

The impact of CRM on customer loyalty: the customer of Algeria Telecom company as a case

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ABSTRACT

The main objective of this study is to explore the effect of CRM dimensions on customer loyalty. This study was conducted in the telecommunications company known as Algeria Telecom. The methodology applied is discriminant function analysis, and the data were collected through an online questionnaire from a sample of 100 customers. The main findings indicate that communication is the most significant CRM factor influencing customer loyalty, with cognitive loyalty being the predominant type of loyalty within the company. Thus, an effective CRM promotes the company's ability to understand customer behavior, and improve their satisfaction and loyalty in a competitive market.

Keywords: Communication, Commitment, CRM, Loyalty, Satisfaction, Trust.

1 INTRODUCTION

From small businesses to global companies adopt CRM to improve customer experiences, acquire and preserve customers, and obtain information about clients that have significant customer capital. According to Gartner consulting company, the global customer relationship management market grew 14% in 2021, and worldwide spending on CRM software reached \$96.3 billion (Poulter, 2023).

In parallel with the development of the international CRM market, the economic environment in Algeria has changed and customers are becoming more demanding. Indeed, building customer loyalty and a business relationship based on trust, strong communication, satisfaction, and long-term commitment is becoming a necessity.

In particular, Algeria's telecommunications sector has undergone many changes. After the implementation of Law 2000-03 in 5 August 2000, we are moving from a state monopoly into a situation in which many telephone operators are positioned and trying to impose themselves. This has led to increased competition in the sector, lower tariffs and improved quality. Telephone operators such as Algeria Telecom must therefore invest in customer relations (Kharbachi & Gani, 2014).

From all of these observations, the research main problem formulates in the following question: How does CRM affect customer loyalty at Algeria Telecom company?

The principal purposes of our study are:

- introduce the different concepts of customer relationship management;
- test the interaction between the relational dimensions of CRM and customer loyalty;
- determine most influential variables of CRM on customer loyalty
- at company level, understand the needs of their customers.

The researchers applied simple random sampling method; therefore an online survey is mailed to a sample of 100 Algeria Telecom customers in the Tlemcen region, and posted online on different social media sites. The data collected are analysed using discriminant function model.

2 THEORETICAL FRAMEWORKS

2.1 CRM DEFINITION

According to (Hermenegildo et al., 2020), CRM includes a set of software tools principally developed to command the three axes of company-customer relations such as: sales, marketing, and services.

CRM is defined as a practice of building a long term bond between customers and company's staffs, and it as well enhances customer confidence. CRM aims to decrease costs and enhance company profitability (performance and quality) by increasing customer loyalty (Indrajit et al., 2021).

According to (Senika; Haywantee; Felix, 2019), CRM comprise customer-oriented activities rely on organizational strategy and technology, developed to ameliorate customer interaction in order to retain customers and increase sales and profits in the longer run.

CRM is principally about the harmonization of clients' strategies and business processes with the aim of increasing client loyalty and a company's profitability. It is a system that follows the interactions of clients with the firm and allows employees to get the essential client information, for example previous orders, service history, and problems resolved (Pohludka; Stverkova, 2019).

According to (Ghazi, 2019) CRM is a philosophy of combination between the business department, clients and business partners. In addition, it covers front office practices for instance marketing, selling, call centre, and client services.

CRM is an integrated information system exploited for planning, programming, and controlling presale and post sales activities in a company. CRM includes all features related to potential clients and actual clients, such as call centre, sales force, marketing, technical support, and field services (Zaelani et al., 2020).

2.2 CUSTOMER LOYALTY DEFINITION

According to (Dam, 2021), customer loyalty was determined as a strong relationship between a relative behaviour of customer and buy back trade. Customer loyalty was referred as well as a strong long term commitment to buy back or support a favored offering continually in the future; as a result the customer will repurchase the same products or brands consistently. Customer loyalty was defined as the composite of customer's positive attitudes and repurchase behaviour. Customer loyalty was considered as the most important element in a business company's success. Its importance was closely related to the firm continued survival and the effect of future development.

