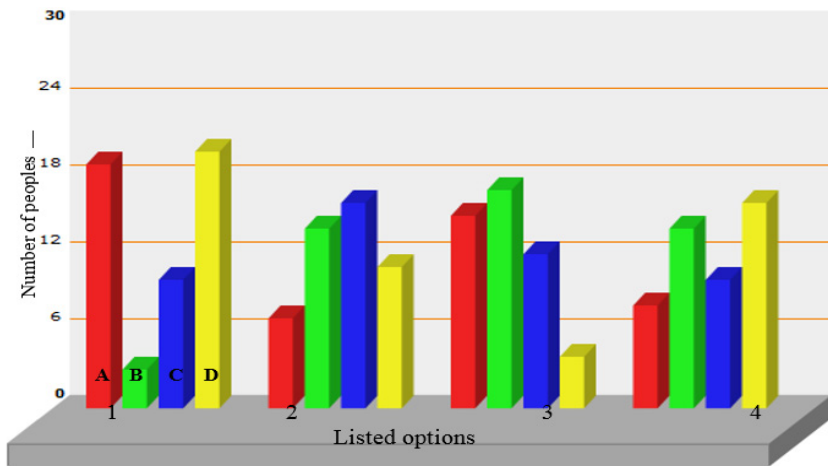


Figure 11. Graphic of question 1 in part C from questionnaire form

Rate from 1 to 4, with 1 being the most important option for you)

(A) The old and new cadastral information for cadastral parcels should be associated with together in cadastral proclamation. Chi-square = 14.804 p<0.05

(B) Reasons of inapplicability of cadastral parcels in proclamation of cadastral works must be specified in proclamation. Chi-square = 3.638 p>0.05

(C) Proclamation of cadastral works should be informed via institutional internet site of GDLRC. Chi-square = 8.915 p<0.05

(D) Proclamation of cadastral works should be sent to GDF by GDLRC. Chi-square = 1.936 p>0.05

2- Have you done your research on the Land Registry Office to determination of specify foundation specification immovable properties? Answer of this question with options are seen in below (Figure 12).

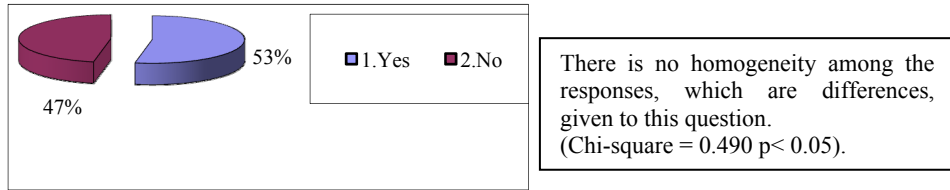


Figure 12. Graphic of question 2 in part C from questionnaire form

3- If your answer to the above question is yes, please specify in what stage you may have difficulty? (Rate from 1 to 4, with 1 being the most important option for you) Answer of this question with options are seen in below (Figure 13).

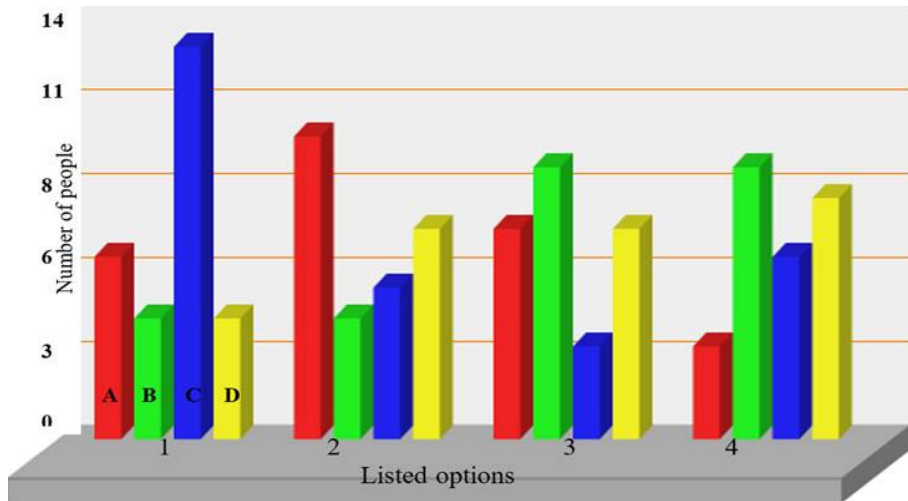


Figure 13. Graphic of question 3 in part C from questionnaire form

(A) Because of busy as a beaver in Land Registry Offices (LRO), and delaying problem. Chi-square = 10.680 $p < 0.05$

(B) Lack of adequate physical facilities required at work in LRO. Chi-square = 1.667 $p > 0.05$

(C) The former Ottoman records of current land records. Chi-square = 3.000 $p > 0.05$

(D) the difficulty of establishing a link between Registers, especially Ottomans (old from Ottoman times) and Turkish. Chi-square = 1.936 $p > 0.05$

4- What are the problems you encounter in the process related to foundation immovable properties both Cadastre and LRO? Answer of this question with people opinions are seen in below Table 5.

