

## ORGANIZATIONAL ENVIRONMENT AND ITS EFFECTS ON PERFORMANCE – APPLIED STUDY IN INSURANCE COMPANIES IN LIBYA

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### Abstract

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This study aims at analyzing organizational environment prevailing in the studied community, and its effect on performance. It also determines type of relationship between organizational environment elements and recognizes which of them, has more influence on personnel performance than the remainder. The study was conducted in three insurance companies, in Libya and it was based on a questionnaire form randomly distributed among the study sample.

The study comes from the thesis of finding of that the constituent elements of the organizational environment vary in their degree of effect on personnel performance. The study, likewise, resulted in dissatisfaction of personnel regarding some aspects of work including absence of co-ordination between units, vagueness of the relationship between them and absence of concern to personnel, and absence of carefulness, social and cultural care and recreation necessary for personnel.

Based on the findings, the researcher presents a set of recommendations most of which focused on improvement of organizational environment prevailing in companies with giving more concern to such positive and negative material and moral factors in the work field represented in encouraging highly qualified and competent personnel and giving much concern to their feelings as well.

organizational environment, organizational factors, material and moral factors, psychological factors, environmental factors and performance

The subject of organizational environment is deemed as one of the topics that were widespread in administrative studies, especially behavioral studies. Despite being tackled in most of books and compilations and organizational studies, the said subject is still susceptible to disagreement and argument, especially on defining the meaning of organizational environment.

Organizations, in particular, possess unique and distinctive features as each organization has its own culture, traditions and private methods in objectives realization, factors which will inevitably form an exclusive environment for each group whom to be dealt with (Soleman; 1997).

Whoever traces the organizational environment in insurance companies, will touch problems and difficulties obstructing achievement of goals, namely the efficiency of personnel performance is not as it should be and that is attributable to non-availability of such organizational environment that will secure an increase of personnel performance.

### OBJECTIVES

This study aims at analyzing organizational environment prevailing in the studied community and its effect of performance, determining the type of relationship between particular factors and investigating which of the factors of the organizational environment

has a stronger effect on personnel performance. It also aims on recognition of the organization environment prevailing in insurance companies and its role in stimulating personnel performance in addition to identification of the most significant methods and styles that support positive aspects in the organizational environment prevailing, in the examined companies plus restriction of passive aspects and obtainment of requested findings there from.

## MATERIAL AND METHODS

### 1. Concept of organizational environment

Organizational environment is defined as a set of characteristics that describe the organization and distinguish it from other organizations within a given time period affecting behavior of personnel therein.

These characteristics basically interconnect the internal work environment in the organization, distinction can be made between an organization and another of the organizations that are characterized by some extent of relative stability. That means the interpretation of the meaning of characteristics and their impact on behavior will vary by variation of individuals on the light of limited factors or variables of perception of each individual.

These characteristics affect the functional behavior of individuals, their trends and motives (Al-Sherbeeni; 1997).

### 2. Factors of organizational environment

#### 2.1 Organizational factors

Organizational factors represent all forms and types of information coming an individual, and which describe and clarify facts and characteristics of the organization positions, relationships and circumstances within the organization.

They also specify for individuals their duties dictated by their belonging to the organization, types of opportunities and interests they could obtain against fulfillment of the said duties and requirement.

Organizational elements can be sub-divided into the following groups: Organizational structure, labor intensity supervision scope, mode of leadership, style of decision – making. (Nagi; 1991). (Appendix 1, questions 1–14)

#### 2.2 Material and moral factors for organizational environment

Material and moral factors for organizational environment are defined as an outermost force attracting the human being thereto to get it through a certain behavior allowing access to the incentive to which individual is entitled.

Thus incentive stands as a prize or reward obtained by any person if his/her behavior was satisfactory to the prize donor.

With respect to the types of factors, elements include material and moral factors.

Material factors mean such factors which satisfy material needs of the individual such as the need for food and clothing while moral factors means such factors which satisfy moral needs such as promotion.

On the other hand factors are also sub-divided into positive and negative where positive factors facilitate and develop some disposal while negative factors prevent some sorts of disposals (Al-kobaisi; 2005). (Appendix 1, questions 15–23)

#### 2.3 Psychological factors for organizational environment

These factors originate from the interior of individual due to perception of his attitude to the surrounding environment.

