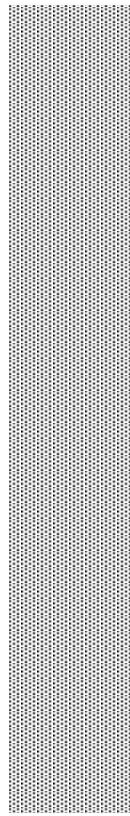


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\ Linkage

$X_i$  $A = \{ \ , \dots, n \}$ 

$$\begin{matrix} X_{ij} & i \in \Lambda \\ j \in \Lambda & i \in \Lambda \end{matrix}$$

$$X_i = f_i(X_{1i}, X_{2i}, \dots, X_{ii}, \dots, X_{ni}) \quad \forall i \in \Lambda$$

$$f_i : \rightarrow R + \forall i \in \Lambda$$

$$f_i = \min\left(\frac{X_{1i}}{a_{1i}}, \frac{X_{2i}}{a_{2i}}, \dots, \frac{X_{ii}}{a_{ii}}, \dots, \frac{X_{ni}}{a_{ni}}\right) \forall i \in \Lambda$$

$$X_{ij} > \cdot \quad \forall ij \in \Lambda$$

$$a_{ij} = X_u / X_i \quad \forall i, j \in \Lambda$$

$$X_j \geq \cdot \quad \forall j \in \Lambda$$

$$a_{ij} \in [\cdot, \cdot] \quad \forall ij \in \Lambda$$

$$\begin{matrix} \vdots & i \in \Lambda & j \in \Lambda \end{matrix}$$

$$X_j (X_i) = a_{ij} X_i$$

⋮

$$C_i(P_1, P_2, \dots, P_n, X_i) = \sum_{j \in \Lambda} P_j a_{ij} X_i$$

$$P_j \in R_+ \quad \forall j \in \Lambda$$

$$\begin{matrix} \vdots & j \in \Lambda & P_j \end{matrix}$$

$$X_i = \sum_{j \in \Lambda} X_{ij} + F_i \quad \forall i \in \Lambda$$

$$X_i = \sum_{j \in \Lambda} a_{ij} X_i + F_i \quad \forall i \in \Lambda$$

\. Non-factorial  
\. Functional

$$F_i \quad i \in \Lambda \quad I \quad ) \quad X_i \\ . \quad i \in \Lambda$$

$$F \quad X$$

$$X' = (X_1, X_2, \dots, X_n)$$

$$F' = (F_1, F_2, \dots, F_n)$$

$$A = [a_{ij}]$$

$$X = AX + F$$

$$(I - A)X = F$$

$$(I - A)$$

$$X = (I - A)^{-1}F$$

$$X = (I - A)^{-1}F$$

$$\Delta X = (I - A)^{-1}\Delta F$$

$$\frac{\Delta X_i}{\Delta F_j} = \alpha_{ij}, \quad (I - A)^{-1} = (\alpha_{ij})$$

$i \in \Lambda$  $\alpha_{ij}$  $j \in \Lambda$ 

$$\sum_{i=1}^n \alpha_{ij} = \sum_{i=1}^n x_{ij} / X_j$$

$x_{ij} \quad j \quad X_j$

$j$

$\langle \sum_{j=1}^n x_{ij} \rangle$

$j \quad i$

$i$

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j

q p

$$q = \sum_{j=1}^n r_{ij} / \sum_{i=1}^n \sum_{j=1}^n r_{ij}$$

$$(q \quad p)$$

$$\begin{array}{ll} q > & p > \\ q < & p > \\ q > & p < \\ q < & p < \end{array}$$

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$$d_{ij} = \alpha_{ij} / \sum_{i=1}^n \alpha_{ij}$$

$$\sum_{i=1}^n \alpha_{ij}$$

$$\alpha_{ij}$$

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$(w_i + u_j) / \gamma$

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	$\mathbf{u}_j$	$\mathbf{w}_i$	$\mathbf{w}_i$	$\mathbf{U}_j$	$(\mathbf{w}_i + \mathbf{u}_j)/\gamma$		
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	<b>IO</b>	<b>DD</b>	<b>EE</b>	<b>ISF</b>	<b>ISW</b>	<b><math>\Delta x</math></b>
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	<b>IO</b>	<b>DD</b>	<b>EE</b>	<b>ISF</b>	<b>ISW</b>	<b><math>\Delta x</math></b>
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