Table 5. Table for question 4 in part C from questionnaire form

Solution approaches	Frequency / Percent Value *	Frequency (f)	Percent ** (%)
Work intensity and long duration		14	58
Not knowing revolving fund fees and tax exemption for foundations		9	37
Difficulties both accessing and translating old documents from Ottomans		5	21
An insufficient number of qualified personnel		5	21
Difficulty of establishing links between old title deeds and currents		4	17
Failure to provide the necessary working environment		6	24

* In this question, more than one opinion could be reported

** Percentages values were calculated according to 43 of the sample group who answered this question

5- Do you think what should be done to solve the problems you encounter in the above question? Answer of this question with people opinions are seen in below Table 6.

Table 6. Table for question 5 in part C from questionnaire form

Solution approaches	Frequency / Percent Value *	Frequency (f)	Percent ** (%)
Regulation should be arranged for funding between GDF and GDLRC		9	33
LRCIS integration should be performed for GDF		8	30
In-service education should be performed all personals periodically		5	18
Co-operations should be make out between GDF and GDLRC		5	18
E-Turkey integrations should be performed		2	7
More skilfully personals should be added to GDF		1	4
Personal wage should be increased		1	4
Translated knowing Ottoman should be employed in every foundation office		1	4

* In this question, more than one opinion could be reported

** Percentages values were calculated according to 27 of the sample group who answered this question

D-Development of Foundation Immovable Properties

1- Do you have difficulty in most any stage in the development of foundation properties valuation? (Rate from 1 to 5, with 1 being the most important option for you) Answer of this question with options are seen in below (Figure 14).

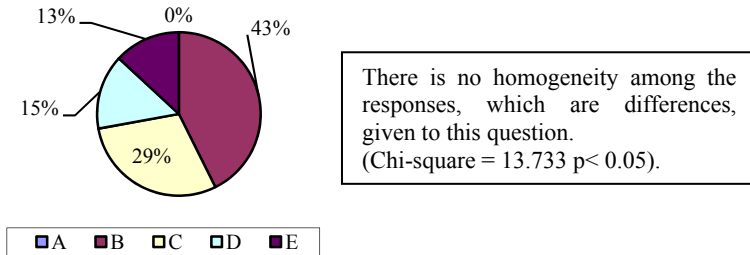


Figure 14. Graphic of question 1 in part D from questionnaire form

- (A) Determination of the value of property tax
- (B) Determination of fair market value
- (C) Determination of the peer immovable determination
- (D) In comparison with immovable properties to foundation properties
- (E) Other.....

2- What do you think about it should be done to solve the problems experienced in while valuation of foundation immovable properties? (Rate from 1 to 4, with 1 being the most important option for you) Answer of this question with options are seen in below (Figure 15).

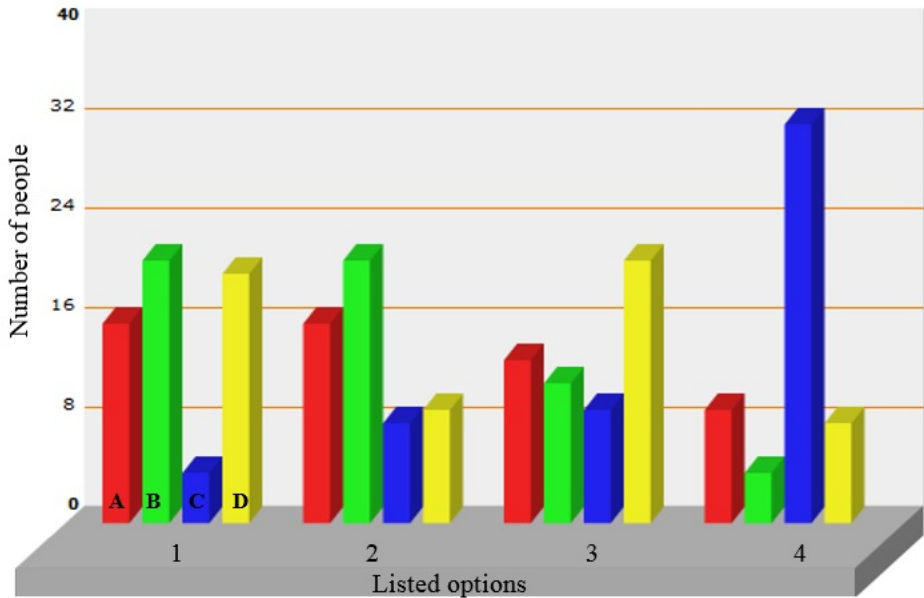


Figure 15. Graphic of question 2 in part D from questionnaire form

- () thanks to co-operation with real estate company for valuation. Chi-square = 12.133 p<0.05
- () thanks to co-operation with the expert committee for valuation (university + corporate + other ...). Chi-square = 7.453 p>0.05
- () Valuation Commission to work in a different Foundation Offices. Chi-square = 5.189 p>0.05

() To work more effectively with the existing Valuation Commission. Chi-square = 34.308 p>0.05

3- Do you think that “cost per square meter of land (rural and urban) is close to real market value? Answer of this question with options are seen in below (Figure 16).

