

Relationship between social media and E-communication marketing via brand content and E-CRM as mediators, case of Algerian mobile operators

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ABSTRACT

The objective of our article is to shed light on the opportunities of social media as an excellent brand content and e-CRM tool for improving e-communication marketing. To achieve our objective, we went through a literature review, based on previous studies, in order to identify our conceptual model and hypotheses. Subsequently, we tested these hypotheses with a quantitative study, based on a questionnaire intended for 500 Internet users, the results obtained are analysed by the modelling of structural equations, using the PLS approach. The study concluded that social media have a positive and direct impact on E-communication marketing, and they affect it indirectly via two mediating variables: brand content and E-CRM. The study's contribution sheds light on the means that allow managers and marketers to optimize their communication on social media via rich and attractive content and good customer service.

Keywords: Social Media; Brand Content; E-CRM; E-communication; PLS approach.

Introduction

Social media is a powerful component of digital marketing, its platforms are understood: social networking sites; emails; blogs; micro-blogs...it provides many advantages for both companies and consumers to achieve marketing communication (Hanaysha, 2016). Nowadays, being present on social media has become an obligation for companies, whether to promote their brand, their products or services or to improve their digital communication. (Schreiner et al, 2019)

Brand content is the cornerstone of digital marketing, by using content as an online marketing strategy through social media; companies can attract potential clients; retain existing ones; and transform aspirational clients into advocates by developing several forms of content (Flanagan, 2015). The goal of content marketing is to produce relevant and valuable content, that meets customer needs (Holliman and Rowley, 2014; Schultz and others, 2016).

E-CRM is a tool to attract and retain valuable and profitable clients, it is a combination of software, hardware, applications, and digital tools like social media and web sites to create and keep the relationship with customers (Danesh Shahraki, 2015).

As in the global context, the advent of social media in the Algerian context has profoundly transformed the behavior of Algerian society as well as that of brands (Saidani, 2016). The latter looked closely at these new social media, which have become the alpha and omega of digital communication (Badillo et al., 2012). In addition, they have managed to develop a new form of marketing communication whose principle is to engage in conversation and interaction with customers, giving them the opportunity to evaluate the content, also involving them in its development (Saidani, 2016). The reasons, which motivated the choice of this research subject is explained by: Consumers tend to be connected across different digital platforms. Therefore, companies have no choice except to integrate this digital expansion into their strategies, to gain new market shares, of which we frame our work by limiting ourselves to social media as the most predominant digital marketing tools.

It is in this context that this article fits, the objective of which is to show the opportunities offered by social media, which become a channel for content creation and customer relationship management, in order to enhance the e-

communications of companies. Therefore, it is a matter of answering the following question: **How does social media serve to improve E-communication marketing within Algerian mobile operators?**

To analyse our research question, we adopted a hypothetic-deductive approach. According to the following plan: the first part will focus on a literature review on the research variables, the proposal of our conceptual model and the development of hypotheses. The second part will devote to a quantitative study by means of a questionnaire intended for Internet users and subscribers of Mobile operators in Algeria. Finally, the presentation of the results as well as some recommendations.

Literature review and hypotheses development

Theories and models of communication:

Communication has existed since the existence of man; however, the theories, which try to treat it, are quite recent. We will attempt to present some theories briefly:

Shannon and Weaver's model of telegraphic communication:

Also called the communication-transmission model, or the Shannon and Weaver transceiver. In 1940, engineers Shannon and Weaver developed a model based on mathematics. The following Figure illustrates this model, where we can see the transmitter, channel and receiver. The authors claimed to have been inspired by the work of Nyquist and Hartley, as well as the basic philosophy of Professor Norbert Wiener, whose model is presented below (Weaver, 1949).

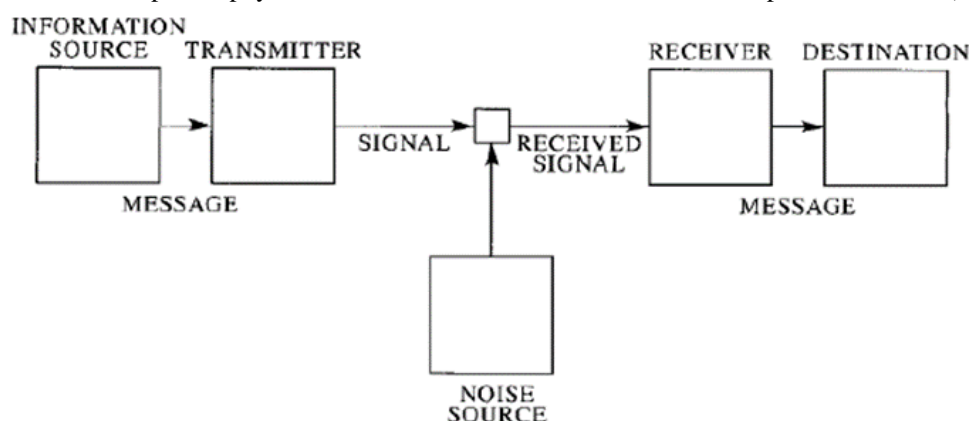


Fig. 1 Shannon and Weaver model of telegraphic communication

Wiener's cybernetic communication model:

Norbert Wiener in his book, which was published in 1948, under the title "The Science of Control and Communication in Animals and in Machines" developed the cybernetic model by introducing the concept of dynamism and circulation of information between the transmitter and the receiver. In addition, with this Wiener was the first to present the bidirectionality of information flows in a model of communication (Wiener, 1948).

McLuhan's media theory:

The communication theorist Marshall McLuhan had a famous quote: "The message is the media" (Malaval et al, 2005). In his theory, the distribution channel is more important than the content. He also believed that a medium is an extension of man, as the wheel extends the foot because it develops the capacity for human movement. It seems that McLuhan is always given the example of a medium like an electric light bulb (Attalah, 1993).

