The Digitalization of Customer Relationships and Its Impact on Repurchase Intention: An Empirical Study of Online Shoppers

رقمنة العلاقة مع العملاء و أثرها على نية إعادة الشراء – دراسة تطبيقية على متسوقي المواقع الالكترونية

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Abstract:

The study aims to demonstrate the effect of digitalization the relationship with customers (ECRM) on the repurchase intention of online shopping customers represented by Aliexpress, Banggood, Shein, Jumia, etc. We distributed 234 electronic questionnaires to Algerian consumers who shop on these websites. The data were analyzed using SPSS software. The study concluded that there is a statistically significant effect of managing customer relationships electronically on the repurchase intention of online shopping customers.

Keywords: digitalization the relationship with customers (ECRM); repurchase intention; online shopping websites; CRM; E-commerce.

JEL Classification Codes: M31, L86, O33.

ملخص:

هدفت الدراسة إلى ابراز أثر رقمنة العلاقة مع العملاء *ECRM* على نية إعادة الشراء لمتسوقي المواقع الالكترونية متمثلة في *Aliexpres , banggood, shein, jumia*... الخ، قمنا بتوزيع 234 استبانة الكترونية على المستهلكين الجزائريين من متسوقي هذه المواقع، تم الدراسة التطبيقية بتحليل البيانات باستخدام برنامج *SPSS* ، توصلت الدراسة الى وجود أثر ذو دلالة احصائية لإدارة علاقة العملاء الكترونيا *ECRM* على نية إعادة الشراء لمتسوقي المواقع الالكترونية.

كلمات مفتاحية: رقمنة العلاقة مع العملاء ECRM، نية اعادة الشراء، مواقع التسوق الالكتروني، إدارة علاقة العملاء، التجارة الالكترونية.

تصنيفات JEL : M31, L86, O33

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INTRODUCTION:

With the development of information and communication technologies in recent decades and the wide spread of the Internet, which has become a main means for research and shopping, and the innovation of systems and tools that allow the transfer, processing, storage, and retrieval of information, in addition to the spread of smartphones, tablets, and their related applications that have accelerated data transfer in record time, cloud computing also appeared, providing the ability to store information, followed by the emergence of social media networks as interactive platforms. This created a leap in the marketing department.

Among the most affected departments by information and communication technology is the marketing department, where digital marketing appeared with its tools represented in online advertising, content marketing, marketing through social media platforms, marketing through search engines, search engine optimization, email marketing, video advertising, and live streaming. E-commerce appeared with online shopping and providing an integrated digital service from purchasing, payment, delivery, to refunding via the Internet. This was followed by artificial intelligence with its various uses such as advertisements, sending messages, and managing marketing services.

In light of this development and the intensification of competition, and the institution's focus on its customers through customer relationship management, which was mainly based on traditional means such as postal letters, phone calls, personal visits, and records, with this development, institutions shifted from customer relationship management to digital customer relationship management. This enables the institution to achieve greater efficiency with the customer with the emergence of programs and tools to manage customer relationships digitally such as Hubspot and Salesforce, and the use of cloud computing for storage and data analysis, automating communication, using multiple methods, and improving the customer experience through ratings, reviews, and instant interaction. Digital customer relationship management also allows integration with other systems and platforms such as accounting, sales, and customer support.

The institution exploited digital customer relationship management to study consumer behavior due to the ease of collecting data about their preferences and behavior, thus providing offers that meet their expectations, achieving their satisfaction and loyalty, improving decision-making, and influencing their purchase intention and repurchase intention. The company's interest in the customer and understanding of their needs increases the likelihood of them making a purchase decision and then having the intention to repurchase.

Research Problem:

With the development of information and communication technologies and the wide spread of the Internet, and the reliance of institutions on these applications and tools in the institution's activities, including its marketing activities, the institution used to rely on traditional tools in managing its relationships with customers in order to retain them and study their purchasing behaviors to maintain them and push them toward continuous repurchase and to enhance their intention to make the purchase and their intention to repurchase. However, the exploitation of the tools and software made available by the continuous development of information and communication technologies enabled the shift to managing customer relationships digitally and

enabled the institution to measure and study purchase intention and repurchase intention for the consumer accurately.

Based on the above, the following main research problem can be posed:
To what extent does digital customer relationship management affect the customer's repurchase intention?

Research Hypotheses:

Main Hypothesis 1: The online shopping website is concerned with applying digital customer relationship management, from which the following sub-hypotheses are derived:

- **Sub-Hypothesis 1:** The online shopping website applies digital customer relationship management in the pre-purchase stage.
- **Sub-Hypothesis 2:** The online shopping website applies digital customer relationship management in the purchase stage.
- **Sub-Hypothesis 3:** The online shopping website applies digital customer relationship management in the post-purchase stage.