According to (Kahraman, 2020), customer loyalty was described as the tendency of clients to evolve into frequent clients relied on their previous experiences and their expectations of the future. Customer loyalty used as an actual indicator to measure future success firms. Customer loyalty allows long-term financial advantages to firms by increasing the relationships with clients and providing new clients to be attracted at a reduced cost. Firms put customer loyalty as one of the most major objectives that desire to attain. Customers who are loyal can be a financial source of profit for firms; they also affect their entourage with their suggestion and motivations, allowing the firms to obtain new clients at

decreased cost. As a consequence, building customer loyalty allows a major competitive advantage, clients' losses are avoided, profit flows are ensured and new clients are more easily to attain.

2.3 LITERATURE REVIEW

The following table (1) summarizes all studies that have examined the impact of CRM on customer loyalty:

Table 1. Summary of literature review

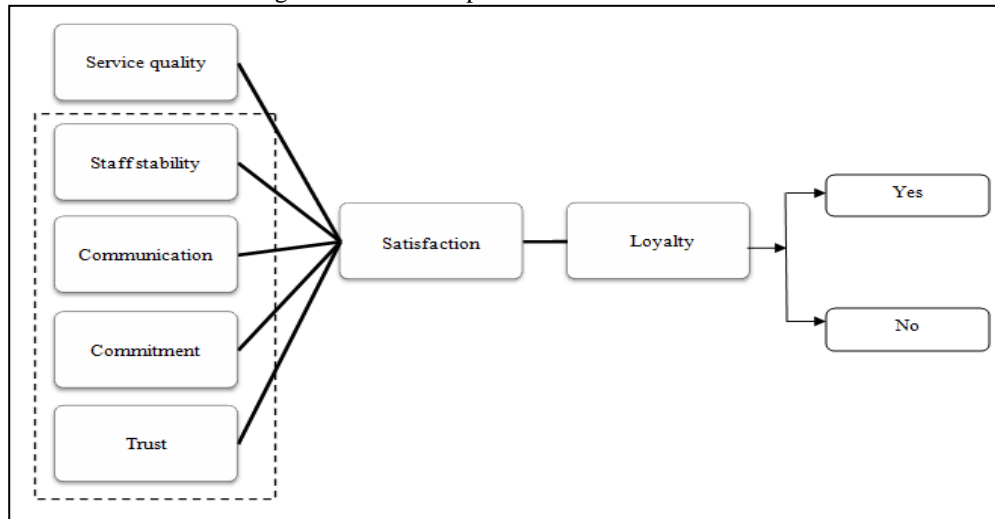
Author	Year	Location	Analysis method	Findings
Hechmi Najjar and others	2011	Supermarkets in Tunisia	Factor analysis	Satisfaction, trust and commitment make customers more loyal and increase the profitability of companies (Najjar, Najjar, & Zaiem, 2011)
Abd Rasid Siti Zaleha and others	2013	A department store in Iran	Multiple regression analysis	The researchers find that there is a relationship between loyalty and four CRM elements: service quality, staff behaviour, relationship development, and interaction management (Choi, Raha, Wan, & Siti Zaleha, 2013)
Amina Haoudi and Mohammed Benamar	2015	Moroccan banks	Structural equations modeling	Trust is a crucial factor in retaining the relationship between the client and Moroccan banks (Haoudi & Benamar, 2015)
Mustapha Khouilid and others	2016	Moroccan telecommunications sector	Multiple regression analysis	The researchers observe that CRM dimensions such as trust, commitment, personalization of the relationship, communication, proximity and satisfaction, obviously induce customer loyalty in the Moroccan telecom sector (Khouilid, Echaoui, & Yousfi, 2016)
Sameh Ben Ammar and Ammar Belaid	2016	Attijari Bank in Tunisia	Principal component analysis	Satisfaction, trust and commitment have a positive impact on customer loyalty. (Ben Ammar & Ammar Belaid, 2016)
Kamal Lakhrif and Abdelkebir El Ouidan	2017	Banks in Agadir	Structural equations modeling	Trust has a positive impact on customer loyalty (Lakhrif & El Ouidan, 2017)
Saeed Awadh Bin Nashwan and others	2017		Systematic review	Service quality, accessibility, and complaint management have a significant effect on customer satisfaction and loyalty (Bin-Nashwan & Haslinda, 2017)
Lena Saleh and others	2018	Beauty centres in Beirut	Principal component analysis	Customer loyalty depends on the strategic implementation of CRM fundamentals (Saleh & El Saheli, 2018)
Raed A. M. Iriqat and Mohannad Abu Daqar	2018	Banking sector in Palestine	Structural equation modeling	CRM and satisfaction positively impact customer loyalty (Iriqat & Abu Daqar, 2018)
Tahmeem Siddiqi and others	2018	Bangladesh's banking industry	Structural equation modeling	The research unfolds a significant relationship between the three dimensions of CRM (trust, technology adoption, complaint handling) and customer loyalty of 12 banks in Dhaka city (Tahmeem, Kabir, & Sugandha, 2018)

