

Djoudi Abdelhak

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Djoudi Abdelhak<sup>1</sup>

<sup>1</sup> The digital economy laboratory in Algeria (Khamis Miliana), University of Tissemsilt, (Algeria),  
abdelhak.djoudi@univ-tissemsilt.dz

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## **Abstract:**

**The study aimed to identify the creativity management in a service institution "Algeria Telecom for the state of Tissemsilt" and analyze the level of creativity in it, through a field study that included the design and distribution of a form to collect data from the frames of the institution under study, as they represent the study community.**

**The study reached a set of results, the most important of which are the following: The sample surveyed has a stock of knowledge about creativity as a concept, through their possession of the components of creativity, and there is a discrepancy between the members of the institution studied, and a certain level of adoption of creativity was reached to identify variables related to creativity, which can be adopted to conduct a future study to determine the relationship between it and the determinants of applied management.**

**Keywords: creativity, elements of creativity, requirements for activating creativity.**

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## **First: Introduction**

In line with the constantly rapid technological changes witnessed by the telecommunications sector, and the fact that these developments and changes are the core of the study topic of creativity management, by exploring and analyzing all the proposed variables related to the subject in order to determine the variables that can be adopted in fact to know the level of creativity in the institution under study within the proposed administrative determinants, if any, in order to activate it, it often seems obvious to put forward and propose a set of variables related to activating creativity, but in fact it is necessary research on how to identify these variables and what are the mechanisms adopted in order to assert the acceptance of variables without others, and here the process of applied theoretical projection takes place in the field of continuous research, which requires identifying the research community within its spatial framework, the

nature of its activity, its organizational structure, and formal and informal administrative practices that we consider in our research as administrative determinants.

This research paper will address the operational determinants of creativity in the Algerian Economic Corporation - represented by Algeria Telecom, the operational directorate of the state of Tissemsilt - to achieve its various and interrelated objectives, such as providing advanced products or services that must be in the place of customer satisfaction and thus achieving the institution in addition to its market share, all of which justifies the inevitability of its interest in new ideas and its use of all possible methods to search, exploit and develop creative energies.

Considering creativity as a fundamental pillar for the survival of the economic institution and its continuation in a difficult business environment, which requires activating creativity among its employees, we pose the following problem: " **What is the reality of creativity management and to what extent is it activated in the Algerian economic institution?**

To answer the problem, we formulated two hypotheses as follows:

**The first hypothesis:** There are statistically significant differences in the availability of creativity in its four dimensions (originality, fluency, flexibility, and sensitivity to problems) among the employments of Algeria Telecom Tissemsilt under study, attributed to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

Four sub-hypotheses branch out of it:

- **The first sub-hypothesis:** There are statistically significant differences in the availability of creative originality among the employees of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).
- **Second sub-hypothesis:** There are statistically significant differences in the availability of creative fluency among the employees of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).
- **Third sub-hypothesis:** There are statistically significant differences in the availability of creative flexibility among the cadres of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).
- **Fourth sub-hypothesis:** There are statistically significant differences in the availability of sensitivity to problems among the employments of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

**Hypothesis II:** The variables of the study related to creativity, consisting of 13 items, are all valid and can be adopted in future studies, at the level of significance ( $\alpha=5\%$ ).

**Second: The theoretical aspect**

**1. The theoretical term for creativity:**

The term creativity is attributed to the Austrian ( Joseph Schumpeter) 1912, who is considered the first theorist of creativity, as he defines it as: "the result resulting from the creation of a new method or method of production, and the change in all components of the product or how it is designed"<sup>(1)</sup>, and he (Guilford ) has shown Guilford in 1950 in his speech, in his capacity as president of the American Psychological Association, that by examining the publication "Abstracts in Psychology" it was found that in the 23 years since its publication, the total number of various psychological studies amounted to 121 thousand titles, of which only 186 are included in the research of creativity, representing 0.153%,<sup>(2)</sup> Crombach (1984) defines creativity as different thinking, which means the availability of skills and patents through which completely new ideas and observations are made<sup>(3)</sup>.

Getzels argues in his research that has lasted more than twenty years that there is no single agreed definition of creativity. The definition of creativity is flexible and wide, and despite the difference and diversity, some definitions emphasize the importance of production, its scarcity or usefulness, others focus on organized mental processes, and some focus on the path of growth and change in the psychological life of the creator. Some definitions also revolve around the subjective experience of the creator and there is something that confirms the awareness of the problem and asking the good question<sup>(4)</sup>.

**2. Analysis of the creative process**

The term "creativity process" refers to the main characteristics of the creativity strategy, its factors, and results, the creativity process is the result of the meeting between the definition of the goals to be achieved to design new products, new processes, or new business practices and the internal and external resources of the company that will contribute to its development, and historically, in the context of product and service innovation, the creativity process is "descending", that is, it first comes from a new technology and then moves to the products and services that will be marketed, but since the eighties of the twentieth century and relative gratification To demand, companies are becoming more interested in uses and users and thus practicing another kind of creativity process called the "escalating process of innovation" meaning that research and development services are working to meet explicit or emerging consumer needs<sup>(5)</sup>.

