Measuring The Algerian Customer's Satisfaction With The Quality Of The 4G Mobile Service By Using The "Kano Model" Study Case The Companies "Ooredoo, Dezzy And Mobilis"

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Abstract:

This study aims to identify the differences in the Algerian customer's satisfaction with the 4G mobile service provided by the companies Ooredoo,Dezzy and Mobilis according to the dimensions of the "*Kano Model*". Forms were distributed to 1153 clients of the three operators, and the data was analyzed using the statistical analysis program SPSS25.

The results showed that there are slight differences in customer's satisfaction among the operators, and that there is no ideal operator who has achieved the required quality. The study showed that most of the reasons for customer dissatisfaction are due to a lack of basic requirements (the flow element), as well as requirements of one-dimensional (network)

Keywords: Customer's Satisfaction; Service Quality; "Kano Model.

Jel Classification Codes: M31, L84

ملخص:

تهدف هذه الدراسة إلى تحديد فروقات رضا الزبون الجزائري حول خدمة الجيل الرابع للهاتف النقال للمؤسسات أوريدو، جازي، موبيليس، بناء على أبعاد نموذج *kano*، حيث تم توزيع استمارة ل1130 زبون من زبائن المتعاملين الثلاث، وتحليل البيانات باستخدام برنامج التحليل الإحصائي *SPSS25*.

وقد أظهرت النتائج وجود فروق بسيطة في رضا الزبائن بين المتعاملين الثلاث، وأنه لا يوجد متعامل مثالي حقق الجودة المطلوبة، كما بينت الدراسة أن أغلب أسباب استياء

الزبائن يعود لنقص في المتطلبات الأساسية (عنصر التدفق)، وكذا المتطلبات أحادية البعد (الشبكة).

كلمات مفتاحية: رضا الزبون، جودة الخدمة، نموذج *kano*
تصنيف JEL : M31, L84

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1.INTRODUCTION:

The changes in the economic environment and rapid technological developments have increased competition, especially in the mobile communications sector, and to keep pace with these changes, the three operators in Algeria used first-generation technologies up to the fourth generation in order to develop the quality of the service provided to the Algerian customer and make profits. Therefore, through this study, we decided to measure the customer's satisfaction differences regarding the quality of the 4G service using the three dimensions of "Kano Model" that divides the service categories into basic, one-dimensional, and attractive requirements.

Accordingly, we present the following problematic:

Does the 4G mobile service furnished by Ooredoo, Jazzy and Mobilis provides the quality required to win the satisfaction of the Algerian customer?

In an attempt to answer this question, the following axis have been elaborated:

- Defining of the concept of customer's satisfaction and quality of service;
- Analyzing levels of service quality and customer satisfaction requirements according to the Kano Model;
- An applied study of customer satisfaction on the quality of the 4G service for the three operators using the Kano Model.

1. Defining Of The Concept Of Customer's Satisfaction And Quality Of Service

1.1. The concept of customer's satisfaction

Koter thinks that "the customer's satisfaction reflects the extent to which the performance (service / product) meets the expectations of the customer". If the performance falls below expectations, the customer is not satisfied, but if it does, then we can say that the company did get the satisfaction of its customers. (Youssef Sawar et all, 2019, p. 85)

Caraman insists on two concepts of the customer's satisfaction, one focuses on distinguishing between the quality of service and the other on satisfaction based on accumulated exchanges. So, the first happens through the exchanges that will be determined in the level of the customer's previous expectations with the final results, while the second concept is based on the total experience of the customer's use over a significant period of time. (Mohamed Khotheer & Maraimi., 2017, p. 33)

1.2. Definition Of Quality Of Service

kotler describes it as "one of the major competitive strategies in the field of services, aiming to provide the best standard for the customers." (Warad & Al-Eidani. , 2019, p. 9)

According to the International Organization for Standardization ISO 9000 Edition 2000, quality (product / service) reflects the ability of a set of core characteristics to satisfy and meet the stated or implied requirements of a group of customers. (Omar Yunus & Daghmoum,, 2019, p. 81)

Berry et al (1985) thinks that the quality of service is an indicator of changes and differences between expectations and the actual performance of the dimensions of the service. (Omar Yunus & Daghmoum,, 2019, p. 124)

2. Levels' Analysis Of Service Quality And Customer Satisfaction Requirements According To The Kano Model

At this level, we will look at the concept of the **Kano model** and explain its dimensions.

