VREDNOTENJE ZEMLJIŠČ V PRIMERU STVARNE SLUŽNOSTI: ŠTUDIJA PRIMERA V SLOVENIJI

LAND VALUATION IN CASE OF EASEMENT: THE CASE STUDY IN SLOVENIA

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IZVLEČEK

Namen raziskave je proučiti vpliv stvarne služnosti na tržno vrednost zemljišča. Tako so analizirani področni pravni predpisi v Republiki Sloveniji ter sedanje metode vrednotenja stvarne služnosti na zemljiščih. Zaradi pomanjkanja ustreznih podatkov o delovanju trga nepremičnin je vpliv služnosti na zemljišču na tržno vrednost zemljišča objektiviziran na podlagi ankete potencialnih kupcev nepremičnin v Republiki Sloveniji. Zaradi večje objektivnosti rezultatov ankete so bili intervjuji izvedeni z 203 prebivalci Republike Slovenije po vseh statističnih regijah. Dobljeni vzorec je po strukturi anketirancev glede na spol, izobrazbo, status na trgu zemljišč in kraj bivanja reprezentativen za državo. Na hipotetičnem primeru zemljišča je bilo ugotovljeno, kako ocenjujejo anketiranci zmanjšanje vrednosti zemljišča glede na obseg in lego dela zemljišča, obremenjenega s stvarno služnostjo, ter mesečni znesek nadomestila za služnost. Rezultati analize statistično značilnih razlik med skupinami anketirancev so pokazali, da obstajajo statistično značilne razlike ($p > 0,05$) glede zmanjšanja vrednosti zemljišča med odgovori skupin, razdeljenimi glede na spol in starost, izobrazbo in status na trgu zemljišč, medtem ko statistično značilnih razlik med odgovori skupin, razdeljenih glede na kraj bivanja, ni bilo ($p < 0,05$).

KLJUČNE BESEDE

vrednotenje zemljišč, stvarna služnost, vpliv služnosti na vrednost zemljišča, raziskava med potencialnimi kupci zemljišč

ABSTRACT

The purpose of the research was to analyse the impact of easement on land value. To this end, relevant regulations in the Republic of Slovenia, and the existing valuation methods of easement on land were analysed. Owing to inadequate data on real estate market operations, the impacts of an easement on land market value were objectivised using a survey of potential real estate buyers in Slovenia. For better objectivity of survey results, interviews with 203 residents from all the statistical regions were conducted. According to gender, education, status on the land market and place of residence, the sample obtained of interviewees is representative of the Republic of Slovenia. On a hypothetical land specimen, how the interviewees assessed the land value decrease depending on the extent and situation of land encumbered by the easement, and the monthly easement compensation amount was established. Analysis results showed that statistically characteristic differences ($p > 0.05$) existed concerning land value decrease between the responses of groups, according to gender and age, education and property status on the land market. In contrast, no statistically characteristic differences existed between the responses of groups divided as to place of residence ($p < 0.05$).

KEY WORDS

land valuation, easement, impact of easement on land value, survey of potential land buyers

1 INTRODUCTION

Under the Law of Property Code (*Stvarnopravni zakonik*, 2002), easement is the right of owner of real estate (governing object) to execute for his needs certain actions on alien real estate (positive easement), or to require the owner of object of easement to allow certain activities, which he would otherwise be allowed to execute on his own real estate (negative easement). Easements thus constitute the different forms of use (and exploitation) of real estate as object of easement. Proprietor of object of easement shall, in executing authority over his object, suffer somewhat, although the execution of easement substance is limited to a part only of real estate under easement (Juhart, 2003; Tratnik, 2010). For this reason, easement encumbers the entire real estate under easement. Easement may be instituted for indefinite or definite time or even for a certain season of the year. Normally, the proprietor of governing object pays to owner of object under easement, a compensation or indemnity for easement, in a single amount or in several amounts.

Legal form, in which the rights and limitations on real estate are expressed, is normally of subordinated significance in real estate valuation (Kroll, 2004). More important are the scope and substance of relevant rights, and circumstances related to their execution. At valuation of change in value of real estate on account of easement, the easement in particular, and the level of property right limitation, shall substantially invariably be defined. It shall also be taken into consideration, how the potential buyer would consciously or subconsciously behave in case of sale of real estate under valuation (perception of decrease in value of real estate on the side of the buyer).

Real estate valuation theory (Ross et al., 1991; Friedman and Ordway, 1998; Ventolo, 2001; Petrson, 2005; Kleiber, 2010; Betts, 2013), at real estate valuation in case of easement, limits itself to general orientations in easement valuation, which are few, rather unspecific and frequently substantiated by 'the rule of thumb' evaluation, which should aid the appraiser in valuation of land in relation to easement (Lang and Smith, 1999; Allen, 2001; Bucaria, 2002; Wolf, 2005; Highway Beautification Agencies, 2005; Valentine, 2008; Maine Association of Assessing Officers, 2011). Relevant practice in the Republic of Slovenia shows that general orientations are inappropriately taken into consideration in most cases, or not considered at all. Reasons for this situation may be multiple, and of objective (absence of appropriate data) or subjective nature (inadequate understanding of impacts of easement on real estate value, and ensuing non-substantiated decisions in the process of valuation). In this regard, our research study endeavours to give answers to the following research questions: (1) What easement characteristics are impacting land value, and which methods are used for assessing such impact? (2) How do inhabitants of the Republic of Slovenia assess the decrease in value of land on account of easement in the particular cases?

In search of answers to these research questions we designed the method of work. First, we analysed the relationship between easement and land value in the existing relevant research studies, theoretic land valuation methods in case of easement, and existing relevant practice. Taking into account the fact that in the Republic of Slovenia the publicly accessible data do not suffice for valuation of land in cases of easement, as easement had not been set up or not entered into land register, we conducted a survey among inhabitants of the Republic of Slovenia on their perception of decrease in land value in particular cases of easement, and prepared the survey results in the

form of a matrix. Using statistical methods, we established the statistical dependence of answers on each group of surveyees.

2 IMPACTS OF EASEMENT ON LAND VALUE

Theory in real estate valuation (Kroll, 2004; Kleiber, 2010) deals with easement valuation from two aspects, namely: a) easement in the sense of encumbrance is dealt with as an extraordinary circumstance or legal characteristics that impacts the change in value of assessed land, and b) easement is dealt with autonomously, as object of valuation, for the definition of compensation.

Change in land value on account of easement is assessed on the basis of comparison of real estate sales prices with equal encumbrance or benefit. Where this is not feasible, real estate value assessment without easement is taken as basis and the value of real estate with easement is assessed using the factors of adaptation. To this end, the 'before and after' method is frequently used (in German: *Differenzmethode*, presented for instance in Allen, 2001; Kroll, 2004; Šubic Kovač, 2006; Šubic Kovač, 2007; Kleiber, 2010; Šubic Kovač and Rakar, 2010; Šnajberg, 2015), whereby the impacts of easement on market value of comparable land are assessed, and the adaptation, assessed in this way, is used in evaluating the market value of land under assessment.

Market value of easement as object of valuation is, based on comparison of value of similar easements on real estate, rather difficult or even impossible to assess, as the easement market does not exist. Thus, the market value of easement is assessed on the basis of simulation of normal business trade. Simulation of normal business trade on the real estate market had already been applied in real estate valuation in Slovenia (Nahtigal and Grum, 2015), for the research of value perception of potential buyers of residential real estate concerning the factors impacting the value of residential real estate. The impacts of easement on real estate value have to date not been studied (according to data available to us) by simulation of real estate market.

In both cases, the characteristics of easement need to be defined first. In defining easement, the legal regulations of a particular country need to be taken as basis. In the Republic of Slovenia, the fundamental law governing this field is the Law of Property Code (*Stvarnopravni zakonik* – SPZ, Official Gazette of the Republic of Slovenia No. 87/2002, 91/2013), in addition to other regulations referring to this field (Table 1).

Easement in the Republic of Slovenia is in general defined by the Law of Property Code (*Stvarnopravni zakonik*), easement for public benefit is governed in detail by the Spatial Management Act (*Zakon o urejanju prostora* – ZurP-1), and for different types of infrastructure by the Electronic Communications Act (*Zakon o elektronskih komunikacijah* – ZEKom-1), the Mining Act (*Zakon o rudarstvu* – ZRud-1), the Roads Act (*Zakon o cestah* – ZCes-1), the Cableway Installations Designed to Carry Persons Act (*Zakon o žičniških napravah za prevoz oseb* – ZŽNPO), and by the State Border Control Act (*Zakon o nadzoru državne meje* – ZNDM-2). The mandatory access driveway as easement is defined in the Law of Property Code (*Stvarnopravni zakonik*) and in the Non-litigious Civil Procedure Act (*Zakon o nepravdnem postopku* – ZNP).

Table 1: Types of easement under the Law of Property Code and other applicable regulations in the Republic of Slovenia.

Type of easement	Governing regulation, law	Legal act	Description	Duration of easement
Easement	SPZ	Law, legal action, decision by national authority	Easement is the right of proprietor (of the governing) real estate to execute certain activities for the needs of relevant real estate on alien (easement) real estate, or to require the proprietor of alien real estate to abstain from certain activities, which he would otherwise be entitled to execute on his real estate. The possible compensation for easement may be defined in a single amount or in periodically payable instalments.	Definite time, definite season, permanent
Easement for public benefit	ZUreP-1 ZEKom-1 ZRud-1 ZCes-1 ZŽNPO ZNDM-2	Legal action, decision by national authority	Easement for public benefit, established to the benefit of the State, Local Communities, implementers of public services and operators of different infrastructural activities. Easement for public benefit is established to the benefit of a particular person, and not to the benefit of governing land, and thus, it belongs to the non-genuine easements. Level of compensation for easement for public benefit comprises the decrease in value of real estate under easement and the actual damage and loss of profit.	Provisional, permanent
Mandatory access driveway	SPZ ZNP	Legal action, decision by national authority	Mandatory access driveway is by certain regulations qualified as legal easement within the law on neighbourly relations, and by others as easement established by a decision issued by a national authority. Mandatory access driveway shall be allowed by the court for a real estate, which has no connection to a public road for the regular use or where such use would be linked to non-proportionate costs. The court determines the mandatory access driveway by encumbering the alien real estate as little as possible, and the beneficiary of mandatory access driveway needs to pay an adequate compensation to the proprietor of real estate under easement. The court determines also the level of compensation and deadline for payment of compensation.	Definite time, permanent

At identification of easement it is necessary, in addition to the type of easement, to define the characteristics of limitation of property right on account of easement, as to situation and extent of easement within the entire land under easement, the decreased use of entire land under easement, possibilities

of abolishment of easement, and conditions for abolishment, and temporal characteristics of easement (Šnajberg, 2015). The appraiser shall respond also to questions concerning the rights of proprietor of land on the land under easement, and concerning the possibilities of extension of relevant easement in the future. Important is also the analysis of impacts of easement on best managed use of land (Allen, 2001), on which basis the actual extent of encroachment upon property right on account of easement, and the impact on value of land under easement, are analysed. Best managed use of original land may change on establishment of easement, but such change is taken into account only if it is reasonably expected (Allen, 2001).

Proprietor of real estate under easement shall be eligible to a compensation for encroachment upon his property right. Proprietors of the governing land and land under easement are generally in a position to agree on the level of compensation. If an agreement is not possible, the level of compensation for easement shall be assessed. At forced encroachment upon property right in case of mandatory access driveway, the SPZ (Article 89) lays down an appropriate monetary compensation for use of mandatory access driveway, which is defined by the court on a case-by-case basis and taking into account the court practice criteria. According to the SPZ (Article 91), the provisions on mandatory access driveways shall apply *mutatis mutandis* for connections to public communal and other networks in case that real estate proprietor, who is applying for such connection, complies with relevant conditions for connection. ZureP-1 (Article 110) lays down the establishment of easement for public benefit as a form of forced establishment of easement, which constitutes a limitation of property right in cases where the limitation of property right suffices for achieving the public interest, and expropriation is not necessary. Easement for public benefit has the nature of non-genuine easement. In such a case as well, the substance is generally defined, and the obligation of real estate proprietor is to suffer somewhat. Easement for public benefit is payable easement, and the proprietor of real estate under easement shall be entitled to a compensation defined by the law as compensation for encroachment upon property right. It comprises the decreased value of real estate or the actual damage and the loss of profit. Under decreased value of real estate, the decreased possibility of use, the decreased possibility of acquisition of yield, and decreased market value of real estate shall be taken into account and determined on the basis of all activities and impacts affecting the real estate under easement. The level of decreased value may be defined in mutual agreement, or by the court in case that an agreement is rendered impossible.