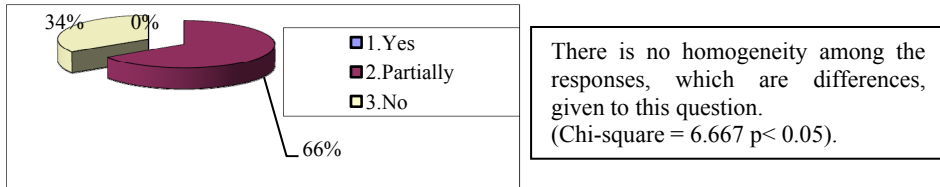


Figure 16. Graphic of question 3 in part D from questionnaire form

4- Do you think it is sufficient to determine the property tax value of some avenue and street for each four year in Turkey? Answer of this question with options are seen in below (Figure 17).

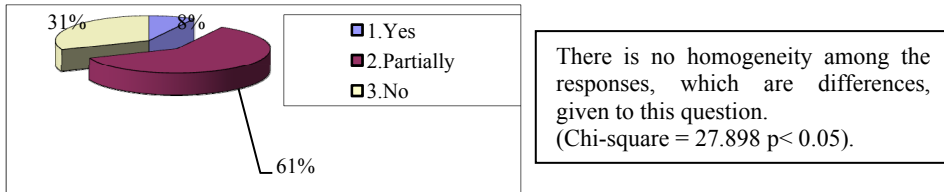


Figure 17. Graphic of question 4 in part D from questionnaire form

5- Which evaluation method should be used for immovable foundation properties which have been no opportunity to hire and /or non-sales? Answer of this question with options are seen in below (Figure 18).

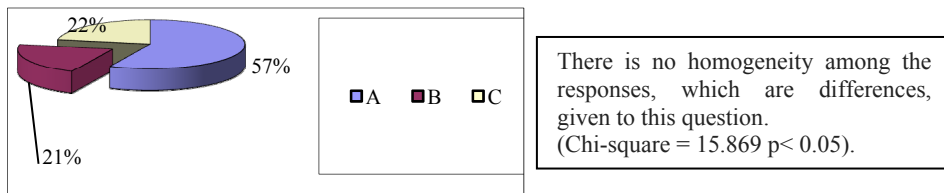


Figure 18. Graphic of question 5 in part D from questionnaire form

(A) It should be swapped with some of the Provincial Directorate of National Estate in provincial

(B) It should be swapped with some of the General Directorate of National Estate in national

(C) Other.....

6- Which value is closer to market value for immovable foundation properties in comparison between real value determined by you and tax value? Answer of this question with options are seen in below (Figure 19).

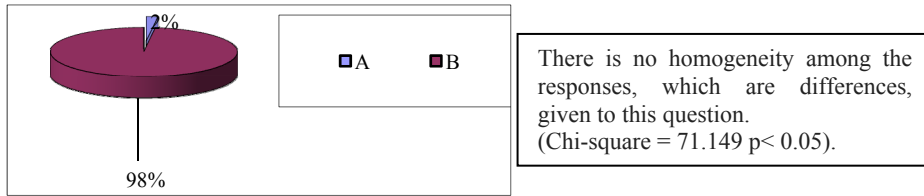


Figure 19. Graphic of question 6 in part D from questionnaire form

(A) Property tax value

(B) Determined by you with investigation of the market value for real estate valuation

7- Please write problems and solutions, experienced by you, in immovable properties implementations conducted by GDF in the space provided below. Answer of this question with people opinions are seen in below Table 7.

Table 7. Table for question 7 in part D from questionnaire form

Solution approaches	Frequency / Percent Value *	Frequency (f)	Percent ** (%)
Technical personals should be added		11	33
Expert personal should be educated		8	24
Quality of software and hardware should be increased		5	15
CAD based GIS system should be re-programmed		4	12
Integration should be realize for each unit in GDF		4	12
Projects should be done based on solving the problems		3	9
GDF should be attained the integration LRCIS and NSDI		3	9
Web based GIS and CAD base should be developed with together		2	6
Quality of software and hardware should be the same both branch office and Foundation Office and General Directorate		2	6
Regulations should be updated periodcially		2	6

* In this question, more than one opinion could be reported

** Percentages values were calculated according to 27 of the sample group who answered this question

E-Immovable Foundation Properties in Cases/Courts

1- Do you examine expert reports in courts or cases for foundation immovable properties?

Answer of this question with options are seen in below (Figure 20).

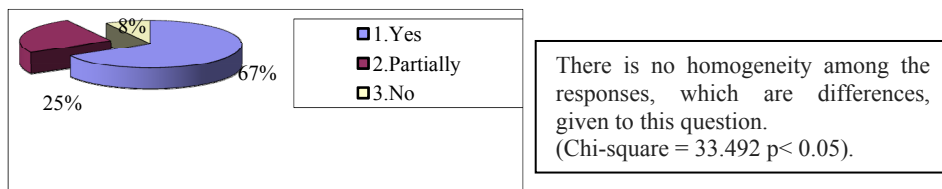


Figure 20. Graphic of question 1 in part E from questionnaire form

- If your answer is "Yes," can you say the expert reports are sufficient? Answer of this question for second section with options are seen in below (Figure 21).