The mass communication model:

Although for decades media audiences were always considered passive, the 1970s changed the situation, with research findings confirming that media audiences are active actors, interacting with the messages they receive. They get. We cite as an example title the article by Stuart Hall "Encoding Decoding" published in 1973, the author proposed a new theory of mass communication. He criticized the previous models and confirmed that the meaning of the messages does not depend only on the sender, the message sent is never transparent it is often coded according to a universal codification, and above all the public is not a passive receiver.

Previous studies related to Social Media and E-communication

Given the great importance of social media, several researchers are interested in their benefits; we have chosen to highlight some of them, which have a relation with our key variables:

Virginia P, et al., 2013: The objective of the authors through their article aims to examine the effectiveness with which hotels use Facebook as a marketing tool. On the other hand, how customers interact with the establishment by measuring the number of fans, customer feedback and the accuracy of the information provided. The methodology is based on content analysis, investigating 100 Facebook pages of American hotels. The results found that the use of Facebook features used by hotels varied widely. Some hotels use Facebook uniquely as a way to post brand content and property information, while others focus on facilitating guest engagement. This research used only one type of social media, which is Facebook, in a hotel sector, but it confirms that Facebook is a brand content tool.

Stelzner 2013: conducted a survey of 3,000 marketing managers on the use of social media to grow their businesses. The questionnaire covered questions related to types of social media, time allocated to social media marketing, benefits of marketing through social media. The results revealed that 97% of managers use social media marketing for their business, 86% confirm that social media is important for the development of their business. Additionally, 88% felt that social media is the most effective way of communicating with customers. The results also revealed that Facebook and LinkedIn are the two main social networks chosen by marketing managers. Many marketers are confused about whether using Facebook marketing is effective. This research is in agreement with ours in the point that social media is a means of communication with consumers.

Nouala & Bousahla, 2016: According to the authors, social media has become a good approach for companies to improve their communication with customers. Their article covers four main sections where the concepts of traditional marketing and electronic marketing are reviewed. For the objective and the methodology, they conducted a case study that shows the effect of online reputation in Algeria through social media, through questionnaires, which were administered through social networks, or they have opted for the convenience sampling method. The sample is made up of 241 people. The results show that all respondents use social networks for communication, exchange, sharing and monitoring of information. As well as a brand's social media, presence influences users' purchasing decisions, if a brand regularly posts content, promotions and news; this has a direct effect on Internet users' decision to buy. In addition, its e-reputation produces a new mode of conversational communication. The results of this study confirm that customers use social media to communicate with their brands. Also, the brand content has an effect on purchase decision.

Abdelhak, S., et al., 2016: The objective of the authors through their research is to understand how social media can have an impact on consumer behaviour in Algeria. To achieve this, the authors carried out a quantitative study via a questionnaire intended for a sample of 350 Algerian social media users. To test the research hypotheses, they adopted SEM structural equation modelling with the approach. The results show that social media have an impact on Internet users' purchase intention and their impulse buying behaviour, particularly through interpersonal factors such as comments and opinions left on a brand's products and services. From the results, it is necessary for Algerian companies to integrate social media and social E-commerce into their marketing strategies in order to promote and sell their products and services. This research studied social media but on other variables (consumer behaviour and purchase intention).

Keegan, B. J., & Rowley, J. 2017: The focus of the research is aimed at the evaluation of social media marketing (SMM) strategy by developing an SMM evaluation stage model and finding out the challenges of this process. For this, interviews were conducted with ten- eight key informants working for specialized SMM agencies. Exploratory research was conducted and thematic analysis highlighted the key elements of the SMM evaluation process. The evaluation framework consists of the following six steps: defining evaluation objectives, identifying KPIs, identifying metrics, collecting and analysing data, generating reports, and making management decisions. Two key issues are the agency-client relationship and the social analysis tools available. This study shows the benefits of social media for business development.

Marian Al-Jallad 2019: This research work deals with the relationship between the increasing use of social media and the implication of this use on online shopping activities and Internet user behavior. The study sample included first-year mass communication students (approximately 50 students) from the University of Sharjah. By distributing a questionnaire to the students taking part in this study. The results of this study showed that 86.8% of the students surveyed believe that social media platforms encourage them to buy online, thus 68.4% of the students surveyed said that their shopping habits and behaviours had changed and increased after using social media. This study was interested in the benefits of social media, but their effect on other variables (e-shopping and consumer behaviour).

Meziane A, et al., 2020: This research discusses the influence of Facebook applications, activities on customers purchase intent, and it provides insights into whether customers take information from Facebook and whether this activity has an effect on the customer's purchase intention. Through the regression analyses conducted on the results of

a survey of 500 users of the "biwoichrat" Facebook page who suggest using the like button, the E-wom location, the registration service and the button sharing. The variables likes, electronic word of mouth and sharing influence positively customers' purchase intention. While Location notification, likes from friends did not have a positive effect on consumer purchase. This research work shows the importance of using Facebook for customers.

Soualhi, I., & Qmichchou, M (2021):

The objective of the research aims to understand how consumers perceive brand content published on social media. Thus, identify the content that attracts the attention of the Moroccan consumer and understand all the motivations that promote commitment to brand communities. The authors focused on the pillars of digital communication of which content and engagement are the key components. For the methodology, a qualitative study through interviews was carried out with a sample of 30 people. The authors focused on the study of brand pages in the telecommunications sector in Morocco. They used Nvivo analysis software. The results showed that interactional content and transactional content lead to a level of active engagement which is reflected in comment rates and share rates,

These results remain ungenerable, because they only concern a qualitative study, without having the opinion of consumers, which remains important. The common point with our study is that communication via social media is based on content, but our study does not address the other component (engagement). Moreover the same sector, but in the Moroccan context.