In certain cases, legal regulations in the Republic of Slovenia, as for instance, the Pricelist for preparation of consents, agreements and settlement of compensations and/or indemnifications for a particular year (*Cenik za pripravo soglasij, pogodb in obračun odškodnin oziroma nadomestil za posamezno leto*, 2016), applicable to agricultural land managed by the Farmland and Forest Fund of the Republic of Slovenia (slov. *Sklad kmetijskih zemljišč in gozdov Republike Slovenije*), define the level of compensation or indemnification for the established easement in the final amount, where the assessment by an appraiser shall have priority. Likewise, the establishment of easement shall be payable on water-land and coastal land. Compensation shall be calculated according to the Rules on the method of determining easement fees for water and coastal land owned by the Republic of Slovenia (*Pravilnik o metodologiji za določanje nadomestil za služnosti na vodnih in priobalnih zemljiščih v lasti Republike Slovenije*, Official Gazette of the Republic of Slovenia No. 35/2001, 18/2013, 59/2014, 56/2015–ZV–1E). The surface of area

impacted by encroachment, the fundamental value of land under easement, factor of the type of land under easement, factor of impact of encroachment on water regime, factor of impact of encroachment on land under easement, factor of water emission, and factor of duration of easement shall be taken into account. The extent of individual elements is defined in pertaining Tables, or the data of the Surveying and Mapping Authority of the Republic of Slovenia (slov. *Geodetska uprava Republike Slovenije*), for instance for establishing the fundamental value of land under easement, shall apply for relevant use. Certain Local Communities have set up pricelists of compensations or indemnifications for the purposes of definition of compensations or indemnifications for the right of easement on immovable property of relevant Local Community.

Compensation defined according to legal regulations, or an agreed compensation, does not necessarily reflect all the impacts of easement on real estate value, in particular if the law prescribes the elements to be taken into account in valuation, and these do not comprise all the possible impacts of easement on value, or where the appraisers in their valuation do not take into account the principles of market real estate valuation, and each in his own way, without any relevant substantiation – subjectively provides for the assessment of adaptation.

Similar findings are detailed by Kroll (2004). In the Federal Republic of Germany, easement is normally dealt with in the framework of "legal characteristics of land", more accurately as "rights and encumbrances on land, impacting its value", but there exist no more detailed orientations for valuation, as each case should be analysed separately. The applicable Regulation on Foundations of Real Estate Market Value Assessment (*Verordnung über die Grundsätze für die Ermittlung der Verkehrswerte von Grundstücken* – ImmoWertV) (2010) lays down (Article 6, paragraph 2) that in valuation only those rights and encumbrances shall be taken into account, which impact market value, and indicates only general orientations as to consideration of the rights and encumbrances in relevant real estate market valuation methods. More precise orientation is laid down in the Guides on market values for real estate market value assessment (*Richtlinien für die Ermittlung der Verkehrswerte (Marktwerte) von Grundstücken, Wertermittlungsrichtlinien* – WertR) (2006). Kroll (2004) pointed out that WertR (2002) enabled the taking into account of impact of rights and encumbrances on market value only in conjunction with economic effects, i.e. by change in yield of real estate or in costs, although this is counter to market valuation of real estate, where the participants on the market have an important role in deciding on decreasing or increasing the value of real estate on account of rights or encumbrances on land. For this reason, he (Kroll, 2004) proposed to supplement such real estate valuation by taking into account the situation in the real estate market, as adaptation of costs or interest rate on real estate under assessment of impact of rights and encumbrances on land value. As such adaptations cannot be evaluated objectively, based on statistics, the appraisers avail themselves of experiential values and analogies. According to Kroll (2004), it is important that appraisers substantiate in a professional way the bases of valuation and expertly and understandably provide the arguments for each particular adaptation. The described method is still valid and worth consideration in cases of assessing the value of land encumbered by easement using adaptations.

In Slovenian valuation practice, the assessment of decreased market value of land and of compensation for easement tends to be made by 'the rule of thumb'. In decreasing the value of land is frequently used the unwritten and non-substantiated "30 % - rule", in two variants: as 30 % decrease in value of

entire land, or of the part of land under easement. In practice, a model was designed for agricultural land (Lovrin et al., 2012), according to which the compensation for entrenched ducts amounted to 33 % of value of land under easement, or to 20 % of value of land in case of non-entrenched ducts. The easement beneficiary shall cover the actual damage in conjunction with easement in place. A somewhat more complicated method of assessment of compensation for easement by 'the rule of thumb' is the Žlajpah method (Stopar, 2013), according to which the level of compensation for easement is impacted by the original market value of land, the period of duration of easement, and the common level of encumbrance of land, i.e. the sum of levels in respect of legal status, encumbrance, share of encumbered part of land, and type of object. The particular adaptation values are defined in relatively wide intervals, and the decision for a certain value within the interval is difficult to substantiate.

There is another specificity of easement that needs to be considered, namely, that impact of easement on land value for a typical buyer and typical seller is assessed, and that easement is only one of factors which may impact the land market value. In addition, in assessing the impact of easement in a concrete case, it is important to take into account the extent of all other pieces of land along the land in question, which are in possession of proprietor of land under easement.

On account of all the above characteristics, a single established traditional method of valuation of impact of easement on land value does not exist in valuation practice, and a combination of several methods is frequently used. This very fact was taken into consideration in his research by Sherwood (2006, 2014). He used the 'before and after' method and analysed the comparable sales of land without and with easement. Analysis was conducted for a major number of pairs of comparable land, and the result constitutes the established general trend of the assessed impact of easement on land market value, corrected by results obtained by way of interviews. The so-called "Sherwood matrix" is composed of columns, with indication of the type of easement, description of situation of easement on land, and its impact on land value in a relatively small interval. Repetition of such analysis is difficult in general, as it is difficult to acquire a sufficient number of pairs of comparable sales. Only by a sufficient number of such pairs can a general trend of easement on real estate value be established.

It needs to be pointed out that all research studies conducted to date have been establishing the linear impacts of easement on land value. Munneke and Trefzger (1998) showed that in case of easement the impact on land market value was nonlinear. More precisely, the fact needs to be taken into account in valuation that the value of the remaining land in case of easement does not decrease linearly to the surface of land, but that the impact of easement on the value of the remaining land is the smaller, the greater is the surface of the remaining land. Thus, in a concrete case, all the surfaces of land of proprietor in question need to be taken into account in assessing the decrease in value on account of easement (Šubic Kovač and Rakar, 2010).

It is obvious that valuation methods do exist for land valuation in cases of easement; however, the use of a particular method is linked to a sufficient number of appropriate data on the sales of land encumbered by easement. It would be optimal to link these with perceptions of potential land buyers as to decrease in value on account of easement, as done by Sherwood (2006, 2014). As in Slovenia the data on land sales without and with easement are not available, we analysed by help of survey the perceptions of potential buyers of land, as to decrease in value of land on account of easement, whereby we conducted a simulation of developments on land market in case of easement.

3 PROCESS AND RESULTS OF SURVEY ON IMPACTS OF EASEMENT ON LAND VALUE

3.1 Presentation of questionnaire

Purpose of survey was to analyse the perceptions of potential land buyers on the decrease in value of land on account of easement, taking into account the different factors: type of easement (water supply pipeline, mandatory access driveway), extent of easement (length of pipeline in comparison to size of land) and situation of the part of land encumbered by easement within the plot of land. Survey was conducted on the basis of a questionnaire (Figure 1).

For the research of public opinion on the decrease in land value encumbered by easement was selected the field survey (interview) in the form of direct conversation of surveyor and interviewee. Reasons for this decision were mainly two. The first was that the internet survey would omit the older population, which uses the web less often, and the other was that the nature of survey included terms infrequently used by the general population, and the surveyor was able to explain them where necessary.

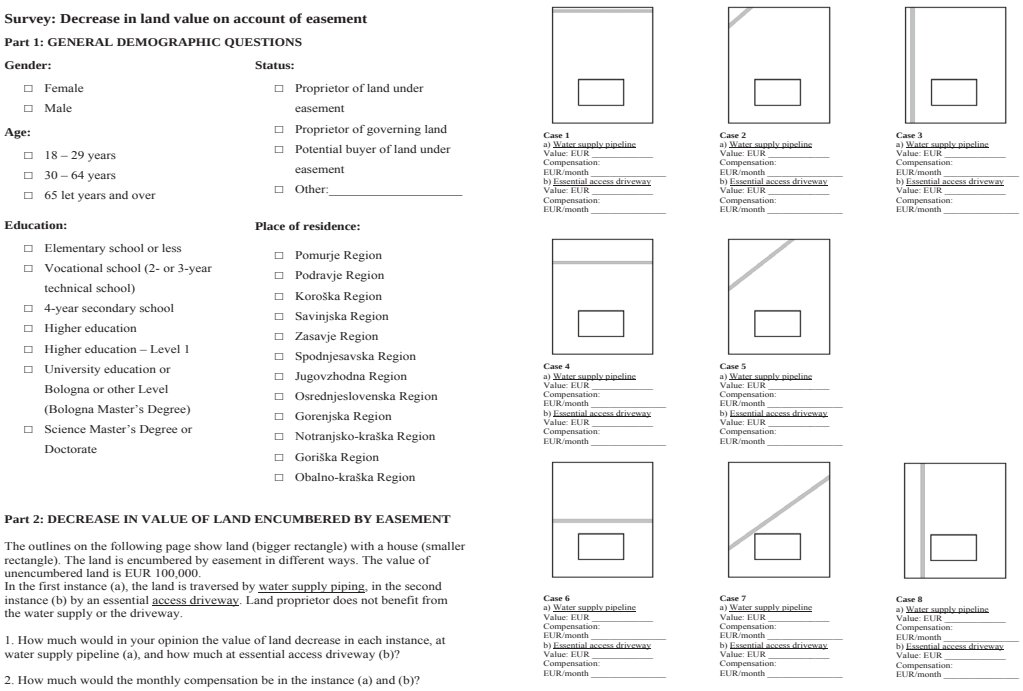
The questionnaire comprised two complexes. The first one included the general demographic question, as gender, age, education, place of residence as to region and status of interviewee on land market, where the interviewee had the possibility of selection between the proprietor of land under easement, proprietor of governing land, and the potential buyer of land under easement. Where the interviewee could not or did not wish to select the role of proprietor or potential buyer, there was a possible selection of response as "Other".

In the second complex included schemes of eight cases of course of pipeline or mandatory access driveway (situation) within a hypothetical land under easement. The land was rectangular, its surface was equal in all the cases, and there was a house presented as orientation only.

The interviewee was explained that the market value of non-encumbered land was EUR 100,000.00. The interviewee then responded to a question on how much in his opinion would the value of land be after its encumbrance in the different ways by easement for indefinite time, and for each case separately. Response was to be given to the question as well on how much would an appropriate monthly compensation for easement amount to, for each case separately.

3.2 Interviewees

The survey comprised 203 adult persons from all statistical regions of the Republic of Slovenia. Interviewees were divided in two groups as to gender (male and female), three groups as to age (18 through 29, 30 through 64, and 65 and over), seven groups as to education, four groups as to status selected (proprietor of land under easement, proprietor of governing land, potential buyer of land under easement, and Other), and twelve groups as to place of residence (statistical region of Slovenia).



Survey: Decrease in land value on account of easement

Part 1: GENERAL DEMOGRAPHIC QUESTIONS

Gender:

- ☐ Female
- ☐ Male

Age:

- ☐ 18 – 29 years
- ☐ 30 – 64 years
- ☐ 65 let years and over

Education:

- ☐ Elementary school or less
- ☐ Vocational school (2- or 3-year technical school)
- ☐ 4-year secondary school
- ☐ Higher education
- ☐ Higher education – Level 1
- ☐ University education or Bologna or other Level (Bologna Master's Degree)
- ☐ Science Master's Degree or Doctorate

Status:

- ☐ Proprietor of land under easement
- ☐ Proprietor of governing land
- ☐ Potential buyer of land under easement
- ☐ Other:_____

Place of residence:

- ☐ Pomurje Region
- ☐ Podravje Region
- ☐ Koroška Region
- ☐ Savinjska Region
- ☐ Zasavje Region
- ☐ Spodnjesavska Region
- ☐ Jugovzhodna Region
- ☐ Osrednjeslovenska Region
- ☐ Gorenjska Region
- ☐ Notranjsko-kraška Region
- ☐ Goriška Region
- ☐ Obalno-kraška Region

Part 2: DECREASE IN VALUE OF LAND ENCUMBERED BY EASEMENT

The outlines on the following page show land (bigger rectangle) with a house (smaller rectangle). The land is encumbered by easement in different ways. The value of unencumbered land is EUR 100,000.
In the first instance (a), the land is traversed by water supply piping, in the second instance (b) by an essential access driveway. Land proprietor does not benefit from the water supply or the driveway.

1. How much would in your opinion the value of land decrease in each instance, at water supply pipeline (a), and how much at essential access driveway (b)?

