

The Impact of the Electronic Marketing Mix on the Bank Customer's Perception, A Case Study of the Banque Nationale d'Algérie and Gulf Bank Algeria – Tébessa Province

Ismahane Saidane ^{1*}, Mourad Mahdi ²

¹ Laboratory of Environmental Studies and Sustainable Development, Echahid Cheikh Larbi Tebessi University, Tébessa Algeria, ismahane.saidane@univ-tebessa.dz,

² Laboratory of Environmental Studies and Sustainable Development, Echahid Cheikh Larbi Tebessi University, Tébessa Algeria, mourad.mahdi@univ-tebessa.dz

Date of receipt: 03/09/2025 Date of acceptance: 14/11/2025

Abstract :

The study aims to determine the extent to which the components and elements of the electronic marketing mix influence the bank customer's perception. The sample consisted of clients from two bank branches located in Tébessa Province: the Banque Nationale d'Algérie and Gulf Bank Algeria. A questionnaire was used as the main data collection tool, with 70 questionnaires distributed and 68 valid ones retrieved for analysis using the statistical software SPSS V27. The study found that the various elements of the electronic marketing mix have varying degrees of impact on shaping the mental image across its different dimensions among the clients of the two bank branches under study. The study concluded with a set of recommendations, mainly emphasizing the need to pay greater attention to the different components of the marketing mix—especially those with weaker effects—in shaping the perception of the banking client, who increasingly relies on modern technology .

Keywords : Electronic Marketing Mix, Bank customer's Perception, Banking products & Services.

Jel Classification Codes : M31 – G 21

1. INTRODUCTION

Electronic marketing emerged as a result of the increasing use of internet technology across all fields and economic and commercial activities, including marketing activities in the banking sector. As a result, marketing has become more advanced, characterized by speed, accuracy, and interaction between the marketer and the customer, as well as among customers themselves.

The electronic marketing mix consists of a set of elements (electronic product/service, electronic pricing, electronic distribution, electronic promotion, customization, privacy, virtual communities, customer service, website design, and security), all of which have come to play a significant role in shaping the mental image of the bank in the minds of its clients—especially given the growing demand among banking customers for electronic products and services, which are considered the core of the marketing process.

Based on the above, the research problem can be formulated through the following question:

To what extent does the electronic marketing mix influence the bank customer's perception at the branches of the Banque Nationale d'Algérie and Gulf Bank Algeria?

Research Hypotheses: To answer the research problem, the following hypotheses were formulated:

✓ **Main Hypothesis:**

There is a statistically significant impact relationship at the level ($\alpha \leq 0.05$) between the combined dimensions of the electronic marketing mix and the overall perception of the bank customer.

✓ **First Sub-Hypothesis:**

There is a statistically significant impact relationship at the level ($\alpha \leq 0.05$) between the combined dimensions of the electronic marketing mix and the cognitive dimension of the bank customer's perception.

✓ **Second Sub-Hypothesis:**

There is a statistically significant impact relationship at the level ($\alpha \leq 0.05$) between the combined dimensions of the electronic marketing mix and the emotional dimension of the bank customer's perception.

✓ **Third Sub-Hypothesis:**

There is a statistically significant impact relationship at the level ($\alpha \leq 0.05$) between the combined dimensions of the electronic marketing mix and the behavioral dimension of the bank customer's perception.

Significance of the Study:

The importance of this study lies in highlighting the role played by the electronic marketing mix in shaping the bank customer's perception, considering the customer as the core of the marketing process. This is achieved by the bank giving great importance to all elements and dimensions of the mix and by developing appropriate strategies to ensure their effective role.