The literature review of the previous studies reveals the importance of social media and the digital communication, our research work will complement these previous studies, which serve as a reference for our work in determining the variables to be studied.

According to our knowledge and until now, at the national or international level. There is no research that combines both of these different variables: (social media, brand content, e-CRM and e-communication). Therefore, the originality of our work lies in the study of the different relationships between these variables.

Research hypotheses and Conceptual model

Social media is the most widely used and effective digital communication channel for companies to ensure brand dissemination (Espuny et al., 2011; Stelzner 2013; Lessard, 2015; Kim & Johnson, 2016; Schivinski et al., 2016; Nouala & Bousahla, 2016; Riad & Alliouche, 2017; Hallil & Amalou, 2017; Yamani & Yaacoubi, 2018), so there is a direct link between social media and e-communication.

H 1: Social Media positively influences E-communication.

Social media accelerate the accessibility of brand content to customers (Lipsman, Mudd, Rich & Bruich, 2012). In addition, these tools promote the generation of content (text, photos, videos, links, etc.) by the customer and sharing it with other internet users. Such a disruption is indisputable (Yamani & Yaacoubi, 2018), According to (Van den Berg and Behrer, 2011) brand content is considered a communication strategy par excellence. so brands that want to improve their online communication strategies must present rich and useful content through social media. Therefore, a good content strategy mediates the social media & e-communication relationship, so we suppose that:

H 2: Brand Content mediates the relationship between Social Media & E-communication.

Social media plays a key role in the dissemination of brand content; in fact, it accelerates the accessibility of Brand content to customers (Lipsman, et al 2012). So the media have an effect on Brand content linked to the brand, we suppose:

H 2.1: Social Media positively influences Brand Content.

According to (Dens, N., & Poels, K. 2023) brand content is considered a communication strategy par excellence, which takes into account the evolution of digital practices and new customer expectations. Therefore, we assume that:

H 2.2: Brand Content positively influences the E-communication.

The e-CRM relies on the concepts evolved by both new relational marketing, in particular online communication, and digital channels such as social media (Mettagarunagul, 2011). Social media have an influence in terms of threats and opportunities on online customer relations (Debos, 2013), e-CRM is the best asset to build online communication actions (Fragouli, 2014), and for this purpose, we assume that:

H 3: The E-CRM mediates the relationship with Social Media & E-communication.

To manage its relationship with the customer online, the company is obliged to use new digital marketing tools such as social media, which have an influence in terms of threats and opportunities on relationships with online customers (Mohamed, S. M et al., 2023), then we assume that:

H 3.1: Social Media positively influences E-CRM.

E-CRM is part of the trend in E-communication marketing, it is considered its visible part and its implementation for the brand (Fuad, E., & Abdullah, Z. 2023), and E-CRM is the best asset to construct online communication actions (Fatimah S, et al., 2014), and for this purpose, we assume that:

H 3.2: E-CRM positively influences E-communication.

So, we are going to test the direct relationship between Social Media and the E-communication. We will also, test the mediating effect of Brand Content and E-CRM in this relationship; Figure 01 schematizes our conceptual model:

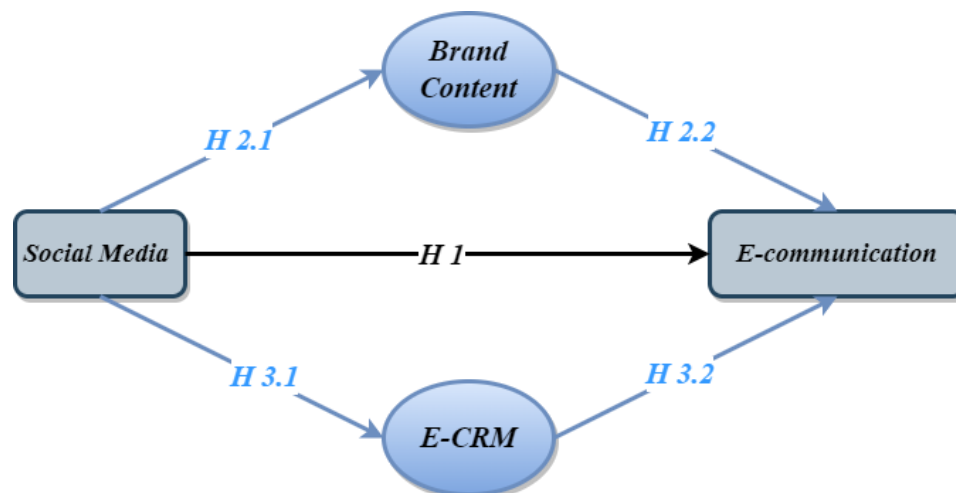


Fig. 2 Conceptual model of research

So our conceptual model consists of three types of variables, an independent variable "Social Media", a dependent variable "E-communication" and two mediating variables "Brand content" and "E-CRM"

Materials and methods

Our choice of field fell on the telecommunications sector, in particular mobile operators (Djezzy, Mobilis and Ooredoo). Companies in this sector are essentially based in their operations on communication and new information and communication technologies, such as social media.

For the adopted methodology, we have opted for a quantitative method, which involves a questionnaire intended for Internet users; to verify and test our hypotheses, the questionnaire is composed of 500 respondents; it is distributed in social networks, emails and face to face in a period of six months. The choice of the respondents is linked to the fact that they must be used to communicating with their mobile operators in social media, or only be followers of the official accounts of mobile operators in social media. For this, we opted for the non-probability sampling method, specifically that of convenience sampling. Then, we will analyse the results by modelling the structural equations using the PLS (Partial Least Squares) approach, which is a technique for estimating the dependence relationships observed in a set of concepts and constructs with the SMART-PLS software. Structural Equation Modeling (SEM) is now an indispensable tool for marketing research; it is a well-known multivariate approach because it offers a way to evaluate theories that is conceptually attractive (Iacobucci, 2009). we are interested in PLS-SEM, because this method simultaneously measures the relationships between the dependent and independent variables which constitute the model (Safitri, S. et al, 2022) with the aim of judging the relevance or not of this theoretical model in the context where it is tested (Memon et al, 2021). Thus it is more flexible, in the case where the applications have little theory available and the predictive accuracy is paramount (Gunarto, M., & Cahyawati, D. 2022).