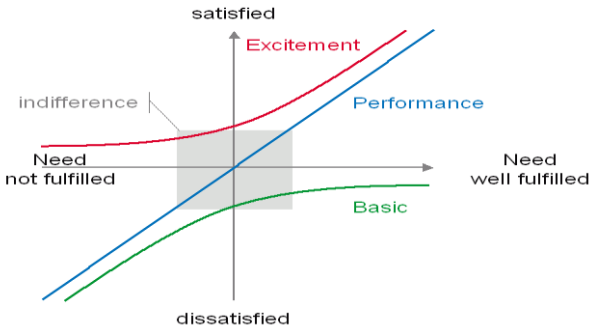
2.1. Kano Model Concept

The **Kano Model** was developed in 1980, by the Japanese professor *Noriaki Kano* who explained that this model allows the product/service to be examined developed, improve, and get the customer's satisfaction. It also showed that not all of the components of the product/service are similarly important to the customer, but are as different as the requirements, thanks to which the quality of the product/service can be improved. (Ingaldi & Ulewicz, 2019, p. 9)**.** It is known to be used to analyze the product/service requirements, with a primary focus on the clients' needs, in an attempt to solve a problem or create an opportunity for the product or service through which the institution acquires their satisfaction. However, it is important to point out that all needs are not equal; they differ based on the customer's priorities and directions. (Rotar & kozar, 2017, p. 343)

2.2. Determinants And Dimensions Of The Kano Model:

Different service features can have more or less impact on customer satisfaction as it varies by category. Kano has identified three categories of service features: one-dimensional requirements, basic requirements and attractive requirements. This classification is shown in Figure 1 and is followed by a more detailed analysis. (Priyono & Yulita , 2017, p. 928)

Figure 1: The Kano model dimensions



Source : (Huang, 2017, p. 912)

- **One-Dimensionnel Requirements :** they are standard type requirements that can be identified, as the Customer usually expresses them explicitly, even before using the product or service. (Madzik & al, 2019, p. 4)
- **Basic Requirements :** These are the characteristics that must be met in the service provided, and if they are not, the customer is not completely satisfied, but if they are,this will not increase his satisfaction. So providing the basic requirements is mandatory to avoid the costumers' dissatisfaction. (Huang, 2017, p. 912)
- **Attractive Requirements :** are qualities available in a product or service that customers do not expect. The service providers use them to meet the unconscious needs they created for them, they provide relief when provided; however, it does not cause the dissatisfaction if not available. (Ratanasawadwat, 2015, p. 1077)

3. The Application Of The Applied Study Of Customer Satisfaction About The Quality Of The 4g Service Provided By The Three Operators Using The Kano Model

In this axis, we will focus on applying the **Kano model** on the quality of the 4G mobile service for all three operators in order to discover how much did they achieve quality of service and gain the satisfaction of the Algerian customer.
The study tools will be clarified, analysis of validity and reliability of questionnaire statements, and then a statistical description will be provided for the opinions of the respondents and in the end the hypotheses will be tested.

3.3. Tools Used In The Study:

The questionnaire was used in the study and it is divided into three axes:
The axis 01: It includes three statements designed to measure a poll about the extent to which the main tools available in the 4G service, provided by the operators under study, do satisfy the Algerian client.

Axis 02: Includes two statements aiming to measure a poll about the extent to which the interesting tools available in the 4G service, provided by the operators under study, do satisfy the Algerian client.

Axis 03: Includes two statements intended to measure a poll about the extent to which the performance factors available in the 4G service, provided by the operators under study, do satisfy the Algerian client.
The response to the questionnaire statements used the Triple **(Likert Scale**),corresponding to each list statement has the following options: (Agree, Neutral and Disagree).

- **The sample members:** The total distributed number of questionnaires is 1153 for the three operators through the paper and electronic distribution (Random sample);
- **Study time limits:** The questionnaire was distributed from June,01st, 2019 to September 30th ,2019;
- **Statistical methods:** The data was subjected to the process of statistical analysis using the Statistical Analysis of Social Sciences (SPSS: V25 (SPSS: Statistical Package for the Social Sciences) and some statistical methods were adopted:

-Frequencies and percentages, arithmetic average, standard deviation;
-The reliability coefficient Cronbach's alpha+ the correlation coefficient: to calculate the reliability and validity of the questionnaire statements.