Objectives of the Study:

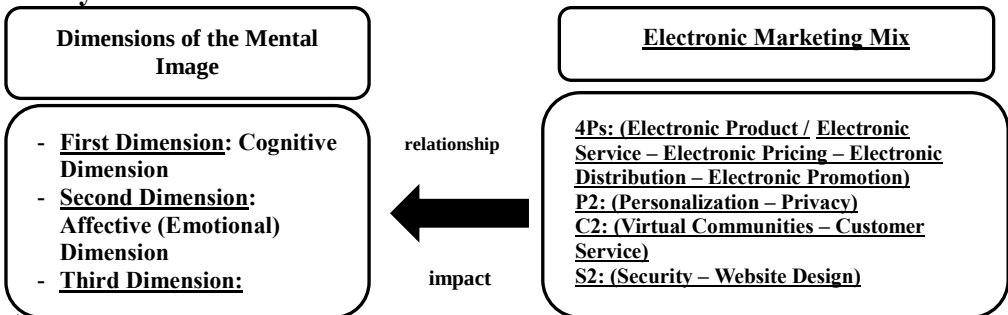
The study aims to:

- Shed light on the theoretical concepts of the study variables.
- Examine the impact of the elements of the electronic marketing mix on the formation and development of the bank's image in the minds of its clients.

Research Methodology:

The study relied on the descriptive-analytical method to review the theoretical concepts related to the study variables (electronic marketing mix – bank customer's perception). Additionally, the case study method was adopted for the practical part of the research by distributing a questionnaire to clients of two bank branches in Tébessa Province: the BNA (Banque Nationale d'Algérie) Tébessa branch and the AGB (Algerian Gulf Bank) Tébessa branch.

Study Model:



➤ **Theoretical Framework of the Study:**

First: The Nature of the Electronic Marketing Mix

1. Concept of Electronic Marketing:

1.1. Definition of Electronic Marketing:

The definitions of electronic marketing vary according to researchers' perspectives and their views of the field. What distinguishes it from traditional marketing is the use of the internet as a means of communication with customers. Some of the most prominent definitions of electronic marketing include:

- It is any marketing interaction based on electronic engagement through the use of software technologies associated with the electronic marketing environment (Nouri, 2014, p. 85) .
- Kotler defined it as marketing based on electronic interaction, in which the brand becomes more flexible and adaptable due to rapid technological trends. It is characterized by innovation and customer participation in improving and developing products and services (KOTLER, pp. 48-49).
- Dave Chaffey and PR Smith defined it as the process of approaching and better understanding customers, adding value to products and services, expanding distribution channels, and boosting sales through electronic marketing campaigns via the internet and its various tools and accompanying software, placing the customer at the center of all online activities (Chaffey, 2008, p. 13).

1-2. The Importance of Electronic Marketing:

The importance of electronic marketing in the world of banking marketing is highlighted in the following points:

- ✓ In electronic marketing, it is easy to obtain information about the banking products and services offered, due to the widespread availability and ease of use of the internet.
- ✓ The elimination of all time and location barriers that may restrict customers from accessing the banking products and services they desire.
- ✓ Lower marketing costs compared to traditional marketing, along with ease of implementation.
- ✓ The software technologies associated with the electronic marketing

process allow for evaluating and measuring the success of the marketing process and identifying its strengths and weaknesses.

- ✓ Equal opportunity for all banks to market their banking products and services electronically, regardless of whether they have large or limited resources (Al-Nasr, 2020, pp. 33-34).

2. The Concept of the Electronic Marketing Mix:

The progression from traditional marketing to electronic marketing will require adaptations to the elements of a marketing mix to allow it to suit the tempo of rapid technological advancements in the marketing world. This evolved form is known as the electronic marketing mix, which consists of a set of elements created by the electronic business environment—particularly the electronic banking environment (E-Banking).

2.1. Definition of the Electronic Marketing Mix (E-Marketing Mix):

One of the main objectives of banks is to meet customer needs and desires and to achieve the highest levels of customer satisfaction.

To accomplish this, a suitable marketing mix must be used that aligns with the realities of the increasingly digital banking market. This requires adapting the traditional banking marketing mix into an electronic marketing mix.

