

12. Metoda AHP  
Analytic Hierarchy Process

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AHP

AHP: Analytic Hierarchy Process (Thomas Saaty, 1980)

Lastnosti:

- hierarhična večkriterijska metoda
- določitev uteži: primerjava atributov po parih
- določitev vhodnih preferenc: primerjava alternativ po parih

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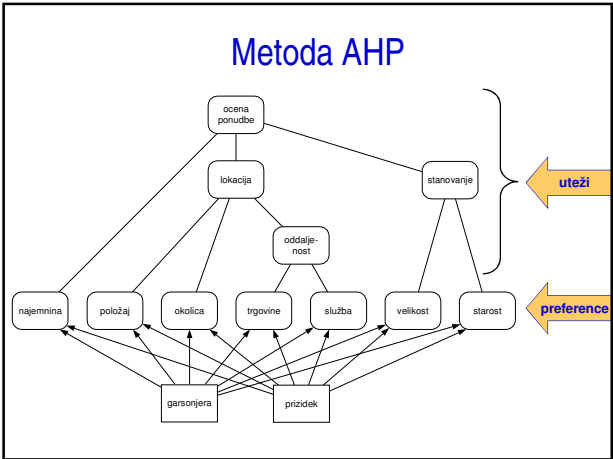
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## Primerjave po parih

- 1: enako pomembna kriterija oz. alternativni  
3: zmerno večja pomembnost prvega kriterija oz. alternative 5: velika, znatna prednost  
7: zelo velika prednost  
9: skrajna, izjemna prednost

2,4,6,8 so vmesne vrednosti

## Primerjave kriterijev → uteži

Matrika primerjav za kriterij

lokacija = f(položaj, okolica, oddaljenost)

	<i>položaj</i>	<i>okolica</i>	<i>oddaljenost</i>
<i>položaj</i>	1	5	3
<i>okolica</i>	1/5	1	1/3
<i>oddaljenost</i>	1/3	3	1

Izračun uteži:

	<i>položaj</i>	<i>okolica</i>	<i>oddaljenost</i>	<b>utež</b>
<i>položaj</i>	0,652	0,556	0,692	<b>0,633</b>
<i>okolica</i>	0,130	0,111	0,077	<b>0,106</b>
<i>oddaljenost</i>	0,217	0,333	0,231	<b>0,260</b>

## Primerjave alternativ → preference

Primerjava stanovanj pri kriteriju *služba*:

<i>služba</i>	matrika primerjav		normirana matrika		koristnost
	<i>garsonjera</i>	<i>prizidek</i>	<i>garsonjera</i>	<i>prizidek</i>	
<i>garsonjera</i>	1	3	0,75	0,75	<b>0,75</b>
<i>prizidek</i>	1/3	1	0,25	0,25	<b>0,25</b>

Konsistentnost matrike primerjav

Ali je matrika konsistentna?

	položaj	okolica	oddaljenost
položaj	1	5	3
okolica	1/5	1	1/3
oddaljenost	1/3	3	1

Matrika je konsistentna, če največja lastna vrednost  $\lambda_{max} = n$ .  
V tem primeru:  $\lambda_{max} = 3,0385$ ,  $n = 3$ , torej matrika ni povsem konsistentna.  
Consistency Index:  $CI = \frac{\lambda_{max}-n}{n-1} = 0,01925$ .  
Random Consistency Index  $RI$ :

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Consistency Ratio:  $CR = \frac{CI}{RI} = 0,0332 = 3,32\%$   
Matrika je "dovolj konsistentna", če  $CR \leq 10\%$ .

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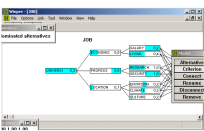
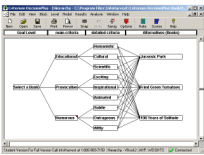
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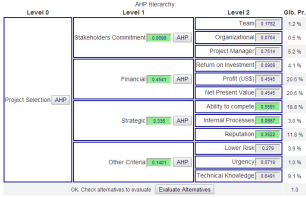
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Programi za AHP

Criterium DecisionPlus  
<http://www.infoharvest.com/>



BPMMSG AHP <https://bpmmsg.com/>



WinPre  
<http://sal.aalto.fi/en/resource/s/downloadables/winpre>

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Web-HIPRE

<http://www.decisionarium.hut.fi/>

DECISIONARIUM

global space for decision support

DECISIONARIUM is a site for interactive multicriteria decision support with tools for individual decision making as well as for group collaboration and negotiation. The site is for academic use only. See [Decisionarium site for general info](#).

web software

Web-HIPRE

Decision Explorer

RSMA Decisions

RSMA Decisions

RSMA Decisions

RSMA Decisions

WinPre

PRIME Decisions

examining material

multiple criteria decision analysis

negotiation analysis

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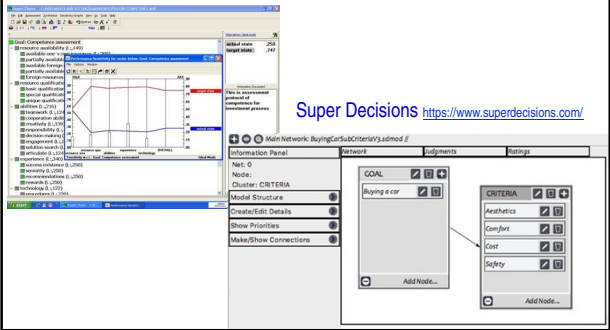
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Programi za AHP

Expert Choice  
<https://www.expertchoice.com/>



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Domača naloga 9

Izpolnite matriko primerjav in izračunajte uteži kriterijev

ocena ponudbe	najemnina	lokacija	stanovanje
najemnina			
lokacija			
stanovanje			

Izpolnite matriko primerjav in izračunajte koristnost alternativ glede na oddaljenost trgovin

trgovine	garsonjera	prizidek	kmetija	stanovanje v bloku
garsonjera				
prizidek				
kmetija				
stanovanje v bloku				

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