- Statistical inference tests (one-way analysis of variance Anova +analysis (one sample t-test) to know the statistical significance (Function or not a Function) of the results of the respondents' answers.

3.2. The validity and reliability of the questionnaire statements :

- **Internal consistency validity : According to the Pearson correlation coefficient**,

The results are mentioned in the following tables :

Table N° 1: Internal consistency validity according to the Pearson correlation coefficient

	1st Axis				2nd Axis		
	Pearson's Correlation	Sig. (bilateral)	Result		Pearson's Correlation	Sig (bilateral)	Result
Paragraph 1	0.896++	0.000	Function	Paragraph 4	0.784++	0.000	Function
Paragraph 2	0.898++	0.000	Function	Paragraph 5	0.794++	0.000	Function
Paragraph 3	0.861++	0.000	Function				
	3rd Axis						
	Pearson's Correlation	Sig (bilateral)	Result				
Paragraph 6	0.825++	0.000	Function				
Paragraph 7	0.849++	0.000	Function				

Source : Based on the results of SPSS25

From the results of the bilateral links shown above, we notice that: The questionnaire statements are distinguished in internal consistency with its axis, as the correlation between the overall degree of the axis and its statements is statistically significant, as the SIG value (significance level) for the statistical values of the Pearson correlation coefficient calculated for each of the axis statements is less than the significance level of 0.05, and the statements of the questionnaire are valid and consistent for the purpose of measurement.

- **Stabilization:** According to the Cronbach's Alpha Coefficient: In our study, the stability of the axes' statements of the questionnaire study was verified.

It's obvious that the total value of all questionnaire's statements regarding the coefficient of constancy reached0.795 which exceeds the minimum 0.6, this indicates the constancy of the study's tools and it should be mentioned that the Cronbach's Alpha Coefficient when it reaches 01 it's an indication that the constant's value is high.

3.3 Statistical And Inferential Description Of The Respondents' Opinions On The Statements Of The Questionnaire:

3.3.1. Presentation And Analysis Of The Opinions Of The Algerian Respondents About The First-Axis Statement

Table N° 2: Descriptive and inferential analysis of the sample responses about the 4G ability to provide the high speed.

	Analysis of sample Answers

		Descriptive Analysis				ANOVA analysis		
Num	Statement	Operator	Mean	Std.	Direction of approval	F	Sig.	Result
1	4G service provides high flow on mobilephones	Ooredoo	2.1838	0.88283	average	12.250	0.000	Statisticall y significant differences between the mobile operators
		Mobilis	1.9111	0.91305	average			
		Djezzy	2.1824	0.87356	average			
		TOTAL	1.0876	0.89953	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals: We noticed through the descriptive statistics, there is an average arithmetic mean that allows the 4G service to provide high speed on mobile phones, reached: 2.1838, with a standard deviation of 0.88283 for "Ooredoo" in the first place, followed by "D" with an average of 2.1824 and a standard deviation of:0.87356, then comes "Mobilis", with an arithmetic mean of 1.9111, with a standard deviation of 0.91305. The total trends to the arithmetic average of the responses of the sample respondents (1153 Algerian customers) about the 4G service providing high speed on Mobile phones: 2.0876 with a standard deviation of 0.89953, and this is an average level according to them.

The results of the inferential analysis of the one-way Anova analysis indicates: that there are statistically significant differences, where the value of (F = 12.250) with a significant level (sig = 0.000) is less than the significance level 0.05 and this result indicates that there are differences between (Ooredoo, Dand Mobilis) in terms of the satisfaction of their clients questioned about the ability of the 4G to provide high speed and by using the Scheff test (dimensional tests) we find out that the differences are in furnishing the high speed which was in favor of "Ooredoo", if compared with "Mobilis" but if we do compare it with "D" and "Mobilis"(the result goes in favor of" D"and Between D and Ooredoo there are no differences which is approximately the same level and this is what the table below shows:

Table N° 3: comparison on customers' satisfaction with the ability of the 4G service provided by the three operators to furnish high speed

Scheff test		Mean Difference	Sig.	Differences
Ooredoo	Mobilis	0.27271+	0.000	in favor of Ooredoo

	Djezzy	0.00147	1.000	No differences
Djezzy	Ooredoo	- 0.00147	1.000	No differences
	Mobilis	0.27124+	0.000	in favor of Djezzy