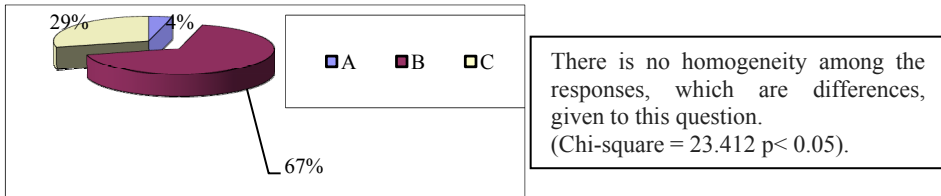


Figure 21. Graphic of question 1 for second section in part E from questionnaire form

- (A) Ok, because
- (B) Partially sufficient because
- (C) Insufficient because

2- Whenever evaluating the expert's report by you, then this assessment is presented to the court by your foundation office, can you say that the case in favor of the foundation thanks you out evaluating? Answer of this question with options are seen in below (Figure 22).

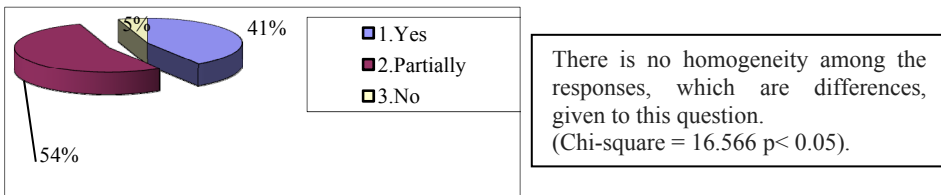


Figure 22. Graphic of question 2 in part E from questionnaire form

3- If it is necessary to sue in some cases related to with foundation immovable property for you or your foundation offices, please inform how you do determine which data is necessary which case? Answer of this question with options are seen in below (Figure 23).

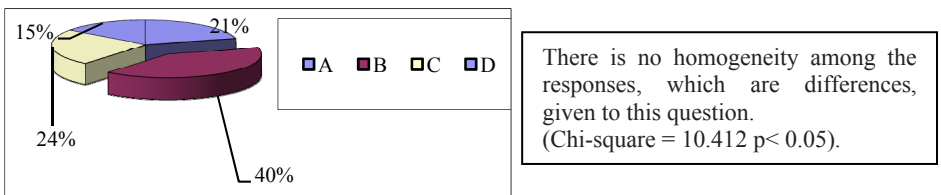


Figure 23. Graphic of question 3 in part E from questionnaire form

- (A) Logically
- (B) In consultation with the Legal Service of Foundation Office
- (C) Taking advantage of the current law or legal regulations
- (D) Other.....

4- Do you follow foundation immovable property based cases?

(A) Yes (B) No (C) as long as the requested information and documents related to the case by Legal Service of Foundation Office. Answer of this question with options are seen in below (Figure 24).

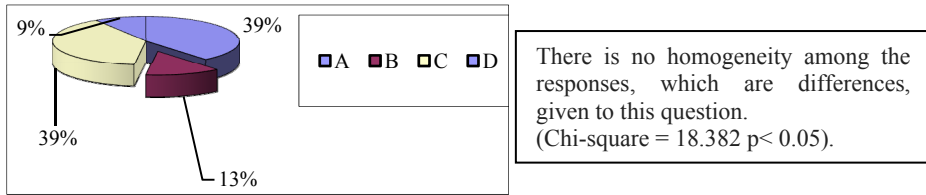


Figure 24. Graphic of question 4 in part E from questionnaire form

(D) Other (.....)

5- The valuation of expropriation commission related to immovable properties, can you say something that it can be made faster and minimize the expropriation case process? (Rate from 1 to 4, with 1 being the most important option for you) Answer of this question with options are seen in below (Figure 25).

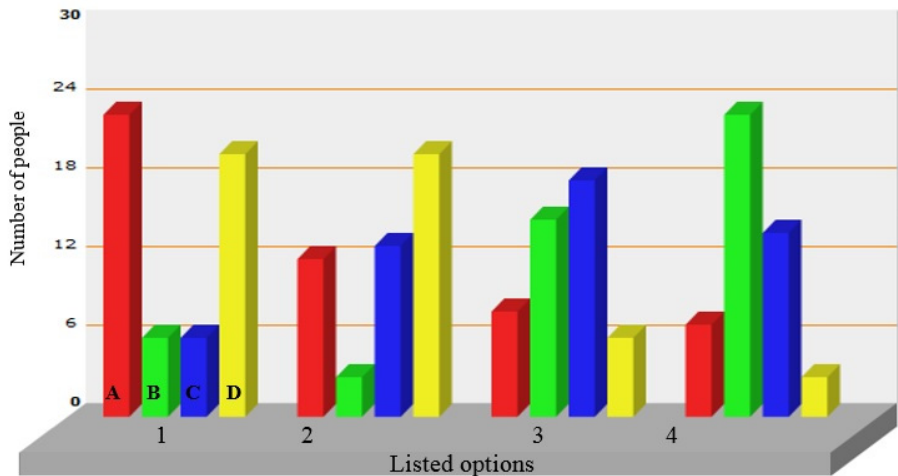


Figure 25. Graphic of question 5 in part E from questionnaire form

(A) Commission members should be composed of different institutions (public officials). Chi-square = 33.455 p<0.05

(B) Academicians should be added to commission. Chi-square = 9.500 p<0.05

(C) Commission should be formed through chambers. Chi-square = 8.064 p<0.05

(D) Public officials with academics-chambers-integrated with commission. Chi-square = 18.277 p<0.05

6- What are the real causes of the problem based on immovable foundation properties in your foundation office?