Selection of scales

The reliability of a survey does not only depend on the size of the sample and/or the sampling method, but also on the content of the questionnaire developed (Veronique et al, 1997). To measure the variables of our model and test our hypotheses, we used Likert scales ranging from 1 to 5 (totally disagree,..., totally agree), containing a set of items that

are inspired by the review of the literature and which showed good reliability, but with some adaptations to the context of the study and the Algerian context.

The EPIC model measured the independent variable E-communication, it is a model developed by AC Nielsen, one of the most famous marketing research companies in the world, to measure the effectiveness of a communication strategy, it consists of four dimensions of empathy, persuasion, impact and communication (Budianto, 2017). The measurement scales used are presented in detail in the following table:

Table 1 Measurement scales used

Variables	Item	Item Description	Reference
Social media	SM1	I use social media to search information about my operator's services.	Garrido-Moreno et al, 2011
	SM2	I find more information about my operator on their social media accounts than on other ways.	
	SM3	The conversation is possible with my mobile operator via their social media accounts.	Motwani et al 2014
	SM4	My mobile operator's social media accounts allow me to be up to date on its services and offers.	
Brand Content	BC1	I can get useful information about my mobile operator's services through the content posted on their social media accounts.	Gao & Feng, 2016
	BC2	I see that my mobile operator's content on their social media accounts describes the benefits of the service presented.	Wu & Wang, 2011
	BC3	I see that my mobile operator's content on their social media accounts provides entertaining information.	
E-CRM	CRM1	My mobile operator explains the functionality of new offers and other systems to me on their social media accounts.	Haikel-Elsabeh et al., 2019
	CRM2	My mobile operator handles my complaints and issues efficiently through their social media accounts.	Auh, S et al 2007
	CRM3	My mobile operator provides me with accurate information about their offers through social media.	
E-comm <i>Empathy</i>	Emp1	I see that my mobile operator's e-communication strategy on its social media accounts is impressive.	Husnain, M., & Toor, A. (2017)
	Emp2	I see that my mobile operator's e-communication strategy and social media accounts create a positive atmosphere about the brand.	
E-comm <i>persuasion</i>	Pers1	I am interested in the services of my mobile operator after seeing their advertising promotions on their social media accounts	Wisetsa et al., 2021
	Pers2	I see that my mobile operator's e-communication strategy on its social media accounts is convincing	
E-comm <i>impact</i>	Imp1	I see that the e-communication strategy of my mobile operator and its social media accounts is more creative than other operators.	Fatimah & Nosita, 2020
	Imp2	I see that my mobile operator's e-communication strategy on its social media accounts allows customers to learn more about its offers.	Budianto, 2017
E-comm <i>commu-</i>	Com1	I understood the messages communicated by my mobile operator on their social media accounts	

cation	Com2	I see my mobile operator on their social media accounts using eye-catching images and postings to help get the message across.	Vinza et al., 2019
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Results and discussion

In structural equation modelling, the model is composed of two sub-models: the measurement model (reliability and validity of measurements) and the structural model (testing the hypothetical relationship). In the analysis, first, we must examine the measurement model, which specifies the relationship between the observed variables and the latent variables that is to say between the items and their variables, then the structural model to examine the relationship between the different latent variables (Hair, 2010).

Figure: Model research on Smart PLS

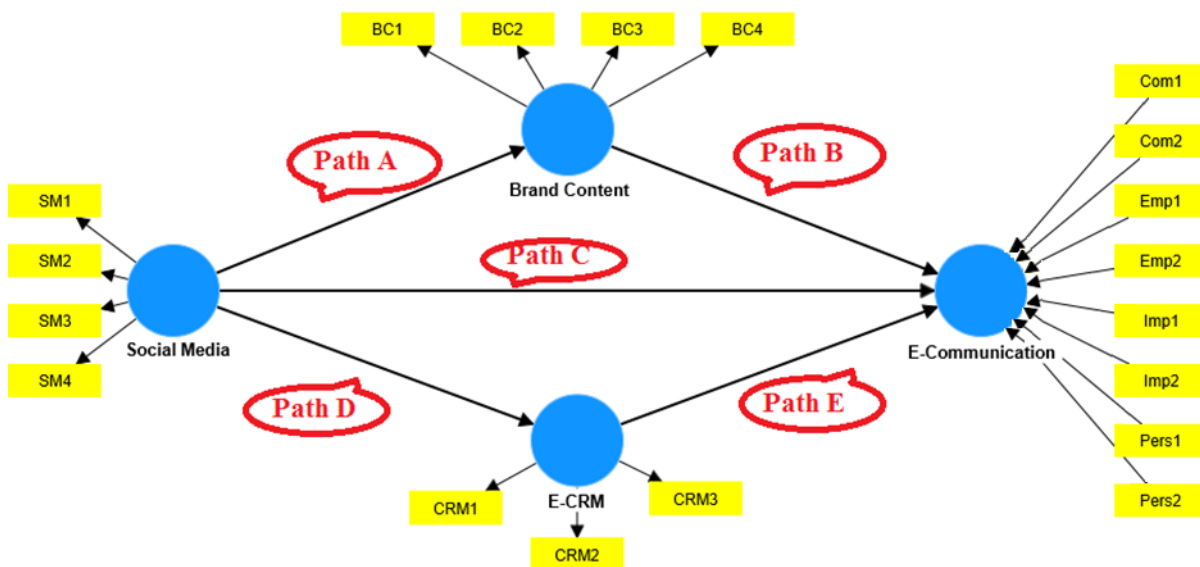


Fig. 3 Model research on Smart PLS

Measurement model analysis

To evaluate the measurement model, all the constructs will be evaluated for their reliability and validity.