Main Hypothesis 2: There is a statistically significant relationship at the significance level ($\alpha \leq 0.05$) between digital customer relationship management and the repurchase intention of online shopping website customers, from which the following sub-hypotheses are derived:

- **Sub-Hypothesis 1:** There is a statistically significant relationship at the significance level ($\alpha \leq 0.05$) between digital customer relationship management in the pre-purchase stage and the repurchase intention of online shopping website customers.
- **Sub-Hypothesis 2:** There is a statistically significant relationship at the significance level ($\alpha \leq 0.05$) between digital customer relationship management in the purchase stage and the repurchase intention of online shopping website customers.
- **Sub-Hypothesis 3:** There is a statistically significant relationship at the significance level ($\alpha \leq 0.05$) between digital customer relationship management in the post-purchase stage and the repurchase intention of online shopping website customers.

Study Model:

Dimensions of the independent variable study (Al-Shubail, 2012).

Dimensions of digital customer relationship management in the pre-purchase stage:

- Website design.
- Search capability on the website.
- Loyalty enhancement programs.

Dimensions of digital customer relationship management in the purchase stage:

- Privacy and security on the website.
- Payment methods on the website.

Dimensions of digital customer relationship management in the post-purchase stage:

- Order tracking.
- On-time delivery.
- Customer support services.

Dependent variable:

Repurchase intention (Al-Najjar, 2024) .

- Purchase frequency: Expectation of purchasing the product or service a second time, i.e., the likelihood of using the brand in the future.

- Purchase intentions: The judgment related to how the consumer will behave in the future, representing the consumer's thinking about purchasing for the first time or for a second time.
- General consumer tendency: Maintaining the purchase of the same product or service without switching to competitors.

A figure representing the study model.

Source: Prepared by the researchers

Importance of the Study:

The importance of this study lies in highlighting the role played by digital customer relationship management in the decision of repurchase intention among online shopping website customers through the following points:

The model of this research includes an independent variable represented by digital customer relationship management, which contains the following dimensions, and a dependent variable represented by repurchase intention. Through this study, we seek to clarify the relationship between the two variables and show the extent to which software, tools, and applications of digital customer relationship management affect consumer behavior represented by the intentions to repurchase products and services. We hope that this research will provide a scientific addition and a continuation of previous research, serving as an example for Algerian institutions, benefiting both the institutions and their customers at the same time.

- The importance of the subject as it is new to the Algerian market, and we wish to transfer the experiences of pioneering countries and websites in this field.
- Completing the studies conducted on this topic.
- The importance of the service sector (sales via online shopping websites and delivery services) and the fact that it is a sector relied upon in the development and advancement of the national economy.

Objectives of the Study: The study aims to:

- Define the nature of digital customer relationship management at the online shopping website.
- Introduce the importance of digital customer relationship management.
- Determine the impact of electronic customer relationship management on consumer behavior, specifically repurchase intention.
- Assess the extent to which the online shopping website applies digital customer relationship management with its determinants.
- Identify the methods of employing digital customer relationship management applications and software in measuring repurchase intention.
- Determine the methods of measuring repurchase intention among online shopping website customers.
- Identify the motives for purchasing and repurchasing products and services and how to influence their intentions.
- Present digital customer relationship management as an extension of customer relationship management.
- Highlight the applications and tools used in digital customer relationship management.

Study Boundaries:

Temporal boundaries: The time frame of this research extends from February 2025 to May 2025.

- **Spatial boundaries:** The study was conducted on online shopping customers among Algerian consumers.

Previous Studies:

1. **Study of Gharib Al-Taous and Boulehbal Asmaa** – The Effect of Electronic Customer Relationship Management on Electronic Customer Loyalty – An Analytical Study. The study aimed to identify electronic customer relationship management with its determinants: customer interaction, trust, security and privacy, and commitment, on electronic customer loyalty in communication institutions (Algeria Telecom). A questionnaire was used to collect the study data from a purposive sample representing 222 customers.

This study concluded that there is a relationship between electronic customer relationship management and electronic customer loyalty, and recommendations were made to focus on immediate response to customer concerns and to respond quickly to complaints to build a strong relationship with customers.

2. **Study of Imad El-Hobashy, Mohamed A. Ragheb, Heba Hassan Sadeq, Mohamed Abu Khesaba** – Impact of Electronic Customer Relationship Management on Purchase Intention with Mediation Role of Customer E-Satisfaction: Evidence from Egyptian SMEs.

   The study aimed to identify the effect of electronic customer relationship management (E-CRM) on purchase intention with the mediation role of electronic customer satisfaction in small and medium enterprises. 440 questionnaires were used to collect the required data and analyzed using the structural equation model (SEM) with AMOS software.

   The study concluded that the direct effect between electronic customer relationship management and purchase intention is statistically significant. The direct effect between electronic customer relationship management and electronic customer satisfaction is statistically significant. The direct effect between electronic customer satisfaction and purchase intention is statistically significant. Finally, the study found that there is a partial mediation effect between electronic customer satisfaction and the relationship between electronic customer relationship management and purchase intention in Egyptian SMEs.

3. **Study of Mohamed Ahmed Saeed Hamad** – The Effect of Electronic Customer Relationship Management on Electronic Brand Reputation through the Satisfaction of Jordanian Duty-Free Customers.