2. How much would the monthly compensation be in the instance (a) and (b)?

Case 1
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 2
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 3
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 4
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 5
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 6
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 7
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Case 8
a) Water supply pipeline
Value: EUR _____
Compensation:
EUR/month _____
b) Essential access driveway
Value: EUR _____
Compensation:
EUR/month _____

Figure 1: First and second part of questionnaire, showing different cases.

Analysis results of structure of interviewees per gender, education, status on land market, and region of residence show that the sample of interviewees was in all these characteristics comparable to the structure of inhabitants in the Republic of Slovenia, and thus, it may be concluded that the sample is representative in this regard for the entire country.

3.3 Process and results of research study

Survey was conducted in person in all the Slovenian regions in the period between 25 March and 5 June 2013. Per each person ready to respond to the questionnaire there were at least two, who were not. A most frequent reason indicated was the lack of time, and many persons thought that they would be incapable of responding to the questions. Collected were 203 fully filled in questionnaires. First, we provided for a test of internal consistency using the Cronbach's alpha coefficient, which in our case amounts to $\alpha = 0.918$ for results of decrease in value of land, and to $\alpha = 0.783$ for monthly compensations, which means that the reliability of sample in both the cases is high. Based on responses obtained to the questionnaire, we calculated for each particular case the basic statistics: arithmetic mean, median value, and standard deviation (Table 2).

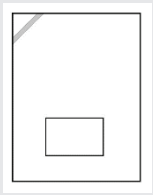
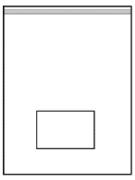
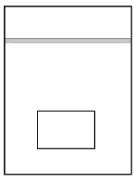
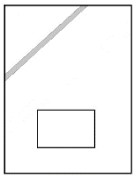
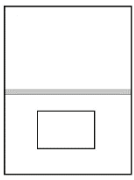
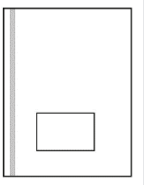
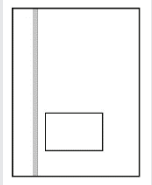
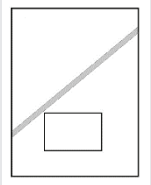
Table 2: Basic statistics for decreased value and monthly compensation required, on account of easement for water supply pipeline and mandatory access driveway, per particular cases.

Type of easement	Water supply pipeline		Mandatory access driveway	
Case	**Decreased value (EUR)**	**Monthly compensation required (EUR)**	**Decreased value (EUR)**	**Monthly compensation required (EUR)**
Case 1				
Arithmetic mean	97,535.03	16.79	92,678.16	41.02
Median value	99,500.00	0.00	95,000.00	11.72
Standard deviation	4,928.73	65.74	8,207.41	166.93
Case 2				
Arithmetic mean	98,057.13	12.22	93,887.67	34.27
Median value	99,800.00	0.00	95,000.00	10.00
Standard deviation	4,249.20	115.75	7,659.92	163.47
Case 3				
Arithmetic mean	93,832.68	30.26	86,239.06	64.99
Median value	95,000.00	10.00	86,000.00	30.00
Standard deviation	7,862.82	241.45	13,415.45	336.33
Case 4				
Arithmetic mean	88,660.85	45.25	78,020.25	95.53
Median value	90,000.00	20.00	80,000.00	50.00
Standard deviation	10,320.05	388.50	14,822.45	553.63
Case 5				
Arithmetic mean	87,157.89	50.79	76,426.51	103.20
Median value	88,000.00	30.00	80,000.00	50.00
Standard deviation	11,077.83	481.49	15,946.88	868.42
Case 6				
Arithmetic mean	75,186.08	119.95	54,140.67	472.87
Median value	75,000.00	50.00	60,000.00	100.00
Standard deviation	19,804.08	1,138.06	25,246.77	2,852.17
Case 7				
Arithmetic mean	70,448.72	146.15	47,846.16	522.90
Median value	70,000.00	60.00	50,000.00	100.00
Standard deviation	22,091.74	996.01	25,722.83	5,324.18
Case 8				
Arithmetic mean	75,212.61	140.23	54,012.04	608.64
Median value	80,000.00	45.00	60,000.00	100.00
Standard deviation	21,803.97	1,010.96	26,348.27	6,438.28

Subsequently, we intended to design a matrix on results and responses of interviewees as to the type of easement, extent of easement, and level of limitation of use of land or situation of easement. Variability of results in assessing the monthly compensation for easement is relatively high (high standard deviation in all the cases), so we did not take into account these results in designing the matrix, and we focused only on the decrease of land value in the particular cases.

First, we designed groups as to extent of easement and limitation of land use. We hypothesised that the extent of easement was smallest in cases where the part of land under easement was affected by a short transverse belt; medium in cases where this part of land was running parallel to the shorter edge of land; and large in cases where this part of land was running parallel to the longer edge of land. We hypothesised also that the smaller limitation of land use was in cases where the part of land under easement was situated at the edge of land; and greater in cases where the part of land under easement was situated towards the centre of land. At partial limitation of land use, the easement runs between these two described cases. Table 3 shows cases distributed as to easement and its encumbrance on land as to its position.

Table 3: Distribution of cases as to extent of easement and encumbrance on land as to its position.

	Smaller limitation of land use	**Partial limitation of land use**	**Large limitation of land use**
Smaller extent of easement			
Medium extent of easement		 	
Large extent of easement			

Subsequently, we calculated the portion of decrease in value of land as a percentage of land value without easement. Cases of partial or large limitation of land use for a smaller extent of easement were not included in the survey, so we calculated the missing results by linear interpolation. Then, the type of easement was divided also for the less disturbing easements, as for instance for a water supply pipeline, underground optical cable, and air piping systems; the medium disturbing types of easement, as for instance for the sewage system and gas pipeline of a smaller extent, where the surface of land above the pipeline is still usable; and to the highly disturbing types of easement, as for instance, the mandatory access driveway that enables access to a public road. Values of medium disturbing types of easement are the arithmetic means of values of the less and highly disturbing types of easement. Final result is the Table or Matrix (Table 4), showing per particular groups the decrease in land value (in %).

Table 4: Decrease in land value (in %) as to the type of easement, extent of easement, and limitation of use of land.

Less disturbing types of easement	**Smaller limitation of land use**	**Partial limitation of land use**	**Major limitation of land use**
Smaller extent of easement	2 %	8 %	17 %
Medium extent of easement	3 %	12 %	25 %
Large extent of easement	6 %	25 %	30 %
Medium disturbing types of easement			
Smaller extent of easement	4 %	14 %	28 %
Medium extent of easement	5 %	17 %	35%
Large extent of easement	10 %	35 %	41%
Highly disturbing types of easement			
Smaller extent of easement	6 %	20 %	40 %
Medium extent of easement	7 %	23 %	46 %
Large extent of easement	14 %	46 %	52 %

Interviewees perceived the factors included in the research as factors impacting the decrease in market value of land. It is possible to conclude from the research that among factors impacting the decrease in market value of land in case of easement belong: the type of easement, extent of easement, and level of limitation of land use. Results obtained by analysis of responses to survey are shown in form of percentage of decrease in value of land, where in case of impact of other factors on market value in a concrete case it is necessary to additionally take into account the factors as (final time of duration of easement, larger surface of remaining land, and similar).

3.4 Analysis of statistically characteristic differences between groups of interviewees

Data collected from the questionnaire were further analysed as to characteristics of interviewees. We were interested in whether there existed the statistically characteristic differences between the interviewees. Test of internal consistency using the Cronbach's alpha coefficient showed, as already indicated in Chapter 3.3., that the reliability of sample was high in case of decreased value of land and the monthly compensation required.

Normalcy of division of values was tested using the Kolmogorov-Smirnov test for greater groups (n>50) and the Shapiro-Wilkov test for smaller groups (n < 50). The form of division of values was verified also

visually. In both the cases the data showed characteristics of an abnormal (non-Gauss) division. As the parametric tests, as the t-test and the variance analysis test, are based on normal division, in the case of violated hypothesis of normalcy of division for identification of differences between the mean values, the use of non-parametric tests is recommended, including the Mann-Whitney test for the identification of differences between the mean values for independent samples, and the Wilcoxon rank-sum test for dependent samples. For comparison of three or more groups we used the Kruskal-Wallis test (Šuster Erjavec, Južnik Rotar, 2013).

U-statistics in the Mann-Whitney test is calculated as

$$U = n_1 n_2 \frac{n_1 (n_1 + 1)}{2} - R_1 \tag{1}$$

where R_1 is the sum of ranges for the first group, n_1 is the size of the first group, and n_2 is the size of the second group.

H-statistics in the Kruskal-Wallis test is calculated as

$$H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(N+1) \tag{2}$$

where R_i is the sum of ranges for each group, N is the total sample size, and n_i is the size of a particular group.

The entire sample was first divided into groups as to gender, age, level of education, status on real estate market, and place of residence of the interviewee, and compared the arithmetic means of the assessed decreases in value per particular groups. There appeared the statistically characteristic differences ($p > 0.05$) between the responses of the groups divided as to gender, age, education, and status in real estate market, whilst the statistically characteristic differences between the responses of groups divided as to the place of residence did not occur ($p < 0.05$). Females found the easement of water supply pipeline closer to the building more disturbing, whilst the vicinity of easement was found less disturbing by older groups. In addition, the persons in the group with highest education assessed the higher decrease in value at easement of water supply pipeline, as compared to other groups. Groups divided as to status in real estate market assessed the decrease in land value in a different manner. On the one hand, proprietors of land under easement and the potential buyers of land under easement assessed a higher decrease in value of land under easement, whilst on the other hand the neutral persons and proprietors of governing land assessed a lower decrease in value of land under easement. Detailed results are evident from Table 5.

Table 5: U-values of the Mann-Whitney test and H-values of the Kruskal-Wallis test for the identification of differences between responses of groups, and probability p for a particular case and type of easement, for the decreased value of land, and monthly compensation for easement, respectively.

	Water supply pipeline		**Mandatory access driveway**	
	Decreased value	**Monthly compensation**	**Decreased value**	**Monthly compensation**
Case 1				
Gender	U = 4658.0 / p = 0.43	U = 4633.0 / p = 0.42	U = 4855.0 / p = 0,79	U = 4843.5 / p = 0,77

	Water supply pipeline		Mandatory access driveway	
	Decreased value	**Monthly compensation**	**Decreased value**	**Monthly compensation**
Age	H = 0.333 / p = 0.85	H = 2.631 / p = 0.27	H = 0.832 / p = 0.66	H = 5.147 / p = 0.08
Education	H = 9.436 / p = 0.15	H = 8.391 / p = 0.21	H = 6.937 / p = 0.33	H = 7.412 / p = 0.28
Status	H = 1.385 / p = 0.71	H = 1.404 / p = 0.70	H = 1.953 / p = 0.58	H = 3.623 / p = 0.30
Place of residence	H = 27.139 / p = 0.00	H = 25.324 / p = 0.01	H = 30.193 / p = 0.00	H = 28.738 / p = 0.00
Case 2				
Gender	U = 4851.0 / p = 0.78	U = 4613.0 / p = 0.35	U = 4958.0 / p = 0.99	U = 4890.5 / p = 0.86
Age	H = 0.141 / p = 0.93	H = 1.391 / p = 0.50	H = 1.136/ p =0.57	H = 4.957 / p = 0.08
Education	H = 13.015 / p = 0.04	H = 11.740 / p = 0.07	H = 7.839 / p = 0.25	H = 6.767 / p = 0.34
Status	H = 3.000 / p = 0.39	H = 2.753 / p = 0.43	H = 3.380 / p = 0.34	H = 5.396 / p = 0.14
Place of residence	H = 29.443 / p = 0.00	H = 26.842 / p = 0.00	H = 23.125 / p = 0.02	H = 25.119 / p = 0.01
Case 3				
Gender	U = 4686.0 / p = 0.50	U = 4444.0 / p = 0.20	U = 4518.0 / p = 0.28	U = 4575.0 / p = 0.35
Age	H = 1.043 / p = 0.59	H = 1.048 / p = 0.59	H = 1.554 / p = 0.46	H = 7.150 / p = 0.03
Education	H = 5.858 / p = 0.44	H = 3.775 / p = 0.71	H = 3.403 / p = 0.76	H = 5.236 / p = 0.51
Status	H = 9.587 / p = 0.02	H = 7.954 / p = 0.05	H = 11.882 / p = 0.01	H = 11.882 / p = 0.01
Place of residence	H = 6.384 / p = 0.85	H = 9.418 / p = 0.58	H = 20.386 / p = 0.04	H = 22.426 / p = 0.02
Case 4				
Gender	U = 4356.5 / p = 0.14	U = 4640.0 / p = 0.43	U = 4513.0 / p = 0.27	U= 4714.5 / p = 0.55
Age	H = 0.012 / p = 0.99	H = 1.354 / p = 0.51	H = 0.873 / p = 0.65	H = 4.588 / p = 0.10
Education	H = 10.919 / p =0.09	H = 6.111 / p = 0.41	H = 9.660 / p = 0.14	H = 4.283 / p = 0.64
Status	H = 19.137 / p = 0.00	H = 14.822 / p = 0.00	H = 27.544 / p = 0.00	H = 25.869 / p = 0.00
Place of residence	H = 11.329 / p = 0.42	H = 16.713 / p = 0.12	H = 15.525 / p = 0.16	H = 25.065 / p = 0.01
Case 5				
Gender	U = 4467.0 / p = 0.23	U = 4723.0 / p = 0.56	U = 4723.0 / p = 0.56	U= 4900.0 / p = 0.88
Age	H = 2.188 / p = 0.34	H = 0.028 / p = 0.99	H = 1.850 / p = 0.40	H = 3.309 / p = 0.19
Education	H = 12.083 / p = 0.06	H = 6.336 / p = 0.39	H = 9.432 / p = 0.15	H = 4.854 / p = 0.56
Status	H = 25.052 / p = 0.00	H = 18.677 / p = 0.00	H = 32.383 / p = 0.00	H = 26.193 / p = 0.00
Place of residence	H = 7.141 / p = 0.79	H = 13.235 / p = 0.28	H = 10.035 / p = 0.53	H = 24.198 / p = 0.01
Case 6				
Gender	U = 4015.0 / p = 0.02	U = 4468.0 / p = 0.23	U = 4201.0 / p = 0.06	U= 4679.5 / p = 0.49
Age	H = 6.258 / p = 0.04	H = 0.101 / p = 0.95	H = 6.834 / p = 0.03	H = 3.525 / p = 0.17