**3. Elements of creativity:**

Creativity has several components<sup>(6)</sup>, of which we mention four of which we have adopted as the determinants of the study:

- **Originality:** It is the extent to which the individual can generate new ideas that were not put forward in the past, the more the idea is uncommon and distinct, the greater the degree of originality, and Guilford defines it as the degree of novelty that the individual can show and that appears in his unfamiliar response, and the tendency to provide remote, new, skilled and unusual repercussions, and the owner of the original thought gets tired of using repetitive ideas and traditional solutions to problems<sup>(7)</sup>.
- **Sensitivity:** It means the ability to sense problems and realize their nature and the creator notices that there is something wrong that others do not notice, and it is said that "Edison" was saying to his collaborators: "There must be a better way to look for it".
- **Flexibility:** It means flexibility of thinking and is considered the basic pillar of knowledge for the creative personality, as it represents the rapid and appropriate reconstruction of the information under the requirements of emerging cases, unlike the rigidity or rigidity of thinking (relying on pre-solved problems without searching for new solutions), so flexibility is the ability to change the state of mind by changing situations, and it is of two types<sup>(8)</sup> Automatic flexibility and adaptive flexibility.
- **Fluency:** The individual can produce a large number of alternatives, synonyms, or ideas when responding to a particular stimulus, and the speed in generating them<sup>(9)</sup>, and it is said that fluency is a bank of creative ability, which is represented in several types<sup>(10)</sup> Verbal fluency, relational fluency, formal fluency, intellectual fluency, and expressive fluency.

Fluency, originality, and flexibility are the hallmarks of a creative person.

### Third: The Applied Aspect

#### 1. Methodology used

This study seeks to provide a general description of the reality of the orientation of the institution surveyed towards creativity and the extent of its importance and need, and the mechanisms of activating it through the analysis of the collected data, and to achieve the objectives of this study, the descriptive approach was used as the appropriate approach for this type of studies through data collection, tabulation, analysis and interpretation of the results obtained using the statistical program (SPSS). ), and the use of appropriate statistical tests to reach valuable indications and indicators that support the subject of study.

#### 2. Questionnaire

Based on the nature of the information collected, and according to the research method used, and according to the available material capabilities, to achieve the objectives of the study, we relied on the "questionnaire" method in collecting information, where the creativity axis - which

aims to poll the opinions of the sample members about the availability of creativity conditions in the institution - included 13 phrases or paragraphs distributed on four dimensions as follows:

- **Originality dimension:** which includes three paragraphs or phrases (1-3), through which we can measure the availability of the element of originality among the members of the sample under study.
- **Fluency dimension:** which also includes three paragraphs (4-6), through which we can measure the availability of the element of fluency among the members of the sample under study.
- **Flexibility dimension:** includes four paragraphs (7-10), through which we can measure the availability of the flexibility element among the members of the sample under study.
- **Sensitivity to problems and devising solutions dimension:** which includes three paragraphs (11-13), through which we can measure the sensitivity of the sample members under study to the problems and their derivation of solutions.

### 3. Population and sample of the study

The study is limited to all 78 employees of the Operational Directorate of Algeria Telecom in Tissemsilt, except the director, where the questionnaire was distributed to a sample of tires that were identified<sup>(11)</sup> at a confidence level of 95% and a margin of error of 05%. The sample size was 66 frames classified in class 15 and above, of them, responded (56) only, equivalent to 84.84% of the selected sample size, and (07) questionnaires were canceled for not meeting the conditions, so the real sample size was (49) individuals, and Table (4-5) summarizes the statistics related to the number of questionnaires distributed, retrieved and adopted in the process of collecting information.

**Table (01):** Distributed, retrieved, and approved questionnaires of the study.

Sample	Distributed Number (1)		Percentage (2)	Retrieved number (3)	Questionnaires retrieved % (4) = (3)/(1)	Questionnaires adopted in the study (5)	Approved Questionnaires % (6)
Sublime frame	3		%4.5	3	% 4.5	3	%6.2
frame	63		%95.5	53	%80.34	46	%93.8
Total	66		%100	56	%84.84	49	%100

#### 4. Test the first hypothesis

##### 4.1 Testing the first sub-hypothesis

There are statistically significant differences in the availability of creative originality among the employees of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

- Study of Differences Through Gender Variable**

We note through the table below that 92% of the research sample agree on the existence of originality in the creative thinking of employment, where the value of Chi-square is estimated at 5,038<sup>a</sup>, which is not a function at the degree of freedom 4 with a level of significance 0.283 It is the largest 0.05, and this is explained by the absence of statistically significant differences in the availability of creative originality among the employees of Algeria Telecom Tissemsilt in question, due to the demographic variable gender.