The study aimed to investigate the effect of electronic customer relationship management on electronic brand reputation through the satisfaction of Jordanian duty-free customers. Data was collected using a questionnaire that included a random sample of 300 individuals from travelers at Queen Alia Airport.

The study concluded that there is an effect of electronic customer relationship management with its dimensions on electronic brand reputation, an effect of electronic customer relationship

management with its dimensions on customer satisfaction, and an effect of customer satisfaction on electronic brand reputation, in addition to partial mediation of customer satisfaction in the effect of electronic customer relationship management on electronic brand reputation. Recommendations were given to increase the focus of the duty-free market management on customer value as a primary source of profit.

4. **Study of Mohamed Sobhi Ahmed Abu El-Dhahab, Basma Mohamed Idris El-Hariri, Soha Abdel-Monem Mohamed Shalaby** – The Effect of Brand Heritage and Corporate Social Responsibility on Repurchase Intention: The Mediating Role of Brand Credibility and the Perceived Value of the Brand – Applied to Fast-Food Restaurant Chains in Cairo Governorate.

The study aimed to explore the direct and indirect relationship between brand heritage and corporate social responsibility as independent variables, and repurchase intention as a dependent variable, with brand credibility and perceived brand value as mediating variables. Data was collected using 405 questionnaires from a random sample. Partial least squares structural equation modeling (PLS-SEM) was used to assess measurement models, Smart PLS 4 was used for the structural model and hypothesis testing, and SPSS 26 was used for descriptive analysis.

The study concluded that there is an indirect effect of brand heritage and corporate social responsibility on perceived brand value with the partial mediating role of brand credibility. It also found a significant indirect effect of brand heritage and corporate social responsibility on repurchase intention, and that brand credibility and perceived value together fully mediate the relationship. The researchers recommended that restaurants revive their brand heritage and rediscover it by focusing in their advertising campaigns on their classic products, the history of their establishment, and sponsoring cultural, health, and educational programs that show their commitment to social responsibility.

5. **Study of Imad Abdelaziz Eid Al-Qusbi Al-Najjar** – The Effect of Customer Experience on Repurchase Intention: The Mediating Role of Brand Value and the Moderating Role of Demographic Variables and Brand Name – An Applied Study on Hypermarket Customers in Mansoura City, 2024.

The study addressed the effect of customer experience on repurchase intention through the mediating role of brand value and the moderating role of demographic variables and brand name for hypermarket customers.

It aimed to identify the impact of customer experience with its dimensions on brand value and repurchase intention, and to determine the contribution of brand value in hypermarkets as a mediating variable in the relationship between customer experience and repurchase intention, in addition to determining the contribution of demographic factors and brand name in modifying the relationship between customer experience and repurchase intention from hypermarkets. The researcher relied on a questionnaire directed to a sample estimated at 300 customers.

The study concluded that there is a significant positive effect of brand value in hypermarkets on repurchase intention, in addition to brand value mediating the relationship between customer

experience dimensions and repurchase intention, and demographic factors and brand name modifying the relationship between customer experience and repurchase intention.

2. The Theoretical Framework of the Study:

2.1. Digital Customer Relationship Management:

2.1.1. Customer Relationship Management:

The institution aims to continuously improve its relationship with its customers and ensure its sustainability by adopting a strategy based on collecting and analyzing customer data to ensure the customization of services and products for its customers in order to provide solutions, meet needs, achieve customer satisfaction and loyalty, improve institutional performance, and increase revenues.

Definition of Customer Relationship Management:

For the institution to succeed and continue in a competitive market, it must establish a strong relationship with its customers, maintain them, achieve their satisfaction and loyalty, and work to ensure a support base of loyal customers by building a relationship and communication with them, working to solve their problems, and improving their experiences. This constitutes one of the frameworks of customer relationship management.

Definition by Philip Kotler: Customer relationship management is defined as a process that involves collecting detailed information about each customer individually, as well as carefully managing each moment of contact with the customer, all in order to achieve the retention of customer loyalty to the institution (Gharib & Boulehbal, 2022).

Definition by Kotler & Keller: The process of managing detailed information about individual customers, and then managing all customers carefully with the aim of increasing customer loyalty (Al-Sabyani, 2019).

2.1.2. The Development of Customer Relationship Management into Digital Customer Relationship Management:

With the emergence of e-commerce and e-marketing and their continuous development, marketers created a mix between them known as electronic customer relationship management (Nader & Abdel Rahim , 2021). Initially, customer relationship management was limited to personal interaction between the institution's employees and its customers, either by phone or in stores, relying on paper and personal records to track their needs and interactions, and thus was limited to traditional means.

With the development of information and communication technologies and the spread of the Internet, customer relationship management transformed into digital customer relationship management (ECRM) and was considered a strategic solution to modern obstacles, as new and modern tools appeared that institutions relied on to record information and data digitally, including the use of artificial intelligence in data analysis and predicting consumer behaviors. The emergence of ECRM programs such as Hubspot and Salesforce, and the design of customized programs by institutions for customer relationship management.