Author	Year	Location	Analysis method	Findings
Bader Almohaimmeed	2019	Restaurants in Riyadh	Structural equation modeling	The researcher finds a positive influence of CRM on customer loyalty through customer satisfaction (Almohaimmeed, 2019)
Jude Leon and Pathmini MGS	2019	Sri Lankan banking industry	Multiple regression analysis	The five dimensions of CRM positively affect customer satisfaction and loyalty (Jude & Pathmini, 2019)
Moyole Mireille Elodie and others	2019	Microfinance institutions in Cameroon	Speech analysis	Staff stability is one of the most practices used by the company to build customer loyalty (Moyole, Fouda, & Fanguie, 2019)
Raed Masadeh and others	2019	Fitness gyms in Kuwait	Multiple regression analysis	CRM factors positively affect customer satisfaction and loyalty (Masadeh, Hayat, & Al Dmour, 2019)
Vipin Jain and others	2019	Restaurants in India	Simple linear regression analysis	The results show a strong association among client loyalty, CRM (trust, commitment), Customer perceived value and customer satisfaction (Vipin, Chanchal, Manoj, Manvinder, & Rachit, 2019)
Yullya Ramadonna and others	2019	Industrial rural bank in Indonesia	Structural equation modeling	The results show that CRM indirectly affects client loyalty via the satisfaction (Ramadonna, Nasfi, & Aziz, 2019)
Andualem Walelign	2020	Ethiopian hotel industry	Multiple regression analysis	CRM dimensions positively impact client loyalty (Walelign, 2020)
Samia Adly El Sheikh and others	2020	Egyptian hotel industry	SEM	CRM indirectly impacts customer satisfaction and loyalty through client estimated value (Adly El Sheikh, Tawfik, Hamdy, & Adel Hamdy, 2020)
Dike Remigius Amarachi and Chukwuana Chukwuma Stanley	2021	Shipping companies in Nigeria	Simple linear regression analysis	CRM factors impact client satisfaction and loyalty (Dike & Chukwuana, 2021)
DM. Haryandika and IK. Santra	2021	Transportation company in Indonesia	Structural equation modeling	CRM dimensions (commitment, communication, service quality) impact client loyalty via satisfaction (Haryandika & Santra, 2021)
Kadek Dian Nita Grihani and Ni Made Wulandari Kusumadewi	2021	Department Store in Bali	Moderated Regression Analysis	CRM positively impacts client satisfaction and loyalty. (Grihani & Kusumadewi, 2021)
Runa Akter and others	2021	Saint Martin Island	Structural equation modeling	CRM positively affect visitor satisfaction and loyalty (Runa, Shahed, & Noman, 2021)
Selvalakshmi Gopalsamy and Suganthi Gokulapadmanaban	2021	Indian banking sector	Structural equation modeling	Client loyalty is positively affected by CRM via trust, CKM, and satisfaction (Selvalakshmi & Suganthi, 2021)
Khadija Yousif Ali and others	2022	Bahrain banks	Multiple regression Analysis	CRM dimensions positively affect client loyalty (Yousif-Ali, Lotayif, & Mohamed Al-Deeb, 2022)

Source: By the authors.