	Water supply pipeline		Mandatory access driveway	
	Decreased value	**Monthly compensation**	**Decreased value**	**Monthly compensation**
Education	H = 4.918 / p = 0.55	H = 6.736 / p = 0.35	H = 4.307 / p = 0.64	H = 4.533 / p = 0.60
Status	H = 34.800 / p = 0.00	H = 26.943 / p = 0.00	H = 42.758 / p = 0.00	H = 33.853 / p = 0.00
Place of residence	H = 11.201 / p = 0.43	H = 19.656 / p = 0.05	H = 8.767 / p = 0.64	H = 20.821 / p = 0.04
Case 7				
Gender	U = 4008.0 / p = 0.02	U = 4365.0 / p = 0.15	U = 4169.5 / p = 0.05	U= 4637.5 / p = 0.43
Age	H = 5.229 / p = 0.07	H = 0.065 / p = 0.97	H = 7.833 / p = 0.02	H = 5.513 / p = 0.06
Education	H = 3.802 / p = 0.70	H = 7.005 / p = 0.32	H = 4.809 / p = 0.57	H = 3.935 / p = 0.69
Status	H = 27.830 / p = 0.00	H = 26.410 / p = 0.00	H = 43.484 / p = 0.00	H = 29.739 / p = 0.00
Place of residence	H = 11.553 / p = 0.40	H = 18.827 / p = 0.06	H = 7.450 / p = 0.76	H = 18.389 / p = 0.07
Case 8				
Gender	U = 4541.0 / p = 0.30	U = 4552.0 / p = 0.32	U = 4547.0 / p = 0.31	U= 4755.0 / p = 0.62
Age	H = 1.223 / p = 0.54	H = 1.375 / p = 0.50	H = 4.152 / p = 0.12	H = 4.209 / p = 0.12
Education	H = 6.644 / p = 0.36	H = 7.471 / p = 0.28	H = 5.917 / p = 0.43	H = 4.922 / p = 0.55
Status	H = 24.799 / p = 0.00	H = 25.677 / p = 0.00	H = 34.069 / p = 0.00	H = 28.591 / p = 0.00
Place of residence	H = 6.329 / p = 0.85	H = 15.108 / p = 0.18	H = 8.952 / p = 0.63	H = 21.423 / p = 0.03

At analysis of responses as to monthly compensation required we cannot give a uniform response, as the results (Table 5) of testing are most diverse. There exist differences in responses of groups divided as to education, status on land market, and place of residence. It may be concluded from the differences in responses only that responses on the monthly amount of compensation required for easement are linked to another factor that had not been included in the survey.

4 DISCUSSION AND CONCLUSION

The purpose of the research study was to assess the decrease in value of land on account of easement in the particular cases. We found that many authors give merely general orientations as to land valuation in case of easement, or combine these with the concrete recommendations or numbers obtained using the 'rule of thumb' method. Most transparent and theoretically substantiated is the Sherwood method (2006, 2014).

On account of absence of appropriate data on operation of land market in conjunction with easement in the Republic of Slovenia we conducted a survey for the purposes of the research study, whereby we obtained the data on behaviour of interviewees on land market as to the decrease in value of land in case of easement. The research results show that the assessed decreases in value of land on account of easement may be used for the evaluation of decrease in value of land, as well as for the determination of compensation for easement. Variability of survey results for monthly compensation for easement is

high, and thus, the results are not usable. It may be concluded from comments during implementation of survey that the interviewees are better able to assess the decrease in value of land, than the monthly amount of compensation for easement, as the former is a more easily imaginable situation on land market. In conducting the survey, a great number of persons rejected being surveyed, as they regarded themselves unable to give a response to the questions.

Based on survey results, we designed a matrix of decrease in value of land in respect of the extent of easement, limitation of use of land, and a more or less disturbing easement as to type of easement. As the "change" is the only constant in the real estate market, we need to take this into account in using the matrix in practice. We believe that the matrix is usable at least as one of the methods for assessing the decrease in value, keeping in mind that these are mean values showing the impacts merely of three factors included in the questionnaire, which may impact the value of land in case of easement. All other factors, which may impact the value of land in a concrete case, shall be incorporated into the valuation process subsequently. In addition, the survey results are usable in assessing the decrease in value of land at different types of easement, where, upon assessment in a concrete case, for the less limiting types of easement a more appropriate lower percentage of decrease in value is taken into account, and for the more limiting types of easement, the higher percentage of decrease in value of land is taken into account.

Results of statistical analysis show that responses of interviewees are not dependent on place of residence, on which account the matrix may be usable for the assessment of decrease in value of land in case of easement in all the statistical regions of the Republic of Slovenia. This by all means demystifies the myth of the 'rule of thumb' method and the 30 % decrease in value of land on account of easement in the Republic of Slovenia. The assessed increments (Table 4) range as to extent of easement and land use limitation from 2 % to 52 %, and thus, the consideration of a mere 30 % of decrease in value leads to erroneous assessments.

In cases where on account of absence of data or incompleteness of data for the assessment of decrease in value of land on account of encumbrance by easement it is difficult to use the 'before and after' method, the model developed in this research study is more appropriate for use, that any other alternative methods based solely on the appraiser's soundness of judgement. The model developed in this research study is more objective, as it takes into account the factors, defined and confirmed by the repeatable professional methods. In applying the model, special attention shall be dedicated to the definition of extent of easement. Data on easement are namely linked to the land register, where they are kept (if at all) only descriptively, and not graphically, and for this reason, the additional verification of extent of easement shall be required also in the field.

The model can be upgraded by taking into account the time of duration of easement and the impacts of size of land on the decrease in value of land. In the long run, it would be most reasonable to supplement the real estate market records kept by the Surveying and Mapping Authority of the Republic of Slovenia at least with the appropriate data on easement on land, to be taken from the land register, so as to facilitate the use of the 'before and after' method.

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VREDNOTENJE ZEMLJIŠČ V PRIMERU STVARNE SLUŽNOSTI: ŠTUDIJA PRIMERA V SLOVENIJI

OSNOVNE INFORMACIJE O ČLANKU:

GLEJ STRAN 685

1 UVOD

Po Stvarnopravnem zakoniku (2002) je stvarna služnost pravica lastnika nepremičnine (gospodujoče stvari) izvrševati za njene potrebe določena dejanja na tuji nepremičnini (pozitivna služnost), ali zahtevati od lastnika služeče stvari, da opušča določena dejanja, ki bi jih sicer imel izvrševati na svoji nepremičnini (negativna služnost). Stvarne služnosti so tako različne oblike uporabe (tudi izkoriščanja) služeče nepremičnine. Lastnik služeče stvari mora v izvrševanju oblasti nad svojo stvarjo nekaj trpeti, čeprav je izvrševanje vsebine služnosti omejeno samo na del služeče nepremičnine (Juhart, 2003; Tratnik, 2010). Zato stvarna služnost bremeni celotno služečo nepremičnino. Stvarna služnost je lahko ustanovljena za nedoločen ali za določen čas, ali celo določen letni čas. Običajno lastnik gospodujoče stvari plačuje lastniku služeče stvari nadomestilo oziroma odškodnino za služnost, in sicer v enkratnem ali v večkratnih zneskih.

Pravna oblika, v kateri se izražajo pravice in omejitve na nepremičnini, ima na področju vrednotenja nepremičnin v splošnem podrejen pomen (Kroll, 2004). Pomembnejša sta obseg in vsebina pravic ter tudi z njihovim izvajanjem povezane okoliščine. Pri vrednotenju spremembe vrednosti nepremičnine zaradi stvarne služnosti je treba predvsem vsebinsko enolično opredeliti stvarno služnost in raven omejevanja lastninske pravice. Premisliti je treba tudi, kako bi se zavedno ali nezavedno obnašal potencialni kupec ob morebitni prodaji ocenjevane nepremičnine (ugotavljanje kupca o zmanjšanju vrednosti nepremičnine).

Teorija vrednotenja nepremičnin (na primer v Ross et al., 1991; Friedman in Ordway, 1998; Ventolo, 2001; Petrson, 2005; Kleiber, 2010; Betts, 2013) se pri vrednotenju zemljišč glede stvarne služnosti omejuje na manjše število splošnih usmeritev za vrednotenje služnosti ali na številne, vendar še vedno precej splošne usmeritve, mnogokrat podkrepljene z ocenami »na palec«, ki naj bi bile v pomoč cenilcu pri vrednotenju zemljišč v zvezi s služnostjo (na primer v Lang in Smith, 1999; Allen, 2001; Bucaria, 2002; Wolf, 2005; Highway Beautification Agencies, 2005; Valentine, 2008; Maine Association of Assessing Officers, 2011). Praksa na tem področju v Republiki Sloveniji kaže, da se splošne usmeritve večinoma ne upoštevajo ustrezno oziroma se sploh ne upoštevajo. Vzrokov za to je lahko več in so tako objektivne (pomanjkanje ustreznih podatkov) kot subjektivne narave (nerazumevanje vpliva stvarne služnosti na vrednost nepremičnine in iz tega izhajajoča neutemeljenost odločitev v procesu vrednotenja). V zvezi s tem smo v raziskavi skušali odgovoriti na naslednja raziskovalna vprašanja: 1. Katere značilnosti stvarne služnosti vplivajo na vrednost zemljišča in katere metode se uporabljajo za ocenjevanje tega vpliva?; 2. Kako prebivalci Republike Slovenije ocenjujejo zmanjšanje vrednosti zemljišča zaradi stvarne služnosti v posameznih primerih?

V iskanju odgovorov na zastavljena raziskovalna vprašanja smo oblikovali metodo dela. Najprej smo analizirali razmerje med stvarno služnostjo in vrednostjo zemljišča v že opravljenih raziskavah na tem

področju, teoretično oblikovane metode vrednotenja zemljišč v primeru stvarne služnosti in prakso na tem področju. Izhajajoč iz dejstva, da v Republiki Sloveniji javno dostopni podatki niso dovolj za ocenjevanje zemljišč pri stvarnih služnostih, ker te služnosti ponekod niso bile vzpostavljene ali pa niso bile vpisane v zemljiško knjigo, smo izvedli anketo med prebivalci Republike Slovenije o njihovem zaznavanju zmanjšanja vrednosti zemljišča v posameznih primerih stvarne služnosti in oblikovali rezultate ankete v obliki matrike. S statističnimi metodami smo ugotavljali tudi statistično odvisnost odgovorov glede na posamezno skupino anketirancev.

2 VPLIV STVARNE SLUŽNOSTI NA VREDNOST ZEMLJIŠČA

Teorija vrednotenja nepremičnin (na primer v Kroll, 2004; Kleiber, 2010) obravnava vrednotenje stvarne služnosti z dveh vidikov, in sicer: a) stvarno služnost v smislu bremena obravnava kot neobičajno okoliščino oziroma pravno značilnost, ki vpliva na spremembo vrednosti ocenjevanega zemljišča; b) stvarno služnost obravnava zaradi določitve nadomestila samostojno kot predmet vrednotenja.

