

SOR'11

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Instructions to authors

1. The paper should be written in English. Each paper should be provided with Abstract reporting concisely on the purpose and results of the paper. There should be up to 8 keywords.
2. Paper has to be of A4 format with 2.6 cm margins (left, right, top, and bottom) in 1 column and with single line spacing. The pages must not be numbered. The text should be justified on both sides, with its every single paragraph beginning 1 cm to the right (except for the Abstracts). See the attached example.
3. Text has to be written in font Times (or Times Roman, Times New Roman and similar).
4. The paper should be short and concise. The length of the paper should not exceed 6 pages. Paper has to include:
 - *title* (14 pt, capitals, bold, centred),
 - *name(s) of author(s)* (10 pt, bold, centred), *address(es)*, *e-mail(s)* (10 pt, normal, centred),
 - *abstract* (up to 6 lines, 11 pt, normal, justified),
 - *keywords* (up to 6, 11 pt, normal, justified),
 - *text* (introduction, elaboration with the presentation of main results of the contribution, conclusion with advantages, limitations, possibilities of application and direction for further research, etc.) (12 pt, normal, justified),
 - *references or/and bibliography* (11 pt, normal, justified).
5. **Title:** The title of the paper should be concise and informative – it should unambiguously reflect its contents. Avoid abbreviations and formulae where possible.
6. **Author names and affiliations:** Present the Authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the Author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each Author.
7. **Abstract:** The abstract should be clear, descriptive and not longer than 100 words. It should precise the paper giving a clear indication of the results it contains.
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9. **Subdivision of the article:** Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2...), 1.2, etc. (the abstract is not included)

in section numbering). In typing the article, titles and subtitles should not be run within the text. They should be typed on a separate line, without indentation.

10. **Tables, figures, and illustrations** should be numbered consecutively with Arabic numerals and inserted in the text where they are to appear (for details see the attached example). Each table or figure should be labelled with an appropriate title or short description.
11. **Numbers** should be written with no spaces (e.g. 1000000), with decimals a decimal point should be used (e.g. 0.333065).
12. **Equations and formulas** should be written in one row only. They should be concise and unambiguous. The measure units should be used everywhere; where they are likely to cause ambiguity or not be readily understood by an international readership, units should be put in full.
13. At the end of the paper the list of the used references and of the remarks given should be typed. Remarks should be numbered consecutively, within the text they should be marked with the exponential number (e.g. traffic¹). The **references** should be typed in alphabetic order, in the text it should be marked with the number in square brackets (e.g. [1]). **Citations** in the text: Please ensure that every reference cited in the text is also present in the reference list (and vice versa).

∇ **Paper has to be submitted online** (<http://sor11.fis.unm.si/>) in Microsoft Word format (*.doc or *.docx) **and** Adobe Acrobat format (*.pdf).

∇ **Deadlines:**

- Submission of papers: June 1, 2011
- Referee's reports: July 1, 2011
- Submission of revised papers and copies of bank transfer August 20, 2011

∇ The **registration fee** has to be paid till August 20, 2011. Please, send a copy (scanned document) of bank transfer to e-mail: sor11@fis.unm.si.

SPATIAL MULTI-ATTRIBUTE ANALYSIS OF LAND MARKET – A CASE OF RURAL LAND MARKET ANALYSIS IN THE STATISTICAL REGION OF POMURJE

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Abstract: In the paper the spatial multi-attribute analysis is discussed in the context of land market analysis – a case study of rural land market analysis in the statistical region of Pomurje. The article focuses on two interrelated concepts of geographical data and multi-criteria analysis. From the problem point of view, the analysis is based on chosen legal and physical characteristics of land and its location, where accessibility is pointed out. The main stress is on spatial analytical tools in the GIS environment where there is more options to choose the appropriate distance function.

Keywords: land, land market, market value, multi-attribute analysis, GIS, location, accessibility.

1 INTRODUCTION

Market research is fundamental to economic decision making. Economics is concerned with choices made in a competitive environment under the constraint of limited resources [3]. Land is one of vital goods for human being from old. In the market-oriented economy land is considered as a fundamental source of capital. Land market analysis is becoming of vital importance for social and economic development of the society, which represents together with the environmental development the main pillars of the sustainable development.

