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دراسة تأثير الانترنت في تطوير أسلوب البحث العلمي للأستاذ الجامعي باستخدام التحليل العملي  
(دراسة استطلاعية لعينة من أساتذة جامعة القادسية)

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Rand Corporation

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ARBANET

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(Atkin G.K.:1978:3)

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. ( WARD AIKEN; 1978: 3)

ADVANCED RESEARCH PROJECTS AGENCY

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( ( Distributed Communication) ( )  
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"Internet Protocol"  
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:

p

$$P_{Ci} = a_{j1}Z_{1i} + a_{j2}Z_{2i} + \dots + a_{jp}Z_{pi}$$

:

.i

:  $P_{Ci}$

. j

p

:  $a_{jp}$

. p

( i

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:  $Z_{pi}$

: ( ) ( ) Commuality

j

$h_j^2$

:

$$a_{j1}^2 + a_{j2}^2 + \dots + a_{jp}^2 = h_j^2$$

$$h_j^2 + S_j^2 + e_j^2 = 1$$

:

$$r_{ij} = h_j^2 + S_j^2 = 1 - e_j^2$$

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Principle Components

Central method

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Principle Components

$$X_1, X_2, \dots, X_p$$

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$$X_1, X_2, \dots, X_p$$

$$p^* < p$$

$\Sigma$

$\mu$

:

n

$$X_{n \times p} = \begin{bmatrix} x_{11} & x_{12} & \dots & x_{1p} \\ x_{21} & x_{22} & \dots & x_{2p} \\ \dots & \dots & \dots & \dots \\ x_{n1} & x_{n2} & \dots & x_{np} \end{bmatrix}$$

:

$\Sigma$

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$$S = \begin{bmatrix} s_{11} & s_{12} & \dots & s_{1p} \\ s_{21} & s_{22} & \dots & s_{2p} \\ \vdots & \vdots & \ddots & \vdots \\ s_{p1} & s_{p2} & \dots & s_{pp} \end{bmatrix}$$

:

$$s_{ij} = \frac{1}{n-1} \left[ \sum X_i X_j - \frac{\sum X_i \sum X_j}{n} \right]$$

. j i

: (S)

$$|S - \lambda I| = 0$$

$$\lambda^p + C_{p-1} \lambda^{p-1} + \dots + C_1 \lambda + C_0 = 0$$

$C_{p-1}, C_{p-2}, \dots, C_0$

$$\lambda_1 > \lambda_2 > \dots > \lambda_p > 0$$

$$(S - \lambda I) \underline{a} = 0$$

$\underline{a}$  :  $\lambda_i$   $p \times 1$

$$P_{Ci} = a_{j1} X_{1i} + a_{j2} X_{2i} + \dots + a_{jp} X_{pi}$$

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R

$$R = \begin{bmatrix} 1 & r_{12} & \dots & r_{1p} \\ r_{21} & 1 & \dots & r_{2p} \\ \dots & \dots & \dots & \dots \\ r_{p1} & r_{p2} & \dots & 1 \end{bmatrix}$$

:

$$r_{ij} = \frac{s_{ij}}{s_i s_j}$$

$i \neq j$

: R

$$|R - \lambda I| = 0$$

$$\lambda^p + C_{p-1}\lambda^{p-1} + \dots + C_1\lambda + C_0 = 0$$

: p

$$\lambda_1 > \lambda_2 > \dots > \lambda_p > 0$$

$p \times 1$   $\underline{a}_i$

:  $\lambda_i$

$$(R - \lambda I)\underline{a} = 0$$

:

$$P_{Ci} = a_{j1}Z_{1i} + a_{j2}Z_{2i} + \dots + a_{jp}Z_{pi}$$

· p

( i

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:  $Z_{pi}$

( ) Factor rotation

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[F]

:

$$[R] = [F][F']$$

[R]

[F]

[R]

[F]

Varimax

-:

( )

(Eigen value)

% 62.084

( )

%28.578

%38.3

:

% 23.623

% 13.937

% 9.882

% 9.848

(Loadings)

(Rotated Component Matrix)

0.50

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28.578

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. 0.752

. 0.743



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