



وزارة التعليم العالي والبحث العلمي  
الجامعة التقنية الوسطى  
الكلية التقنية الإدارية - بغداد

## وقائع المؤتمر العلمي التخصصي الرابع للكلية التقنية الإدارية - بغداد

للمدة من

2018 / 11/ 29 -28

تحت شعار

### الإبداع الإداري لتحقيق الرؤية المستقبلية لمنظمات الأعمال

المجلد الثاني / رقم الإيداع (642)

البحوث المنشورة محكمة

## الفهرست المجلد الثاني

محور الجودة			
201-227	م.م. سعاد حمود مسلم أ.م.د. لمياء حسين موله	تطبيق معايير ادارة الجودة الشاملة من حيث تقويم الاداء في المكتبات الجامعية : دراسة تحليلية في مكتبة كلية الصيدلة/ جامعة بغداد	41
228-245	م. بسام منيب علي م. احمد طلال احمد	تشخيص واقع فجوات جودة الخدمة في القطاع السياحي/دراسة تحليلية لعينة من الشركات السياحية في محافظة نينوى	42
246-273	م. محمد منيب محمود م.م. علي وليد حازم	انشطة التوزيع المادي واثرها في ضبط جودة المنتجات/دراسة استطلاعية لأراء المدراء في معمل الالبسة الولادية في الموصل	43
274-301	أ.د. سمير كامل سعيد السيد علي عبد الحسين الزرقي	تطبيق معايير الاعتماد المؤسسي الوطنية لتحسين جودة التعليم/دراسة ميدانية : الكلية التقنية الادارية-بغداد	44
302-332	أ.م.د. نداء صالح مهدي	قياس وتحليل مدى توافر متطلبات نظام ادارة استمرارية الاعمال وفق المواصفة ISO22301:2012/دراسة حالة في البنك المركزي العراقي	45
333-356	أ.م. حيدر شاكر البرزنجي	تأثير تطبيق المواصفة الدولية ISO45001:2018 لإدارة السلامة والصحة المهنية في الاداء الاستراتيجي لشركة دبال العامة للصناعات الكهربائية	46
المحور المعلوماتي			
358-370	م. انهار خير الدين محمد م. نعمة عبد الله الفخري	تصميم نظام معلومات لدعم تطبيق الادارة الالكترونية الذكية في الشركات المساهمة	47
371-383	أ.م.د. احمد ذياب احمد م.د. بشري خريبط جاسم	اهمية استعمال تكنولوجيا المعلومات والاحصاء في المؤسسات الحكومية	48
384-393	Dr. Sabah F. Abdulhussein	Statistical Study on Causes f Begging Spread Phenomenon in Baghdad From Academic Point of View	49
394-403	A.P.Dr. Maisa,a Abid Ali A.P. Muntaha Khudair Abbas	Steganography Secret Message based on Image Sharpening Using 2D Hear Wavelet Transform	50

## **Statistical Study on Causes of Begging Spread Phenomenon in Baghdad from Academic Point of View**

**Dr. Sabah F. Abdulhussein**

**Specialized in applied statistics, Department of statistic,  
Institute of Administration – Alrusafa, Middle Technical  
University, Iraq**

---

### **Abstract:**

This paper aims to diagnose the main causes of begging in Baghdad and try to suggest the convenient treatments. For this purpose a questionnaire form is devised and distributed randomly among thirty academic in Institute of administration – Alrusafa and Administrative technical college – Baghdad.

The questionnaire is tested for validity and reliability, and the data collected by this way are studied using "Factor Analysis".

The results have supported the fact that there are significant causes of begging and they can be classified into three factors:

- 1- The bad management of government and society, 2- the facility and profitability of begging action, 3- the cultural heritage of people.

According to these factors, some treatments are suggested to stop spread begging and then to eliminate it.