**Table (02): X<sup>2</sup> Test Results about Gender - Authenticity**

Total	There are differences in the originality of creative thinking in terms of the professional category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
37	2	1	0	19	15	Male	Gender
12	0	0	1	8	3	Female	
49	2	1	1	27	18	Total	
100%	4%	2%	2%	55%	37%	Percentage	
decision				Level of significance	The degree of freedoms	Chi-square Value	
There are no differences in the respondents' answers				0,283	4	5,038	

Source: Prepared by the researcher based on SPSS v23 outputs.

- Study of differences according to the professional category variable**

We note through the table below that 92% of the members of the research sample of various classifications agree on the originality, where the value of Chi-square is estimated at 16,780, which is a function at the degree of freedom 4 with a level of significance 0.002 This is explained by the existence of statistically significant differences in the availability of creative originality among the employees of Algeria Telecom Tissemsilt under study, due to the demographic variable of the occupational group at the level of significance ( $\alpha=5\%$ ).

**Table (02): X<sup>2</sup> Test Results of Professional Category - Authenticity**

Total	There are differences in the originality of creative thinking in terms of the professional category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
46	2	1	0	25	18	High skilled employee	Category Profession
3	0	0	1	2	0	employee	
49	2	1	1	27	18	Total	
100%	4%	2%	2%	55%	37%	Percentage	
decision				Level of significance	The degree of freedoms	Chi-square Value	
There are differences in the responses of the respondents				0,002	4	16,780 <sup>a</sup>	

Source: Prepared by the researcher based on SPSS v23 outputs.

We partially reject the first sub-hypothesis: we say that there are no significant differences in the ownership of the employees of Algeria Telecom Tissemsilt for the originality of creativity attributed to the demographic variable (gender), at the level of significance ( $\alpha=5\%$ ), while there are significant differences in the ownership of the employees of Algeria Telecom Tissemsilt for the originality of creativity attributed to the demographic variable (professional category), at the level of significance ( $\alpha=5\%$ ).

#### 4.2 Second sub-hypothesis test

The hypothesis text is "There are statistically significant differences in the availability of creative fluency among the employments of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ )".

- **Study of differences by gender variable:**

We note through the table below that 86% of the research sample agree on the existence of fluency in creative thinking among skilled employees, where the value of Chi-square is estimated at 2,314 and is not a function at the degree of freedom 4 with a level of significance 0.678 This explains the absence of statistically significant differences in the availability of creative fluency among the employees of Algeria Telecom Tissemsilt under study, due to the gender variable.

**Table N° (03): Results of the X<sup>2</sup> Test Gender - Fluency**

Total	There are differences in the fluency of creative thinking in terms of the category of gender						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
37	1	2	3	21	10	Male	Gender
12	0	1	0	9	2	Female	
49	1	3	3	30	12	Total	
100%	2%	6%	6%	61%	25%	Percentage	
decision				Level of significance	The degree of freedoms	Chi-square Value	
There are no differences in the respondents' answers				0,678	4	2,314	

**Source:** Prepared by the researcher based on SPSS v23 outputs.

- **Study of differences according to professional category variable:**

We note through this table that 86% of the members of the research sample of various classifications agree on fluency, where the value of Chi-square is estimated at 4,924 and is not a function at the degree of freedom 4 with a level of significance of 0.295 This is explained by the absence of statistically significant differences in the availability of creative fluency among the



employees of Algeria Telecom Tissemsilt under study, due to the variable of the occupational category.

**Table N° (04): X<sup>2</sup> test results Professional Category - Fluency**

Total	There are differences in the fluency of creative thinking in terms of the professional category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
46	1	3	2	28	12	High skilled employee	Category Profession
3	0	0	1	2	0	employee	
49	1	3	3	30	12	Total	
100%	2%	6%	6%	61%	25%	Percentage	
decision					The degree of freedoms	Chi-square Value	
There are no differences in the respondents' answers				0,295	4	4,924 <sup>a</sup>	

**Source:** Prepared by the researcher based on SPSS v23 outputs.

Rejection of the second sub-hypothesis: We say that there are no significant differences in the availability of creative fluency among the employees of Algeria Telecom Tissemsilt for the originality of creativity attributed to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

### 4.3 Testing the third sub-hypothesis

There are statistically significant differences in the availability of creative flexibility among the employments of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

- Study of differences by gender variable

Table (05): X<sup>2</sup> Test Results of Gender - Flexibility

Total	There are differences in the flexibility of creative thinking in terms of gender category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
37	0	1	5	21	10	male	Gender
12	0	0	0	10	2	female	
49	0	1	5	31	12	Total	
100%	0%	2%	10%	63%	25%	Percentage	
decision				Level of significance	The degree of freedoms	Chi-square Value	
There are no differences in the respondents' answers				0,340	3	3,355	

Source: Prepared by the researcher based on SPSS v23 outputs.