(Rate from 1 to 5, with 1 being the most important option for you) Answer of this question with options are seen in below (Figure 26).

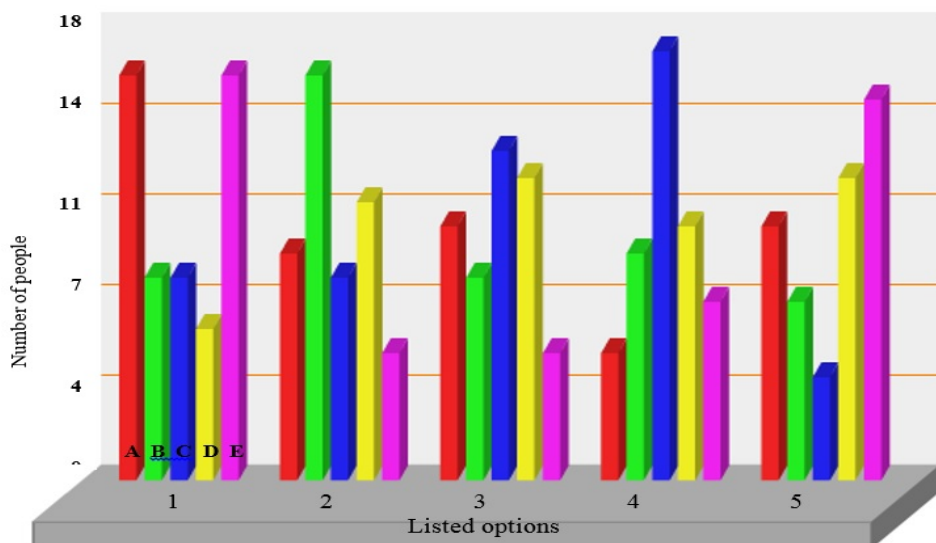


Figure 26. Graphic of question 6 in part E from questionnaire form

(A) From being scattered by legislations related to immovable properties. Chi-square = 9.547
 $p < 0.05$

(B) Contrasts among legislations of some articles. Chi-square = 5.660 $p > 0.05$

(C) Different court decisions in cases related to immovable properties. Chi-square = 32532
 $p > 0.05$

(D) Lack of institution is responsible for immovable property activities. Chi-square = 8.426
 $p > 0.05$

(E) Other (.....). Chi-square = 6.723 $p > 0.05$

7- What can be done to solve the problems, based foundations immovable, properties, without suing?

Answer of this question with people opinions are seen in below Table 8.

Table 8. Table for question 7 in part E from questionnaire form

Solution approaches	Frequency / Percent Value *	Frequency (f)	Percent ** (%)
Consensus method should be preferred among parties rather than suing		14	64
Privileges of foundation immovable properties should be provided to announce to every implementers		4	18
Inter-agency coordination should be ensured		4	18
According to subject matter, selection of expert professionals should be provided in a systematic way		1	4
Publicity of GDF should be given to the importance, legislative gap regarding the foundations and theirs properties should be handled then it should be reconstituted		1	4
Contradictions among different laws related to foundations and their properties should be abolished		1	4

* In this question, more than one opinion could be reported

** Percentages values were calculated according to 22 of the sample group who answered this question

F- Zoning Plan Implementation

1- Can you say whether changed the application taking into account the objections made to the Municipality in the 18th article (Land Readjustment) of Law No. 3194 (Zoning Law) on the applications, or not? Answer of this question with options are seen in below (Figure 27).

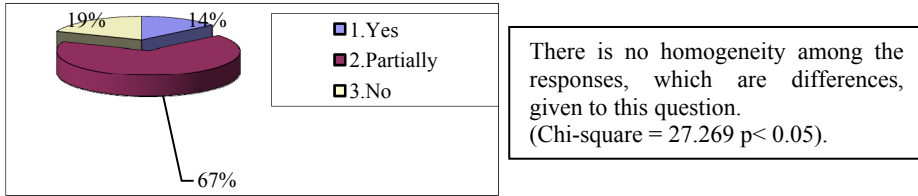


Figure 27. Graphic of question 1 in part F from questionnaire form

2- If your foundation’s objection on Land Readjustment does not take into account by Municipality, then If the land readjustment implementations is sued by you, then if your foundation office win your case which changes will be performed on implementation by Municipality? Answer of this question with options are seen in below (Figure 28).