Based on previous studies that analyze the effect of CRM on customer loyalty, we develop the following conceptual framework (Figure 1). The framework consists of two groups: where the first group is about the factors associated with CRM (trust, commitment, communication, staff stability), and the second group is about service quality.

Figure 1. The conceptual framework of research



Source: By authors based on literature review

2.4 RESEARCH HYPOTHESES

Three hypotheses advance in order to respond to the research problem:

- **H1:** the relational components of CRM significantly effect on customer loyalty in Algeria Telecom Company;
- **H2:** the service quality significantly effects Algeria Telecom's customers' loyalty;
- **H3:** the interesting information that the customers have about Algeria Telecom operator significantly effect on their loyalty.

3 METHODOLOGY

3.1 THE DISCRIMINANT ANALYSIS MODEL DESCRIPTION

DFA is applied to identify the variables that distinguish between several existing groups. The aim of this study is to identify the factors of CRM that differentiate the group of loyal customers and non-loyal customer. This means that DFA is applied to identify most influential variables of CRM on customer loyalty at Algeria Telecom.

DFA comprises two phases, the primary phase includes the identifying the distinguishing parameters of the current model, and in the second one the predictive model is identified (the best predictor variables are determined) (Boualamat; Mahmodi; Benbouziane, 2023).

3.2 DESCRIPTION OF VARIABLES

Table 2. Measurement scales used in the questionnaire

Variable	Items	Measurement scale
Trust	Credibility; Honestly; Benevolence	Patricia Gurviez and Michael Korchia Scale, 2002
Commitment	Recommendation; Regularity; Frequency	Kim and Park Scale, 2003
Communication	Understanding; Listening; Taking charge	CMM-15 Scale
Staff Stability	Knowledge; Familiarity	Christian Latour
Service Quality	Serviceability; Empathy; Speed	SERVQUAL Model
Satisfaction	Claim; Repeat purchase intention	Dimitriades Scale, 2006
Loyalty	Cognitive; Affective; Conative; Action	Oliver, 1999

Source: By authors

4 RESULTS

Table 3. DFA findings

	Eigenvalue (λ)	R	Wilks' lambda (Λ)	C	Sensitivity (S)
Step 1	1,127	0,728	0,470	0,639	91,7%
Step 2	0,714	0,645	0,584	0,509	91,7
Model equation	$Y = 0,461X_1 + 0,800X_2$				

Source: By authors

4.1 INTERPRETATION OF PHASE 1

As $\lambda=1,127$ increases, a larger variance in Y is represented by the DF. This means that the function effectively distinguishes between the two group (customer purchase intention of Algeria Telecom's products and services: yes or no), demonstrating that there is only one discriminant function (see table 5 in appendix).

$R = 0,728$ indicates a strong correlation between the DF and Y.

A lower value of $\Lambda = 0,470$ suggest a more significant classification capacity of the DF. As a result, an effective DF is indicated as the significance test is below 0,005 (see table 6 in appendix).

The standardized DF coefficients maximize the distance to the highest level possible. The constant is null.