A human being does not merely live for satisfaction of his physical needs only, but there are other needs which he feels and endeavors to satisfy (Psychological needs).

Psychological needs relate to the willingness of an individual in achieving and realizing results and desire to obtain an eminent social status. Psychological needs are characterized to a large extent by being personal, namely they may be found in some individuals rather than others.

Such psychological factors are sub-divided into needs for allegiance and belonging, possession, struggle, and needs for power and influence. They can be further classified into the need for security and stability, allegiance and belonging, personal factors and the need for self realization (Kamel; 1994). (Appendix 1, questions 24–31)

#### 2.4 Environmental factors for organizational environment

Environmental factors (external environment) are represented in the surrounding factors in the organization affecting it including (P) political and legal environment, (E) economical environment, (S) social environment, (T) technical and technological environment, (E) ecological environment. This classification of the parts of macro-environment is called PESTE (or sometimes due to the changed order of items STEP analysis (Pošvář, Erbes; 2005). The study of environmental factors for organizational environment makes possible the interpretation of many phenomena as well as control over many situations within the organization and affects the same in terms of policies and decisions and accordingly long-run objectives can easily be determined. (Appendix 1, questions 32–34)

### 3. Concept of performance

Performance can be defined as a completion of a task assigned to an individual or a group of individuals to perform, or the energy afforded by an individual in performing the work required to be carried out whether energy being mental or intellectual. Performance is likewise defined as the extent of success or failure of an individual in realizing the objectives required from him/her in work (Raslan; 2001). Thus performance stands as a certain estimation expressing a certain potential within a given period of time, namely performance expresses the real or actual effort exerted in work (Appendix 1, questions 35–41).

### 4. Methodology of research

The study covered three insurance companies in Libya, where the number of personnel in the said companies amounted to 6201. A random sample of 15 % was selected, and the total volume of the sample was 930 employees. The sample was distributed in accordance with relative weights formed by the number of employees in each company out of the total labor

force. Field data was collected through distribution of questionnaire forms over the sample population. After collecting the questionnaire forms, they were sorted out and incomplete forms were excluded. The no. of total complete responses amounted to 663, namely at a ratio of 71.29 % of the total size of the sample. This shall necessarily mean that the counter percentage was 28.71 %. The questionnaire (appendix 1) form was designed through its focusing on factors of organizational environment knowing the fact that the questionnaire form included only a single type of questions, namely the closed questions which lead to easiness, distinguishing, recording and classifying of the answer and reducing the bias of the interviewed. Single – answer questions were used in addition to observance of having an odd number of answers (five answers per each question), where the medium answer constituted the answer of uncertainty in addition to difference of the meaning between each of the alternative answers. The table included five answers with their relative weight, the answers were chosen from asked personal, then, the data was identified by their relative weight through the replicates when the analysis of data was done.

#### I: Answers and their relative weights

Alternative answer	Completely agree	Agree	Not sure	Disagree	Absolutely disagree
Degree	5	4	3	2	1

After data collection, data was discharged utilizing a computer, and it was then scheduled where data was sorted out and classified in simple, compound or double tables in order to analyze and interpret data where the same took place statistically to give a precise picture for the content of tables and result contained therein with the aim of determining the degree with which research findings can be generalized on the ori-

ginal population. Analysis included the application of independence test among the variables by using ( $K^2$ ).

This method is embodied in sketching correlation tables of the factors of which independence to be tested or interdependence of factors after calculation of the observed value (OV) forming the tables in addition to computation of the estimated values (EV), then computing the calculated value by using the following formula (Al-sebai;1998):

$$K^2 \text{ (Computed)} = \text{Summation} \frac{(\text{observed values} - \text{estimated values})^2}{\text{Estimated values}}$$

Then we see the table value of ( $k^2$ ) and (D), degree of freedom which is

$$D = (Y - 1) (Z - 1),$$

where Y is the summation of the rows in the correlation table, Z is the summation of columns in the same table and (p) is determined by a small percentage value that may be 5%, 1% or otherwise (the level of significance). The table value of ( $k^2$ ) is denoted ( $k^2$ ) (table) = ( $k^2$ ) (D, p). We obtained the results after inserting

all data to computer then using the well-known statistical program (Minitab) in order to compute the ( $k^2$ ) values. That was made after adaptation of correlation tables by using the (Excel) system.