**Key-words:** Begging , Questionnaire form , Factor Analysis , Validity , Reliability .

### **I- The preface and the purpose:**

Begging can be defined as the practice of imploring others to grant a favor, often a gift of money.<sup>[8]</sup> This practice has spread in Baghdad now days. Anyone can meet it everywhere but no one here denies this behavior. It seems as if everyone was interesting; the giver and the beggar together. So it has become a difficult problem and it needs the efforts of all; the government and the people. The problem is not the begging itself but the spread of it widely such that many unemployed people take it as a job. So the society has lost their efforts to produce goods and services, that is, the society has become poor although there is a lot of cash money.

The purpose of this paper is to diagnose the main causes of 'Begging' and to study them deeply in order to suggest convenient treatments.

A global questionnaire form is devised and distributed on thirty academics in Institute of Administration – Alrusafa and Administrative Technical College – Baghdad in order to diagnose the causes. The factor analysis' method is used to study these causes using SPSS-package. The hypothesis discussed in this paper is the ability to explore the main causes of spread begging phenomenon in Baghdad using factor analysis technique as a prelude to treat them. To explain this subject, the paper is divided into four parts: first for making and testing the questionnaire form; second for the concept of factor analysis and the model of responses; third for application of factor analysis and fourth for conclusions and suggestions.

## II- Making and testing the questionnaire form:

Since the problem of begging is multidimensional, a global questionnaire form is devised.<sup>[1]</sup> It contains ten dimensions (causes) and three options for answering each one. [see the appendix]

It is necessary to test the reliability and validity of the questionnaire form in order to be reliable for study.<sup>[7]</sup>

A- **The Reliability:** The data of questionnaire form is divided into two sets; set of odd questions data and set of even question data, then the summation of both is computed and Gittman formula is used to find the value of coefficient of reliability (  $R=0.86$  ) which indicates the questionnaire is reliable . [ see table (1) and the calculations in the appendix .]

B-**Validity:** The total data are ordered and 27% of them is taken from each of high and low data in order to make a comparison between them using T-test . The result was that the computed  $|T|$  equals (9.443 ) at  $H_0$  , whereas the value of ( table – T ) equals  $t(0.05,14)=1.761$  , so the questionnaire is valid . [ see table (2) and the calculation in the appendix. ]

## III- Factor analysis and linear model of responses

There are many definitions of factor analysis, for example:

- Factor analysis is a statistical technique that aims to reduce large number of observed variables into a small number of unobserved ones (factor).<sup>[5]</sup>
- Factor analysis is a statistical technique using to study phenomena in order to find the affected factors that are loaded with main causes (variables) of significant positive correlations.<sup>[2]</sup>
- Factor analysis is a statistical multivariate method to analyze data or correlation matrices in order to explain the relations between their variables by creating a few new variables called factors.<sup>[3]</sup>

But all these definitions share a common characteristic, that is, a statistical technique to study many correlated variables by classifying them into few factors. This paper tried to do that and finally it succeeded in determining the factors that are loaded with main causes (variables) of begging spread phenomenon as we shall see later.

Since the purpose of factor analysis is to determine the elements of loading matrix "A" and the variance matrix " $V_e$ ", we have to build the linear model for responses (causes) using the common factors as following:<sup>[4]</sup>

Let 'K' responses be described by random variables;

$y_1, y_2, y_3, \dots, y_k$  where  $y_i \sim MN [\underline{\mu}, \underline{var}(y_i)]$  with full rank matrix, then we can write each response as a linear model:

$$y_1 = \alpha_{11}Z_1 + \alpha_{12}Z_2 + \alpha_{13}Z_3 + \dots + \alpha_{1f}Z_f + e_1$$

$$y_2 = \alpha_{21}Z_1 + \alpha_{22}Z_2 + \alpha_{23}Z_3 + \dots + \alpha_{2f}Z_f + e_2$$

$$y_3 = \alpha_{31}Z_1 + \alpha_{32}Z_2 + \alpha_{33}Z_3 + \dots + \alpha_{3f}Z_f + e_3$$

$$y_k = \alpha_{k1}Z_1 + \alpha_{k2}Z_2 + \alpha_{k3}Z_3 + \dots + \alpha_{kf}Z_f + e_k$$

Where:

$Z_j = j^{th}$  common – factor variate

$\alpha_{ij}$  = the parameter of loading the  $i^{th}$  response with  $j^{th}$

Common factor. It indicates the importance of the  $j^{th}$

Common factor in  $i^{th}$  linear component of responses.