Reliability and Convergent Validity

-Reliability: is based on the mean of the variance extracted by the construct relative to the measurement errors. When Cronbach's α and composite reliability greater than 0.7, the reliability is acceptable and represents good reliability according to (Hair & al., 2017). *Cronach's alpha* and *composite reliability (CR)* obtained after running our measurement model using PLS-SEM is presented in the table 3.

-Convergent validity: according to this test, we aim to verify if the manifest variables measure their constructs. We applied the criteria of strong convergence described by (Fornell & Larcker, 1981). An AVE (Average Variance Extracted) greater than or equal to 0.5 indicates good convergent validity.

Table. 2 Reliability and validity of the construct

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Brand Content	0.853	0.865	0.901	0.695
E-CRM	0.920	0.929	0.940	0.758
E-Communication	0.892	0.906	0.914	0.572
Social Media	0.856	0.857	0.902	0.698

Based on the results and according to the previous table, it can be seen that in our model, the values of all the reliability indices (Cronbach's α , Rho-A and Composite Reliability) are > 0.85 and the values of the convergent validity of AVE are > 0.57 . Therefore, the results are very satisfactory and show good internal consistency of the scales and strong harmony between the items.

Discriminant Validity

To test discriminant validity we using the Fornell-Larcker test (1981). It is established if the measurement indicators of a construct are more correlated with each other than with those of the other constructs. The table 3 shows the results of our model:

Table. 3 Discriminant Validity of constructs

Discriminant validity - Fornell-Larcker criterion [Zoom \(200%\)](#) [Copy to Excel](#) [Copy to R](#)

	Brand Content	E-CRM	E-Communication	Social Media
Brand Content	0.833			
E-CRM	0.327	0.871		
E-Communication	0.662	0.384	0.757	
Social Media	0.701	0.506	0.748	0.836

The results show that manifest variables are more related to their constructs than to other latent variables. As shown in the table above, the AVE of each construct was compared to the squared correlation of that construct with other constructs and the AVE was found to be superior.

Structural model analysis

(Hair & al. 2017) state that the structural model test focuses on the values of correlation coefficients, the analysis of the coefficient of determination R^2 , the index of the size of the effect of Cohen F^2 and the predictive validity Q^2 of Stone-Geisser.

Correlation coefficients

Also called standardized multiple regression coefficients or structural coefficients indicate the nature of the link that exists between a dependent variable and another independent of the model. Its value is between -1 and 1, the more it tends towards 1 it means a strong positive relationship (Hair & al., 2017).

Table. 4 The path coefficients of the model

Path coefficients - Matrix [Zoom \(177%\)](#) [Copy to Excel](#) [Copy to R](#)

	Brand Content	E-CRM	E-Communication
Brand Content			0.208
E-CRM			0.318
E-Communication			
Social Media	0.468	0.445	

In our case and according to the previous table, which presents the values of the correlation coefficients, we note that the correlation is positive and strong between the variables.

Analysis of the R² coefficients of determination

It is the most used tool to evaluate the structural model; it is the proportion of the variance of a dependent variable, which is explained by one or more independent variables. (Chin, 1998) specifies that the values of 0.67, 0.33 and 0.19 can be considered respectively as substantial, moderate and weak.

Table. 5 Determination coefficient R²

R-square - Overview Zoom (200%) Copy to Excel Copy to R

	R-square	R-square adjusted
Brand Content	0.704	0.698
E-CRM	0.220	0.212
E-Communication	0.613	0.601

In our model according to the table 5, the model explains 0.7 of variance for Brand Content (substantial value), 0.22 of variance for E-CRM (moderate value) and 0.61 of variance of E-communication (moderate value). So our dependent variables are well explained by the independent variables.

Analysis the size of the effect F²

It is used to determine the intensity of the impact, according to Cohen (1988): $F^2 > 35\%$ means a large effect size, $15\% < F^2 < 35\%$ medium size, $2\% < F^2 < 15\%$ a small size and $F^2 < 2\%$ means no effect size (Hair & al., 2017).

Table. 6 The size of the effect F²

f-square - Matrix Zoom (177%) Copy to Excel Copy to R

	Brand Content	E-CRM	E-Communication
Brand Content			0.317
E-CRM			0.951
E-Communication			
Social Media	0.268	0.159	0.197

In our model, as indicated in the table 6, the values of F² shows that the size of effect for social media on other variables is medium effect, and the values of F² for brand content and E-CRM are large effect.

Predictive Relevance Q² Analysis

The Stone-Geisser coefficient Q², also known as the cross-validation redundancy index, when $Q^2 > 0$ means that the model has predictive validity while when $Q^2 < 0$ means that the model studied is not acceptable (Hair & al., 2017).

Table. 7 Predictive Relevance Q²

Construct cross-validated redundancy - Total Zoom (200%) Copy to Excel Copy to R

	SSO	SSE	Q ² (=1-SSE/SSO)
Brand Content	980.000	655.764	0.331
E-CRM	1,225.000	996.089	0.187
E-Communication	1,960.000	1,334.683	0.319
Social Media	980.000	980.000	0.000

In our model as indicated in the previous table, the values of Q^2 are > 1 ; this means that the model has substantial predictive validity and it appears that the model has a predictive ability to explain the variable E-communication.