### RESULTS

After conducting the analysis, the following results were reached:

1. Existence of a strong positive relationship between

the factors forming the organizational environment and efficiency of personnel performance and it is of varying effect on the personnel performance.

2. The organizational factors are deemed as the first effect on performance where the computed ( $k^2$ ) value between the organizational factors and the performance amounted to (612) (appendix 2).
3. The results proved and indicated that the environmental factors come next in influence on personnel performance, where the computed ( $k^2$ ) between the environmental factors and performance amounted to (358) (appendix 3).
4. The results further indicated that the psychological factors come in the third ranking in terms of effect on performance of personnel, where the computed ( $k^2$ ) values between the psychological factors and performance amounted to (229) (appendix 4).
5. The results likewise indicated that positive and negative material and moral factors come fourth in terms of effect on personnel performance, the computed ( $k^2$ ) value amounted to (189) (appendix 5).
6. There were many aspects that did not receive adequate concern from the companies and which influence the performance improvement which are the following:
  - Some personnel never like to assume responsibility and this is why authority is not delegated to them.
  - Some units in such companies suffer from work overlapping therein.
  - A lack of adequate concern to factors (material – moral {positive + negative}) by the companies, will definitely lead to weakness of willingness in the required performance in addition to the negative incentive system (deprivation from salary – allowance and promotion) regarding acts of default is not properly applied and so penalties and punishment are only enforced on some of personnel.
  - The ratio of criticism directed to personnel at times of error occurrences is too high and it exceeds the encouraging bonus.

## DISCUSSION

The style of ( $k^2$ ) independence test was applied to know the role played by the different factors of organizational environment on performance and the results can be discussed such as follows:

### A. Study of organizational factors and their impact on performance

( $k^2$ ) independence test between the organizational factors and performance represented in indepen-

dence (non- independence) test of organizational factors and performance – such organizational factors are represented in the organizational structures, labor factor, supervision scope, mode of leadership, style of decision – making on one hand and performance on the other hand. Through correlation tables which show the values seem for organization factors and performance, and from which we can find the ( $k^2$ ) computed value.

Comparing the table value and computed value we find the table ( $k^2$ ) value with degree of freedom (16) and significance level ( $p = 0.05$ ) equal (26. 296). Due to the fact that the computed value between organizational factors and performance (612) is greater than the ( $k^2$ ) table value that will confirm the existence of relationship between the organizational factors and performance. In order to verify that a single factor of organizational factors that has a more influence on performance than the remainder of the factors, the results indicated, through data (frequencies) discharge, that the factor of delegating power represents the second rank and that will, in turn, indicate that jobs of personnel within insurance companies are determined by an obvious style and in accordance with an intact organizational structure mode and that supervision factor occupies the third rank followed by factors of job description, decision – making, communication clearness, assumption of responsibility, co-ordination among units, and mode of leadership respectively. That was the product of data (frequencies) discharge and that accordingly indicates the extent of availability and application of each factor within insurance companies.

### B. Study of positive and negative material and moral factors and their impact on performance

( $k^2$ ) independence test between positive and negative material and moral factors on one hand and performance on the other hand. Such factors are represented in wages and additional salaries (allowances), the encouraging bonus, profit sharing, social security fund, pensions fund, vacations, training courses, educational missions, medical care, personnel participation in the administration, opportunities of growth and upgrading, cultural, social and recreational care in addition to the negative factors which are represented in deprivation from wages and salaries and allowances and delay of the same. The computed ( $k^2$ ) value from tables between positive and negative material and moral factors and performance is (189) and when compared to table ( $k^2$ ) value ( $D = 16, p = 0.05$ ) = (26.296), we will clearly notice, as expected, the existence of a larger impact for positive and negative material and moral factors on personnel performance rate. To verify such impact, the



results indicated that the salary factor comes first in terms of effect on performance where it scored the highest degrees of approval. It represents a significant factor for creating momentum towards work; where as the factor of vacation system comes next, followed by promotion system then thereafter will come factors of remuneration and appreciation, insurances, penalty respectively. The latter shows that whenever the worker makes a mistake during his work, he will be penalized. Thereafter, comes the factor negative incentive system in where it is applied so precisely realizing the end their form. Finally, we have the factor of personnel care which occupies the 8<sup>th</sup> position and that is in terms of concern of officials in insurance companies with personnel care in cultural, social and recreational aspects.