The electronic marketing mix is defined as a set of elements and components that rely primarily on internet technologies, allowing the bank to target customers individually (Individual Electronic Marketing) and to interact with them. It does not only focus on banking products or services but also emphasizes managing customer relationships within both the internal and external marketing environments (Abu Fara, 2018, pp. 109-110)

It is also defined as a set of integrated and interconnected marketing activities that depend on one another to perform the marketing function according to the e-marketer's plan. Based on this principle, the marketing mix is generally built on the core idea that no single component or element alone can achieve the desired goals and objectives in the best possible way (AL-Ababneh, 2025, p. 47).

2.2. Elements of the Electronic Marketing Mix:

- Researchers and marketers have held different views on defining the elements of the electronic marketing mix. Several perspectives have

emerged in an attempt to precisely determine its components. Among the most notable perspectives are the following:

- The first perspective states that the electronic marketing mix consists of four elements (4Ps): Product, Price, Place (Distribution), and Promotion. These are the same elements as in the traditional marketing mix developed by McCarthy in 1964, though they differ in their application and practice within the electronic context.
- The second perspective holds that the electronic marketing mix consists of six elements (4Ps + 2Ds): the 4Ps being Product, Price, Place, and Promotion, while the 2Ds are Dialogue and Database. These elements were proposed and structured by Jean J. Rechenmann.
- The third perspective, which will be the focus of this study, views the electronic marketing mix as comprising the elements (4Ps + P2C2S2). This model was introduced by Kalyanam & McIntyre in 2002 (Ezeddine, 2016, pp. 391-392).

It is noteworthy that maintaining the 4Ps is the common factor among all researchers in their efforts to define the elements of the electronic marketing mix. However, the digital context of marketing necessitates expanding the number of elements from the traditional 4Ps to 4Ps + P2C2S2 (Dominici, 2009, pp. 18-19).

The two researchers addressed the elements of the electronic marketing mix in their study titled “The E-Marketing Mix: A Contribution of the E-Tailing Wars” by classifying them into the following sub-groups:

2.2.1. The 4Ps Group:

This group includes the electronic product (or service), electronic pricing, electronic distribution, and electronic promotion.

- **Electronic Product (E-Product):** This is the core of the electronic marketing mix. Banking products and services have become widely accessible over the internet, and banks have increasingly adopted them due to the competitive advantages they provide. There are two types of banks that offer their products and services online:

- ✓ Banks with a physical presence that provide traditional services while also offering them online, facing growing competition as more clients

become proficient internet users.

✓ Banks that exist exclusively online and offer services solely through the internet, such as PayPal.

Banks offer a wide range of products and services to customers via the internet, including: balance inquiries, bill payments and financial settlements, savings services, credit services, and more. For these products and services to be effective, they must feature valuable, simple, and clear content, along with a design that reflects the bank's style and the nature of the product or service (Abu Fara Y. , 2003, pp. 176-177).

- **Electronic Pricing (E-Pricing):** Also referred to as dynamic pricing due to its flexibility and high sensitivity in the internet environment, the prices of electronic banking products and services are variable and not fixed because of intense price competition. Appropriate pricing is determined by internal factors such as the cost of banking products and services, other elements of the electronic marketing mix, the technology used, availability of after-sales services, the bank's objectives, etc. In addition, external factors include the nature of competition in banking and financial markets, the ever-changing nature of the online market, customers' economic levels, and their bargaining power, among others.

- **Electronic Distribution (E-Place):** Due to changes in customer behavior and their increasing interest in the timing and location of banking service delivery, electronic systems for delivering banking products and services have become a crucial criterion for customers in choosing the banks they deal with. This was highlighted in reports by the American Bankers Association (Naamoun, 2008, pp. 116-117).

- **Electronic Promotion (E-Promotion):** Promotion is considered a key component of the marketing mix. Kotler referred to it as marketing communications, defining it as the communication activity aimed at stimulating marketing and public relations with customers to create a positive image and reputation for the product or service provider (Kotler, 2017, p. 42).

With the dominance of internet use globally, the shift toward electronic promotion has become an urgent necessity. Researchers define it as the

process of mutual communication between the customer and the bank using internet technologies to introduce the features of products and services marketed electronically, essentially promoting the image of the bank itself (al Alaq, 2009, pp. 174-175).