Source : Based on the results of SPSS25

Table N° 4: Shows a descriptive and inferential analysis of the sample responses about the 4G service ability to download applications quickly

		Analysis of sample answers							
		Descriptive Analysis					ANOVA analysis		
N°	Statement	Operator	N	Mean	Std.	Direction of approval	F	Sig.	Result
2	4G service can downloadapplications quickly	Ooredoo	**408**	2.1838	0.87444	average	16.284	0.000	Statistically significant differences between the mobile operators
		Mobilis	**405**	1.8543	0.88479	average			
		Djezzy	**340**	2.1324	0.87415	Average			
		TOTAL	**1153**	2.0529	0.88965	Average			

Source : Based on the results of SPSS25

Based on the descriptive analysis of the opinion of the sample individuals, we noticed through the descriptive statistics, there is an arithmetic mean of the extent of which it is possible to download phone applications with the 4Gservice at a speed of 2.1838, and with a standard deviation of:0.87444 for the operator "Ooredoo" in the first place, followed by "Mobilis" with an arithmetic mean of 2.1324 and a standard deviation of: 0.87415 then comes "Mobilis" with an arithmetic mean of 1.8543 with a standard deviation of: 0.88497, and the overall trends of the mean for the responses of the 1153 respondents(Algerian customers) about the 4G service ability to download applications reached: 2.0876, with a standard deviation of:0.89953 This is the average speed, according to them.

T**he results of the inferential analysis of the one-way ANOVA analysis indicate:** that there are statistically significant differences, where the value of (F = 16.284) with a significant level (sig = 0.000) is less than the significance level 0.05 and this indicates that there are differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients questioned about the ability of the 4G to download applications and by using the Scheff test (dimensional tests) we find out

that the differences are in speed of downloading the applications which was in favor of Ooredoo if compared with Mobilis . But if we do the comparison with D and Mobilis(we find that the result goes in favor of D and Between D and Ooredoo there are no much of a difference in the applications downloading speed and this is what the table below shows:

Table N° 5: Comparison between the customers' satisfaction with the ability of the4G service provided by the three operators to download applications quickly

Scheff test		Mean difference	Sig.	differences
Ooredoo	Mobilis	0.32950*	0.000	in favor of Ooredoo
	Djezzy	0.05147	0.727	None
Djezzy	Ooreoo	-0.05147	0.727	None
	Mobilis	0.27803*	0.000	in favor of Djezzy

Source : Based on the results of SPSS25

Table N° 6: Descriptive and inferential analysis of sample responses about the ability of the 4G service to download applications quickly

		Analysis of sample answers							
		Descriptive Analysis					ANOVA analysis		
N°	Statement	Operator	N	Mean	Std.	Direction of approval	F	Sig.	Result
3	Sharing and sending messages and heavy videos quickly	Ooredoo	**408**	2.0147	0.87261	average	7.840	0.000	Statistically significant differences between the operators
		Mobilis	**405**	1.7778	0.85885	average			
		Djezzy	**340**	1.9147	0.83176	average			
		TOTAL	**1153**	1.9020	0.86096	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals: We noticed through the descriptive statistics, that there is an average arithmetic mean of the possibility of the 4G service to share and send messages and video clips: 2.0147,with a standard deviation of:0.87261 for the operator Ooredoo in the first place, followed by D with an arithmetic average of: 1.9147 and a standard deviation of: 0.83176 followed by

Mobilis with an arithmetic mean of 1.7778 and a standard deviation that reached: 0.85885. The overall trends of the mean for the answers of the 1153 respondents(Algerian customers) about the ability ofthe 4G service to share and send messages and video clips, it reached: 1.9020, with a standard deviation of: 0.86096, this is an average speed according to the costumers.

The results of the inferential analysis of the analysis of one-way ANOVA indicate: that there are statistically significant differences, where the value of (F = 7.840) with a significant level (sig = 0.000) is less than the significance level 0.05 and this result indicates that there are differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients questioned about the ability of the 4G to share and send messages, photos and videos and by using the Scheff test (dimensional tests) we find out that the differences are in speed of downloading the applications which was in favor of Ooredoo. If compared with the operator Mobilis but according to the rest of comparisons there is no difference in terms of the ability of the 4G service, and this is shown in the following table:

Table N° 7: Comparison between the customers' satisfaction with the ability of the 4G service provided by the three operators to download applications quickly.