C refers to the centroids which are average values calculated for each category being studied. These centroids are then used in setting classification thresholds (customer purchase intention from Algeria Telecom, yes= 1,870 and no =-0,591). In this research, we have unequal groups, (yes= 76, no=24) the optimal cutting point is the weighted average of the two values. Thus, to differentiate between customers who are intending to buy the services of Algeria Telecom and those that do not, the sum of the two values should be divided by two (see table 7 in appendix).

$$C = (1,870 - 0,591) / 2 = 0,639 \quad (1)$$

In other words, in case of substituting independent variables values and obtaining a result that is less than 0,639, we conclude that the customer is intending to buy from Algeria Telecom, and the customer is loyal to Algeria Telecom and vice versa.

S between the actual model and the predictive one is estimated at 91,7% for those customers who intend to buy the services of Algeria Telecom (see table 8 in appendix). It suggests that the model is highly effective at correctly identifying true positives within the dataset.

4.2 INTERPRETATION OF PHASE 2

In defining the research independent variables, there are approximately about 40 important steps for determining variable effect on the prediction model used in this study. Based on coefficients ranging from 3.84 to 2.71, the selected variables are as follows : “Cognitive loyalty” (the information that customers have about the telephone operator Algeria Telecom makes it preferable to others) with a lambda value estimated at 0,638 and “understanding” (customers are felt understood by staff) with a lambda value estimated at 0,584 (see table 9 in appendix).

As $\lambda = 0,714$ increases, a larger variance in Y is represented by the DF. This means that the function effectively distinguishes between the two group (customer purchase intention of Algeria Telecom’s products and services: yes or no), demonstrating that there is only one discriminant function (see table 10 in appendix).

$R = 0,645$ indicates a significant correlation between the DF and Y.

A lower value of $\Lambda = 0,584$ suggest a more significant classification capacity of the DF. As a result, an effective DF is indicated as the significance test is below 0,005 (see table 11 in appendix).

The global equation of the model for this study is (see table 12 in appendix):

$$Y = 0,461X_1 + 0,800X_2 \quad (2)$$

Y: Customer purchase intention of Algeria Telecom’s products and services.

X_1 : Understanding between client and staff.

X_2 : Cognitive Loyalty.

C refers to the centroids which are average values calculated for each category being studied. These centroids are then used in setting classification thresholds (Customer purchase intention from Algeria Telecom, no =1,488 and yes= -0,470). In this research, we have unequal groups, (yes= 76, no=24)

the optimal cutting point is the weighted average of the two values. Thus, to differentiate between customers who are intending to buy the services of Algeria Telecom and those that do not, the sum of the two values should be divided by two (see table 13 in appendix).

$$C = (1,488 - 0,470) / 2 = 0,509 \quad (3)$$

In other words, in case of substituting independent variables' values (ranging from -4 to 4) and obtaining a result that is less than 0,509, we conclude that the customer is intending to buy from Algeria Telecom, and the customer is loyal to Algeria Telecom and vice versa.

S between the actual model and the predictive one is estimated at 91,7% for those customers who intend to buy the services of Algeria Telecom (see table 14 in appendix). It suggests that the model is highly effective at correctly identifying true positives within the dataset.

5 DISCUSSION

As for the result of the effect of CRM on customer loyalty at Algeria Telecom, there are two discriminant predictor variables which can be written as follow:

$$Y = 0,461X_1 + 0,800X_2 \quad (4)$$

X_1 refers to communication between customers and staff which include the variable (understanding with a discriminant coefficient estimated at 0.461). The first hypothesis is accepted.

X_2 refers to cognitive loyalty (the information that customers have on the telephone operator Algeria Telecom makes it preferable to others) which represents the type of loyalty, with a discriminant coefficient estimated at 0,800). The third hypothesis is accepted.

The second group concerning the quality of service does not significantly affect the loyalty of Algeria Telecom's customers. The second hypothesis is rejected.