$e_i = i^{th}$  specific factor – variate accompanied with each response.

To write the linear model by matrices, let:

$$\underline{y}^T = [y_1, y_2, y_3, \dots, y_k], \underline{Z}^T = [Z_1, Z_2, Z_3, \dots, Z_f]$$

$$\text{and the loading matrix, } A = \begin{bmatrix} \alpha_{11} & \alpha_{12} & \alpha_{13} & \dots & \alpha_{1f} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} & \dots & \alpha_{2f} \\ \alpha_{31} & \alpha_{32} & \alpha_{33} & \dots & \alpha_{3f} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \alpha_{k1} & \alpha_{k2} & \alpha_{k3} & \dots & \alpha_{kf} \end{bmatrix}$$

Then the linear model of responses will be:

$$\underline{y} = A\underline{Z} + \underline{e} \quad \dots \dots \dots (1)$$

and to show the matrix of the specific variance ' $V_e$ ', suppose  $f$  of  $Z_j$  are independent variables distributed normal with zero mean and unit variance, and also suppose the elements of ' $e$ ' are independent and distributed normal with zero mean and variance  $\Rightarrow V_{ei}$ , then  $V_{ei}$  called the specific variance of the  $i^{th}$  response, and the matrix of specific variance will be diagonal matrix as following:

$$V_e = \begin{bmatrix} V_{e1} & & & & \\ & \ddots & & & \\ & & \text{○} & & \\ & & & \ddots & \\ & & & & V_{ek} \end{bmatrix}$$

So the variance of  $y_i$  can be written:

$$V_{yi}^2 = \alpha_{i1}^2 + \alpha_{i2}^2 + \alpha_{i3}^2 + \dots + \alpha_{if}^2 + V_{ei} \quad \dots \dots \dots (2)$$

$$\therefore \sum_{j=1}^f \alpha_{ij}^2 = V_{yi}^2 - V_{ei} \dots \dots \dots (3)$$

Called the communalities of the responses

$$\text{so } 0 \leq \sum_{j=1}^f \alpha_{ij}^2 \leq 1 \text{ for each response}$$

$$\alpha_{ij} = \text{cov}(y_i, Z_i) \text{ or } \alpha_{ij} = r(y_i, Z_i)$$

$$i = 1, 2, 3, \dots, k ; j = 1, 2, 3, \dots, f$$

And the covariance of  $y_i$  and  $y_j$  will be:

$$\text{cov}(y_i, y_j) = \alpha_{i1}\alpha_{j1} + \alpha_{i2}\alpha_{j2} + \alpha_{i3}\alpha_{j3} + \dots + \alpha_{if}\alpha_{jf} \dots \dots \dots (4)$$

Now from  $A$  and  $V_e$  we can put these relations in a matrix form as following:

$$\Sigma = AA^T + V_e \dots \dots \dots (5)$$

#### IV- The application and analysis:

After having collected the questionnaire forms from the academics and transformed their responses into numbers according to likert measurement with three options, the researcher tested them for reliability and validity then he analyzed data by applying "Factor Analysis" using SPSS-package and got the following:<sup>[6]</sup>.