Sprememba vrednosti zemljišča zaradi stvarne služnosti se ocenjuje na podlagi primerjave prodajnih cen nepremičnin z enako obremenitvijo oziroma ugodnostjo. Ko to ni mogoče, se izhaja iz ocene vrednosti nepremičnin brez stvarne služnosti in na podlagi dejavnikov prilagoditve oceni vrednost nepremičnine s stvarno služnostjo. Pogosto se pri tem uporablja diferenčna metoda (angl. *before and after method*, nem. *Differenzmethode,* predstavljena na primer v Allen, 2001; Kroll, 2004; Šubic Kovač, 2006; Šubic Kovač, 2007; Kleiber, 2010; Šubic Kovač in Rakar, 2010; Šnajberg, 2015), s katero se ocenjuje vpliv stvarne služnosti na tržno vrednost primerljivih zemljišč, in se tako ocenjena prilagoditev uporabi pri oceni tržne vrednosti ocenjevanega zemljišča.

Tržno vrednost stvarne služnosti kot predmeta vrednotenja je na podlagi primerjave vrednosti podobnih stvarnih služnosti na nepremičninah težko ali celo nemogoče oceniti, ker trg stvarnih služnosti ne obstaja. Zato se tržna vrednost stvarne služnosti ocenjuje na podlagi simulacije običajnega poslovnega prometa. Simulacija običajnega poslovnega prometa na trgu nepremičnin se je na področju ocenjevanja nepremičnin v Sloveniji sicer že uporabila (Nahtigal in Grum, 2015), vendar za raziskavo vrednostne percepcije potencialnih kupcev stanovanjskih nepremičnin glede dejavnikov, ki vplivajo na vrednost stanovanjskih nepremičnin. Z vplivom služnosti na vrednost nepremičnin na podlagi simulacije trga nepremičnin pa se (po nam dostopnih podatkih) ni ukvarjal še nihče.

Obakrat je treba značilnosti stvarne služnosti najprej opredeliti. Pri tem je treba izhajati iz pravnih predpisov posamezne države. V Republiki Sloveniji je temeljni zakon na tem področju Stvarnopravni zakonik (Ur. l. RS, št. 87/2002; št. 91/2013 – SPZ), vendar posegajo na to področje tudi drugi zakoni (preglednica 1).

Stvarno služnost v Republiki Sloveniji v splošnem opredeljuje Stvarnopravni zakonik (SPZ), služnost v javno korist ureja podrobneje Zakon o urejanju prostora (ZUreP-1) oziroma za različne vrste infrastrukture Zakon o elektronskih komunikacijah (ZEKom-1), Zakon o rudarstvu (ZRud-1), Zakon o cestah (ZCes-1), Zakon o žičniških napravah za prevoz oseb (ZŽNPO) ter Zakon o nadzoru državne meje (ZNDM-2). Nujna pot je kot stvarna služnost opredeljena tako v Stvarnopravnem zakoniku kot v Zakonu o nepravdnem postopku (ZNP).

Preglednica 1: Vrste stvarnih služnosti po Stvarnopravnem zakoniku in drugih pravnih predpisih v Republiki Sloveniji.

Vrsta stvarne služnosti	**Zakon, ki jo ureja**	**Nastanek**	**Opis**	**Trajanje stvarne služnosti**
Stvarna služnost	SPZ	zakon, pravni posel, odločba državnega organa	Stvarna služnost je pravica lastnika (gospodujoče) nepremičnine, da za potrebe te nepremičnine izvršuje določena dejanja na tuji (služeči) nepremičnini ali da zahteva od lastnika tuje nepremičnine, da opušča določena dejanja, ki bi jih sicer imel pravico izvrševati na svoji nepremičnini. Morebitno nadomestilo za stvarno služnost se lahko določi v enkratnem znesku ali v periodično zapadlih obrokih.	določen čas, določen letni čas, neomejeno
Služnost v javno korist	ZUreP-1 ZEKom-1 ZRud-1 ZCes-1 ZŽNPO ZNDM-2	pravni posel, odločba državnega organa	Služnost v javno korist je služnost, ki je ustanovljena v korist države, lokalnih skupnosti, izvajalcev javnih služb in nosilcev različnih infrastrukturnih dejavnosti. Služnost v javno korist se ustanovi v korist poimensko določene osebe in ne v korist gospodujočega zemljišča, zato spada med neprave stvarne služnosti. Višina nadomestila za služnost v javno korist obsega zmanjšanje vrednosti služeče nepremičnine in dejansko škodo ter izgubljeni dobiček.	začasno, trajno
Nujna pot	SPZ ZNP	pravni posel, odločba državnega organa	Nujna pot je nekje kvalificirana kot zakonita služnost v okviru sosedskega prava, drugje pa kot služnost, ustanovljena z odločbo državnega organa. Nujno pot sodišče dovoli za nepremičnino, ki nima za redno rabo ustrezne zveze z javno cesto ali pa bi bila taka zveza povezana z nesorazmernimi stroški. Sodišče določi nujno pot tako, da se tuja nepremičnina čim manj obremeni, za dovoljeno nujno pot je upravičenec dolžan plačati zavezancu primerno nadomestilo. Sodišče določi tudi višino denarnega nadomestila ter način in rok plačila nadomestila.	določen čas, trajno

Pri identifikaciji stvarne služnosti je treba poleg vrste služnosti opredeliti značilnosti omejitve lastninske pravice zaradi služnosti glede na lego in obseg stvarne služnosti na celotnem služečem zemljišču, zmanjšano rabo celotnega služečega zemljišča, možnosti za ukinitev stvarne služnosti in pogoje za njeno ukinitev ter časovni značaj služnosti (Šnajberg, 2015). Cenilec mora odgovoriti tudi na vprašanja glede pravic lastnika zemljišča na služečem delu zemljišča in možnosti razširitve obravnavane stvarne služnosti v prihodnosti.

Pomembna je tudi analiza vpliva stvarne služnosti na najbolj gospodarno rabo zemljišča (Allen, 2001), s čimer se dejansko analizira velikost posega v lastninsko pravico zaradi ustanovitve služnosti in vpliv na vrednost služečega zemljišča. Najbolj gospodarna raba prvotnega zemljišča se lahko spremeni, če se ustanovi stvarna služnost, vendar se ta sprememba upošteva le, če jo je utemeljeno pričakovati (Allen, 2001).

Lastniku služeče nepremičnine za poseg v njegovo lastninsko pravico pripada nadomestilo. Glede višine nadomestila se lastnika gospodujočega in služečega zemljišča v splošnem lahko dogovorita. Če dogovor ni mogoč, je treba višino nadomestila za stvarno služnost oceniti. Ob prisilnem posegu v lastninsko pravico zaradi nujne poti SPZ (89. člen) navaja primerno denarno nadomestilo za uporabo nujne poti, ki ga določi sodišče primeroma in ob upoštevanju kriterijev sodne prakse. Po SPZ (91. člen) se določila o nujnih poteh smiselno uporabljajo za priključitev na javna komunalna in druga omrežja, če lastnik nepremičnine, ki to zahteva, izpolnjuje pogoje za priklop. ZureP-1 (110. člen) določa nastanek služnosti v javno korist kot obliko prisilne ustanovitve služnosti, ki pomeni omejitev lastninske pravice takrat, ko za doseganje javnega interesa zadošča omejevanje lastninske pravice in razlastitev ni potrebna. Služnost v javno korist ima naravo neprave stvarne služnosti. Tudi v tem primeru gre za splošno določeno vsebino in dolžnost lastnika nepremičnine, da nekaj trpi. Služnost v javno korist je odplačna služnost in lastniku služeče nepremičnine pripada nadomestilo, ki je v zakonu opredeljeno kot odškodnina za poseg v lastninsko pravico. Ta obsega zmanjšano vrednost nepremičnine ali dejansko škodo in izgubljeni dobiček. Pri zmanjšani vrednosti nepremičnine se upošteva zmanjšana možnost uporabe ter zmanjšana možnost pridobivanja plodov in nižja tržna vrednost nepremičnine, ki se ugotavlja na podlagi vseh dejanj in vplivov, ki segajo na služečo nepremičnino. Višina se lahko določi sporazumno ali jo določi sodišče, če sporazum ni mogoč.

V nekaterih primerih je v pravnih predpisih v Republiki Sloveniji, na primer Ceniku za pripravo soglasij, pogodb in obračun odškodnin oziroma nadomestil za posamezno leto (2016), ki velja za kmetijska zemljišča v upravljanju Sklada kmetijskih zemljišč in gozdov v Republiki Sloveniji, določena višina nadomestila oziroma odškodnine za ustanovljeno služnost v končnem znesku, pri čemer ima ocena cenilca prednost. Prav tako odplačna je ustanovitev služnosti na vodnem ali priobalnem zemljišču. Nadomestilo se izračuna v skladu s Pravilnikom o metodologiji za določanje nadomestil za služnosti na vodnih in priobalnih zemljiščih v lasti Republike Slovenije (Ur. l. RS, št. 35/201, št. 18/2013, št. 59/2014 in št. 56/2015–ZV–1E). Upošteva se površina vplivnega območja posega, temeljna vrednost služečega zemljišča, dejavnik za vrsto služečega zemljišča, dejavnik vpliva posega na vodni režim, dejavnik vpliva posega na služeče zemljišče, dejavnik emisije vode in dejavnik trajanja služnosti. Velikost posameznih elementov je določena v pripadajočih preglednicah oziroma se uporabljajo podatki Geodetske uprave Republike Slovenije (kot na primer za temeljno vrednost služečega zemljišča). Tudi nekatere lokalne skupnosti so za namene določanja nadomestila oziroma odškodnine za pridobitev služnostne pravice na nepremičnem premoženju lokalne skupnosti določile cenik nadomestil oziroma odškodnin.

Nadomestilo, določeno po pravnih predpisih, oziroma dogovorjeno nadomestilo ne odraža nujno vseh vplivov stvarne služnosti na vrednost nepremičnine, predvsem če zakon predpisuje elemente, ki jih je treba upoštevati pri vrednotenju, in ti ne zajemajo vseh možnih vplivov stvarne služnosti na vrednost, oziroma če cenilci pri ocenjevanju ne upoštevajo načel tržnega vrednotenja nepremičnin in vsak po svoje oceni prilagoditve brez ustrezne utemeljitve, torej subjektivno.

Podobno ugotavlja Kroll (2004). Služnost se v Zvezni republiki Nemčiji po navadi obravnava v okviru »pravnih značilnosti zemljišč«, točneje kot »pravice in obremenitve na zemljišču, ki vplivajo na njegovo vrednost«, vendar podrobnejših usmeritev glede vrednotenja ni, ker naj bi se vsak primer analiziral posebej. Veljavna Uredba o temeljih ocenjevanja tržne vrednosti nepremičnin (nem. *Verordnung* über *die Grundsätze für die Ermittlung der Verkehrswerte von Grundstücken* – ImmoWertV, 2010) poudarja (drugi odstavek 6. člena), da se pri vrednotenju upoštevajo samo tiste pravice in obremenitve, ki vplivajo na tržno vrednost, in podaja samo splošne napotke glede upoštevanja pravic in bremen v posameznih metodah tržnega vrednotenja nepremičnin. Natančnejše usmeritve so podane v Smernih vrednostih za ocenjevanje tržne vrednosti nepremičnin (nem. *Richtlinien für die Ermittlung der Verkehrswerte (Marktwerte) von Grundstücken (Wertermittlungsrichtlinien* – WertR, 2006).

Kroll (2004) je opozoril, da WertR (2002) dopušča upoštevanje vpliva pravic in obremenitev na tržno vrednost samo v povezavi z gospodarskimi učinki, to je s spremembo donosa nepremičnine oziroma stroškov, čeprav je to v nasprotju s tržnim vrednotenjem nepremičnin, pri katerem imajo udeleženci na trgu pomembno vlogo pri odločanju o zmanjšanju ali povečanju vrednosti nepremičnine zaradi pravic ali obremenitev na zemljišču. Zato je predlagal (Kroll, 2004) dopolnitev takega vrednotenja nepremičnin z upoštevanjem položaja na trgu nepremičnin, in sicer kot prilagoditev stroškov oziroma obrestne mere za nepremičnine v postopku ocenjevanja vpliva pravic in obremenitev na vrednost zemljišča. Ker tovrstnih prilagoditev objektivno na podlagi statistike ni mogoče oceniti, se cenilci zanašajo na izkustvene vrednosti in analogije. Zato je pomembno, tako Kroll (2004), da cenilci strokovno utemeljijo izhodišča vrednotenja ter strokovno in razumljivo argumentirajo posamezne prilagoditve. Opisani način je še vedno aktualen in vreden razmisleka, ko se ocenjuje vrednost zemljišča, obremenjenega s služnostjo, na podlagi prilagoditev.