6 CONCLUSIONS

The Algerian telecommunications market faces many changes since the year 2000. This requires telephone operators to invest in customer relations. And for the purpose of increasing client satisfaction and loyalty, the implementation of CRM becomes a necessity to counter the competition. In this context, Algeria Telecom applies two customer relationship management systems, the first is called "GAIA" specialised in

the management of fixed telephony customer relations, and the second system called "BILLING" which contains all the information concerning the ADSL customers. As for the handling of customer complaints, this is done on the spot at telecommunications commercial agencies or via the call centres.

The primary focus of our research is to answer the initial problem, centred on the effect of CRM on customer loyalty at Algeria Telecom? And the main results analysed through discriminatory equations shown that the CRM constitutes a loyalty tool. We observe that:

- communication between customers and staff, included in the relational components of CRM, is the most influential variable in the process of customer loyalty of Algeria Telecom (The first hypothesis is accepted);
- the customers of Algeria Telecom are loyal as a result of the interesting information they have about Algeria Telecom operator (The third hypothesis is accepted);
- the quality of service provided by Algeria Telecom doesn't significantly affect customer loyalty (Second hypothesis is refused).

This research faced several challenges including time limitation, a limited population and geographical constraints, and especially the difficulty of accessing CRM software data.

We would like to propose the following suggestions and recommendations to managers:

- personalise communication with customers;
- ensure that customers are not put on hold for a long time during calls;
- adopt new loyalty tools than the reception and the customer's occupation.

There are several avenues for future investigation that this study points out:

- a comparative study between different telephone operators on customer relationship management;
- a study should be conducted with a larger sample.

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APPENDIX

Table 4. Discriminant analysis case processing summary

Unweighted Cases		N	Percent
Valid		100	100,0
Excluded	Missing or out-of-range group codes	0	,0
	At least one missing discriminating variable	0	,0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	,0
	Total	0	,0
Total		100	100,0

Source: SPSS

Table 5. Eigenvalues (λ)

Function	Eigenvalues (λ)	% of variance	Cumulative %	Canonical Correlation ®
1	1,127 ^a	100,0	100,0	,728

Source: SPSS

Table 6. Wilks' lambda (Λ)

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig
1	,470	66,421	20	,000

Source: SPSS

Table 7. Group centroids (C)

Customer purchase intention of Algeria Telecom's products and services	Function
	1
No	1,870
Yes	-,591

Table 8. Classification results

Customer purchase intention of Algeria Telecom's products and services		Predicted Group Membership		Total
		No	Yes	
Original	Count	No	Yes	Total
	No	22	2	24
	Yes	10	66	76
	%	No	Yes	Total
	No	91,7	8,3	100,0
	Yes	13,2	86,8	100,0

a. 88,0% of original grouped cases correctly classified.

Source: SPSS

Table 9. Variables entered/removed

Step	Entered	Wilks' Lambda (Λ)							
		Statistic	df1	df2	df3	Exact F			
						Statistic	df1	df2	Sig.
1	Cognitive loyalty	,638	1	1	98,000	55,639	1	98,000	,000
2	Understanding	,584	2	1	98,000	34,611	2	97,000	,000

At each step, the variable that minimizes the overall Wilks' Lambda is entered.

- a. Maximum number of steps is 40.
- b. Minimum partial F to enter is 3.84.
- c. Maximum partial F to remove is 2.71.
- d. F level, tolerance, or VIN insufficient for further computation

Source: SPSS

Tabel 10. Eigenvalues (λ)

Function	Eigenvalue (λ)	% of Variance	Cumulative %	Canonical Correlation
1	,714 ^a	100,0	100,0	,645

Source: SPSS

Table 11. Wilks' lambda (Λ)

Test of Function(s)	Wilks' Lambda (Λ)	Chi-square	df	Sig.
1	,584	52,246	2	,000

Source: SPSS

Table 12. Standardized canonical discriminant function coefficients

	Function	
	1	
Understanding	,461	
Cognitive loyalty	,800	

Table 13. Group centroids (C)

Customer purchase intention of Algeria Telecom's products and services	Function	
	1	
No	1,488	
Yes	-,470	

Source: SPSS