### **C. Study of psychological factors and their impact on performance**

( $k^2$ ) independence test between the psychological factors (represented in anxiety, struggle or disagreement, allegiance and belonging, and effect of personal factors) and performance. We note that the computed ( $k^2$ ) value between psychological factors and performance is (229) and from the tables ( $k^2$ ), table value was ( $D = 16, p = 0.05$ ) = (26.296), which is much smaller than the computed value.

This constitutes a considerable statistical indication (strong relationship) that such psychological factors have large and obvious effect and role on personnel performance level. In order to know which of the psychological factors has a larger effect on performance, the fact that the results indicated, through data discharge, that the factor of allegiance and belonging to the company represents the first position in terms of effect on performance, and that is through the feeling of personnel with boast, pride and belonging and this factor scored the highest degrees of approval of the answers, whereas the factor of struggle or disagreement occupied the second position and the two factors of concern with personnel feelings and needs came third in terms of impact on performance.

### **D. Study of environmental factors and their effect on performance**

( $k^2$ ) independence test between environmental factors and performance. That is represented in independence (non-independence) test of performance factors and the different factors such as technological, social, cultural, legal, political, economical and international environment, called collectively the general environmental factors and the general missions factors such as market and competition plus internal organizational environment factors which are the concerns of personnel, culture and management, we

find that the computed ( $k^2$ ) value between environmental factors and performance is (358), and that the counted value is much larger than the table value was ( $k^2$ ) ( $D = 16, p = 0.05$ ) = (26.296). This institutes an indication to existence of a stronger relationship between environmental factors and performance. Moreover performance can not be improved without reference to the environmental factors. In order to know which of environmental factors has the stronger effect on performance the results indicated, through data discharge, that the factor of environmental conditions comes first in terms of impact on performance because it scored the lightest degrees of approval among the answers. This shows that environmental factors (technological, social, cultural, legal, political, economic and international environment) influence the personnel performance. The factor of adaptation with surrounding environment in accordance with the needs and developments of the market come second in terms of effect on personnel performance.

### **SUMMARY**

The findings were summed up in existence of a strong positive relationship between the constituent factors of organizational environment on one hand and efficiency of personnel performance on the other hand. The findings also indicated that the environmental factors come second in terms of influence on personnel performance. The findings also indicated that psychological factors come third in terms of influence on personnel performance. The findings also proved that positive and negative material and moral factors occupy the fourth position in affecting personnel performance. The forgoing findings represent the aspects that have positive impact on performance. However there are several aspects that have not been given adequate concern by companies knowing the fact that such aspects affect the improvement of performance. They are represented in the fact that some personnel do not like to assume responsibility and that some units in the said companies suffer from overlapping of work therein plus lack of adequate concern by companies with respect to (positive and negative material and moral) factors specially wages. Furthermore, the negative incentive system (deprivation from salary, allowance and promotion) concerning those who act in default is not properly applied, as some are susceptible to punishments and penalties while others are not. Likewise, the percentage of criticism against personnel at time of error commitment is too high and exceeds the encouraging bonus. Based on such findings, we can forward a set of recommendations the most important of which is the improvement of the organizational environment prevailing in insurance companies with necessity of availability of fle-

xibility in the functional and organizational structure in addition to concern to communication factor and assurance of significance of supervision scope. Decision – making shall depend on individuals who should be highly qualified and skillful in addition to focusing on the significance of co-ordination between working units and giving much concern to positive and negative moral and material factors represented in encouraging high qualified personnel and considering their feeling. Promotion should also depend on the basis of capacity beside superiority and utilization

of the negative incentive system by making the same incentive and motivation factor and giving concern to psychological aspects by converting the disagreement and struggle to the motivation aspect in order to realize the performance efficiency and towards the interest of work in insurance companies. Moreover, much concern should be given to environmental factors and orienting the same in favor of companies and personnel therein with observance that the work in companies should be correlated with such environments which it affects and is affected.

## SOUHRN

Prostředí organizace a jeho dopad na výkon – aplikovaná studie v libyjských pojišťovnách

Tato studie analyzuje prostředí organizace převažující ve zkoumané pracovní skupině, její dopady na pracovní výkon, určuje typ vztahů v ní a rozlišuje prvky organizace, které mají větší vliv na osobní pracovní výkon než ostatní faktory. Studie byla provedena ve třech pojišťovacích společnostech v Libyi, na základě dotazníků náhodně distribuovaných mezi zkoumanými pracovníky.