We note through this table that 88% of the research sample agree on the existence of flexibility in creative thinking in the frames, where the value of Chi-square is estimated at 3,355 and is not a function at the degree of freedom 4 with a level of significance 0.340 This explains the absence of statistically significant differences in the availability of creative flexibility among the employees of Algeria Telecom Tissemsilt under study, due to the gender variable.

- Study of differences according to the professional variable

Table (06): X<sup>2</sup> Test Results of Professional Category - Flexibility

Total	There are differences in the flexibility of creative thinking in terms of the professional category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
46	0	1	4	29	12	High skilled employee	Category Profession

3	0	0	1	2	0	Employee	
49	0	1	5	31	12	Total	
100%	0%	2%	10%	63%	25%	Percentage	
decision				Level of significance	The degree of freedoms	Chi-square Value	
There are no differences in the respondents' answers				0,470	3	2,529 <sup>a</sup>	

Source: Prepared by the researcher based on SPSS v23 outputs.

We note through this table that 88% of the members of the research sample in their various classifications agree on flexibility, as the value of Chi-square estimated at 2,529 is not significant at the degree of freedom 4 with a level of significance of 0.470. This explains that there were no statistically significant differences in the availability of creative flexibility among the employees of Algeria Telecom Tissemsilt under study, due to the variable of the occupational category.

Rejection of the third sub-hypothesis: We say that there are no significant differences in the availability of creative flexibility of the employments of Algeria Telecom Tissemsilt for the originality of creativity due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

#### 4.4 Testing the fourth sub-hypothesis

There are statistically significant differences in the availability of sensitivity to problems among the employees of Algeria Telecom Tissemsilt under study, due to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

- Study of differences by gender variable

Table (07): Results of Gender X<sup>2</sup> Test - Sensitivity to Problems

	There are differences in sensitivity to problems in terms of gender category						
Total	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
37	0	3	4	19	11	male	Gender
12	0	0	0	9	3	female	

49	0	3	4	28	14	Total
100%	0%	6%	8%	57%	19F	Percentage
decision				Level of significance	The degree of freedoms	Chi-square Value
There are no differences in the respondents' answers				0,358	3	3,228 <sup>a</sup>

**Source:** Prepared by the researcher based on SPSS v23 outputs.

We note through the above table that 86% of the research sample agree on their sensitivity to the problems before they occurred, where the value of Chi-square is estimated at 3,228 and is not a function at the degree of freedom 4 with a level of significance 0.358 This is explained by the absence of statistically significant differences in the availability of the element of sensitivity to problems in the staff of the Algerian Telecom Corporation Tissemsilt under study, due to the gender variable.

- **Study of differences according to professional category variable:**

We note through the table below that 8-6% of the members of the research sample of various classifications agree on sensitivity to problems before they occur, as the value of Chi-square is estimated at 6,277 and is not a function at the degree of freedom 4 at the level of significance 0.179 This explains the absence of statistical significance because of the element of sensitivity availability to problems among the employments of Algeria Telecom Tissemsilt under study, due to the variable of the occupational category.

**Table (08): X<sup>2</sup> Test Results of Professional Category - Sensitivity to Problems**

Total	There are differences in sensitivity to problems in terms of occupational category						
	Completely disagree.	Disagree	neutral	I agree	Strongly agree		
46	0	3	4	25	14	High skilled employee	Category Profession
3	0	0	0	3	0	employee	
49	0	3	4	28	14	Total	

100%	0%	6%	8%	57%	19F	Percentage
decision				Level of significance	The degree of freedoms	Chi-square Value
There are no differences in the respondents' answers				0,179	3	6,277 <sup>a</sup>

**Source:** Prepared by the researcher based on the outputs of SPSS v23.

Rejection of the fourth sub-hypothesis: We say that there are no significant differences in the availability of sensitivity to problems in the employments of Algeria Telecom Tissemsilt for the originality of creativity attributed to demographic variables (gender, occupational group) at the level of significance ( $\alpha=5\%$ ).

## 5. Second hypothesis test

In order to test this hypothesis, we will study the relationship and differences of the variables of the study, based on the degree of compatibility and difference between each component of the variables of the axis of creativity, which we highlight by doing the Kai 2 test, so that we recall that its low significance value indicates 0.05, that is, accepting the null hypothesis because there are differences between the two variables for each component of the study under test, and this means that there is a significant relationship between them, and in this case one of the two variables is dispensed with for the rest of the study To avoid duplication of results, when the significance value of the test  $X^2$  is greater than 0.05, this means rejecting the null hypothesis and accepting the initial hypothesis (alternative), which indicates that it is not a function and there are no differences between them, the main goal is to determine the level of embrace of all or some of the proposed variables within the focus of the study.