Exploiting the development of information and communication technology, such as social media, email, and instant messaging service, these tools enabled the institution to improve the customer experience and maintain continuous communication through digital channels.

2.1.3. Definition of Electronic Customer Relationship Management:

With the emergence of e-commerce, customer relationship management became known as electronic customer relationship management. Customers are the most important business for the institution, and it has been given the following definitions:

Definition of Philip Kotler: Electronic customer relationship management is part of e-business that explains how to use tools and basic systems to manage business and enables it to serve its customers quickly, on a wide scale, personalize services, and reduce costs (Gharib & Boulehbal, 2022).

It was also defined as: A set of activities carried out to identify, select, and retain customers beneficial to the company, and loyalty can be achieved by offering an appropriate product or service at the right time and at an appropriate cost (Nader & Abdel Rahim , 2021)

2.1.4. The Importance of Electronic Customer Relationship Management:

Electronic customer relationship management is of great importance, and the following elements can be mentioned:

- Achieving customer satisfaction and loyalty.
- Personalizing services and products.
- Targeting the most profitable customers.
- Retaining current customers and acquiring new customers at a lower cost.
- Speed in fulfilling orders.
- Achieving differentiation from competitors and reaching a competitive advantage.

2.2. Consumer Behavior:

The decisions and actions taken by individuals when purchasing and using products and services represent consumer behavior and extend to searching for products and services, evaluations, reviews, and feedback after purchase.

2.2.1. Definition of Consumer Behavior:

It is the behavior undertaken by the consumer to search in order to purchase or use a service, product, experience, or ideas to satisfy needs and desires according to his financial capabilities (Charef, Zerouki, & Sayeh, 2020) .

It is also defined as: The actions and direct behaviors of individuals to obtain the product or service, including making the purchase decision (Ben yakoub, 2014).

2.2.2. Factors Influencing Consumer Behavior:

Consumer behavior is influenced by a set of factors. Customers have classified them as follows:

- Psychological factors: personal motives, learning, and prior scientific knowledge.
- Social factors: family and friends.
- Cultural factors: customs, religion, traditions.
- Economic factors: economic situation, net income, in addition to other factors.

2.3. Purchase Decision:

It was defined by (Joël) as the process of weighing available alternatives, i.e., the process of choosing the best alternative that meets the needs and desires of the individual (Hamidi & Remmas, 2022) . It is also the stage where the consumer makes the final decision to purchase a product or service after going through several stages:

2.3.1. Stages of the Purchase Decision:

Several classifications can be given for the stages of making a purchase decision, and the following classification of purchase decision stages was adopted (Assassi & Samir , 2020) .

A: Pre-purchase stage:

1- Recognizing the need: When there is a need to purchase a specific product or service, it is identified.

2- Searching for information: The consumer searches for information related to the product or service needed using various means such as shopping, the Internet, and personal experiences.

3- Evaluating alternatives: Alternatives among available options are evaluated based on factors such as quality, price, and features.

B: Decision-making stage:

After evaluating the alternatives, the consumer decides on the service or product to purchase by paying a monetary amount to meet his needs, determining the appropriate time and place, payment methods, and finally obtaining the product.

C: Post-purchase decision-making stage:

After purchase, the consumer evaluates his experience of purchasing the product or service, which affects his future decisions and confirms his future preferences, whether by becoming a loyal customer who trusts the advertisements or the medium through which he learned about the product, or by refraining from purchasing the product or service in the future. It also affects his surroundings, such as family and friends.

2.3.2. Factors Influencing the Purchase Decision:

The following factors influence the purchase decision:

- Psychological factors: personal motives and first impressions.
- Social factors: resulting from the influence of the surrounding environment such as family and friends.
- Price-related factors: price plays a large role in influencing the purchase decision.

2.4. Purchase Intention:

It represents the extent to which the consumer is ready to make a purchase, and it is an initial desire formed by the consumer based on factors such as urgent need for the product or service, advertisements, promotional offers, and when appropriate financial resources and opportunity are available. It is also affected by previous purchase experience, and the stronger the purchase intention, the greater the likelihood of making the purchase decision.

Definition of Purchase Intention:

Defined by (Hair) as an individual's willingness to purchase the same product or another brand after making evaluations based on his personal experiences, attitudes, perceptions, and subjective behavioral standards (Hamidi & Remmas, 2022).

It is also defined as an individual's following of a conscious plan to make an effort to purchase a specific brand (Suleiman Ali & Al-Dhabet., 2016).

2.4.1. How to Measure Purchase Intention:

1- Response to advertisements when the consumer shows interest in offers.

2- Interaction with digital content such as browsing online stores, adding to the shopping cart, and clicking on ads.

3- Willingness to pay, shown by the consumer's financial readiness to purchase, such as entering bank card payment information.

2.4.2. Factors Influencing Purchase Intention:

1- Personal marketing: offers and coupons encouraging making the purchase decision.
2- Previous customer experiences: when the product or service has been tried previously and the result was satisfactory, a strong intention to repurchase is formed.
3- Influencer marketing: the consumer and his purchase intention are influenced by public figures, especially on social media platforms.