Scheff test		Mean difference	Sig.	differences
Ooredoo	Mobilis	0.23693*	0.000	in favor of Ooredoo
	Djezzy	0.10000	0.282	None
Djezzy	Ooreoo	-0.10000	0.282	None
	Mobilis	0.13693	0.094	None

Source : Based on the results of SPSS25

3.3.2. Presentation And Analysis Of The Opinions Of The Algerian Customers Questioned About The Statements Of Axis 02:

Table N° 8: Descriptive and inferential analysis of sample responses about the ability of the 4G service to provide Good network coverage.

		Analysis of sample Answers						
		Descriptive Analysis				ANOVA analysis		
Num	Statement	Operator	Mean	Std.	Direction of approval	F	Sig.	Result
01	Good network coverage	Ooredoo	1.9412	0.85077	average	2.970	0.052	No statistically significant differences between the mobile operators
		Mobilis	1.8247	0.85676	average			
		Djezzy	1.9647	0.86146	average			
		TOTAL	1.9072	0.85750	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals. We noticed through the descriptive statistics, that there is an average arithmetic that reached: 1.9647, and with a standard deviation of 0.86146 for the operator D in the first place, followed by Ooredoo with an average of 1.9412and a standard deviation of: 0.85077, then comes "Mobilis", with an arithmetic mean of 1.8247and a standard deviation of 0.85676. The total trends to the arithmetic average of the responses of the sample respondents (1153 Algerian customers) about the ability of 4G service to provide good mobile network coverage that reached: 1.9072, and with a standard deviation of 0.85750, and this is an average level according to them.

The results of the inferential analysis of the one-way ANOVA analysis indicate: that there are no statistically significant differences, where the value of (F = 2.970) with a significant level (sig = 0.052) and it's more than the significance level 0.05 and this result indicates that there are no differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients asked about the ability of the 4G service to provide good network coverage.

Table N° 9: Descriptive and inferential analysis of sample responses about the ability of the 4G service to provide good network coverage.

		Analysis of sample answers							
		Descriptive Analysis					ANOVA analysis		
N°	Statement	Operator	N	Mean	Std.	Direction of approval	F	Sig.	Result

5	Appropriate pricing	Ooredoo	**408**	1.8186	0.86223	average	14.324	0.000	statistically significant differences between the operators
		Mobilis	**405**	2.1383	0.87351	average			
		Djezzy	**340**	1.9176	0.87187	average			
		TOTAL	**1153**	1.9601	0.87904	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals. We noticed through the descriptive statistics, that there is an average arithmetic that allows sharing and sending messages and video clips: 2.1383, with a standard deviation of: 0.87351 for the operator "Mobilis" in the first place, followed by "D" with an arithmetic average of: 1.9176and a standard deviation of: 0.83176. Followed by " Ooredoo " with an arithmetic average of 1.8186 and a standard deviation of: 0.86223. The overall trends of the average for the answers of the 1153 respondents(Algerian customers) about the Appropriate pricing that was: 1.9601 and with a standard deviation of : 0.87904 this reached an average level of satisfaction of costumers.

The results of the inferential analysis of the one-way ANOVA analysis indicate: t there are statistically significant differences, where the value of (F = 14.324) with a significant level (sig = 0.000) is less than the significance level 0.05and this indicates that there are differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients questioned about the ability of the 4G to provide an appropriate pricing by using the Scheff test (dimensional tests) we find out that the differences was in favor of "Mobilis" if compared with "Ooredoo" and it goes in favor of " Mobilis" if compared with " D". The rest of the comparisons showed that there are no differences and this is what the table below shows:

Table N°10: Comparison between the customers' satisfaction with the ability of the 4G service to provide an appropriate pricing:

Scheff test		Mean difference	Sig.	differences
Ooredoo	Mobilis	- 0.31964*	0.000	In favor of Mobilis

	Djezzy	- 0.09902	0.300	None
Djezzy	Ooreoo	0.09902	0.300	None
	Mobilis	- 0.22062- *	0.003	In favor of Mobilis

Source : Based on the results of SPSS25

3.3.3 Displaying And Analyzing The Opinions Of The Algerian Customers Questioned About The 03 Axis Phrases: Measurement

Table N° 11: Descriptive and inferential analysis of sample responses about the ability of the 4G service to provide Good network coverage.