We will perform the  $X^2$  test in two ways:

- ✓ Bias method: It is based on the assumption that one of the variables is independent of the rest of the variables and can be adopted in the study.
- ✓ The method of matrix analysis of all creativity variables without bias to one variable from another.

### 5.1 Study the compatibility between the variables of the creativity axis through the $X^2$ test based on bias

- Study the compatibility between the variable "the ability to present new unfamiliar ideas in my field of work" (P1) and the rest of the variables of creativity

The table below provides an explanation of the degree of compatibility or difference between the different indicators of creativity variables, where it is clear that there is a variation in the degree of relationship between the variables, and this is based on the significance values (sig), as we note relatively high independence between the variable P1 and each of the variables P2, P9, P10 and P12, where the results had a significant value greater than 0.05 and this is what justifies independence from each other and rejection of the null hypothesis.

While the variables P3, P4, P5, P6, P7, P8, P11, and P13 appear with the variable P1 through results with a significant value of less than 0.05, which means accepting the null hypothesis and therefore there is a relationship between the variable P1 and the variables (P3, P4, P5, P6, P7, P8, P11 and P13).

**Table (09):** Analysis of differences for variable P1 and the rest of the variables of creativity

P1 "I can present new ideas that are not familiar in my field"				
Decision	Level of significance	Degrees of freedoms	Chi-square Value	Paragraphs
Insignificant (there are no differences in respondents' answers)	0.054	9	16.674	P2
<u>significant (There are differences in respondents' answers)</u>	<u>0.008</u>	<u>9</u>	<u>22.277</u>	<u>P3</u>
<u>significant (There are differences in respondents' answers)</u>	<u>0.000</u>	<u>12</u>	<u>52.140</u>	<u>P4</u>
<u>significant (There are differences in respondents' answers)</u>	<u>0.001</u>	<u>9</u>	<u>28.867</u>	<u>P5</u>
<u>significant (There are differences in respondents' answers)</u>	<u>0.003</u>	<u>12</u>	<u>30.316</u>	<u>P6</u>
<u>significant (There are differences in respondents' answers)</u>	<u>0.002</u>	<u>9</u>	<u>25.587</u>	<u>P7</u>
<u>significant (There are differences in respondents' answers)</u>	<u>0.007</u>	<u>9</u>	<u>22.851</u>	<u>P8</u>
Insignificant (there are no differences in	0.113	12	18.084	P9

respondents' answers)				
Insignificant (there are no differences in respondents' answers)	0.173	9	12.785	P10
significant (There are differences in respondents' answers)	<u>0.001</u>	<u>12</u>	<u>34.622</u>	<u>P11</u>
Insignificant (there are no differences in respondents' answers)	0.146	12	17.100	P12
significant (There are differences in respondents' answers)	<u>0.000</u>	<u>12</u>	<u>37.614</u>	<u>P13</u>

Source: Prepared by the researcher based on SPSS v23 outputs.

- **Study the compatibility between the variable "boredom when using repetitive ideas and traditional solutions to problems" (P2) and the rest of the variables of creativity:**

The table below shows the degree of compatibility or difference between the different indicators of creativity variables, and it is clear that there is a discrepancy in the degree of relationship between the variables, and this is based on the significance values (sig), the independence is relatively high between the variable P2 and each of the variables P1, P9, and P10, and the results were significantly greater than 0.05 and this is what justifies their independence from each other.

While the variable P12 appears with the variable P2 through the results of its value of significantly less than 0.05, which means accepting the null hypothesis and therefore there is a relationship between the variable P2 and the variable P12.

**Table (10):** Analysis of the differences between the variable P2 and the non-excluded variables of the creativity axis

"I get bored using repetitive ideas and traditional solutions to problems I encounter in the performance of my tasks" (P2)				
Decision	Level of significance	Degrees of freedoms	Chi-square Value	Paragraphs
Insignificant (there are no differences in respondents' answers)	0.054	9	16.674	P1
Insignificant (there are no differences in respondents' answers)	0.177	12	16.328	P9

Insignificant (there are no differences in respondents' answers)	0.099	9	14.728	P10
<u>significant (There are differences in respondents' answers)</u>	<u>0.000</u>	<u>12</u>	<u>38.025</u>	<u>P12</u>

Source: Prepared by the researcher based on SPSS v23 outputs.