2.5. Repurchase Intention:

It is the consumer's readiness to repurchase the same product or service through traditional means or to buy online again, based on a previous experience, and it is a translation of the customer's satisfaction with the product or service.

Definition of Repurchase Intention:

Repurchase intention means the personal or subjective judgment regarding how the customer will act in the future (Dekrouri, M., Al-Munbawi, A., & Abdel-Ghani, , 2016).

It is also defined as an individual's desire to repurchase the same product or service from the same company again, taking into account the current situation and possible circumstances (Hellier, 2003).

It is also defined as a form of voluntary behavior and an intention to repeatedly purchase products from the same seller, and customer repurchasing constitutes a source of profit for companies, enabling them to reduce and improve service costs and enhance the customer experience (Al-Batriq, 2019).

2.5.1. How to Measure Repurchase Intention:

There are different measures and models for measuring repurchase intention, including the Technology Acceptance Model (TAM), which focuses on directional interpretation of the intention to use a specific technological system and provides an explanation of behavior, aiming to track the effect of external factors on beliefs, intentions, and attitudes. The TAM model assumes two factors: perceived usefulness and perceived ease of use (Dekrouri, M., Al-Munbawi, A., & Abdel-Ghani, , 2016).

Repurchase intention can also be measured by the following elements:

1- Positive reviews: when the customer leaves a good evaluation, there is a possibility of repurchase.
2- Brand loyalty: when the customer prefers a brand over others after trying it previously.
3- Loyalty programs: encouraging consumers to repurchase with rewards, coupons, and exclusive offers.

2.5.2. Factors Influencing Repurchase Intention:

- Quality of service or product: if the product meets needs and the experience is positive, repurchase is likely in this case.
- Continuous communication: constant communication with the customer and loyalty programs affect repurchase intention.
- Continuous innovation: institutions that innovate and improve their products and services regularly attract customers again for purchase.

3. Applied Study

3.1. Method and Tools for Data Collection:

In this research, the descriptive method was relied upon, where the conceptual framework for customer relationship management was first addressed, leading to electronic customer relationship management and its determinants at the different stages of making the purchase decision, i.e., before purchase, during purchase, and after purchase, and its importance. Then purchase intention and repurchase intention were addressed as a manifestation of consumer behavior.

Secondary references and sources were used, represented by previous studies by researchers and scholars in the field of marketing, especially digital marketing.

Primary sources were also used to collect data from the study population in order to obtain answers to the questions posed in the study and to test the hypotheses.

2.3. Study Population and Sample:

This study aims to measure the effect of digital customer relationship management on the intention to repurchase. The study population consisted of shoppers of local and international e-commerce websites, such as: Aliexpress, Banggood, Shein, Jumia.

A purposive sample of shoppers was used due to the difficulty of reaching all customers, by preparing an online questionnaire using Google Drive, as this made it easy to distribute electronically, especially since the customers are online shoppers. A total of 234 valid questionnaires were collected for analysis.

Study Tool:

In order to obtain information and data from the study population and identify the effect between the variables, a questionnaire was designed for this purpose, with reference to previous studies. The questionnaire consisted of the following:

- **Part One:** Related to personal and demographic variables of the study population, represented by: gender, age, occupation, and educational level.
- **Part Two:** Related to shopping behaviors from e-commerce websites, represented by: shopping frequency, annual shopping budget, and e-commerce websites used.
- **Part Three:** Included the independent and dependent variables of the study topic.

The first axis included the variables of digital customer relationship management as an independent variable, represented in its dimensions:

Dimensions of electronic customer relationship management before the purchase stage:

- Website design.
- Ability to search on the website.
- Loyalty enhancement programs.

Dimensions of electronic relationship management in the purchase stage:

- Privacy and security on the website.
- Payment methods on the website.

Dimensions of electronic customer relationship management after the purchase stage:

- Order tracking.
- On-time delivery.
- Customer support services.

The second axis included the dimension of repurchase intention as a dependent variable, represented in the following statements:

- Purchase frequency: The expectation of buying the product or service a second time, i.e., the likelihood of using the brand again in the future.
- Purchase intentions: The judgment regarding how the consumer will behave in the future, representing the consumer's thinking about buying for the first time or a second time.
- The consumer's general tendency: Maintaining the purchase of the same product or service without switching to competitors for several reasons, such as quality.

Reliability and Validity Test of the Questionnaire:

Reliability means obtaining the same results or similar results if the, study is repeated under similar conditions, which was measured by Cronbach's alpha coefficient. As for validity, it reflects the degree to which each questionnaire item is consistent with the dimension it measures. In this study, the validity coefficient was estimated using the square root of Cronbach's alpha coefficient. The following table shows the results obtained regarding the reliability and validity of the tool:

Table 1: Results of Validity and Reliability Test of the Questionnaire

Questionnaire Sections	Reliability Coefficient	Validity Coefficient
Digital Customer Relationship Management	0.773	0.879
Repurchase Intention	0.824	0.907
All Axes	0.825	0.908

Source: Prepared by the researchers according to SPSS results.