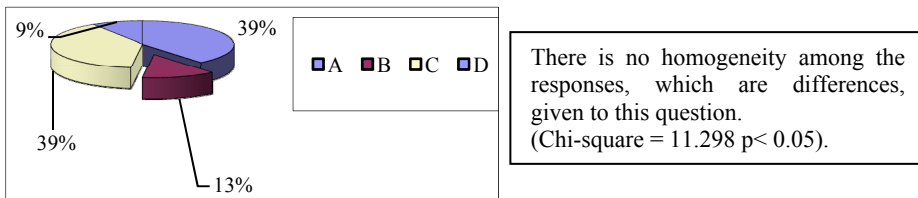


Figure 28. Graphic of question 2 in part F from questionnaire form

(A) Completely changed. (B) Partially changed. (C) Changed to Positive for foundation immovable property
 (D) Other (.....)

3- How did areas, which have been planned to be used for public in the development plan in your region, obtained? Answer of this question with options are seen in below (Figure 29).

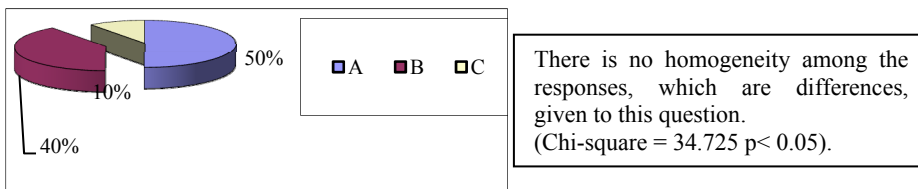


Figure 29. Graphic of question 3 in part F from questionnaire form

(A) Implementation of article 15 and 16 of Law No. 3194 (Zoning Law) called as Voluntary Method
 (B) Implementation of Land Readjustment Method as article 18 of of Law No. 3194
 (C) Expropriation

4- What do you think about sources and solutions of the problems experienced in article 15, 16 and 18, defined as basically zoning implementations, in terms of foundation immovable properties? Answer of this question with people opinions are seen in below Table 9.

Table 9. Table for question 4 in part F from questionnaire form

Solution approaches	Frequency / Percent Value *	Frequency (f)	Percent ** (%)
It should be reported to the Municipal that Foundation immovable properties is not public land-property		21	60
Special attention on promotion of registered foundations should be given in addition foundations and their immovable properties		18	51
Protection on income-generating foundation properties, have to be guaranteed by foundations law 5737, should be informed to all implementers-institutions		12	34
It should be reported to the municipalities if there are foundation immovable properties in implementation areas, municipalities should be more careful to perform implementations in terms of foundation properties		4	11
It should be informed to municipalities and other implementers if there are charity properties of foundations in zoning implementations, it cannot decreased/reduced the areas of these properties to public areas according to Zoning Law		3	8
Land Readjustments on planned areas should immediately be completed by authorities instead of voluntary methods by owners of properties as soon as plans come into force as legally		2	6
Land Readjustment practices must be implemented as holistic way not to local way.		2	6
Exemption of tax and revolving fund to foundations properties on land management issues should be taken into consideration by authorities		1	3
Land readjustment implementations should be informed by authorities to foundation offices and the all information should be sent as well.		1	3

* In this question, more than one opinion could be reported

** Percentages values were calculated according to 35 of the sample group who answered this question

2. Selected One Answer as an example with all Interview Form Questions

Because of the same answers given by sample groups for both categorized questions and open ended questions and also semi structured interview form questions, so there is no need of writing these answers from semi structured interview form for each person taken part in interview form and numbered alphabetic from A to I. there, there are questions from interviews written below which were questioned to everyone between and I in the format of normal speaking like friends.

Semi-Structured Interviews Form

Personal information

A-Immovable Registration System and (Geographical) Information Systems

1- Do you think that operations and legislation, based immovable foundation properties, are adequate/enough, carried out by your institution (GDF)? If your answer is not enough, what should be done as solutions, according to you?

2- Do you think that CAD-based geographic information system and web GIS based information system in GDF is enough to draw and register both land (rural and urban) and condominium data? If your answer is not enough, what should be done as solutions, according to you?

3- Do you think that CAD-based geographic information system and web GIS based information system have enough hardware and software to register both land (rural and urban) and condominium data? What should be done to solve the problems about these questions in terms of both GDF and other institutions?

4- Does the geographic information system both CAD based and webGIS based which were put into practice in 2006 in GDF, is actively used by GDF personals? Do you think not to usage of these is a problem? If this is a problem, what do you suggest for a solution?

B-Land Registry and Cadastre Implementations

1- Can inter-institutional coordination be achieved in cadastral surveys for determination of foundation immovable properties borders and other rights of them? What are the problems experienced at this point? What are your suggestions for solutions to these problems?

2- Do you think enough steps to access cadastral proclamation and its information both sheets, maps and other technical document and legal documents such as land registries? If this process is insufficient, what would you recommend to solve these inadequate situation?

3- Do you think Land Registry Offices (LRO)' operations and archive system are sufficient? If it is insufficient, does the situation create problems against immovable foundation properties?

4- Do you have trouble in the archives of LRO in case of the determination of the old land registers (mainly Ottomans) and translation into the Turkish? If you are having problems, what would you suggest for a solution?