- Study the compatibility between the variable "the tendency to the spontaneous initiative in situations and not just respond to commands within the organization" (P9) and the rest of the variables of creativity:

**Table (11):** Analysis of the differences between the variable P9 and the non-excluded variables of the creativity axis

" I tend to be spontaneous in situations and not just respond to orders within the organization" (P9)				
Decision	Level of significance	Degrees of freedoms	Chi-square Value	Paragraphs
Insignificant (there are no differences in respondents' answers)	0.113	9	18.084	P1
Insignificant (there are no differences in respondents' answers)	0.177	12	16.328	P2
<u>significant (There are differences in respondents' answers)</u>	<u>0.002</u>	9	30.497	P10

Source: Prepared by the researcher based on SPSS v23 outputs.

The above table provides an explanation of the degree of compatibility or difference between the different indicators of creativity variables, where it is clear that there is a variation in the degree of relationship between the variables, and this is based on the significance values (sig), as we note relatively high independence between the variable P9 and each of the variables P1 and P2, where the results had a significant value greater than 0.05, and this justifies independence from each other and the rejection of the null hypothesis.



While the variable P10 appears with the variable P9 through the results of its value of less than 0.05, which means accepting the null hypothesis and therefore there is a relationship between the variable P9 and the variable P10.

**Outcome 01:** By assuming that paragraph P1 is a reliable variable to determine other independent variables, the variables of the creativity axis were deduced, namely:

- P1 "I can present new ideas that are not familiar in my field ".
- P2 "I get bored using repetitive ideas and traditional solutions to problems I encounter in the performance of my tasks ".
- P9 "I tend to be spontaneous in situations and not just respond to orders within the organization "

**Note:**

For variables excluded as a result of the  $X^2$  test, their values can change and each has a significance value greater than 0.05, if the effect of other variables is not taken into account, using the output of spss v23 within the available layers "Couche 1de 1", which requires matrix analysis of all  $X^2$  values.

**5.2 Choosing all the creativity variables that can be adopted in the study from the perspective of the class:**

For the differences based on the bias of one variable over the other variables, we came to choose P1, P2, and P9, then we will seek to confirm or deny this result from the perspective of a matrix for all variables based on the same level (the same situation) and study the relationship or independence, and based on this we will include the values of  $X^2$  for all variables within the matrices for the results  $X^2$  and the significance value sig in the following two tables:

Table (12): X<sup>2</sup> values matrix for all creativity variables

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
P1	1	16.6 74	22.2 77	52.1 40	26.8 67	30.3 16	25.5 87	22.8 51	18.0 84	12.7 85	34.6 22	17.1 00	37.6 14
P2	16.6 74	1	13.1 49	8.35 5	3.12 6	11.7 50	12.1 40	16.2 59	16.3 28	14.7 28	26.1 99	38.0 25	19.3 68
P3	22.2 77	13.1 49	1	26.2 69	23.4 61	33.0 42	7.03 4	19.6 96	21.4 48	36.9 86	12.1 79	6.53 3	11.1 51
P4	52.1 40	8.35 5	26.2 69	1	72.9 38	81.4 68	19.9 06	30.9 79	16.2 97	39.9 75	29.0 13	10.4 21	22.9 33
P5	26.8 67	3.12 6	23.4 61	72.9 38	1	81.4 80	14.3 12	22.3 09	25.8 57	35.2 65	5.57 9	10.1 12	5.77 7
P6	30.3 16	11.7 50	33.0 42	81.4 68	81.4 80	1	22.5 22	26.5 52	25.4 63	33.6 10	13.6 05	6.65 6	22.6 44
P7	25.5 87	12.1 40	7.03 4	19.9 06	14.3 12	22.5 22	1	31.8 88	18.2 75	14.0 07	10.1 72	27.0 11	41.0 25
P8	22.8 51	16.2 59	19.6 96	30.9 79	22.3 09	26.5 52	31.8 88	1	32.2 66	23.9 74	19.0 91	19.5 02	8.94 8
P9	18.0 84	16.3 28	21.4 48	16.2 97	25.8 57	25.4 63	18.2 75	32.2 66	1	30.4 97	37.1 03	34.5 01	18.8 49
P10	12.7 85	14.7 28	36.9 86	39.9 75	35.2 65	33.6 10	14.0 07	23.9 74	30.4 97	1	12.6 94	11.0 54	18.5 38
P11	34.6 22	26.1 99	12.1 79	29.0 13	5.57 9	13.6 05	10.1 72	19.0 91	37.1 03	12.6 94	1	25.7 93	11.2 67
P12	17.1 00	38.0 25	6.53 3	10.4 21	10.1 12	6.65 6	27.0 11	19.5 02	34.5 01	11.0 54	25.7 93	1	46.6 67
P13	37.6 14	19.3 68	11.1 51	22.9 33	5.77 7	22.6 44	41.0 25	8.94 8	18.8 49	18.5 38	11.2 67	46.6 67	1

Source: Prepared by the researcher based on SPSS v23 outputs.