2.2.2. The P2 Group: Personalization and Privacy

- **Personalization:** Personalization holds great importance as a central component of the electronic marketing mix, while also being taken into account in other customer-targeted marketing activities. This element is based on the principle of using customer-specific data and information to design and tailor products and services to suit individual preferences via the internet, thus giving them a personal dimension. This is achieved by employing a set of technological tools and applications to build and design informational models derived from the customer's purchasing and shopping behavior and experiences (creating a customer profile). This process ensures customer satisfaction and loyalty, while also increasing transaction volumes.
- **Privacy:** Foxman & Kilcoyne Nil (1993) defined privacy as the ability to control what customer information is disclosed and used on the electronic store. Maintaining customer data privacy is crucial because banks that prioritize it are more likely to earn customer trust and loyalty, secure a strong market position, and improve their performance. Additionally, they benefit from more relaxed regulatory oversight (E.Murphy, 2016, pp. 136-152).

2.2.3. The C2 Group: Virtual Communities and Customer Service

- **Virtual Communities:** Journalist Howard Rheingold defined virtual communities as a new type of community that emerges on the internet, where a number of individuals engage in ongoing discussions long enough to form networks of personal relationships in cyberspace (Noveck, 2021, p. 13).

Marcel Danesi, in his Dictionary of Media and Communications, defined them as groups of people who interact online, such as in chat rooms, where they share interests or activities. What distinguishes these interests most is their significant influence on customers' purchasing behavior, leading to the formation of virtual communities centered around consumer knowledge and

the gathering and exchange of information about products and services. This has transformed customers from passive consumers into active producers of information (Gosh, 2022, p. 06).

- **Customer Service:** The customer is a central factor in any marketing activity. Banks use all elements of the electronic marketing mix to win, retain, and continuously attract new customers. For this reason, special departments are dedicated to customer service.

Today's customers are equipped with internet technologies, which give them characteristics that distinguish them from traditional customers.

2.2.4. The S2 Group: Website Design and Security

- **Website Design:** Websites are considered one of the key elements of competition and distinction among various providers of electronic products and services, including banks. Great importance is given to building and designing these websites through the development of a precise strategy for presence on the internet.

A website is defined as a group of interconnected and coherent web pages linked together via hyperlinks, all covering a single topic, whose features are expressed through the content of the site—such as text, static and animated images, music, etc (Al-Ahmad, 1998, p. 86).

- **Security:** This refers to the security of electronic banking information. Information security is defined as the science that explores theories and strategies for protecting information from internal and external threats and risks (Al-Mdadha, 2014, p. 109).

It is also defined as a set of concepts, technologies, and both administrative and technical procedures used to protect information assets from unauthorized access-whether intentional or accidental-or from possession, disclosure, manipulation, loss, misuse, or damage (AL-Qahtani, 2015, p. 58).

Secondly: The Customer's Perceived Image of the Bank

1.1. The Concept of Mental Image

1.1.1. Definition of Mental Image:

There are various definitions of the mental image, including the following:

- Ali Ajwa defined it as the final result of subjective impressions formed by individuals or groups toward a person, an organization, or anything that affects human life. These impressions result from direct or indirect experiences and are linked to individuals' emotions and beliefs. The information generated from them does not necessarily have to be accurate; it only needs to reflect a perceived reality through which people view and understand the world around them (Ajwa, 2003, pp. 09-10).

- The mental image is also defined as the accumulated store of ideas, impressions, and judgments in a person's mind, formed by direct or indirect sensory perceptions toward a group, individual, organization, or phenomenon. This store becomes a source of thought that leads to decision-making and judgments, which may be either positive or negative (Moussa, 2014, pp. 56-57).

1.1.2. Characteristics of the Mental Image:

The mental image has the following characteristics:

a-Partiality: The partial nature of the mental image arises from the fact that information about an institution—such as a bank—reaching customers via messages transmitted through various human communication channels represents only a part of the comprehensive and complete information about it.