**Table (3) : Correlation Matrix<sup>a</sup>**

Response Variates	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	
Correlation	y1	1.000	.149	.568	.313	.599	.231	.759	.759	.317	.195
	y2	.149	1.000	.235	.176	.149	.081	.113	.038	.003	.228
	y3	.568	.235	1.000	.394	.515	.318	.580	.529	.163	.217
	y4	.313	.176	.394	1.000	.313	.092	.159	.204	-.033-	.221
	y5	.599	.149	.515	.313	1.000	.389	.650	.488	.317	.195
	y6	.231	.081	.318	.092	.389	1.000	.324	.274	.619	.279
	y7	.759	.113	.580	.159	.650	.324	1.000	.846	.263	.155
	y8	.759	.038	.529	.204	.488	.274	.846	1.000	.263	.155
	y9	.317	.003	.163	-.033-	.317	.619	.263	.263	1.000	.143
	y10	.195	.228	.217	.221	.195	.279	.155	.155	.143	1.000
Sig. (1-tailed)	y1		.216	.001	.046	.000	.109	.000	.000	.044	.151
	y2	.216		.105	.176	.216	.336	.275	.421	.494	.113
	y3	.001	.105		.016	.002	.043	.000	.001	.195	.124
	y4	.046	.176	.016		.046	.314	.201	.140	.432	.120
	y5	.000	.216	.002	.046		.017	.000	.003	.044	.151
	y6	.109	.336	.043	.314	.017		.041	.072	.000	.068
	y7	.000	.275	.000	.201	.000	.041		.000	.080	.207

y8	.000	.421	.001	.140	.003	.072	.000		.080	.207
y9	.044	.494	.195	.432	.044	.000	.080	.080		.225
y10	.151	.113	.124	.120	.151	.068	.207	.207	.225	

a. Determinant = .008

- We notice from table (3) the matrix of correlations between the response variables. It represents the initial solution of the relations between them to be interred to factor analysis and the small value of its determinant (0.008) indicates that there is dependency between the columns of the matrix.

**Table ( 4 ) :KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.765
Approx. Chi-Square	118.513
Bartlett's Test of Sphericity	Df
	45
	Sig.
	.000

- We notice from table (4) that the sample is adequate for Kimo measurement because it is more than (0.50) and Bartlett's test of sphericity assures that the correlations between the original variables (responses) are very far from being zero (significant) so the factors extracted from them are reliable to explain the relations.

**Table ( 5 ) :Communalities**

	Initial	Extraction
y1	1.000	.790
y2	1.000	.496
y3	1.000	.627
y4	1.000	.519
y5	1.000	.604
y6	1.000	.789
y7	1.000	.857
y8	1.000	.806
y9	1.000	.787
y10	1.000	.530

Extraction Method: Principal Component Analysis.

- The table (5) shows the summation of square loading of each response extracted by principal components method, i.e;

$$\sum_{j=1}^f \alpha_{ij}^2 \text{ such as } \sum_{j=1}^{10} \alpha_{1j} = 0.790, \sum_{j=1}^{10} \alpha_{2j} = 0.496 \dots \dots \dots$$

The first five variables which have most loading with factors are:

$$y_7 = 0.857, y_8 = 0.806, y_1 = 0.790, y_6 = 0.789 \text{ and } y_9 = 0.787$$

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.140	41.397	41.397	4.140	41.397	41.397	3.495	34.954	34.954
2	1.384	13.842	55.238	1.384	13.842	55.238	1.743	17.425	52.379
3	1.280	12.805	68.043	1.280	12.805	68.043	1.566	15.664	68.043
4	.816	8.162	76.205						
5	.735	7.350	83.555						
6	.496	4.956	88.511						
7	.481	4.810	93.321						
8	.355	3.546	96.867						
9	.199	1.990	98.858						
10	.114	1.142	100.000						

- The table (6) shows the total variance explained by factors.

The first three factors explains 68% of the total variance as following:

- 1- Before rotation: the 1<sup>st</sup> factor explains 41.397% the 2<sup>nd</sup> factor explains 13.842% and the third 12.805% .
- 2- After rotation: the 1<sup>st</sup> factor explains 34.954% , the 2<sup>nd</sup> factor explains 17.425% and the third 15.664% .