Table (13): Sig matrix for all creativity variables

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
P1	1	0.05 4	0.00 8	0.00 0	0.00 1	0.00 3	0.00 2	0.00 7	0.11 3	0.17 3	0.00 1	0.14 6	0.00 0
P2	0.05 4	1	0.15 6	0.75 7	0.95 9	0.46 6	0.20 6	0.06 1	0.17 7	0.09 9	0.01 0	0.00 0	0.15 6
P3	0.00 8	0.15 6	1	0.01 0	0.00 5	0.00 1	0.63 4	0.02 0	0.04 4	0.00 0	0.43 1	0.88 7	0.51 6
P4	0.00 0	0.75 7	0.01 0	1	0.00 0	0.00 0	0.06 9	0.00 2	0.43 2	0.00 0	0.02 4	0.84 4	0.11 6
P5	0.00 1	0.95 9	0.00 5	0.00 0	1	0.00 0	0.11 2	0.00 8	0.01 1	0.00 0	0.92 8	0.60 6	0.92 7
P6	0.00 3	0.46 6	0.00 1	0.00 0	0.00 0	1	0.03 2	0.00 9	0.06 2	0.00 1	0.62 8	0.97 9	0.12 4
P7	0.00 2	0.20 6	0.63 4	0.06 9	0.11 2	0.03 2	1	0.00 0	0.10 8	0.12 2	0.60 1	0.00 8	0.00 0
P8	0.00 7	0.06 1	0.02 0	0.00 2	0.00 8	0.00 9	0.00 0	1	0.00 1	0.00 4	0.08 6	0.07 7	0.70 7
P9	0.11 3	0.17 7	0.04 4	0.43 2	0.01 1	0.06 2	0.10 8	0.00 1	1	0.00 2	0.00 2	0.00 5	0.27 7
P10	0.17 3	0.09 9	0.00 0	0.00 0	0.00 0	0.00 1	0.12 2	0.00 4	0.00 2	1	0.39 2	0.52 4	0.10 0
P11	0.00 1	0.01 0	0.43 1	0.02 4	0.92 8	0.62 8	0.60 1	0.08 6	0.00 2	0.39 2	1	0.05 7	0.79 3
P12	0.14 6	0.00 0	0.88 7	0.84 4	0.60 6	0.97 9	0.00 8	0.07 7	0.00 5	0.52 4	0.05 7	1	0.00 0
P13	0.00 0	0.15 6	0.51 6	0.11 6	0.92 7	0.12 4	0.00 0	0.70 7	0.27 7	0.10 0	0.79 3	0.00 0	1

Source: Prepared by the researcher based on SPSS v23 outputs.

Based on the results of the above two tables, it is clear that the variables P10, P11, and P13 are the ones that have a significance greater than 0.05 in proportion to all other variables, and therefore the variables P10, P11, and P13 are independent of each other and independent of the rest of the variables, so we suggest that these variables are the subject of study because they may express the rest of the variables (P1, P2, P3, P4, P5, P6, P7, P8, P9 and P12), and this result is contrary to what was previously reached and built on the bias for one variable over another.

**Result 02:** Through the  $X^2$  test to study the differences between all paragraphs without exception, and to identify other independent variables, the variables of the creativity axis were deduced, namely:

- P10 "I can adapt to any problem I encounter while performing my duties".
- P11 "I can anticipate business problems before they occur and prepare for them".
- P13 "I can keep a number of ideas in my mind, connect them and devise solutions to problems at the same time."

**Reviews:**

- ✓ The variables that can be adopted in the study and identified through the  $X^2$  test based on a bias are P1, P2, and P9 and are a combination between the originality of creative thought and the flexibility of creative thinking.
- ✓ The variables that can be adopted in the study and identified by the matrix-based  $X^2$  test are P10, P11, and P13 all related to sensitivity to problems.

**Outcome 03:** Through results 01 and 02, the following are reached:

We partially reject the first sub-hypothesis "the variables of the study related to creativity, which consists of 13 paragraphs, all valid and can be adopted in future studies", and accept the opposite of the hypothesis that the variables of the study related to creativity, consisting of 13 paragraphs, are not all valid and cannot be adopted together in future studies.

**conclusion:**

The concepts of creativity were projected on Algeria Telecom in Tissemsilt, where this study presented a systematic attempt in diagnosing and analyzing a set of variables represented in the elements of both creativity and administrative determinants, where the hypotheses set for the study were tested, so the study concluded that Algeria Telecom adopted creativity through its four elements of originality, fluency, flexibility and sensitivity to problems and devising solutions, where The interest in original ideas is very large, which means originality, "more than the rest of the elements according to the view of the study sample.

To study the subject of creativity management in the operational directorate of Algeria Telecom in Tissemsilt, it is possible to focus on certain variables identified through the results reached, i.e. not all the proposed creativity variables can be adopted, but only those that the results have proven can be adopted and include originality, flexibility, and sensitivity to problems.