Additionally, the conditions under which customers receive this information vary, which makes inconsistency in the mental image likely.

b-Coloration (Distortion): The competitive environment faced by communication channels that transmit information about banks leads to these messages being influenced by other sources of information. This results in a shift or distortion in the transmitted mental image.

c-Inaccuracy: The impressions formed in customers' minds may be exposed to interference, problems, or obstacles. As a result, the mental image formed may also be marked by uncertainty and inaccuracy (Al Fattah, 2011, pp. 31-32).

1.2. Types of Mental Image:

According to Jefkins, the types of mental image vary and are as follows:

1-2-1. Mirror Image: This is the image through which the institution or organization—such as banks—perceives itself.

1-2-2. Current Image: This is the image through which customers view the banks.

1-2-3. Desired Image: This is the image that banks wish to establish for themselves in the minds of customers.

1-2-4. Ideal Image: This represents the best possible image that can form in customers' minds, taking into account the surrounding conditions and influences.

1-2-5. Multiple Images: These are formed when customers are exposed to various representatives of the banks, which leads to different impressions being created about them (El-Janabi, 2019, pp. 19-20).

1-3. Importance of the Mental Image:

Many banks have recognized the great importance of a positive mental image in the midst of intense competition in the banking market. Its significance can be seen in the following:

A good mental image contributes to the success of banks and increases their value.

- ✓ It helps improve the behavior and attitudes of employees, which in turn affects the bank's ability to survive under fierce competition.
- ✓ It supports the bank's marketing efforts.
- ✓ The mental image is considered one of the most important sources that sustain the bank's competitive advantage.
- ✓ It contributes to building a distinct personality for the bank, reflecting its identity through which customers recognize it. (Zahra, 2015-2016)

2. Dimensions and Components of the Mental Image:

2-1. Dimensions of the Mental Image:

There are three dimensions of the mental image, as follows:

2-1-1. The Cognitive Dimension:

This refers to the information related to the bank, on which the mental image in customers' minds is built. The more accurate and comprehensive the information, the more it contributes to forming a precise and complete mental image.

2-1-2. The Affective (Emotional) Dimension:

This refers to the positive or negative inclination toward the bank within the mental image formed by customers. This emotional aspect develops alongside the cognitive aspect.

2-1-3. The Behavioral Dimension:

This is reflected in the customers' behavior according to the nature of the mental image they have of the bank (Dubyan, 2020, p. 88).

2-2. Components of the Mental Image:

The mind image of banks consists of several components as detailed below:

✓ The Brand Image ; how much customers trust the brand of the bank and how this image impacts on their overall mind image of the bank.

✓ The Image of Products and Services ; the quality of the banks product and services, and their ability to meet the needs and desires of customers forms a mental image in the minds of customers.

✓ Efficiency of Bank's Communication Network ; the degree of efficiency in the banks communication and information dissemination with their internal customers and external customers are major components in developing their image in the customers mind.

✓ Social Responsibility Programs; Positive activities carried out by the bank in serving the community influence customers' emotions, help earn their sympathy and trust, and contribute to forming a positive mental image.

✓ Customer Impressions of the Bank's Physical Location; The impression that the bank's branch is a distinguished place to carry out transactions—based on the quality of the work environment, building design and furnishings, and the availability of security and comfort for both customers and employees—helps build a good mental image of the bank.

✓ Employee Job Satisfaction; The proper and professional performance of employees contributes to creating a positive mental image. This requires the bank to provide a motivating work environment for its staff (Ghabachi, 2008, p. 221).

Third: RESULTS AND DISCUSSION

The Reality of Applying Electronic Marketing at the Level of BNA and BGA Agencies

1.Study Methodology:

This study adopted the descriptive and analytical method, as it is the most suitable for studying social and economic phenomena, especially those related to customer behavior and perceptions. This approach allows for

describing and analyzing reality through the collection of field data from a sample of bank clients, then interpreting that data in order to reach accurate, scientifically-based conclusions.