**Table ( 7-a ) :Component Matrix<sup>a</sup>**

	Component		
	1	2	3
y1	.849	-.144-	-.219-
y2	.237	-.308-	.588
y3	.749	-.246-	.072
y4	.402	-.482-	.354
y5	.777	-.001	-.015
y6	.535	.636	.313
y7	.865	-.063	-.325-
y8	.817	-.077	-.365-
y9	.462	.749	.110
y10	.350	.011	.638

Extraction Method: Principal Component Analysis.

a. 3 components extracted.



**Table ( 7-b ) : Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
y1	0.871	0.116	0.134
y2	0.025	-0.003	0.704
y3	0.682	0.080	0.395
y4	0.308	-0.167	0.629
y5	0.689	0.279	0.225
y6	0.200	0.851	0.159
y7	0.911	0.161	0.014
y8	0.890	0.118	-0.028
y9	0.197	0.861	-0.084
y10	0.034	0.335	0.645

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

- The table (7-a & b) shows the rotated and unrotated component matrix. The main variables are still themselves in both (roated and unroated) matrix with some variance in their values. For the first factor, the main variables are ( $y_7$ ,  $y_8$  and  $y_1$ ) which are the most loading with it, whereas, for the second factor the main variables are ( $y_6$  and  $y_9$ ) and for the third factor the main variables are ( $y_2$ ,  $y_4$  and  $y_{10}$ ).

## V- The conclusions and suggestions:

### - Conclusions:

- 1- There are main (significant) causes of begging phenomenon explored by using valid and reliable questionnaire, and factor analysis for responses, that is, the valid and reliable questionnaire with factor analysis for its responses are good technique to determine the main causes and discover the relations between them.
- 2- The most significant main causes of begging spread phenomenon are classified in the first factor "the bad management of the government and society". They are the following:
  - $y_7$  : (0.911)  $\Rightarrow$  the spread of poverty in the country.
  - $y_8$  : (0.890)  $\Rightarrow$  the increasing of unemployment rate.
  - $y_1$  : (0.871)  $\Rightarrow$  the bad distribution of wealth.
- 3- The causes coming in the second rank of begging spread phenomenon are classified in the second factor "the facility and profitability of begging action" and they are as following:
  - $y_9$  : (0.861)  $\Rightarrow$  the begging is profitable action (job) without any risk .
  - $y_6$  : (0.851)  $\Rightarrow$  the begging is easy action.

4- The causes coming in the third rank are classified in the factor "the cultural heritage of people" and they are as following:

$y_2 : (0.704) \Rightarrow$  the inheritance of the phenomenon.

$y_4 : (0.624) \Rightarrow$  wrong understanding of helping others.

$y_{10} : (0.645) \Rightarrow$  weak social solidarity.

### Suggestions:

1- Changing the management of the government and society into one can take a new economic approach to develop all economic sectors by benefiting from the oil revenues and customs taxes on imported luxury goods as well as the revenues obtained from citizens in return for the government services provided to them.

2- Fairness in distribution of national product to citizens according to their contributions.

3- Employing Iraqi labor in various economic sectors according to their need, instead of using foreign workers.

4- Introducing a new legislation to present begging.

5- Fighting begging by the police power with all rigour and intensity.

6- Using the media and the means of social communication to highlight the negative aspects of begging in the community and urged everyone to denounce and disapprove it for the fact that it is a flawed phenomenon

### References:

1- A.Fawole, D.V.Ogunkan and A. Omoruan, 2011, "The Menace of Begging in Nigerian Cities: A sociological Analysis", International Journal of Sociology and Anthrology, vol.3(1), pp.2-14 .

2- Abu Faid, Ahmed, 2016, "Factor Analysis: Concept, objects, types and procedure", Al-Azhar University.

3- Abu Hashim, Dr. Al.Sayed, 2016, "Factor Analysis", Saud King University, Education College, Department of Psychology, Al-Saudia Arabia Kigdom.