5- Is LRCIS enough to connect between GDF and GDLRC in immovable properties based applications? At this point, Is Web-GIS of GDF's database compatible with LRCIS of GDLRC? If not, do you think this case is a problem with respect to management of foundation immovable properties and also e-government organization?

C-Development of Foundation Immovable Properties

1- Would you please express what you were experienced in problems in the determination of market value for development or leasing foundation immovable property? You can make any suggestions as to how to solve these problems?

2- What do you think whether determination of property tax values, which are very low prices per square for land (urban and rural) in comparison with market values, based generally street and avenue each four years (2010, 2014 and so on..) is an appropriate method for taxing or not? If your answer is this method is not suitable for correct taxing in accordance with market values, what would you like to propose to solve the problem?

3- What do you think what is the reason of poor management on unstructured foundation immovable properties in rural and urban areas in accordance with neighboring properties by foundation offices? What would you recommend this type of foundation properties for good management of them in terms of sustainable management of immovable properties?

D-Immovable Foundation Properties in Cases or Courts

1- What kind of problems have you encountered in cases/courts related to foundation immovable properties such as selection of experts, sufficiency of expert report, completion time of court, time of data and document collection, and final decision? Could you please suggest some proposals the problems, you have encountered in this process, for the solution?

On matters such as expert selection, the adequacy of the expert reports, timeframe of a lawsuit, etc. during proceedings of foundation properties in dispute owned by DGF, the following problems were mentioned by the interviewees, respective number of which is given after each statement: "expert witnesses are not experts" by 8 interviewees; "expert reports are not

satisfactory” by 7 interviewees; “proceedings take a long time” by 6 interviewees, and “expert reports are inconsistent” by 3 interviewees, seen in Table 10.

Table 10. Current problems and person codes in cases concerning foundation properties

Person	Insufficient expert reports	The experts are not professionals about case-related problems
A	Scientific and technical aspects of the expert's report is insufficient, Preparation of different reports for same work	Selecting as the expert in real estate based cases, who do not know enough in real estate legislation
B		Get expert witness in cases of inadequate in both professional and technical
C	Lack of expert reports, some reports to be different for the same real estate based case	Experts lack of professional fields related to the case
D	The expert report is not sufficient	Long case period
E	Lack of expert reports, report that there are differences between the values of real estates	People who do not know the real estate legislation, are selected expert
F		Experts, foundations legislation, to not know
G	Serious mistakes in the expert's report	Lack of experts selected
H	Failure of technical aspects of expert reports	
I	The expert report cannot fully reflect the correct	Selected experts do not know the real estate legislation, are selected expert
J	Long period for preparation of reports	Selecting a particular expert of the same person, preparation of expert-sided report

E-Zoning Plan Implementation

1- Do you have any problems streaming from the municipalities, responsible for performing land readjustment issues, in case of foundation immovable properties in the zoning implementation? If you have encountered any problems about this subject, could you please inform whether your suggestions to solve these problems can be accepted by municipalities or not? If your suggestions are not accepted by municipalities, have you been sent any document about rejection together with technical and legal explanations? Do you think that these reason about rejection is suitable and legislative?

Findings and discussions obtained from the survey and interviews within the scope of the study were classified by their respective parts, simplified, and the following matrix of results and discussions was obtained. The above-mentioned sample results from the questionnaire and the interview as well as other results and discussions obtained within the scope of the PhD thesis are presented as a whole in the following Table 11.

Table 11. Findings and considerations obtained by means of data collection tools

Section of Survey and Interview	(1): Relation, (0): No relation	Relation		
		Institutional	Legal	Technical
Property registration system, Information system	Absence of a reference for land management implementations in GDF	1	1	0
	Lack of immovable property registration system	1	1	1
	e-government applications with different standards in DGF	1	1	1
	GDF and other public institutions should ensure the exchange of data via the e-government	1	1	1
Implementations of Registry and Cadastre	the difficulty of tracking "cadastral posting" in cadastral works	1	1	0
	Lack of cooperation between GDF and GDLRC	1	1	0
	Investigation of Deed Records in the archives of Ottoman with difficulty	1	1	1
	Difficulties in the revolving fund fees and tax paid	1	1	1
	Constraints in the land registry is not in deed	0	0	1
	Inability to access data of deed-cadastral through LRCIS	1	1	1
	difficulty of reaching data of urban information system in municipality	0	1	1
Land Valuations	Lack of property tax system	0	1	1
	difficulty of detecting peer real estate to compare	0	1	0
	the actual real estate price is higher than written on the title deed of the sale price	0	1	0
	some real estate, with the possibility of valuation, is delayed for land valuation	1	1	1
	Procurement legislation slows down land valuation system	1	1	0
Land Management implementations	compliance problems between Foundations of Cultural Heritage and zoning plan	1	1	0
	tax exemption aroused from zoning plan for foundation properties cannot be questioned	1	1	0
	Devaluation of foundation properties thanks to some zoning plan application	1	1	0
	exemptions of foundation property are not taken into account in zoning plan implementations	1	1	0
Case Process	E-government has been not used effectively inter-agency exchange of documents and information	0	1	1
	Case time, the quality of expert reports, and the adequacy of the expert are not same standard	0	1	0
	Technical units must work together with the legal unit for GDF in lawsuit cases related foundation properties	1	1	1
	In the legislation for foundations that contrasts (cadastral, land development and foundation law)	1	1	0