2. Study Population and Sample:

The study population consists of clients of commercial banks operating in the Wilaya of Tébessa. A purposive sample was selected from clients of the following two banks:

- ✓ Gulf Bank Algeria – Tébessa Branch.
- ✓ National Bank of Algeria – Tébessa Branch.

A total of 70 questionnaires were distributed, of which 68 were returned, as follows:

- 38 paper questionnaires:
 - 17 distributed to clients of Gulf Bank Algeria (AGB).
 - 21 distributed to clients of the National Bank of Algeria (BNA).
- 30 electronic questionnaires:
 - 4 completed by clients of Gulf Bank Algeria (AGB).
 - 26 completed by clients of the National Bank of Algeria (BNA).

Thus, the total sample for the study consisted of 68 respondents, distributed across the two studied banks.

3. Data Collection Tools:

The study relied on the questionnaire as the primary tool for data collection. It was designed based on theoretical frameworks and previous studies related to the topics of the electronic marketing mix and brand image. The questionnaire was divided into two main parts:

- **Part One:** General information about the respondents.
- **Part Two:** Contains axes measuring the dimensions of the electronic marketing mix (product, price, promotion, distribution, processes, etc.) and their impact on the dimensions of the customer's brand image (cognitive, emotional, and behavioral), using a five-point Likert scale (from 1 = Strongly Disagree to 5 = Strongly Agree).

4. Statistical Processing Methods:

Data was entered and analyzed using SPSS software (version 27), with the following statistical methods applied:

- Frequencies and percentages to analyze demographic data.
- Means and standard deviations to analyze respondents' answers to the questionnaire items.
- Cronbach's Alpha test to measure the validity and reliability of the questionnaire.
- Pearson correlation coefficient to analyze the relationship between variables.
- One-sample and independent T-tests, along with simple and multiple linear regression tests, to measure the impact of the independent variables on the brand image.

5. Presentation and Analysis of Data Results:

5.1. Personal Information: This part of the research provides a detailed description of the characteristics of the studied sample in terms of gender, age, educational level, type of bank dealt with, and type of bank account. The aim of this analysis is to present a clear picture of the nature of the sample, allowing for a deeper understanding of the study results within their real-world context. The following table shows the obtained results:

Table 1. Demographic Characteristics of the Study Sample

Variable	terms	Fréquency	Pourcentage (%)
1. Gender	Woman	31	45,6
	Man	37	54,4
2. Âge	Under 30 ans	21	30,9
	30 to 40 ans	30	44,1
	40 to 50 ans	12	17,6
	50 and Over	5	7,4
3. Livel of education	Less than secondaire	1	1,5
	Secondary	1	1,5
	University	46	67,6
	Higher education	20	29,4
4. Bank attented	Banque Al Gulf Algérie (AGB)	20	29,4
	Banque Nationale d'Algérie (BNA)	48	70,6
5. Type of bank account	Individual account : checking	49	72,1
	Individual account : Foreign	/	/

The Impact of the Electronic Marketing Mix on the Bank Customer's Perception, A Case Study of the Banque Nationale d'Algérie and Gulf Bank Algeria – Tébessa Province
Ismahane Saidane/Mourad Mahdi

	currency		
	Business account : checking	2	2,9
	Business account:current	9	13,2
	Business account: Foreign	3	4,4
	Entreprises account : current	3	4,4
	Entreprises account : Foreign currency	2	2,9
	Entreprises account : convertible forgein currency	/	/
	Compte entreprise: internal account for non- residents.	/	/
Total		68	100,0

Source: Prepared by the researchers based on the outputs of SPSS V27 software.

5-1-1. Distribution by Gender: The study results showed that the percentage of male respondents was 54.4%, while the percentage of females was 45.6%. This distribution indicates a relative balance in gender representation, with a slight predominance of males. This can be interpreted as both genders showing increasing interest in electronic banking services, which adds to the inclusiveness and credibility of the study's findings in representing diverse viewpoints.