4- Donald F. Morrison, 1978, "Multivariate Statistical Methods" 2<sup>nd</sup>-edition, MC Graw-Hill, Book company.

5- Ghanem, Dr. Hagag, 2011, "Factor Analysis, Theoretical and Applied in Humanities and Educational Science".

6- Joda, Dr. Mahfodh, 2008, "Basic Statistical Analysis Using SPSS" –part two-, Applied Science University, Amman, Jordan.

7- Al-Kurshi, Dr.Ihssan Kadhem, 2007, "Parametric and Non-parametric Methods for Statistical Tests", Al-dewani press, 1<sup>st</sup> edition, Baghdad.

8- Wikipedia, 2015, "Concept of Begging".

## Appendix"Questionnaire Form"

Dear colleagues .. In your hands questionnaire for the purpose of scientific research on the causes of the spread of begging phenomenon in Baghdad. For every cause, please kindly put a sign in the square that goes with your option. Thank you for your cooperation.

No.	Cause	Strongly Support	Somewhat Support	No Support
1	Bad distribution of wealth			
2	Inheritance of the phenomenon			
3	False education in nonself-reliance			
4	Weak social solidarity			
5	The state does not guarantee the children who have no sponsor			
6	The begging is easy job			
7	Spread of poverty in Iraq			
8	Increasing of unemployment rate			
9	The begging is profitable job without any risk			
10	Wrong understanding of helping others			

Table (1) : Classification of Questionnaire Data

No. of lecture	y <sub>1</sub> Summation of odd Questionnaire data	y <sub>2</sub> Summation of even Questionnaire data	y The total (odd + even)
1	14	14	28
2	12	10	22
3	14	10	24
4	14	9	23
5	5	5	10
6	12	10	22
7	14	13	27
8	7	9	16
9	11	9	20
10	5	6	11
11	13	12	25
12	9	8	17
13	5	6	11
14	10	8	18
15	12	11	23
16	13	12	25
17	11	9	20
18	13	12	25

19	13	11	24
20	13	8	21
21	15	11	26
22	11	10	21
23	5	7	12
24	13	14	27
25	13	12	25
26	10	8	18
27	11	10	21
28	14	13	27
29	13	8	21
30	12	9	21
	$s_1^2 = 9.013$	$s_2^2 = 5.476$	$s^2 = 25.413$

$$R = 2 \left( 1 - \frac{s_1^2 + s_2^2}{s^2} \right) \longrightarrow \text{Gittman formula}$$

Where: R = coefficient of Reliability

$s_1^2$  = the variance of set  $y_1$

$s_2^2$  = the variance of set  $y_2$

$s^2$  = the total variance ,

$$\therefore R = 2 \left( 1 - \frac{9.013 + 5.476}{25.413} \right) = 0.86$$

hen the questionnaire form is reliable.

**Table (2) : Descending order of Questionnaire data**

No. of lecture	Total data	Order of data
1	28	28
2	22	27
3	24	27
4	23	27
5	10	26
6	22	25
7	27	25
8	16	25
.	.	.
23	5	18
24	13	18
25	13	17
26	10	16
27	11	12
28	14	11
29	13	11
30	12	10

$$\bar{y}_1 = 26.25$$

$$s_1^2 = 1.357$$

$$n_1 = 8$$

$$\bar{y}_2 = 14.125$$

$$s_2^2 = 11.839$$

$$n_2 = 8$$

$$H_0: M_1 = M_2 \quad v.s \quad H_0: M_1 \neq M_2$$

$$|t| =$$

$$\left| \frac{\bar{y}_1 - \bar{y}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \right| = \left| \frac{26.25 - 14.125}{\sqrt{\frac{1.357}{8} + \frac{11.839}{8}}} \right| = 9.443$$

$$\therefore t(0.05, 14) = 1.761$$

$\therefore$  Reject  $H_0$  and conclude that the questionnaire is valid.