#### **The results of the study:**

Based on the theoretical and applied study of the subject of creativity management in the economic enterprise, the following results were reached:

- ✓ Algeria Telecom uses the Tissemsalt unit for most of the elements of creativity, but with varying.
- ✓ The institution under study practices most of the administrative determinants to activate creativity, but with varying bicycles.
- ✓ The proposed variables for the study of the subject of creativity management in the operational directorate of Algeria Telecom Tissemsilt under study and related to the management of creativity cannot be fully adopted.
- ✓ Studying the subject of creativity management requires identifying relevant variables so that the outputs are of quality, and to do this there are several tools such as cluster analysis and discriminatory analysis.

#### **Proposals:**

- ✓ Prioritize all elements of creativity without focusing on some and neglecting others, by reconciling the ambitions and desires of workers with the financial capacity of the institution.
- ✓ The various administrative determinants must be used well and continue to activate creativity among employees.
- ✓ The need to develop a diverse and effective system for skills development that includes material and moral motivational elements, to contribute to satisfying the psychological and material needs corresponding to the human nature of workers.
- ✓ Paying attention to individual and collective initiatives, because of their great importance in raising and improving the performance of employees and thus launching their creative ideas.
- ✓ Intensifying training and development courses give opportunity to all without exception, which contributes to developing skills and unleashing creativity.
- ✓ Accurate identification of the variables of the subject of creativity, as similar variables must be avoided to achieve objectivity in the study of creativity in the institution.

Djoudi Abdelhak

Creativity Management in the Algerian Economic Institution -The Case Study of Algeria  
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<https://fr.surveymonkey.com/mp/sample-size-calculator/>

### Appendix 01

1. Paragraph P1 "I can present new ideas that are not familiar in my field of work ".
2. Paragraph P2 "I get bored when using repetitive ideas and traditional solutions to problems I encounter in the performance of my tasks".
3. Paragraph P3 "I care about original ideas, even if they are from my colleagues."

4. Paragraph P4 "I can provide as many appropriate ideas as possible that serve my organization within a specific time".
5. Paragraph P5 "I propose many solutions and alternatives during any problem at work".
6. Paragraph P6 "I express all my thoughts in an easy way that all my colleagues can understand." "
7. Paragraph P7 "I can produce as many diverse ideas as possible related to a problem or exciting situation in a short time".
8. Paragraph P8 "I can quickly and appropriately construct information in accordance with the requirements of emerging cases".
9. Paragraph P9 "I tend to be spontaneous in situations and not just respond to orders within the organization."
10. Paragraph P10: "I can adapt to any problem I encounter while performing my duties."
11. Paragraph P11 "I can anticipate business problems before they occur and prepare to face them."
12. Paragraph P12 "I can notice things that others do not notice at work."
13. Paragraph P13 "I can keep a number of ideas in my mind and connect them and devise solutions to problems at the same time."

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<sup>(1)</sup> Kharaz Al-Akhdar, The Role of Creativity in Gaining Competitive Advantage, Master's Thesis in International Corporate Management, International Finance, Abu Bakr Belkaid University of Tlemcen, 2011, p. 30.

<sup>(2)</sup> Alexander Roshka, translated by Ghassan Abdul Hai Abu Fakhr, Public and Private Creativity, Monthly Cultural Book Series, National Council for Culture, Arts and Letters, Kuwait, N° 144, 1989, p. 12.

<sup>(3)</sup> Dr. Sayed Mohamed Gad Al-Rab, Creativity and Competitive Excellence Department, Egyptian House of Books, 2012, p. 91.

<sup>(4)</sup> Prof. Mohamed Khader Abd Mokhtar, Engy Salah Farid Adawi, Stereotypical and Creative Thinking, Center for Graduate Studies and Research, Cairo University, 1st Edition, 2011, p. 6.

<sup>(5)</sup> Grégoire CLIQUET (2010), Méthode d'creativity à l'ère du Web 2.0, thèse de doctorat, PariTech, p p 24-26.

<sup>(6)</sup> Jamal Khairallah, Administrative Creativity, Dar Osama for Publishing and Distribution, Amman, 1st Edition, 2009, p. 28.

<sup>(7)</sup> Suhair Mamdouh Al-Tal, Creativity, Dar Al-Fikr, Amman, 2013, p. 68.

<sup>(8)</sup> Suhair Mamdouh al-Tal, op. cit., p. 66.

<sup>(9)</sup> Ben Aichi Ammar, Ben Aichi Bachir and Taqarat Yadzid, The Importance of Human Resources Management in Activating Creativity in Algerian Economic Institutions, Journal of Economic and Financial Research, Volume 6, First Issue, 2019, p. 118.

<sup>(10)</sup> Jamal Khairallah, previous reference, p. 28.

<sup>(11)</sup> <https://fr.surveymonkey.com/mp/sample-size-calculator/>