		Analysis of sample Answers						
		Descriptive Analysis				ANOVA analysis		
N°	Statement	Operator	Mean	Std.	Direction of approval	F	Sig.	Result
6	The performance factors available in the 4G service provided by the operators under study,do satisfy the Algerian customer	Ooredoo	1.9191	0.79669	average	2.226	0.108	No statistically significant differences between the mobile operators
		Mobilis	1.8123	0.79251	average			
		Djezzy	1.8265	0.73425	average			
		TOTAL	1.8543	0.77813	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals. We noticed through the descriptive statistics, that there is an arithmetic average of: 1.9191 for "Ooredoo" in the first place, followed by "D" with an arithmetic average of 1.8265, then comes "Mobilis" with an arithmetic average of 1.8123 . The total trends to the arithmetic average of the responses of the sample respondents (1153 Algerian customers) about the ability of the performance factors, available in the 4G service provided by the operators under study, to get the satisfaction of the Algerian customer .

The results of the inferential analysis of the of one-way ANOVA analysis indicate: that there are no statistically significant differences, where the value of (F = 2.226) with a significant level (sig = 0.108) which is more than the significance level 0.05 and this indicates that there are no differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients questioned about the ability of the performance factors, available in the 4G service .

Table N° 12: Descriptive and inferential analysis of sample responses about the ability of the 4G service to provide Good network coverage

		Analysis of sample Answers						
		Descriptive Analysis				ANOVA analysis		
N°	Statement	Operator	Mean	Std.	Direction of approval	F	Sig.	Result
7	Offers on increasing the Internet Flow during the events	Ooredoo	1.8968	0.82699	average	0.507	0.602	No statistically significant differences between the mobile operators
		Mobilis	1.9086	0.84669	average			
		Djezzy	1.9559	0.82787	average			
		TOTAL	1.9184	0.83387	average			

Source : Based on the results of SPSS25

Descriptive analysis of the opinion of the individuals. We noticed through the descriptive statistics, that there is an arithmetic average of: 1.9559 for the operator "D" in the first place, followed by "Mobilis" with an arithmetic average of 1.9086then comes "Ooredoo" with an arithmetic average of 1.8968. The total trends to the arithmetic average of the responses of the sample respondents (1153 Algerian customers) the benefit from the offers on the increase in the Internet flow during the events had reached: 1.9184and the level of the customer's satisfaction is average.

The results of the inferential analysis of the one-way ANOVA analysis indicate: that there are no statistically significant differences, where the value of (F = 0.507) with a significant level (sig = 0.602) which is more than the significance level 0.05 and this indicates that there are no differences between Ooredoo, D and Mobilis in terms of the satisfaction of their clients questioned about the increase in the internet flow during the events.

3.4 The Hypotheses'test, The Study And Its Results:

Test of hypothesis'N°1: the basic tools available in the 4G service provided by the operators under study, do satisfy their clients. In order to test this hypothesis, it is statistically reformulated at the significance level of 0.05 as following:

The Null hypothesis(H_0): There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers regarding the

satisfaction of Algerian client about the basic tools available in the 4G service provided by the operators under study and the hypothetical average 2.

Alternative hypothesis(H_1): There are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers regarding the satisfaction of Algerian client asked about the basic tools available in the 4G service provided by the operators under study and the hypothetical average 2.

Table N° 13: The results of the analysis of the hypothesis testN°1

Statistical significance for sample answers to statements related to Axis 01	Sample volume	Arithmetic average	Standard deviation	Mean Difference between $\bar{X}$ and (X=2)	T	Degree of freedom	sig	Decision
	1153	2.0142	0.78216	0.01417	0.615	1152	0.539	Function

Source : Based on the results of SPSS25

Through the above table, we found that the arithmetic average of the responses of the sample respondents about the ability of the main tools available in the 4G service provided by the operators under study to satisfy the Algerian clients , it hit($\bar{x}$ = 2.0142).It is less thanthe hypothetical arithmetic average(X= 02) and the difference between them is approximately 0.It is 0.014 = (02– $\bar{x}$).The difference is statistically significant T = 0.615 and sig = 0.539 are more than the significance level 0.05, so we reject the alternative statistical hypothesis and accept the null hypothesis and also reject the hypothesis Research N°1 which means that the basic tools available in the 4G service do not satisfy the Algerian clients in their opinion.