V slovenski cenilski praksi se je uveljavilo ocenjevanje zmanjšanja tržne vrednosti zemljišča in tudi nadomestila za stvarno služnost »na palec«. Za zmanjšanje vrednosti zemljišča se pogosto uporablja nenapisano in neargumentirano »pravilo 30 %«, in sicer v dveh različicah: ali kot 30-odstotno zmanjšanje vrednosti celotnega zemljišča ali samo dela zemljišča, na katerega se nanaša služnost. Za kmetijska zemljišča se je v praksi oblikoval model (Lovrin et al., 2012), po katerem znaša odškodnina pri vkopanih vodih 33 % vrednosti zemljišča, na katerega se nanaša služnost, oziroma 20 % vrednosti zemljišča, če so vodi zračni. Služnostni upravičenec je dolžan poravnati tudi dejansko škodo v povezavi z vzpostavljeno služnostjo. Nekoliko bolj zapletena metoda ocene nadomestila za stvarno služnost »na palec« je Žlajpahova metoda (Stopar, 2013), po kateri na višino nadomestila za stvarno služnost vpliva izhodiščna tržna vrednost zemljišča, obdobje trajanja služnosti in skupna stopnja obremenjenosti zemljišča, to je vsota stopenj glede na pravni status, obremenjenost, delež obremenjenega dela zemljišča in vrsto objekta. Posamezne vrednosti prilagoditev so določene v razmeroma širokih intervalih, zato je odločitev za eno izmed vrednosti znotraj intervala težko argumentirati.

Tudi sicer se je treba zavedati še ene posebnosti glede služnosti, in sicer dejstva, da se ocenjuje vpliv stvarne služnosti na vrednost zemljišča za tipičnega kupca in tipičnega prodajalca ter da je služnost le eden izmed dejavnikov, ki lahko vplivajo na tržno vrednost zemljišča. Poleg tega je pri ocenjevanju vpliva služnosti v konkretnem primeru pomembno upoštevati tudi površino vseh preostalih zemljišč v lasti lastnika služečega zemljišča ob obravnavanem zemljišču.

Zaradi vseh navedenih značilnosti v cenilski praksi ne obstaja ena sama, uveljavljena in tradicionalna metoda za ocenjevanje vpliva stvarne služnosti na vrednost zemljišča, temveč se pogosto uporablja kombinacija več metod. Prav to je v svoji raziskavi upošteval Sherwood (2006, 2014). Uporabil je diferenčno metodo ter analiziral primerljive prodaje zemljišč brez služnosti in s služnostjo. Analiza je bila narejena za več parov primerljivih zemljišč, rezultat je ugotovljen splošni trend ocenjevanega vpliva služnosti na tržno vrednost zemljišča, popravljenega z rezultati, dobljenimi s pogovori. Tako imenovano »Sherwoodovo matriko« sestavljajo stolpci z navedbo vrste služnosti, z opisom lege služnosti na zemljišču in njenega vpliva na vrednost na relativno majhnem intervalu. Ponovitev tovrstne analize je v splošnem težka, ker je težko pridobiti dovolj parov primerljivih prodaj, da bi lahko ugotovili splošen trend vpliva služnosti na vrednost nepremičnin.

Poudariti velja, da je bil v vseh dosedanjih raziskavah ugotovljen linearni vpliv stvarne služnosti na vrednost zemljišča. Munneke in Trefzger (1998) sta dokazala, da je vpliv stvarne služnosti na tržno vrednost zemljišča nelinearen. Točneje, pri ocenjevanju je treba upoštevati, da se vrednost preostalega zemljišča zaradi stvarne služnosti ne zmanjšuje linearno s površino zemljišča, temveč je vpliv služnosti na vrednost preostalega zemljišča toliko manjši, kolikor večja je površina preostalega zemljišča. Zato je treba v konkretnem primeru upoštevati vse površine zemljišča obravnavanega lastnika in oceniti zmanjšanje vrednosti zaradi služnosti (Šubic Kovač in Rakar, 2010).

Očitno je, da za vrednotenje zemljišč v primerih stvarne služnosti metode vrednotenja obstajajo, vendar je uporaba posamezne metode odvisna od količine ustreznih podatkov o prodajah zemljišč, obremenjenih s služnostjo. Najbolje bi bilo, če bi te podatke povezali z zaznavanjem potencialnih kupcev zemljišč glede zmanjšanja vrednosti zaradi stvarne služnosti, kot je to naredil Sherwood (2006, 2014). Ker v Sloveniji podatkov o prodajah zemljišč brez služnosti in s služnostjo nimamo, smo z anketo analizirali samo zaznavanje potencialnih kupcev zemljišč glede zmanjšanja vrednosti zemljišča zaradi stvarne služnosti, s čimer smo izvedli simulacijo dogajanja na trgu zemljišč v primeru stvarne služnosti.

3 POTEK IN REZULTATI ANKETE O VPLIVU STVARNE SLUŽNOSTI NA VREDNOST ZEMLJIŠČ

3.1 Predstavitev vprašalnika

Namen ankete je bil analizirati zaznavanje potencialnih kupcev zemljišč glede zmanjšanja vrednosti zemljišča zaradi stvarne služnosti, pri čemer se upoštevajo različni dejavniki, in sicer: vrsta služnosti (vodovod, nujna pot), obseg služnosti (dolžina voda v primerjavi z velikostjo zemljišča) in lega dela zemljišča, obremenjenega s služnostjo, na zadevnem zemljišču. Anketa je bila izvedena v obliki vprašalnika (slika 1).

Za raziskavo javnega mnenja o zmanjšanju vrednosti zemljišča, ki je obremenjeno s stvarno služnostjo, je bilo izbrano terensko anketiranje (intervju), pri čemer gre za neposredni pogovor med anketarjem in anketirancem. Razloga za to sta bila predvsem dva. Prvi je, da bi s spletnim anketiranjem izpustili starejšo populacijo, ki splet manj uporablja, drugi pa je sama narava ankete, v kateri se uporablja terminologija, ki je splošna populacija ne uporablja pogosto, tako da je spraševalec na voljo za morebitna pojasnila.

Vprašalnik je bil sestavljen iz dveh sklopov. Prvi je vseboval splošna demografska vprašanja, kot so spol, starost, izobrazba, kraj bivanja glede na regijo in status anketiranca na trgu zemljišč, kjer je vprašani imel možnost izbire med lastnikom služečega, lastnikom gospodujočega zemljišča in potencialnim kupcem

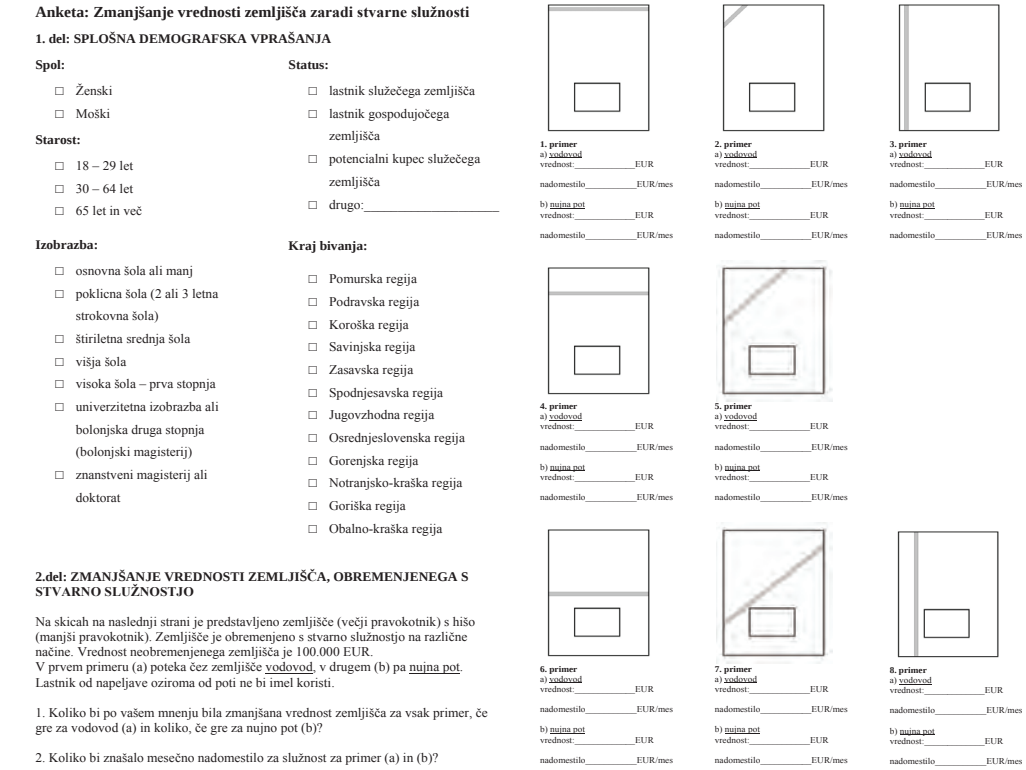
služečega zemljišča. Če si ni mogel ali ni hotel izbrati vloge lastnika ali potencialnega kupca, je imel na izbiro odgovor »drugo«.

V drugem sklopu je bilo s skicami predstavljenih osem primerov poteka vodovoda oziroma nujne poti (lege) na hipotetičnem služečem zemljišču. Zemljišče je bilo pravokotno, površina je bila v vseh primerih enaka, na njem je zgolj informativno stala tudi hiša.

Anketirancu je bilo pojasnjeno, da je tržna vrednost neobremenjenega zemljišča 100.000,00 EUR. Anketiranec je nato odgovarjal na vprašanje, koliko je po njegovem mnenju vredno zemljišče po tem, ko je obremenjeno na različne načine s stvarno služnostjo za nedoločen čas, in sicer za vsak primer posebej. Odgovoriti je moral tudi na vprašanje, koliko bi znašalo primerno mesečno nadomestilo za služnost, in sicer prav tako za vsak primer posebej.

3.2 Sodelujoči v anketi

V anketo so bile zajete 203 polnoletne osebe iz vseh statističnih regij v Republiki Sloveniji. Anketiranci so bili razdeljeni v dve skupini glede na spol (moški in ženske), tri skupine glede na starost (od 18 do 29 let, od 30 do 64 let ter 65 let in starejše), sedem skupin glede na izobrazbo, štiri skupine glede na status, ki so si ga izbrali (lastnik služečega zemljišča, lastnik gospodujočega zemljišča, potencialni kupec služečega zemljišča in drugo), in na dvanajst skupin glede na kraj bivanja (statistično regijo Slovenije).



Anketa: Zmanjšanje vrednosti zemljišča zaradi stvarne služnosti

1. del: SPLOŠNA DEMOGRAFSKA VPRAŠANJA

Spol:

- ☐ Ženski
- ☐ Moški

Starost:

- ☐ 18 – 29 let
- ☐ 30 – 64 let
- ☐ 65 let in več

Izobrazba:

- ☐ osnovna šola ali manj
- ☐ poklicna šola (2 ali 3 letna strokovna šola)
- ☐ štiriletna srednja šola
- ☐ višja šola
- ☐ visoka šola – prva stopnja
- ☐ univerzitetna izobrazba ali bolonjska druga stopnja (bolonjski magisterij)
- ☐ znanstveni magisterij ali doktorat

Status:

- ☐ lastnik služečega zemljišča
- ☐ lastnik gospodujočega zemljišča
- ☐ potencialni kupec služečega zemljišča
- ☐ drugo:_____

Kraj bivanja:

- ☐ Pomurska regija
- ☐ Podravska regija
- ☐ Koroška regija
- ☐ Savinjska regija
- ☐ Zasavska regija
- ☐ Spodnjesavska regija
- ☐ Jugovzhodna regija
- ☐ Osrednjeslovenska regija
- ☐ Gorenjska regija
- ☐ Notranjsko-kraška regija
- ☐ Goriška regija
- ☐ Obalno-kraška regija

2.del: ZMANJŠANJE VREDNOSTI ZEMLJIŠČA, OBREMENJENEGA S STVARNO SLUŽNOSTJO

Na skicah na naslednji strani je predstavljeno zemljišče (večji pravokotnik) s hišo (manjši pravokotnik). Zemljišče je obremenjeno s stvarno služnostjo na različne načine. Vrednost neobremenjenega zemljišča je 100.000 EUR.
V prvem primeru (a) poteka čez zemljišče vodovod, v drugem (b) pa nujna pot. Lastnik od napeljave oziroma od poti ne bi imel koristi.

1. Koliko bi po vašem mnenju bila zmanjšana vrednost zemljišča za vsak primer, če gre za vodovod (a) in koliko, če gre za nujno pot (b)?