From the table above, we obtained an acceptable Cronbach's alpha coefficient greater than the required threshold of 0.6 for the questionnaire as a whole. In addition, the high consistency of the statements in each section confirms the credibility of the responses and the strong correlation between its statements. This confirms the reliability and validity of the questionnaire and its suitability for analysis, and thus the trustworthiness of the results obtained.

Analysis of Results Related to the Personal Data of the Study Sample Members:

The study sample consisted of 234 customers shopping on e-commerce websites. The personal characteristics of the sample are represented in the following table:

Table 2: Results of the Analysis statistical.

Data	Statements	Frequency	Percentage
Gender	Male	162	69.2%
	Female	72	30.8%
Age	Less than 20 years	15	6.42%
	From 20 to 35 years	121	51.70%
	From 36 to 50 years	98	41.88%
	More than 50 years	00	00%
Educational Level	Primary	00	00%
	Middle	00	00%
	Secondary	18	7.7%
	University	180	76.9%
	Postgraduate	36	15.4%

Occupational Status	Unemployed	81	34.6%
	Freelance	27	11.5%
	Employee	126	53.8%
Income	Less than 20,000 DZD	81	34.6%
	20,000–40,000 DZD	36	15.4%
	40,000–70,000 DZD	72	30.8%
	More than 70,000 DZD	45	19.2%
Total		**234**	**100%**

Source: Prepared by the researchers according to SPSS results.

From the table above, the gender distribution of the study sample was 30.8% female and 69.2% male, which can be explained by the tendency of males to purchase mobile phones and electronic devices more frequently. Regarding age, the largest percentage was in the age group 20–35 years (51.70%), followed by the 36–50 years group (41.88%). The age group under 20 years accounted for only 6.42%, due to financial capacity and obtaining electronic payment cards from local or virtual banks.

The majority of the sample had a university education level (76.9%), which is attributed to students' interest in online shopping and higher educational attainment. The rest of the sample was distributed as follows: 15.4% postgraduate, and 7.7% secondary education.

Regarding occupational status, employees accounted for the largest share at 53.8%, due to having stable income, followed by freelancers at 11.5%. The unemployed category (34.6%) includes students and those who can obtain financial support from others.

As for income distribution, the highest percentage was for those earning less than 20,000 DZD (34.6%), followed by those earning between 40,000–70,000 DZD (30.8%), then those earning more than 70,000 DZD (19.2%), and finally those earning between 20,000–40,000 DZD (15.4%).

Analysis of Sample Responses to the Study Variables:

The following table shows the descriptive analysis results for the sample's responses regarding the variables of electronic customer relationship management and repurchase intention, by calculating the arithmetic mean and standard deviation as follows:

Table 3: Results of the Analysis of Sample Responses to the Study Variables.

Verification Degree	Standard Deviation	Arithmetic Mean	Axis	No.
High	0.585	3.975	E-CRM before purchase	01
High	0.652	3.807	E-CRM during purchase	02
High	0.593	3.750	E-CRM after purchase	03
High	0.463	3.852	Results of E-CRM Axis	
High	0.641	3.782	Results of Repurchase Intention Axis	

Source: Prepared by the researchers according to SPSS results.

1. **Results of the Electronic Customer Relationship Management Axis:**

By analyzing the above table, we notice that the responses in the E-CRM axis corresponded to a high verification degree, with an arithmetic mean of 3.852 and a relatively low standard deviation of 0.463, indicating low dispersion and close agreement among responses.

A- E-CRM Before Purchase:

Results show a high average of 3.975. Respondents agreed that e-commerce websites have attractive and easy-to-use designs, allow easy and comfortable searching, and provide coupons, discounts, and benefits upon repeat purchases to enhance loyalty.

B- E-CRM During Purchase:

Results show a high average of 3.807. Respondents agreed that e-commerce websites provide privacy and security, offer various payment methods, and make payment easy.

C- E-CRM After Purchase:

Results show a high average of 3.750. Respondents agreed that e-commerce websites provide easy order tracking, ensure on-time delivery, and offer customer support services that resolve disputes fairly.

2. **Results of the Repurchase Intention Axis:**

By analyzing the above table, we note that the responses in the repurchase intention axis corresponded to a high verification degree, with an arithmetic mean of 3.782 and a relatively low standard deviation of 0.641, indicating near agreement among responses.

Testing the Study Hypotheses:

To verify whether the data follow a normal distribution in order to test the study hypotheses, kurtosis analysis was applied. The results were as follows:

Table 4: Results of the kurtosis test.

Study Axes	Sample Size N	Mean	Standard Deviation SD	Kurtosis
E-CRM	234	3.852	0.463	-0.515
Repurchase Intention	234	3.782	0.641	-0.176
Whole Questionnaire	234	3.820	0.490	0.580

Source: Prepared by the researchers according to SPSS results.

Since the kurtosis values for the E-CRM axis, the repurchase intention axis, and the whole questionnaire fall between -1 and +1, and given that the sample size is large, the data follow a normal distribution, allowing parametric tests to be applied.