Test of hypothesis' N°2: **statement of the study hypothes is**: the interesting tools available in the 4G service provided by the operators under study, do satisfy the Algerian clients. In order to test this hypothesis, it is statistically reformulated at the significance level of 0.05 As follows:

The Null hypothesis (H_0): There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers about wither or not the interesting tools available in the 4G service provided by the operators under study, do satisfy the Algerian clients and the hypothetical average 2.

Alternative hypothesis(H_1): There are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers about wither or not the

interesting tools available in the 4G service provided by the operators under study, do satisfy the Algerian clients and the hypothetical average 2.

Table N° 14: Shows the results of the analysis of the hypothesis test N°2

Statistical significance for sample answers to statements relating to Axis 02	Sample volume	Arithmetic average	Standard deviation	Mean Difference between $\bar{X}$ and (X=2)	T	Degree of freedom	sig	Decision
	1153	1.9354	0.68683	-0.06461	-3.194	1152	0.001	Function

Source : Based on the results of SPSS25

Through the above table, we found that the arithmetic average of the responses about wither or not the interesting tools available in the 4G service provided by the operators under study, do satisfy the Algerian clients, it reached ($\bar{x}$ = 1.9354). It is less than the hypothetical arithmetic average (X = 02) and the difference between them is negative: -0.06461= (02 – $\bar{x}$). The difference is statistically significant T = -3.194 and sig = 0.001which is less than the significance level 0.05, so we reject the null hypothesis and accept the alternative statistical hypothesis. The directions and answers of costumers are negative, they reject the content of hypothesis research which makes us reject the hypothesis Research N°2. So according to them the tools available in 4G service provided by the operators under study do not satisfy of the Algerian client.

Test of hypothesis' N°3 : **statement of the study hypothesis**: The performance factors available in the 4G service, provided by the operators under study, do satisfy the Algerian client, in order to test this hypothesis it is statistically reformulated at the significance level of 0.05 as follows:

The Null hypothesis (H_0): There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers about wither or not the performance factors available in the 4G service, provided by the operators under study, do satisfy the Algerian client and the hypothetical average 2.

Alternative hypothesis(H_1): There are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the sample answers about wither or not the performance factors available in the 4G service, provided by the operators under study, do satisfy the Algerian client and the hypothetical average 2.

Table N° 15: Shows the results of the analysis of the hypothesis test N°3

Statistical significance for sample answers to statements relating to Axis 03	Sample volume	Arithmetic average	Standard deviation	Mean Difference between $\bar{X}$ and (X=2)	T	Degree of freedom	sig	Decision
	1153	1.8868	0.67506	- 0.11318	-5.693	1152	0.000	Function

Source : Based on the results of SPSS25

We can see that the arithmetic average of the responses of the sample answers to statements relating to Axis 03,, this arithmetic average reached(x = 1.8868). It is less than the hypothetical arithmetic average(X = 02) and the difference between them is negative:- 0.11318 = (02 – x). The difference is statistically significant isT =- 5.693, sig = 0.001 which is less than the significance level 0.05, so we reject the null hypothesis and accept the alternative statistical hypothesis. We noticed that the directions and answers of costumers are negative, they reject the content of hypothesis research so these results make us reject the hypothesis Research N°3. According to them the tools available in 4G service provided by the operators under study do not satisfy of the Algerian client.

4. CONCLUSION:

In Algeria, the three mobile operators, launched the 4G service in line with a strategy seeking the modernization of their services as well as the Internet. In this context this study aimed to measure the customer's satisfaction by using the Kano model. According to the results obtained we noticed that although the customer got the 4G service, he uses it to open websites that are easy to download and the Social Media Hence, the efficiency of the high and fast flow along with a good network coverage depend on the customer's area; this is what has been revealed by the answers. Actually, most of choose the operator and the4G service according to the quality of the coverage in the area, which indicates slight differences between the three operators. Thus, there is no ideal operator that satisfies the needs of the Algerian customer and this has been proven through this study by rejecting all the hypotheses proposed and measured using the Kano model.

The introduction to the article should contain an appropriate introduction to the subject, then put forward the research problem and develop the appropriate hypotheses, in addition to determining the objectives and methodology of the research.

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