5-1-2. Distribution by Age Group: The age group "30 to 40 years" has ranked in first place with 44.1%, the "under 30 years" age group, with 30.9%, is in second place. In addition, the "40 to 50 years" age group (17.6%) and "50 years and over" (7.4%) were much lower in comparative totals. This suggests that the majority of respondents would be in the young and middle age brackets and were more likely to utilize modern technologies which adds to the relevance of the sample to the study topic on electronic marketing mix.

5-1-3. Distribution by Educational Level: There were also notable educational hurdles reported, as the majority of respondents totalled as having a university-level educational level (67.6%) then postgraduate studies (29.3%) where the secondary education or lower were represented as very small percentages each at 1.5%. The educational levels reported reflects a high awareness level for the sample regarding the frequency of digital banking transactions and thus, the sample would have considered the

electronic services offered from banks with a reasonable level of objectivity and understanding.

5-1-4. Distribution by Bank Affiliation: The study showed that the majority of respondents deal with the Banque Nationale d'Algérie (BNA), representing 70.6%, compared to 29.4% who deal with Al Gulf Bank Algeria (AGB). This disparity may be explained by the wider branch network of BNA in the province or its larger customer base compared to AGB. This supports the study's ability to make accurate comparisons regarding the effectiveness of electronic marketing mix strategies in both institutions.

5-1-5- Distribution by Type of Bank Account: It was found that most of the sample hold personal accounts, accounting for 72.1%, while the remaining percentages were distributed among professional and institutional accounts, such as current accounts, foreign currency accounts, and others, ranging between 2.9% and 13.2%. These results indicate that the study mainly focuses on individual clients as the primary consumers of electronic banking services, which aligns with the nature of the study's topic related to the customer's perceived image.

By analyzing the personal characteristics or demographic data of the surveyed sample, it becomes evident that the study is centered on a group of banking clients who possess attributes that make them suitable for evaluating the topic of the electronic marketing mix and its impact on perceived image. Most respondents belong to the younger age groups (under 40), have a university-level education or higher, and primarily use personal accounts, which enables them to interact more actively with digital channels.

These fundamental data are essential for interpreting the results of statistical difference tests (such as the T-test or ANOVA), as they allow the researcher to determine whether variations in customer perceptions of the electronic marketing mix or brand image are truly due to demographic characteristics or whether they reflect a general consensus across different groups.

6. Descriptive Statistics for the Two Axes and Their Dimensions:

Table 2. Descriptive Statistics of the Dimensions of the Two Axes.

Axis / Dimension	Range	Mean	Standard Deviation	Coefficient of Variation
4Ps Group: (Electronic Product, Pricing, Distribution, Promotion)	4	3.10	0.943	0.890
P2 Group: (Personalization, Privacy)	4	3.34	0.744	0.554
C2 Group: (Virtual Community, Customer Service)	4	2.96	0.883	0.779
S2 Group: (Website, Security)	4	3.37	0.939	0.882
Electronic Marketing Mix	3	3.19	0.667	0.445
Cognitive Dimension of the Customer's Perceived Image	4	3.30	0.874	0.763
Emotional (Affective) Dimension of the Customer's Perceived Image	4	3.26	0.910	0.829
Behavioral Dimension of the Customer's Perceived Image	4	3.36	0.841	0.708
Customer's Perceived Image	3	3.31	0.724	0.525

Source: Prepared by the researchers based on the output of SPSS V27

1-6 Descriptive Statistics of the Electronic Marketing Mix Dimensions:

The descriptive statistics results for the components of the electronic marketing mix showed variation in the evaluation levels of each dimension by the sample members, as follows:

6-1-1- 4Ps Group (Electronic Product, Pricing, Distribution, Electronic Promotion): This group recorded a mean score of (3.10) on a five-point Likert scale, which is an acceptable average leaning toward satisfaction. The standard deviation was (0.943), while the coefficient of variation was (0.890), which is relatively high, indicating a dispersion in responses regarding this dimension.