Analysis of mediating variables and Hypothesis testing

The mediating variable is the variable that explains the effect and reason for the relationship between the independent variable and the dependent variable. In our case, the two mediating variables are *brand content* and *e-CRM*, in the analysis of the effect of mediation we will follow the method proposed by Preacher and Hayes (2008):

Measure of total effect (bootstrap the indirect effect)

Table. 8 Total effects

Total effects - Mean, STDEV, T values, p values Zoom (127%) Copy to Excel Copy to R					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Brand Content -> E-Communication	0.077	0.077	0.024	3.258	0.001
E-CRM -> E-Communication	0.619	0.619	0.027	22.681	0.000
Social Media -> Brand Content	0.459	0.460	0.036	12.658	0.000
Social Media -> E-CRM	0.370	0.371	0.036	10.201	0.000
Social Media -> E-Communication	0.562	0.562	0.033	16.979	0.000

The relationship between indirect variable and direct variable via mediator must be significant. Representing the total effect according to the following form: Path A Path B through to the bootstrap, we extract the indirect effect and find a P-value 0.000, which shows that, the relationship between the independent variable: *social media* and the dependent variable *E-communication* via the *brand content* mediator is considered significant and acceptable.

As for the second E-CRM mediating variable: Path D Path E through bootstrapping, we extract the indirect effect and find P-value = 0.000, which shows that the relationship between *social media* and *E-communication* via *E-CRM* is considered significant and acceptable.

According to the table above, concerning the direct effect of social media on E-communication: T-Student=16.979 therefore >2 and P-Value=0.000 therefore $<5\%$. So *social media* positively influences *E-communication*, which confirms hypothesis H1.

bootstrapped confidence interval

According to Preacher and Hayes (2008): If the value of zero is found between the lower limit and the upper limit of confidence interval, there is no effect of mediating variable.

Table. 9 Mediator variable test

					Bootstrapped Confidence Interval	
Path A	Path B	Indirect Effect	SE	t-value	95% LL	95% UL
0,468	0,208	0,215	0,0660	3.257	0,086	0,344
Path C	Path D					
0,445	0,318	0,215	0,0658	3,267	0,086	0,344

In our study, the zero does not belong to confidence interval {0,086 - 0,344} so brand content is considered as an intermediate variable between social media and E-communication. Which confirms the H2, H2.1 and H2.2 hypotheses. Both E-CRM is considered as an intermediate variable between social media and E-communication. Which confirms the H3, H3.1 and H3.2 hypotheses.

Discussion:

All of our retained results confirm the results of the literature review, namely:

Our results confirmed the essential role that social media plays in marketing, and particularly in communication between the brand and its customers. We have managed to confirm that social media have a great and positive influence on online marketing communication, whether it is a direct influence (because H.1 which indicates that social media positively influences online marketing communication, has been validated). Moreover, social media presents the most adopted and most useful e-communication channel to ensure the dissemination of brand messages.

The impact of social media on E-communication can occur through other intermediaries, according to our results, there are two mediators that strengthen the relationship between social media and E-communication. The first intermediary is the Brand Content strategy; our results (hypothesis H.2 and its two sub-hypotheses H.2.1 and H.2.2) validate the importance of the Brand Content strategy in the relationship between social media and E-communication, because rich and effective content via social media will necessarily strengthen communication with the customer.

The role of E-CRM as a variable that mediates the relationship between social media and E-communication is confirmed through hypotheses H.3 and sub-hypotheses H3.1 and H3.2, which works with the literature review. E-CRM relies on concepts evolved by both new relationship marketing, particularly online communication, and digital channels such as social media.

Conclusion

The objective of our study was to examine the effect of social media on marketing communication via two mediating variables (brand content and e-CRM) in the Algerian telecommunication sector. The research followed the quantitative approach where a survey was distributed to Internet users, who are both subscribers of mobile operators; the proposed hypotheses were tested using structural equations with SMART PLS software.

The results obtained confirmed the existence of a strong and positive relationship between social media, brand content, e-CRM, and e-communication marketing, which confirms our hypotheses. They represent proof of the importance and critical role of social media for publishing brand content and customer relationship management, and they provide a clear understanding of the contribution of these factors (brand content and e- CRM) to improve brands' marketing communication with their online customers.

Our theoretical contribution has just enriched the theory on the strategy of e-communication marketing, as well as the opportunities offered to brands by social media through the dissemination of rich and effective content; it also presents a practical platform for managing the relationship with the client. In this sense, we have designed a conceptual model that explains the direct and mediating relationships between our different variables.

Our methodological contribution lies in the use of the method of modelling by structural equations by the PLS approach in order to judge the relevance of the proposed model. It means to test the different relationships existing between the mediating variables (brand content and e -CRM) that explain the relationship between the independent variable (social media) and the dependent variable (e-communication).

Our managerial contribution sheds light on the means that allow managers and marketing managers to optimize their communication on social media. We have found during our research that rich and attractive content published by the brand allows participation and interaction from the virtual community, as well as good customer service through social media, therefore, the marketer must pay attention to these variables in order to improve his online communication. Given that digital marketing practices are developing in Algeria, this is an appropriate opportunity for marketers to develop an online communication strategy, which will allow them to connect with customers. This work integrates complementary disciplines such as strategic management, strategic marketing, relationship marketing and digital marketing. The results obtained can be a rich and reliable basis, which gives rise to recommendations in terms of management and strategic marketing of the company.

We encourage all types of brands to give more importance to the role of social media, as well as the usefulness of the publication of attractive content via these new media to properly manage customer relations and communication with them.