6. DISCUSSION

In recent years, several studies have been conducted to provide access to questionnaires and expert opinions on matters, including, land registry transactions, cadastral surveys, zoning practices, information system applications, and property development work, which are sub-branches i.e. scientific branches of Survey Engineering. It is known that opinions and suggestions of students and faculty members have been obtained using data collection tools such as surveys or interviews in survey engineering departments providing undergraduate education in Turkey [5, 37, 38]. In this type of studies, it is of great importance that expert opinions, questions and their answers to questions are listed at the beginning of the questionnaires developed, types of scales are determined and the Cronbach's alpha reliability coefficient regarding content validity and reliability of the questionnaire is at the desired level. In order to ensure that reliability coefficient is high, some questions may need to be removed or questionnaire items, types of scale may need to be altered, which help the questionnaire and its results to be valid and reliable. In addition, it was determined that the questionnaires are prepared as hard copies, and such hardcopies are sent to the sample group, the target population. After the data given as hard copy in questionnaires by the sample group is transformed into soft copy, the answers given to the questions are evaluated on a percentage basis by simple entry (for example, in a survey, 40% of the sample group said yes and 60% said no to a question). In this study, while developing the questionnaire, emphasis was placed on preparation of survey questions and answers together with experts and faculty members from the university selected among the target population comprising the sample group. Moreover, the questionnaire was prepared and applied online, which allowed easy access to the sample group, regardless of location. In addition, percentage data as well as statistical data were utilized to evaluate answers to questions (For example, there is no homogeneity but difference among the answers given to the question (Chi-square = 29.424 $p < 0.05$ with a confidence of 95%).

Content validity of the interview form developed in the same manner was tested with expert personnel from foundations and faculty members from the university, then interview questions were organized, some questions were removed, some were altered and it was decided to apply the final version of the interview form after ensuring its content validity. It was intended to apply the interview form to survey engineers, the largest set of the questionnaire sample group of 68 people. When the work done and answers given by survey engineers to survey questions were examined, it was seen that there was no difference between the answers given by survey engineers and the sample group.

It is extremely important to present sample land management practices to the reader in order to materialize land management issues based especially on foundational works [39, 40, 41] and solution approaches revealed using questionnaires and interviews. At this point, we endeavored to decide which samples to present on the basis of land management practices about which we acquired in-depth knowledge by survey and interview data. Although 31 current practices were presented within the scope of the study, around 100 land management practices were investigated. Some of these practices are very complicated and include many applications on their own so it was a challenge to select and present sample practices. Indeed, with 31 sample practices, information was provided on the type of practice which we wished to emphasize.

7. CONCLUSIONS

In this study, with the questionnaire, semi-structured interview form and sample practices, current status of foundation properties in terms of preservation and development was established, problems were identified, materialized by sample practices and solution approaches were developed.

Conclusions and suggestions were developed by taking account of results and discussions obtained from the survey, interview and sample practice data. The target of the study is to institutionally, legally and technically address such conclusions and suggestions. Therefore, conclusions and suggestions are summarized and sequences in below paragraphs.

"GDF Property Transactions Guide" should be prepared by taking account of land management practices. Property registration system for GDF should be made suitable for registration of "lands and buildings" separate registration books. All GDF e-government applications should be integrated into a single interface to be carried out and controlled all implementation easier than the current system. E-government integration with other stakeholders should be provided within the scope of e-government-e-Turkey not only for be essential for GDF but also the other institutions related to land management issues.

Cadastral scales in the cadastral surveys should be announced in network address General Directorate of Land Registry and Cadastre (GDLRC in Turkish TKGGM). In the case of Land Management Practices, collaboration with other institutions should be enabled thanks to e-governance application. It should be ensured that title deed registers in Ottoman Turkish at land registry archives are read. Online inquiry about revolving fund and tuition waivers of foundation properties from GDF network address should be enabled.

"Title deed" should include all restrictions in land registry. Access to cadastre and land registry data of GDLRC (in Turkish TAKBIS) should be provided through e-government. Access to Urban Information System data should be provided through e-government. Land taxation system should be transformed into parcel-based version. Purchase and sale transactions at land registries should be based on their actual values. Foundation properties should not be sold according to different managerial perspective.

Properties which can be valued in accordance with their zoning status should be utilized as soon as possible. Public Procurement Law 2886 should be applied from an online system. In the case of planned areas which are foundation cultural assets, GDF should be involved in corresponding processes. Foundation properties exempt from charges and revolving fund under zoning plan should be enquired online especially by Municipalities and Land Registry and Cadastre Offices. Zoning plan implementations should be done in a holistic way in terms of foundation properties. Zoning plans should be applied as soon as possible by considering foundation property exemptions.

Courts should have access to all information provided by public institutions via e-government. Lawsuits, expert reports and timeframe for decrees and their content should be standardized. In the case of proceedings, coordination between technical unit and legal department should be ensured. Case files of foundation properties should be archived in electronic database. Inconsistencies between legislations about foundations should be resolved (cadastral, zoning and foundation).

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