Testing the First Main Hypothesis:

To test the first main hypothesis, the sub-hypotheses were tested first using the one-sample t-test, as shown in the table below:

Table 5: Results of the one-sample t-test.

Statement	Mean	Degrees of Freedom	Calculated t-value	Significance Level sig	Result
First sub-hypothesis	4.000	233	104.424	0.000	Accept H1
Second sub-hypothesis	3.807	233	89.202	0.000	Accept H1
Third sub-hypothesis	3.769	233	112.139	0.000	Accept H1

Source: Prepared by the researchers according to SPSS results.

From the table above, which shows the results of testing the sub-hypotheses, the obtained results were as follows:

- **First sub-hypothesis:** The calculated t-value was 104.424, with a significance level of 0.000, which is less than $\alpha \leq 0.05$. We thus accept the alternative hypothesis: The e-commerce website applies digital customer relationship management in the pre-purchase stage. With a high mean of 4.000, respondents agreed that e-commerce websites are characterized by good design, ease of search and use, and offer customers coupons and discounts.
- **Second sub-hypothesis:** The calculated t-value was 89.202, with a significance level of 0.000, which is less than $\alpha \leq 0.05$. We thus accept the alternative hypothesis: The e-commerce website applies digital customer relationship management in the purchase stage. With a high mean of 3.807, respondents agreed that e-commerce websites are characterized by reliability, security, and ease and diversity of electronic payment methods.

The third sub-hypothesis: The calculated T value was estimated at 112.139, at a significance level of sig=0.000, which is less than the significance level $\alpha \leq 0.05$. Therefore, we accept the alternative hypothesis as follows: The e-commerce website applies customer relationship management digitally in the post-purchase stage.

With an average of 3.769, which represents a high degree, we find that the study sample members agree in their responses that e-commerce websites ensure delivery within a reasonable and acceptable time, provide traceability, support customers with after-sales services, and resolve disputes fairly.

Table 6: Results of the one-sample t-test for testing the first main hypothesis.

Axis	Mean	Degrees of Freedom	Calculated T Value	Significance Level (sig)	Decision
According to the results of the previous sub-hypotheses, we test the first main hypothesis based on the data in the following table: The e-commerce website applies electronic customer relationship management	3.858	233	121.609	0.000	Accept H1

Source: Prepared by the researchers according to the results of the SPSS program.

From the table above, the calculated t value is estimated at 121.609 at a significance level of sig=0.000, which is less than the significance level $\alpha \leq 0.05$. Accordingly, we accept the alternative hypothesis as follows:

The e-commerce website is concerned with applying digital customer relationship management, as is evident from the arithmetic mean estimated at 3.858, which represents a high degree of agreement. This is because e-commerce websites apply digital relationship management in various stages—before, during, and after purchase—through an easy and attractive website design, the ability to search through it, offering discounts, providing privacy and security, offering various and easy payment methods, tracking orders, delivering orders within a reasonable time, and resolving disputes in a manner that satisfies the customer.

Testing the second main hypothesis:

To ensure the absence of multicollinearity among the independent variables, Variance Inflation Factor (VIF) and Tolerance values were examined The results are presented in Table 7.

Table 7: Results of Variance Inflation Factors (VIF).

Variable	VIF	Tolerance	Decision
X1	X1 – Pre-Purchase eCRM	1.342	0.745
X2	X2 – Purchase eCRM	2.344	0.427
X3	X3 – Post-Purchase eCRM	2.025	0.494

Source: Prepared by the researchers according to the results of the SPSS program.

Rule of thumb: VIF < 5 indicates no problematic multicollinearity; VIF > 10 is severe. Tolerance = 1/VIF; values > 0.20 are acceptable

Using the multiple regression model, we identified the relationship between digital customer relationship management and repurchase intention, The multiple regression model is specified as:

$Yi=\beta0+\beta1X1i+\beta2X2i+\beta3X3i+\varepsilon i$

Where:

- Y = Repurchase Intention (composite score)
- X1 = eCRM Pre-Purchase Stage
- X2 = eCRM Purchase Stage
- X3 = eCRM Post-Purchase Stage
- $\beta0$ = intercept
- $\beta1,\beta2,\beta3$ = partial regression coefficients
- εi = error term, assumed $\sim N(0,\sigma2)$

It should be noted that :

X1 represents the determinants of Digital Customer Relationship Management (eCRM) at the pre-purchase stage.