Our study does not exclude the logic that each scientific work represents limits and faces difficulties, which must be highlighted: a theoretical limitation lies in the scarcity of existing literature on the function of marketing communication, despite the evolution of this discipline in practice. We were not able to exploit all the digital marketing

tools, such as websites and e-mail marketing. The research context is limited to a single sector. Nevertheless, our study could have affected a large number of companies from different sectors, because it could have been based on a larger theoretical corpus and therefore concerned other opportunities of social media, but due to lack of time, we leave the door open to perspectives open for future work. It would be useful to question other variables that can enrich the model, such as E-reputation, brand image and E-WOM (electronic word-of-mouth).

Availability of data and materials

All data and materials used in this study will be available upon request.

Abbreviations

E-CRM: Electronic Customer Relationship Management

PLS: Partial Least Squares

SEM: Structural Equation Modeling

SMM: Social Media Marketing

KPI : Key Performance Indicator

EPIC: Empathy, Persuasion, Impact, and Communication

SM: Social Media

BC: Brand Content

CRM: Customer Relationship Management

Com: Communication

Emp: Empathy,

Imp: Impact

Pers: Persuasion

AVE: Average Variance Extracted

CR: Composite Reliability

R²: Determination coefficient

F²: The size of the effect

Q²: Predictive Relevance

References :

Abdelhak, S., Graa, A., et Baraka, H (2016). L'influence des réseaux sociaux numérique sur le comportement d'achat du consommateur. *Roa Iktissadia review*, 11 (12), pp 495-509

Al-Jallad, M. (2019). Implications of Social Media Use on Consumer Behaviour & Habits. *The Algerian Communication Journal*. 18 ,(02), PP 199-219

Attalah, Paul. 1993. Théories de la communication, histoire, contexte, pouvoir. Coll. «Collection Communication et société». Ste-Foy: Université du Québec Télé-université.

Auh, S., Bell, S. J., McLeod, C. S., & Shih, E. (2007). Co-production and customer loyalty in financial services. *Journal of retailing*, 83(3), 359-370

Budianto, A. E. (2017). Promotion Effectiveness Using EPIC Model. *Management and Business Review*, 1(1), 1–8.

Danesh Shahraki, Zymh. Davarpanah Jazi, M. (2014): Customer Relationship Management in E-banking portals Iran and propose strategies for improvement. Master's thesis, University of Shiraz.

Debos, F. (2013), e-Marketing & e-Commerce. Concepts. Outils. Pratiques. Paris, Dunod. Communication. Information médias théories pratiques, 32(1).

Dens, N., & Poels, K. (2023). The rise, growth, and future of branded content in the digital media landscape. *International Journal of Advertising*, 42(1), 141-150.

Dimitriadis, S. (2010), "Testing perceived relational benefits as satisfaction and behavioural outcomes drivers", *International Journal of Bank Marketing*, Vol. 28 No. 4, pp. 207-13

Espuny. C., González. J & Otros.C. (2011). Actitudes y expectativas del uso educativo delas redes sociales en los alumnos universitarios. *Revista de Universidad y Sociedad del Conocimiento (RUSC)*, 8 (1); pp.171-185.

Fatima, S., Alqahtani, H., Naim, A., & Alma'alwi, F. (2022). E-CRM Through Social Media Marketing Activities for Brand Awareness, Brand Image, and Brand Loyalty. In *Building a Brand Image Through Electronic Customer Relationship Management* (pp. 109-138). IGI Global.

Fatimah, S., & Nosita, F. (2020). Analisis Efektivitas Iklan Ramayana Berbasis Epic Model Pada Media Sosial Youtube. *Ultima Management : Jurnal Ilmu Manajemen*, 11(1), 39–54.

Flanagan, K., 2015. The Essential Guide to Creating a Successful Content Marketing Strategy. Available at: <http://blog.hubspot.com/marketing/content-marketing-blueprint-ht>

Fragouli, E., & Noutrixa, A. (2014). Application of Electronic Customer Relationship Management (e-CRM) for promoting products and Services in a Local Context: Exploration of a Case. *International Journal of Information, Business and Management*, 6(4), 11.

Fuad, E., & Abdullah, Z. (2023). Impact of E-CRM Implementation, Customer Experience, and Customer Loyalty in E-Commerce: Literature Review. *Finance, Accounting and Law in the Digital Age: The Impact of Technology and Innovation in the Financial Services Sector*, 389-399.

Garrido-Moreno, A., & Padilla-Meléndez, A. (2011). Analyzing the impact of knowledge management on CRM success: The mediating effects of organizational factors. *International Journal of Information Management*, 31(5), 437-444.

Gummesson, E. (2004). Return on relationships (ROR): the value of relationship marketing and CRM in business-to-business contexts. *Journal of business & industrial marketing*, 19(2), 136-148.

Gunarto, M., & Cahyawati, D. (2022). Experience Value as a Mediator Variable for Co Creation Relationship on Alumni Loyalty: Using the SEM-PLS Model Approach. *Jurnal Organisasi dan Manajemen*, 18(1), 46-59.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM). Available at: http://www.hhz.de/fileadmin/user_upload/Hermann_Hollerith_Zentrum/Forschung/PLS-SEM_Course.pdf

Hallil, W., & Amalou, E. (2017). La Communication Digitale : Quel Impact Sur La Notoriété Et La Rentabilité De L'entreprise. Available at: http://dspace.univ-msila.dz:8080/xmlui/bitstream/handle/123456789/4113/Article_13.pdf

Hanaysha, J. (2016). The importance of social media advertisements in enhancing brand equity: A study on fast food restaurant industry in Malaysia. *International Journal of Innovation, Management and Technology*, 7(2), 46.

Husnain, M., & Toor, A. (2017). The impact of social network marketing on consumer purchase intention in Pakistan: Consumer engagement as a mediator. *Asian Journal of Business and Accounting*, 10(1), 167-199.