2. Koliko bi znašalo mesečno nadomestilo za služnost za primer (a) in (b)?

1. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

2. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

3. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

4. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

5. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

6. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

7. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

8. primer
a) vodovod
vrednost:_____EUR
nadomestilo_____EUR/mes
b) nujna pot
vrednost:_____EUR
nadomestilo_____EUR/mes

Slika 1: Prvi in drugi del vprašalnika s prikazom posameznih primerov.

Rezultati analize strukture anketirancev po spolu, izobrazbi, statusu na trgu zemljišč in regiji bivanja kažejo, da je vzorec anketirancev po vseh navedenih značilnostih primerljiv s strukturo prebivalcev v Republiki Sloveniji, iz česar sklepamo, da je vzorec glede tega reprezentativen za celotno državo.

3.3 Potek in rezultati raziskave

Anketa se je izvajala osebno po vseh slovenskih regijah v obdobju med 25. marcem in 5. junijem 2013. Na vsako osebo, ki je bila pripravljena odgovarjati na vprašalnik, sta bili vsaj dve, ki tega nista želeli. Najpogosteje izrečen razlog je bil pomanjkanje časa, veliko oseb pa je menilo, da na vprašanja ne bi znalo odgovoriti. Zbrani so bili 203 izpolnjeni vprašalniki. Najprej smo izvedli test notranje konsistentnosti na podlagi Cronbachovega koeficienta, ki je v našem primeru $\alpha = 0{,}918$ za rezultate zmanjšanja vrednosti zemljišča in $\alpha = 0{,}783$ za mesečna nadomestila, kar pomeni, da je zanesljivost vzorca obakrat visoka. Na podlagi pridobljenih odgovorov smo za vsak primer posebej izračunali osnovne statistike: aritmetično sredino, mediano in standardni odklon (preglednica 2).

Preglednica 2: Osnovne statistike za zmanjšano vrednost in zahtevano mesečno odškodnino zaradi služnosti za vodovod in nujno pot po posameznih primerih.

Vrsta služnosti	**Vodovod**		**Nujna pot**	
Primer	**Zmanjšana vrednost (EUR)**	**Zahtevana mesečna odškodnina (EUR)**	**Zmanjšana vrednost (EUR)**	**Zahtevana mesečna odškodnina (EUR)**
1. primer				
Aritmetična sredina	97.535,03	16,79	92.678,16	41,02
Mediana	99.500,00	0,00	95.000,00	11,72
Standardni odklon	4.928,73	65,74	8.207,41	166,93
2. primer				
Aritmetična sredina	98.057,13	12,22	93.887,67	34,27
Mediana	99.800,00	0,00	95.000,00	10,00
Standardni odklon	4.249,20	115,75	7.659,92	163,47
3. primer				
Aritmetična sredina	93.832,68	30,26	86.239,06	64,99
Mediana	95.000,00	10,00	86.000,00	30,00
Standardni odklon	7.862,82	241,45	13.415,45	336,33
4. primer				
Aritmetična sredina	88.660,85	45,25	78.020,25	95,53
Mediana	90.000,00	20,00	80.000,00	50,00
Standardni odklon	10.320,05	388,50	14.822,45	553,63
5. primer				
Aritmetična sredina	87.157,89	50.79	76.426,51	103,20
Mediana	88.000,00	30,00	80.000,00	50,00
Standardni odklon	11.077,83	481,49	15.946,88	868,42

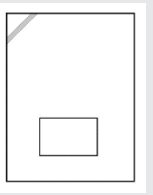
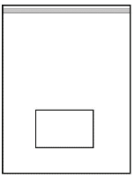
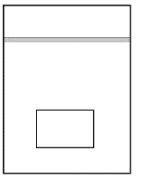
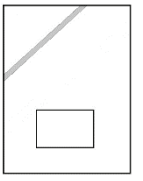
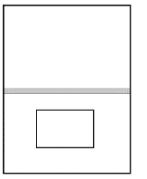
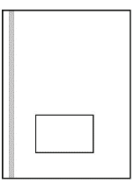
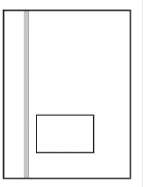
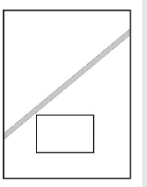
Vrsta služnosti	Vodovod		Nujna pot	
Primer	**Zmanjšana vrednost (EUR)**	**Zahtevana mesečna odškodnina (EUR)**	**Zmanjšana vrednost (EUR)**	**Zahtevana mesečna odškodnina (EUR)**
6. primer				
Aritmetična sredina	75.186,08	119,95	54.140,67	472,87
Mediana	75.000,00	50,00	60.000,00	100,00
Standardni odklon	19.804,08	1.138,06	25.246,77	2.852,17
7. primer				
Aritmetična sredina	70.448,72	146,15	47.846,16	522,90
Mediana	70.000,00	60,00	50.000,00	100,00
Standardni odklon	22.091,74	996,01	25.722,83	5.324,18
8. primer				
Aritmetična sredina	75.212,61	140,23	54.012,04	608,64
Mediana	80.000,00	45,00	60.000,00	100,00
Standardni odklon	21.803,97	1.010,96	26.348,27	6.438,28

V nadaljevanju smo želeli oblikovati matriko rezultatov odgovorov anketirancev glede na vrsto služnosti, obseg služnosti in stopnjo omejevanja rabe zemljišča oziroma lego služnosti. Variabilnost rezultatov pri oceni mesečnega nadomestila za služnost je relativno visoka (velik standardni odklon v vseh primerih), zato v nadaljevanju teh rezultatov pri oblikovanju matrike nismo upoštevali, temveč smo se osredotočili le na zmanjšanje vrednosti zemljišča v posameznih primerih.

Najprej smo oblikovali skupine glede na obseg služnosti in omejevanje rabe zemljišča. Predpostavili smo, da je obseg služnosti manjši, ko del zemljišča, na katero se nanaša služnost, le v kratkem pasu poteka po obravnavanem zemljišču, srednji obseg, ko ta del zemljišča poteka vzporedno s krajšim robom zemljišča, večji obseg pa, ko ta del zemljišča poteka vzporedno z daljšim robom zemljišča. Predpostavili smo tudi, da je manjše omejevanje rabe zemljišča, ko je del zemljišča, na katerega se nanaša služnost, ob robu zemljišča, večje omejevanje rabe, če poteka blizu sredine zemljišča. Pri delnem omejevanju rabe zemljišča služnost poteka vmes med opisanima primeroma. V preglednici 3 smo prikazali primere, razporejene glede na obseg služnosti in obremenjevanje zemljišča glede na lego.

Nato smo izračunali odstotni delež zmanjšanja vrednosti zemljišča od vrednosti zemljišča brez služnosti. Primerov delnega in večjega omejevanja rabe zemljišča za manjši obseg služnosti v anketi ni bilo, zato smo manjkajoče rezultate izračunali z linearno interpolacijo. V nadaljevanju smo vrsto služnosti razdelili še na manj moteče služnosti (na primer vodovod, podzemne optične kable in zračne vode), srednje moteče vrste služnosti (na primer za kanalizacijo in plinovod manjšega obsega, pri čemer je površina zemljišča nad vodom še uporabna), ter na zelo moteče vrste služnosti (na primer nujna pot, ki omogoča dostop do javne ceste). Vrednosti pri srednje motečih vrstah služnosti so aritmetične sredine vrednosti manj in zelo motečih vrst. Končni rezultat je preglednica oziroma matrika (preglednica 4), v kateri je po posameznih skupinah prikazano zmanjšanje vrednosti zemljišča v odstotkih (%).

Preglednica 3: Razvrstitev primerov glede na obseg služnosti in obremenjevanje zemljišča glede na lego.

	Manjše omejevanje rabe zemljišča	**Delno omejevanje rabe zemljišča**	**Večje omejevanje rabe zemljišča**
Manjši obseg služnosti			
Srednji obseg služnosti		 	
Večji obseg služnosti			

Preglednica 4: Zmanjšanje vrednosti zemljišča v odstotkih (%) glede na vrsto, obseg služnosti in omejevanje rabe zemljišča.

Manj moteče vrste služnosti	**Manjše omejevanje rabe zemljišča**	**Delno omejevanje rabe zemljišča**	**Večje omejevanje rabe zemljišča**
Manjši obseg služnosti	2 %	8 %	17 %
Srednji obseg služnosti	3 %	12 %	25 %
Večji obseg služnosti	6 %	25 %	30 %
Srednje moteče vrste služnosti			
Manjši obseg služnosti	4 %	14 %	28 %
Srednji obseg služnosti	5 %	17 %	35%
Večji obseg služnosti	10 %	35 %	41%
Zelo moteče vrste služnosti			
Manjši obseg služnosti	6 %	20 %	40 %
Srednji obseg služnosti	7 %	23 %	46 %
Večji obseg služnosti	14 %	46 %	52 %

Anketiranci so dejavnike, vključene v raziskavo, zaznali kot dejavnike, ki vplivajo na zmanjšanje tržne vrednosti zemljišča. Iz raziskave je mogoče ugotoviti, da pri stvarni služnosti med dejavnike, ki vplivajo na zmanjšanje vrednosti zemljišča, spadajo: vrsta služnosti, obseg služnosti in stopnja omejevanja rabe zemljišča. Rezultati, pridobljeni z analizo anketnih odgovorov, so prikazani v obliki odstotkov zmanjšanja vrednosti zemljišča, pri čemer je ob vplivu drugih dejavnikov na tržno vrednost v konkretnem primeru treba dodatno upoštevati tudi te (na primer: končen čas trajanja služnosti, večja površina preostalega zemljišča in podobno).

3.4 Analiza statistično značilnih razlik med skupinami anketirancev

Zbrane podatke iz vprašalnika smo v nadaljevanju analizirali tudi glede značilnosti anketirancev. Zanimalo nas je, ali med njimi obstajajo statistično značilne razlike. Test notranje konsistentnosti na podlagi Cronbachovega koeficienta je pokazal, kot smo že napisali v poglavju 3.3, da je zanesljivost vzorca tako za zmanjšano vrednost zemljišča kot za zahtevano mesečno nadomestilo visoka.

Normalnost porazdelitve vrednosti smo testirali s Kolmogorov-Smirnovim testom za večje skupine (n < 50) in Shapiro-Wilkovim testom za manjše skupine (n < 50). Obliko porazdelitve vrednosti smo preverjali tudi vizualno. Obakrat so podatki izkazovali lastnosti nenormalne (ne Gaussove) porazdelitve. Ker parametrični testi, kot sta t-test in test analize variance, temeljijo na normalni porazdelitvi, je v primeru kršene predpostavke normalnosti porazdelitve za ugotavljanje razlik med povprečnimi vrednostmi priporočena uporaba neparametričnih testov, kot sta Mann-Whitneyjev test za ugotavljanje razlik med povprečnimi vrednostmi za neodvisne in Wilcoxonov rank-sum test za odvisne vzorce. Za primerjavo treh ali več skupin smo uporabili test Kruskal-Wallis (Šuster Erjavec, Južnik Rotar, 2013).

Statistika U je v testu Mann-Whitney izračunana kot:

$$U = n_1 n_2 \frac{n_1 (n_1 + 1)}{2} - R_1, \tag{1}$$

kjer je R_1 vsota rangov za prvo skupino, n_1 je velikost prve skupine, n_2 je velikost druge skupine.

Statistika H je v testu Kruskal-Wallis izračunana kot:

$$H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(N+1), \tag{2}$$

kjer je R_i vsota rangov za vsako skupino, N je velikost celotnega vzorca, n_i je velikost posamezne skupine.

Celoten vzorec smo razdelili najprej v skupine glede na spol, starost, stopnjo izobrazbe, status na trgu zemljišč in kraj bivanja anketiranca ter primerjali aritmetične sredine ocenjenih zmanjšanj vrednosti po posameznih skupinah. Pojavile so se statistično značilne razlike (p > 0,05) med odgovori skupin, razdeljenimi glede na spol in starost, izobrazbo in status na trgu zemljišč, medtem ko statistično značilnih razlik med odgovori skupin, razdeljenih glede na kraj bivanja, ni bilo (p < 0,05). Ženske je služnost vodovoda bližje stavbe bolj motila, medtem ko je bila bližina služnosti za starejše skupine manj moteča. Poleg tega so tisti v skupini najvišje izobraženih ocenili večje zmanjšanje vrednosti pri služnosti vodovoda kot druge skupine. Skupine, ki so bile razdeljene glede na status na trgu zemljišč, so zmanjšanje vrednosti zemljišča ocenile drugače. Na eni strani so lastniki služečega zemljišča in potencialni kupci služečega

zemljišča ocenili, da se obremenjenemu zemljišču ob stvarni služnosti bolj zmanjša vrednost, medtem ko so nevtralni in lastniki gospodujočega zemljišča ocenjevali vrednost obremenjenega zemljišča višje. Podrobni rezultati so razvidni iz preglednice 5.