X2 represents the determinants of Digital Customer Relationship Management (eCRM) at the purchase stage.
X3 represents the determinants of Digital Customer Relationship Management (eCRM) at the post-purchase stage.
The results obtained were as follows:

Table 8: Results Multiple Regression Coefficients:

Term	β Estimate	Std. Error	t-value	p-value	CI Lower	CI Upper	Sig.
(Intercept)	1.7149	0.2965	5.7833	0.0000	1.1307	2.2992	***
X1 – Pre-Purchase eCRM	0.2486	0.0677	3.6728	0.0003	0.1152	0.3820	***
X2 – Purchase eCRM	0.5717	0.0803	7.1227	0.0000	0.4136	0.7299	***
X3 – Post-Purchase eCRM	-0.2930	0.0948	-3.0910	0.0022	-0.4798	-0.1062	**
Note: Significance codes: *** p<0.001 | ** p<0.01 | * p<0.05 | . p<0.10 | ns: not significant							

Source: Prepared by the researchers according to the results of the SPSS program

The multiple linear regression results demonstrate a significant impact of the three eCRM dimensions on repurchase intention, as follows:
Statistical Significance: All eCRM dimensions are statistically significant, with p-values for all variables falling below the 0.05 threshold.
Purchase Stage eCRM (X2): This dimension has the strongest positive impact on repurchase intention, with a regression coefficient of (0.5717). This indicates that ensuring privacy, security, and diverse payment methods is the primary driver for customer loyalty among Algerian online shoppers.
Pre-Purchase eCRM (X1): This dimension shows a positive and significant effect (0.2486), confirming that website design quality, ease of search, and promotional programs clearly contribute to enhancing the customer's desire to repeat the experience.
Post-Purchase eCRM (X3): this dimension shows a negative and significant effect (-0.2930) in the multiple regression model. Statistically, this suggests that when controlling for other variables, deficiencies in after-sales services (such as order tracking or technical support) have a sharp adverse effect on repurchase intention.
Model Fit: Collectively, the model explains 34.49% (R2=0.3449) of the variance in shoppers' repurchase intentions. This explanatory power confirms the importance of adopting a holistic eCRM approach rather than analyzing dimensions in isolation

Table 9: Results Overall Model Fit Statistics:

Statistic	Value
R^2	0.3449
Adjusted R^2	0.3364
F-statistic	40.371
df (model)	3
df (residual)	230
p-value (F)	5.358e-21
RMSE	0.5226

Source: Prepared by the researchers according to the results of the SPSS program

Interpretation of Model Fit:

- **R^2** indicates the proportion of variance in repurchase intention explained jointly by the three eCRM dimensions.
- **Adjusted R^2** penalizes for the number of predictors, providing a more conservative fit estimate.
- The **F-test** evaluates the null hypothesis that all regression coefficients are simultaneously zero. A significant F-statistic ($p < 0.05$) confirms the overall model is statistically meaningful.

Table 10: Summary Effect of Each eCRM Dimension on Repurchase Intention:

eCRM Dimension	β	p-value	Sig.	Nature of Effect
X1 – Pre-Purchase eCRM	0.2486	0.0003	***	Positive & Significant
X2 – Purchase eCRM	0.5717	0.0000	***	Positive & Significant
X3 – Post-Purchase eCRM	-0.2930	0.0022	**	Negative & Significant

Source: Prepared by the researchers according to the results of the SPSS program

The multiple regression model allows us to assess the **unique contribution** of each eCRM dimension to repurchase intention, **controlling for the other dimensions simultaneously** — which is the key advantage over simple regression.

- **β_1 (X1 – Pre-Purchase eCRM):** Represents the change in repurchase intention for a one-unit increase in pre-purchase eCRM quality (website design, search ease, promotions), holding all other predictors constant.
- **β_2 (X2 – Purchase eCRM):** Represents the marginal effect of purchase-stage eCRM practices (privacy, payment methods) on repurchase intention, net of the other dimensions.
- **β_3 (X3 – Post-Purchase eCRM):** Captures the unique influence of after-sales eCRM (order tracking, delivery timeliness, customer support) on repurchase intention.

Decision on Hypotheses:

- **Main Hypothesis 2: Accepted**; there is a joint significant impact of the three dimensions on repurchase intention.
- **Sub-Hypothesis 1: Accepted**; a statistically significant positive relationship exists (p=0.0003).
- **Sub-Hypothesis 2: Accepted**; a strong statistically significant positive relationship exists (p=0.0000).
- **Sub-Hypothesis 3: Accepted**; a statistically significant relationship exists (p=0.0022), although it is inverse within this multiple regression context

3. Conclusion:

It has become necessary for companies to manage their customer relationships digitally due to the requirements of competition, ensuring the continuity of the company, preserving its market share, and as an opportunity to gain a competitive advantage. It is also a necessity imposed by the continuous and tremendous development of information and communication technologies. This enables the company to study the behaviors and preferences of its customers, improve their

experience, and understand what influences their purchase and repurchase decisions. The study results showed the following:

- The repurchase intention of the study sample members is affected by digital customer relationship management.
- The e-commerce website applies digital customer relationship management in pursuit of customer satisfaction, thereby achieving their loyalty and influencing their repurchase intention.
- The customer perceives, during various purchase stages, the application of digital customer relationship management by the e-commerce website.

Study Recommendations:

- Pay attention to customer relationship management in the marketing department.
- Transition from customer relationship management to digital customer relationship management.
- Employ digital customer relationship management software and applications in the company's marketing of its services and products.
- Employ digital customer relationship management to improve the customer experience and study their behavior.

❖ **Sources and References at the end of the research**

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