Studie zjistila, že různé hypotézy se liší ve faktorech ovlivňujících prostředí organizace a jejich dopadech na osobní pracovní výkon. Studie rovněž zjistila, že případy osobních pracovních neúspěchů jsou způsobeny nedostatkem koordinace mezi jednotkami, vážně definovanými vztahy mezi nimi, absencí ohledu na sociální a kulturní péči pracovníka a jeho odpočinek.

Na základě výsledků výzkumu jsou v příspěvku poskytnuta doporučení, která se soustředí na zlepšení prostředí ve zkoumaných organizacích. Doporučení spočívají v zdůraznění jak materiálních, tak nemateriálních sociálních faktorů ovlivňujících pracovní výkon vysoce kvalifikovaného personálu.

prostředí organizace, faktory ovlivňující organizaci, materiální a sociální faktory, psychologické faktory a výkon

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## APPENDICES

**Appendix 1:** Questionnaire on the Organizational Environment and its Effects on Performance(in Insurance Companies in Libya)

Dear Participant!

Organizational Environment is a measure for every organization. It covers the characteristics of the internal working environment in the organization which affect workers' performance and satisfaction.

The following questions are for conducting a study on the effect of organizational environment on workers performance. Please select the answer that best expresses your views, by putting a check mark (√) in the proper space. Your participation will be utilized for research of the subject matter. Your candid answers will help make this work a successful study. Thank you for your cooperation.

No.	Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1	Jobs are clearly defined according to a proper organizational chart					
2	Job Description (tasks and duties) should include worker's responsibility in retaining customers					
3	There is a clear system in place for communication among all job levels and departments					
4	The objective of delegating is to achieve better results and accomplish tasks. Delegating should be given to qualified workers for achieving objectives					
5	Management explains clearly all company policies and work procedures to employees					
6	Employees know precisely their roles and responsibilities					
7	Employees participate in setting up general policies and their objectives					
8	Employees know who the decision makers are					
9	Supervisory rules are outlined clearly for supervisors and subordinates					
10	Of the problems, workers do not want to take responsibilities					
11	Working units suffer from overlapping (lack of coordination) and ambiguity of relation					
12	There is a feeling among workers in de-centralizing of decision making with upper management					
13	Leadership in the company put an emphasis on workers needs and encourages workers that put out a bigger effort and help them to do so					

No.	Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
14	Decision-making relies on careful scrutiny to ensure effectiveness					
15	Wage (salary) is major incentive factor					
16	There is a social security regime in place for workers (additional wages, workers compensation, etc.)					
17	Vacation regulations allow all workers to get their vacation time whenever they need it					
18	Promotion is tied to performance					
19	Management looks after workers socially with adequate recreation programs					
20	Negative incentive regime (depriving of merit increase and promotion) is not applied at proper way to achieve objectives					
21	A worker who makes a mistake at work is discipline					
22	Usually a worker is rewarded more than criticized and threatened					
23	Rewards are adequate and are relative to performance					
24	Work groups understanding of other work groups behavior lead to achieving objectives					
25	Disagreement and differences among workers is a healthy phenomenon as it is within work principles and in line with achieving objectives					
26	Workers feel proud to be part of the corporation					
27	Workers feel that what management presents is suitable all the time and needs no discussion					
28	Management philosophy concentrates around the human side and looking after workers					
29	Participation spirit is dominant in taking responsibility, planning and execution between supervisors and workers					
30	Workers look after their personal interests					
31	An attention is paid to workers' desires and needs to give them a sense of belonging which reflects on performance					



No.	Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
32	Environmental factors (technology, politics, law, economics, social and international) affect performance					
33	Customers differ in their dealings in size and kind, the company carries out studies to improve customers dealings with the company					
34	Workers have to be ready to adapt to the surrounding environment according to market needs to satisfy customers					
35	I believe the company does its most to improve services to customers					
36	After-sale customer care will lead to clientele retention and will attract new customers					
37	There must be coordination among insurance sales staff to provide more beneficial insurance services					
38	We feel stress to continually improve individual and team performance					
39	Management believes performance improves with workers satisfaction					
40	The company encourages team efforts to improve insurance services, and makes them a performance competency					
41	In evaluating performance, the company attempts to reward personal efforts to improve services and attract customers					