Preglednica 5: Vrednosti U iz Mann-Whitneyevega testa in vrednost H iz Kruskal-Wallisovega testa za ugotavljanje razlik med odgovori skupin ter verjetnost p za posamezni primer ter vrsto služnosti, ločeno za zmanjšano vrednost zemljišča in mesečno nadomestilo zaradi služnosti.

	Vodovod		**Nujna pot**	
	Zmanjšana vrednost	**Mesečno nadomestilo**	**Zmanjšana vrednost**	**Mesečno nadomestilo**
1. primer				
Spol	U = 4658,0 / p = 0,43	U = 4633,0 / p = 0,42	U = 4855,0 / p = 0,79	U = 4843,5 / p = 0,77
Starost	H = 0,333 / p = 0,85	H = 2,631 / p = 0,27	H = 0,832 / p = 0,66	H = 5,147 / p = 0,08
Izobrazba	H = 9,436 / p = 0,15	H = 8,391 / p = 0,21	H = 6,937 / p = 0,33	H = 7,412 / p = 0,28
Status	H = 1,385 / p = 0,71	H = 1,404 / p = 0,70	H = 1,953 / p = 0,58	H = 3,623 / p = 0,30
Kraj bivanja	H = 27,139 / p = 0,00	H = 25,324 / p = 0,01	H = 30,193 / p = 0,00	H = 28,738 / p = 0,00
2. primer				
Spol	U = 4851,0 / p = 0,78	U = 4613,0 / p = 0,35	U = 4958,0 / p = 0,99	U = 4890,5 / p = 0,86
Starost	H = 0,141 / p = 0,93	H = 1,391 / p = 0,50	H = 1,136/ p =0,57	H = 4,957 / p = 0,08
Izobrazba	H = 13,015/ p = 0,04	H = 11,740 / p = 0,07	H = 7,839 / p = 0,25	H = 6,767 / p = 0,34
Status	H = 3,000 / p = 0,39	H = 2,753 / p = 0,43	H = 3,380 / p = 0,34	H = 5,396 / p = 0,14
Kraj bivanja	H = 29,443 / p = 0,00	H = 26,842 / p = 0,00	H = 23,125 / p = 0,02	H = 25,119 / p = 0,01
3. primer				
Spol	U = 4686,0 / p = 0,50	U = 4444,0 / p = 0,20	U = 4518,0 / p = 0,28	U = 4575,0 / p = 0,35
Starost	H = 1,043 / p = 0,59	H = 1,048 / p = 0,59	H = 1,554 / p = 0,46	H = 7,150 / p = 0,03
Izobrazba	H = 5,858 / p = 0,44	H = 3,775 / p = 0,71	H = 3,403 / p = 0,76	H = 5,236 / p = 0,51
Status	H = 9,587 / p = 0,02	H = 7,954 / p = 0,05	H = 11,882 / p =0,01	H = 11,882 / p = 0,01
Kraj bivanja	H = 6,384 / p = 0,85	H = 9,418 / p = 0,58	H = 20,386 / p = 0,04	H = 22,426 / p = 0,02
4. primer				
Spol	U = 4356,5 / p = 0,14	U = 4640,0 / p = 0,43	U = 4513,0 / p = 0,27	U= 4714,5 / p = 0,55
Starost	H = 0,012 / p = 0,99	H = 1,354 / p = 0,51	H = 0,873 / p = 0,65	H = 4,588 / p = 0,10
Izobrazba	H = 10,919 / p =0,09	H = 6,111 / p = 0,41	H = 9,660 / p = 0,14	H = 4,283 / p = 0,64
Status	H = 19,137 / p = 0,00	H = 14,822 / p = 0,00	H = 27,544 / p =0,00	H = 25,869 / p = 0,00
Kraj bivanja	H = 11,329 / p = 0,42	H = 16,713 / p = 0,12	H = 15,525 / p = 0,16	H = 25,065 / p = 0,01
5. primer				
Spol	U = 4467,0 / p = 0,23	U = 4723,0 / p = 0,56	U = 4723,0 / p = 0,56	U= 4900,0 / p = 0,88
Starost	H = 2,188 / p = 0,34	H = 0,028 / p = 0,99	H = 1,850 / p = 0,40	H = 3,309 / p = 0,19
Izobrazba	H = 12,083 / p = 0,06	H = 6,336 / p = 0,39	H = 9,432 / p = 0,15	H = 4,854 / p = 0,56
Status	H = 25,052 / p = 0,00	H = 18,677 / p = 0,00	H = 32,383 / p = 0,00	H = 26,193 / p = 0,00
Kraj bivanja	H = 7,141 / p = 0,79	H = 13,235 / p = 0,28	H = 10,035 / p = 0,53	H = 24,198 / p = 0,01

	Vodovod		Nujna pot	
	Zmanjšana vrednost	**Mesečno nadomestilo**	**Zmanjšana vrednost**	**Mesečno nadomestilo**
6. primer				
Spol	U = 4015,0 / p = 0,02	U = 4468,0 / p = 0,23	U = 4201,0 / p = 0,06	U= 4679,5 / p = 0,49
Starost	H = 6,258 / p = 0,04	H = 0,101 / p = 0,95	H = 6,834 / p = 0,03	H = 3,525 / p = 0,17
Izobrazba	H = 4,918 / p = 0,55	H = 6,736 / p = 0,35	H = 4,307 / p = 0,64	H = 4,533 / p = 0,60
Status	H = 34,800/ p = 0,00	H = 26,943 / p = 0,00	H = 42,758 / p = 0,00	H = 33,853 / p = 0,00
Kraj bivanja	H = 11,201 / p = 0,43	H = 19,656 / p = 0,05	H = 8,767 / p = 0,64	H = 20,821 / p = 0,04
7. primer				
Spol	U = 4008,0 / p = 0,02	U = 4365,0 / p = 0,15	U = 4169,5 / p = 0,05	U= 4637,5 / p = 0,43
Starost	H = 5,229 / p = 0,07	H = 0,065 / p = 0,97	H = 7,833 / p = 0,02	H = 5,513 / p = 0,06
Izobrazba	H = 3,802 / p = 0,70	H = 7,005 / p = 0,32	H = 4,809 / p = 0,57	H = 3,935 / p = 0,69
Status	H = 27,830 / p = 0,00	H = 26,410 / p = 0,00	H = 43,484 / p = 0,00	H = 29,739 / p = 0,00
Kraj bivanja	H = 11,553 / p = 0,40	H = 18,827 / p = 0,06	H = 7,450 / p = 0,76	H = 18,389 / p = 0,07
8. primer				
Spol	U = 4541,0 / p = 0,30	U = 4552,0 / p = 0,32	U = 4547,0 / p = 0,31	U= 4755,0 / p = 0,62
Starost	H = 1,223 / p = 0,54	H = 1,375 / p = 0,50	H = 4,152 / p = 0,12	H = 4,209 / p = 0,12
Izobrazba	H = 6,644 / p = 0,36	H = 7,471 / p = 0,28	H = 5,917 / p = 0,43	H = 4,922 / p = 0,55
Status	H = 24,799 / p = 0,00	H = 25,677 / p = 0,00	H = 34,069 / p = 0,00	H = 28,591 / p = 0,00
Kraj bivanja	H = 6,329 / p = 0,85	H = 15,108 / p = 0,18	H = 8,952 / p = 0,63	H = 21,423 / p = 0,03

Pri analizi odgovorov glede zahtevane mesečne odškodnine ne moremo dati enotnega odgovora, saj so rezultati (preglednica 5) testiranja zelo različni. Obstajajo razlike v odgovorih skupin, razdeljenih glede na izobrazbo, status na trgu zemljišč in kraj bivanja. Iz razlik lahko sklepamo le, da so odgovori o zahtevanem mesečnem znesku nadomestila za služnost povezani s katerim drugim dejavnikom, ki ni bil vključen v anketo.

4 RAZPRAVA IN SKLEP

Namen raziskave je bil oceniti zmanjšanje vrednosti zemljišča zaradi stvarne služnosti v posameznih primerih. Ugotovili smo, da številni avtorji podajajo zgolj splošne usmeritve glede vrednotenja zemljišč pri stvarni služnosti ali jih kombinirajo s konkretnimi priporočili oziroma številkami, dobljenimi z metodo »na palec«. Najbolj transparentna in teoretično utemeljena je Sherwoodova metoda (2006, 2014).

Zaradi pomanjkanja ustreznih podatkov o delovanju trga zemljišč v povezavi s stvarno služnostjo v Republiki Sloveniji smo za namene raziskave izvedli anketo, s katero smo dobili podatke o zaznavanju udeležencev na trgu zemljišč glede zmanjšanja vrednosti zemljišč pri stvarni služnosti. Rezultati raziskave kažejo, da se ocenjena zmanjšanja vrednosti zemljišč zaradi stvarne služnosti lahko uporabijo tako za oceno zmanjšanja vrednosti zemljišča kakor tudi za določitev nadomestila za služnost. Variabilnost rezultatov ankete za mesečno nadomestilo za služnost je velika, zato niso uporabni. Iz povedanega pri izvedbi ankete sklepamo, da anketiranci lažje ocenjujejo zmanjšanje vrednosti zemljišča kot mesečni znesek nadomestila za služnost, ker si je to na trgu zemljišč lažje predstavljati. Pri izvajanju ankete je namreč veliko ljudi odklonilo anketiranje, ker po njihovem mnenju ne bi znali odgovoriti na vprašanja.

Na podlagi rezultatov ankete smo oblikovali matriko zmanjšanja vrednosti zemljišča glede na obseg služnosti, omejevanje rabe zemljišča in bolj ali manj motečo služnost glede na vrsto služnosti. Ker je »sprememba« edina konstanta na trgu nepremičnin, moramo to upoštevati tudi pri uporabi te matrike v praksi. Menimo, da je matrika uporabna vsaj kot ena izmed metod za oceno zmanjšanja vrednosti, pri čemer se zavedamo, da gre za povprečne vrednosti, ki izkazujejo vpliv zgolj treh dejavnikov, vključenih v vprašalnik, ki lahko vplivajo na vrednost zemljišča pri stvarni služnosti. Vsi drugi dejavniki, ki morebiti tudi vplivajo na vrednost zemljišča v konkretnem primeru, se vključijo v proces ocenjevanja naknadno. Poleg tega so rezultati ankete uporabni pri ocenjevanju zmanjšanja vrednosti zemljišča pri različnih vrstah služnosti, kjer se po presoji v konkretnem primeru upošteva za manj omejujoče vrste služnosti primeren manjši odstotek zmanjšanja vrednosti, za bolj omejujoče služnosti pa večji odstotek zmanjšanja vrednosti zemljišča.

Rezultati statistične analize kažejo, da odgovori anketirancev niso odvisni od kraja bivanja, zaradi česar je matrika lahko uporabna za oceno zmanjšanja vrednosti zemljišča pri stvarni služnosti v vseh statističnih regijah v Republiki Sloveniji. Vsekakor pa razbija mit o metodi na palec in 30-odstotnem zmanjšanju vrednosti zemljišča zaradi stvarne služnosti v Republiki Sloveniji. Ocenjeni razponi (preglednica 4) znašajo namreč glede na obseg služnosti in omejevanje rabe zemljišča od 2 % do 52 %, zaradi česar upoštevanje zgolj 30-odstotnega zmanjšanja vrednosti vodi k napačnim ocenam.

Ko je zaradi pomanjkanja oziroma nepopolnosti podatkov za oceno zmanjšanja vrednosti zemljišča zaradi obremenitve s stvarno služnostjo težko uporabiti diferenčno metodo, je model, ki je bil razvit v tej raziskavi, primernejši za uporabo kot druge alternativne metode, ki temeljijo zgolj na občutku cenilca. Razviti model je objektivnejši, saj upošteva dejavnike, ki so bili opredeljeni in potrjeni s ponovljivimi strokovnimi metodami. Pri uporabi modela je treba posvetiti posebno pozornost opredelitvi obsega stvarne služnosti. Podatki o stvarni služnosti so namreč vezani na zemljiško knjigo, kjer se vodijo (če sploh) le opisno in ne grafično, zaradi česar je treba dodatno preveriti obseg stvarne služnosti tudi na terenu.

Model bi bilo mogoče tudi nadgraditi, in sicer tako, da bi upoštevali čas trajanja služnosti in vpliv različnih velikosti zemljišča na zmanjšanje vrednosti zemljišča. Dolgoročno pa bi bilo najbolj smiselno ustrezno dopolniti evidenco trga nepremičnin pri Geodetski upravi Republike Slovenije vsaj z ustreznimi podatki o služnosti na zemljišču iz zemljiške knjige, s čimer bi omogočili uporabo diferenčne metode.

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