
**رتبه‌بندی واحدهای کارا با ترکیب رویکرد تحلیل
پوششی داده‌ها و فرآیند تحلیل سلسله مراتبی در
سازمان‌های بازرگانی استانی**

*

(// : // :)

BCC

Email: s_hossein_r@yahoo.com

: *

.[]

:

.[]

»

.[]

«

.[]

.[]

Archive of SID

_____ ...

...

»:

«

[]

[]

[]

$$E = \frac{\text{_____}}{\text{_____}} = \text{_____}$$

[]

Archive of SID

[.]

[.]

[.]

[.]

[.]

[.]

[.] CCR

$$E_j = \max_{u_r, v_k} \frac{\sum_{r=1}^k u_r y_{rj}}{\sum_{i=1}^s v_i x_{ij}}$$

v_i r u_r j E_j
 s k I x_{ij} r y_{rj}
 E_j

n

_____ ...

CCR

)

(

A

)

B

B

A

(

A

.[]

[]

Archive of SID

()

()

Archive of SID

_____ ...

() :()

% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
%		/		/	/		
%	/	/		/	/		

() : ()

%	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
% /	/	/		/	/		
%	/	/		/	/		

(DEA)

Archive of SID

()

) . []

(BCC

()

ε

BCC

$$Maxy_r = \theta - \varepsilon \left(\sum_{r=1}^s s_r^+ + \sum_{i=1}^m s_i^- \right)$$

St :

$$\sum_{j=1}^n \lambda_j y_{rj} - s_r^+ = \theta y_r, \quad (r = 1, 2, \dots, s)$$

$$\sum_{j=1}^n \lambda_j x_{ij} + s_i^- = x_i, \quad (i = 1, 2, \dots, m)$$

$$\sum_{j=1}^n \lambda_j = 1$$

$$\lambda_j, s_r^+, s_i^- \geq 0, \theta : free \quad (j = 1, 2, \dots, n)$$

		ε		θ
	s_r^+	j	λ_j	
i		s_i^-		r
()				
	$\frac{1}{\theta^*}$	θ^*	LINGO.8	

()

:()

	θ^*			θ^*	
/	/				
/	/				
			/	/	
/	/				
/	/				

()

B A

B E_{BB} B A E_{AA}
B E_{BA} A E_{AB} A
B A [] ()

$$a_{jj} = 1 \quad a_{AB} = \frac{E_{AA} + E_{AB}}{E_{BB} + E_{BA}}, \quad a_{BA} = \frac{1}{a_{AB}}$$

:()

$E_{AA} = \max Z_{AA} = \sum_{r=1}^s u_r y_{rA}$ <p>ST</p> $\sum_{i=1}^m v_i x_{iA} = 1$ $\sum_{r=1}^s u_r y_{rA} \leq 1$ $\sum_{r=1}^s u_r y_{rB} - \sum_{i=1}^m v_i x_{iB} \leq \cdot$ $u_r \geq \cdot \quad r = 1, 2, \dots, s.$ $v_i \geq \cdot \quad i = 1, 2, \dots, m.$	$E_{BA} = \max Z_{BA} = \sum_{r=1}^s u_r y_{rB}$ <p>ST</p> $\sum_{i=1}^m v_i x_{iB} = 1$ $\sum_{r=1}^s u_r y_{rB} \leq 1$ $\sum_{r=1}^s u_r y_{rA} - E_{AA} \sum_{i=1}^m v_i x_{iA} = \cdot$ $u_r \geq \cdot \quad r = 1, 2, \dots, s.$ $v_i \geq \cdot \quad i = 1, 2, \dots, m.$
$E_{BB} = \max Z_{BB} = \sum_{r=1}^s u_r y_{rB}$ <p>ST</p> $\sum_{i=1}^m v_i x_{iB} = 1$ $\sum_{r=1}^s u_r y_{rB} \leq 1$ $\sum_{r=1}^s u_r y_{rA} - \sum_{i=1}^m v_i x_{iA} \leq \cdot$ $u_r \geq \cdot \quad r = 1, 2, \dots, s.$ $v_i \geq \cdot \quad i = 1, 2, \dots, m.$	$E_{AB} = \max Z_{AB} = \sum_{r=1}^s u_r y_{rA}$ <p>ST</p> $\sum_{i=1}^m v_i x_{iA} = 1$ $\sum_{r=1}^s u_r y_{rA} \leq 1$ $\sum_{r=1}^s u_r y_{rB} - E_{BB} \sum_{i=1}^m v_i x_{iB} = \cdot$ $u_r \geq \cdot \quad r = 1, 2, \dots, s.$ $v_i \geq \cdot \quad i = 1, 2, \dots, m.$

:()

	/			/	
	/			/	
	/			/	
	/			/	
	/			/	
	/			/	
	/			/	
	/			/	
	/			/	

λ_i

()

:()

Archive of SID

$v_i \quad u_r$

Archive of SID

-
-) » () .
 : «(
 : « » () .
 « » () .
 :
 : « » () .
) » () .
 : «(
 « » () .
7. Charnes, A.; Cooper, W. W. and Rhodes, E. (1978). "Measuring the efficiency of decision-making units", *European Journal of Operational Research*, 2, pp: 429- 444 .
 8. Farrel, M.J. (1957), "the measurement of Productive efficiency", *Journal of Royal Statistical Society, series A*, Vol. 120, No. 3, pp: 253-290.
 9. Marr, B., Schiuma G. (2003), "Business performance measurement-past, present and future", *Management Decision*, Vol. 41, No. 8, pp: 680- 687.
 10. Otley, D. (1999). "Performance management: a framework for management control systems research", *Management Accounting Reasearch*, Vol. 10, No. 14, pp: 363- 382.
 11. Pierce. (1996). "Efficiency Progress in the Newsothwale Government", Internet: www.treesury.nsw.gov.edu.
 12. Sinuany, S. Z.; Mehrez, A. and Hadad, Y. (2000). "An AHP/DEA methodology for ranking decision making units", *International Transactions in Operational Research*, Vol. 7, No. 2, pp: 109- 124.
 13. Sumanth. (1994). "Productivity Engineering and Management", New York: Mc Grawhill.
 14. Witzel, M. (2002). "A Short History of Efficiency", *Business Strategy Review*, Vol. 13, No.4, pp: 38- 47.