Iacobucci, D. (2009, October). Everything you always wanted to know about SEM (structural equations modeling) but were afraid to ask. *Journal of Consumer Psychology*, 19(4), 673–680. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S1057740809001119>

Keegan, B. J., & Rowley, J. (2017). Evaluation and decision making in social media marketing. *Management decision*, 55(1), 15-31. Available at: <https://e-space.mmu.ac.uk/617347/1/Evaluation%20and%20decision-making%20in%20social%20media%20marketing.pdf>

Kim, A. J., & Johnson, K. K. P. (2016). Power of consumers using social media: Examining the influences of brand-related user-generated content on Facebook. *Computers in Human Behavior*, 58, 98–108. <https://doi.org/10.1016/j.chb.2015.12.047>

Lessard, S. (2015). Communiquer la marque employeur sur les médias sociaux. *Gestion*, Vol. 40(1), 100–103. <https://doi.org/10.3917/riges.401.0100>

Lipsman, A., Mudd, G., Rich, M., & Bruich, S. (2012). The power of “Like”: how brands reach (and influence) fans through social-media marketing. *Journal of Advertising research*, 52(1), 40e52.

Lipsman, A., Mudd, G., Rich, M., & Bruich, S. (2012). The power of “like”: How brands reach (and influence) fans through social-media marketing. *Journal of Advertising research*, 52(1), 40-52. DOI: 10.2501/JAR-52-1-040-052

Memon, M. A., Ramayah, T., Cheah, J. H., Ting, H., Chuah, F., & Cham, T. H. (2021). PLS-SEM statistical programs: a review. *Journal of Applied Structural Equation Modeling*, 5(1), 1-14.

Mettagarunagul, M., Pensiri, P. (2011). “The use of e-CRM to enhance customer relationship: the case of Toyota Mahanakorn”. Malardalen University: Sweden.

Meziane A, Slah, M & Tahraoui D-A. (2020). The impact of social networks (Facebook) on Consumer Purchase. *Al-riyada for Business Economics Journal*, 06(01), pp 42-51.

Minami, C., & Dawson, J. (2008). The CRM process in retail and service sector firms in Japan: Loyalty development and financial return. *Journal of Retailing and Consumer Services*, 15(5), 375-385.

Mohamed, S. M., Marie, M., & Yehia, E. (2023). Exploring The Impact of E-CRM System on Customers in Banking Sector Using PLS-SEM Approach. *International Journal of Intelligent Systems and Applications in Engineering*, 11(9s), 156-165.

Nouala, M. (2016). Social media as a new emerging tool of marketing: effect of E-reputation in an Algerian market. *Revue ELMISHKAT en économie, développement et droit*. 03(12), pp 80-97.

O' zgener, S. and I' raz, R. (2006), “Customer relationship management in small-medium enterprises: the case of Turkish tourism industry”, *Tourism Management*, Vol. 27 No. 6, pp. 1356-63

Pan, S.L., Tan, C.W. and Lim, E.T.K. (2006), “Customer relationship management (CRM) in e-government: a relational perspective”, *Decision Support Systems*, Vol. 42 No. 1, pp. 237-50

Riad, I., & Alliouche, B. (2017). La communication via les médias sociaux comme outil du marketing stratégique cas des PME algeriennes.

Safitri, S., Sudiro, A., Rochman, F., & Mugiono, M. (2022). Customer Experience Management for ICT Industry Using SEM-PLS Analysis Technique. In *Computational Intelligence in Security for Information Systems Conference* (pp. 291-302). Cham: Springer International Publishing.

Saidani, A. (2016). La présence des entreprises sur les réseaux sociaux : quel impact sur le comportement des communautés virtuelles des marques? Conference de Tim O'Reilly, “What Is Web 2.0.”

Schivinski, B, Christodoulides, G., & Dabrowski, D. (2016). Measuring consumers' engagement with brand-related social-media content: Development and validation of a scale that identifies levels of social-media engagement with brands. *Journal of Advertising Research*, 56(1), 64–80. <https://doi.org/10.2501/JAR-2016-004>

Schultz, D. E., Barger, V., & Peltier, J. W. (2016). Social media and consumer engagement: a review and research agenda. *Journal of Research in Interactive Marketing*, 10(4), 268-287.

Soualhi, I., & Qmichchou, M. (2021). La communication sur les réseaux sociaux et l'engagement des utilisateurs: Une étude qualitative. *International Journal of Accounting, Finance, Auditing, Management and Economics*, 2(3), 458-475.

Stelzner, M. (2013). “Social media marketing industry report”. Retrieved from <http://www.socialmediaexaminer.com/SocialMediaMarketingIndustryReport2013.pdf>

Van den Bergh, J., & Behrer, M. (2011). How to create brands that generation Y will love.

Vinza, A., Rizka, R. & Ervianty, M. (2019). Penggunaan Media Komunikasi Pemasaran Digital sebagai Alat Pencapaian Kesadaran Merek pada Produk Kitchenindo. *The International Journal of Applied Business Tijab*, 3(1), 59–72.

Virginia Phelan, K., Chen, H. T., & Haney, M. (2013). “Like” and “Check-in”: how hotels utilize Facebook as an effective marketing tool. *Journal of hospitality and Tourism Technology*, 4(2), 134-154.

Weaver, W. (1949). The mathematics of communication. *Scientific American*, 181(1), 11-15.

Wiener, N. (1948). Cybernetics. *Scientific American*, 179(5), 14-19.

Wisetsa, A., Eviana, N., & Achmadi, R. (2021). Effectiveness of Promotional Media Using EPIC Model (A Case Study in Al Qadri Umrah and Hajj Bureau in Jakarta). *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 4531, 322–334

Yamani, Z. EL, & Yaacoubi, Y. EL. (2018), Digitalization of the Brand : From a Passiv. Public & Nonprofit Management Review PNMReview, 3(April), 436–451. Available at: <https://revues.imist.ma/index.php/PNMReview/article/view/15980>