**Appendix 2:****(A)** Observed values of relations between organizational factors and performance

Factor		Performance				
Organizational factors	Answers	5	4	3	2	1
	5	6210	6325	4400	4168	3484
	4	6825	6940	5015	4783	4099
	3	4535	4650	2725	2493	1809
	2	5322	5437	3512	3280	2596
	1	3968	4083	2158	1926	1242

**(B)** Computed ( $k^2$ ) values of relations between organizational factors and performance.

Cell	Observe value (Ov)	Estimated values (Ev)	Ov-Ev	(Ov-Ev) <sup>2</sup>	(Ov-Ev) <sup>2</sup> / Ev
1	6210	6475.47	-265.470	70474	10.883
2	6825	7285.30	-460.300	211876	29.083
3	4535	4269.84	265.160	70310	16.467
4	5322	5306.16	15.480	251	0.047
5	3968	3523.22	444.780	197829	56.150
6	6325	6614.10	-298.100	83579	12.636
7	6940	7441.26	-501.260	251261	33.766
8	4650	4361.25	288.750	83377	19.118
9	5437	5419.75	17.250	298	0.055
10	4083	3598.64	484.360	234605	65.193
11	4400	4293.68	106.320	11304	2.633
12	5015	4830.65	184.350	33985	7.035
13	2725	2831.19	-106.190	11276	3.983
14	3512	3518.34	-6.340	40	0.011
15	2158	2336.13	-178.130	31730	13.582
16	4168	4015.23	153.770	23645	5.889
17	4783	4517.38	266.620	71086	15.736
18	2493	2647.59	-153.590	23590	8.910
19	3280	3290.17	-9.170	84	0.026
20	1926	2184.63	-257.360	66373	30.382
21	3484	3189.52	294.480	86718	27.189
22	4099	3588.41	510.590	260702	72.651
23	1809	2103.13	-294.130	86512	41.135
24	2596	2613.57	-17.570	309	0.118
25	1242	1735.38	-493.380	243424	140.271
<b>Total</b>					<b>612</b>

**Appendix 3:****(A)** Observed values between environmental factors and performance

Factor		Performance				
environmental factors	Answers	5	4	3	2	1
	5	3753	3868	1943	1711	1027
	4	3990	4105	2180	1948	1264
	3	3426	3541	1616	1384	700
	2	3284	3399	1474	1242	558
	1	3189	3304	1379	1147	463

**(B)** Computed ( $k^2$ ) values between environmental factors and performance.

Cell	Observe value (Ov)	Estimated values (Ev)	Ov-Ev	(Ov-Ev) <sup>2</sup>	(Ov-Ev) <sup>2</sup> / Ev
1	3753	3882.75	-129.750	16835.1	4.336
2	3990	4256.73	-266.730	71144.9	16.714
3	3426	3366.75	59.250	3510.6	1.043
4	3284	3143.00	141.000	19881.0	6.325
5	3189	2992.77	196.230	38506.2	12.866
6	3868	4009.30	-141.000	19965.7	4.980
7	4105	4395.47	-290.470	84372.9	19.195
8	3541	3476.48	64.520	4162.8	1.197
9	3399	3245.44	153.560	23580.7	7.266
10	3304	3090.32	213.680	45659.1	14.775
11	1943	1890.97	52.030	2707.1	1.432
12	2180	2073.11	106.890	11425.4	5.511
13	1616	1639.67	-23.670	560.3	0.342
14	1474	1530.70	-56.700	3214.9	2.100
15	1379	1457.54	-78.540	6168.5	4.232
16	1711	1637.00	75.000	5625.0	3.436
17	1948	1794.67	154.330	23817.7	13.271
18	1384	1419.45	-34.450	1186.8	0.836
19	1242	1325.11	-81.110	6578.8	4.965
20	1147	1261.78	-113.780	12945.9	10.260
21	1027	882.98	144.020	20741.8	23.491
22	1264	968.03	295.970	87598.2	90.491
23	700	765.64	-65.640	4308.6	5.627
24	558	714.75	-156.750	24570.6	34.376
25	463	680.59	-217.590	47345.4	69.565
<b>Total</b>					<b>358</b>