In a land context, market analysis examines the attributes of a land vis-à-vis the relationship of supply and demand, delineating the market in which the land (property) competes. Land has a number of characteristics, which make it different from other assets that may be traded on the market. Heterogeneity is a basic quality of land. Besides economic aspects – such as immovability, limited supply, planning regulations that affect the permitted land use, legal framework of the title transfer etc. – geographical location and accessibility to the supply centre influence the land value. Therefore, the use of spatial multi-attributes analysis methods has become a necessity in the land market analysis.

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Analysis of land market is a multi-step study process. Market value of the land (v), as well as the land market activity, is a function of numerous attributes (l, \dots, n), referred to the land i.e. geographical location which we might label i . Formally, we can state (1):

$$v_i = f(x_{i1}, x_{i2}, \dots, x_{in}) \quad (1)$$

1.1 Physical and legal characteristics of rural land

In statistical region of Pomurje in the north-eastern part of Slovenia, flat land with agricultural land use dominates with some deviation in the uttermost northern part and in the south-eastern part of the region with hilly landscape, where agricultural land use is combined with forestry land use. Fig. 1 shows the main categories of land use in the region together with administrative units and its centres, which are also the largest cities in the region.

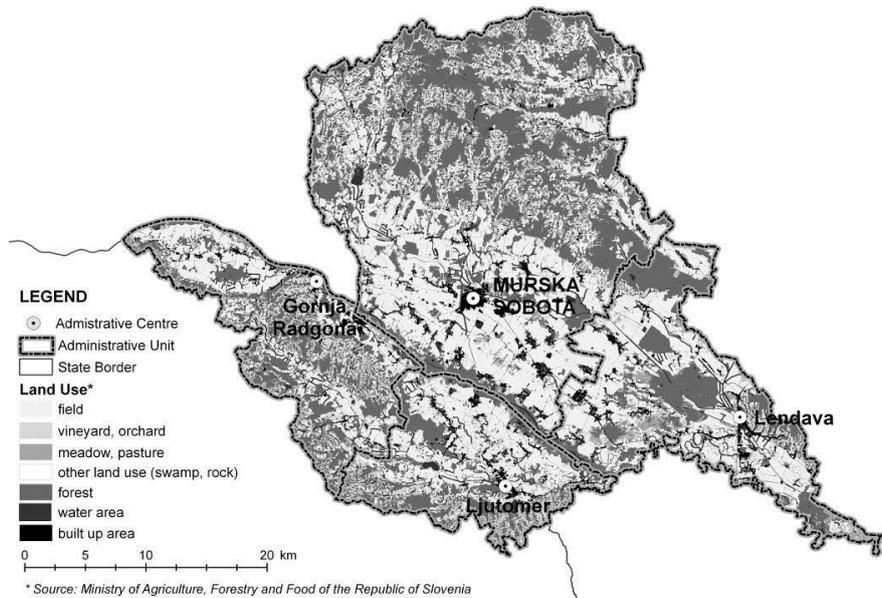


Figure 1: Land use and administrative units in the statistical region of Pomurje, north-east part of Slovenia.

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Since standard statistical and spatial analysis are hidden behind the thematic mapping, which is a very useful tool for the visualisation and interpretation of spatial related data and the results of its analyses, the conventional methods for presentation of the results of analyses are still supported (Tab. 1).

Table 1: Numeric interpretation of land market activity in Pomurje with regards to accessibility and protected areas for the period 2004–2006 according to the data of the Surveying and Mapping Authority.

	<i>Areas outside protected territories</i>			<i>Protected areas</i>		
	<i>Time spending distance</i>			<i>Time spending distance</i>		
	<i>0-15 min</i>	<i>15-30 min</i>	<i>over 30 min</i>	<i>0-15 min</i>	<i>15-30 min</i>	<i>over 30 min</i>
$k_{average} (10^{-6})$	2.602	2.714	1.180	0.941	0.486	0.368
$k_{under} (10^{-6})$	2.438	2.691	0.826	1.224	1.434	1.059
$k_{above} (10^{-6})$	1.118	1.440	0.231	0.230	0.036	0.095
$P_a (EUR/m^2)$	1.35	1.33	0.34	1.03	1.17	0.25

$k_{average}$ average value of the market activity coefficients in the cadastral communities for the transaction with the price between 0.5 and 5.0 EUR/m²;

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References

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