**Appendix 4:****(A)** Observe values between psychological factors and performance

Factor		Performance				
psychological factors	Answers	5	4	3	2	1
	5	4407	4522	2597	2365	1681
	4	4937	5052	3127	2895	2211
	3	4172	4287	2362	2130	1446
	2	4384	4499	2574	2342	1658
	1	3692	3807	1882	1650	966

**(B)** Computed ( $k^2$ ) values between psychological factors and performance

Cell	Observe value (Ov)	Estimated values (Ev)	Ov-Ev	(Ov-Ev) <sup>2</sup>	(Ov-Ev) <sup>2</sup> / Ev
1	4407	4444.84	-37.840	1431.9	0.322
2	4937	5201.20	-264.200	69801.7	13.420
3	4172	4109.47	62.530	3910.0	0.951
4	4384	4412.02	-28.020	785.1	0.178
5	3692	3424.47	267.530	71572.3	20.900
6	4522	4563.21	-41.210	1698.3	0.372
7	5052	5339.71	-287.710	82777.0	15.502
8	4287	4218.91	68.090	4636.2	1.099
9	4499	4529.51	-30.510	930.8	0.206
10	3807	3515.66	291.340	84879.0	24.143
11	2597	2581.84	15.160	229.8	0.089
12	3127	3021.19	105.810	11195.8	3.706
13	2362	2387.04	-25.040	627.0	0.263
14	2574	2562.78	11.220	125.9	0.049
15	1882	1989.15	-107.150	11481.1	5.772
16	2365	2344.08	21.920	480.5	0.205
17	2895	2742.97	153.030	23418.2	8.538
18	2130	2167.22	-36.220	1311.9	0.605
19	2342	2326.77	16.230	263.4	0.113
20	1650	1805.96	-154.960	24012.6	13.296
21	1681	1639.02	41.980	1762.3	1.075
22	2211	1917.93	293.070	85890.0	44.783
23	1446	1515.36	-69.360	4810.8	3.175
24	1658	1626.92	31.080	966.0	0.594
25	966	1262.76	-296.760	88066.5	69.741
<b>Total</b>					<b>229</b>

**Appendix 5:****(A) Observed values between material and moral factors and performance**

Factor		Performance				
material and moral factors	Answers	5	4	3	2	1
	5	4890	5005	3080	2848	2164
	4	5047	5162	3237	3005	2321
	3	4242	4357	2432	2200	1516
	2	4744	4859	2934	2702	2018
	1	3977	4092	2167	1935	1251

**(B) Computed ( $k^2$ ) values between material and moral factors and performance**

Cell	Observe value (Ov)	Estimated values (Ev)	Ov-Ev	(Ov-Ev) <sup>2</sup>	(Ov-Ev) <sup>2</sup> / Ev
1	4890	5011.87	-121.870	14852.3	2.963
2	5047	5230.58	-183.580	33701.6	6.443
3	4242	4109.13	132.870	17654.5	4.296
4	4744	4808.47	-64.470	4156.4	0.864
5	3977	3739.95	237.050	56192.7	15.025
6	5005	5137.71	-132.710	17611.9	3.428
7	5162	5361.92	-199.920	39968.0	7.454
8	4357	4212.30	144.700	20938.1	4.971
9	4859	4929.21	-70.210	4929.4	1.000
10	4092	3833.86	258.140	66636.2	17.381
11	3080	3031.19	48.810	232.4	0.786
12	3237	3163.48	73.520	5405.2	1.709
13	2432	2485.21	-53.210	2831.3	11.39
14	2934	2908.18	25.820	666.7	0.229
15	2167	2261.94	-94.940	9013.6	3.985
16	2848	2778.41	70.590	4983.0	1.793
17	3005	2899.66	106.340	11308.2	3.900
18	2200	2277.96	76.960	5922.8	2.600
19	2702	2665.66	37.340	1394.3	0.523
20	1935	2073.31	-137.310	18854.1	9.094
21	2164	2028.82	135.180	18273.6	9.007
22	2321	2117.36	203.640	41469.2	19.585
23	1516	1663.39	-147.390	21723.8	13.060
24	2018	1946.49	71.510	5113.7	2.627
25	1251	1513.95	-262.950	69142.7	45.670
<b>Total</b>					<b>189</b>

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