6-1-2- P2 Group (Personalization, Privacy): This group recorded the highest mean among the marketing mix dimensions, at (3.34), indicating a relatively positive perception by customers of the importance of personalization and privacy protection. The standard deviation was (0.744), and the coefficient of variation was (0.554), reflecting a good level of consistency in the sample's responses.

6-1-3- C2 Group (Virtual Community, Customer Service): This dimension ranked the lowest in terms of mean score (2.96), reflecting a below-average evaluation of the virtual interaction experience and electronic customer service. The standard deviation was (0.883), and the coefficient of variation was (0.779), indicating a relative disparity in individual opinions.

6-1-4- S2 Group (Website, Security): This group recorded the second-highest mean (3.37), indicating good satisfaction with the website design

and the level of electronic security. The relatively high standard deviation (0.939) and coefficient of variation (0.882) suggest variability in the sample's responses despite the relatively high evaluation.

6-1-5- The Electronic Marketing Mix as a Whole: It recorded an overall mean of (3.19), with a standard deviation of (0.667) and a coefficient of variation of (0.445). These results indicate that the general perception of the electronic marketing mix is moderately positive, with a considerable level of consistency in participants' evaluations.

6-2 Descriptive Statistics of the Dimensions of the Bank Customer's Perceived Image

The results for the evaluation of the dimensions of the bank customer's perceived image were relatively close, indicating a balanced level of general perception:

6-2-1 Cognitive Dimension: It recorded a mean score of (3.30), reflecting a relatively good level of awareness and knowledge that the customer has about the bank and its services. The standard deviation (0.874) and the coefficient of variation (0.763) indicate moderate variation in the sample's responses.

6-2-2 Emotional (Affective) Dimension: The mean score for this dimension was (3.26), indicating moderately positive feelings toward the bank. The standard deviation was (0.910), and the coefficient of variation (0.829), which reflects a relative variation in customer emotions.

6-2-3 Behavioral Dimension: This dimension recorded the highest mean score among the perceived image dimensions, at (3.36), indicating a relatively positive behavioral orientation toward the bank, such as repeated dealings or recommending it to others. The coefficient of variation (0.708) reflects a relative consistency in the expected customer behavior.

6-2-4 Overall Perceived Image: The overall mean was (3.31), which leans toward a positive perception. The standard deviation was (0.724), and the coefficient of variation (0.525), indicating a relatively good consistency in the general perception of the bank's image.

Based on the statistical data and the previous analysis, it can be said that the overall perceived image of banking customers is relatively positive. The behavioral dimension had the highest mean score, followed by the cognitive

and then the emotional dimensions . As for the evaluation of the electronic marketing mix dimensions, the S2 group (Website and Security) and the P2 group (Privacy and Personalization) received the highest levels of satisfaction, indicating customers' awareness of the importance of technological infrastructure and digital reliability in their interactions with electronic banking services.

7. Cronbach’s Alpha Coefficient:

Table 3. Results of Cronbach’s Alpha Coefficient

	Number of Items	Cronbach’s Alpha Coefficient
Electronic Marketing	16	0.860
Customer’s Perceived Image	9	0.826
Questionnaire (excluding personal data)	25	0.908

Source: Prepared by the researchers based on the output of SPSS V27

The **Electronic Marketing** axis consisted of 16 items and recorded a Cronbach’s Alpha coefficient of **0.860**, which is a high value indicating very good internal consistency among the items forming this axis. This reflects a high level of reliability in measuring the dimensions of the electronic marketing mix.

Similarly, the **Customer’s Perceived Image** axis included 9 items and recorded a Cronbach’s Alpha value of **0.826**, indicating strong reliability as well. This confirms that the axis reliably measures the three dimensions (cognitive, emotional, and behavioral) of the perceived image.

The **overall questionnaire** (excluding personal data), which comprises a total of 25 items, recorded a Cronbach’s Alpha coefficient of **0.908**. This is an excellent value that demonstrates a high degree of internal consistency and reliability, thus enhancing the validity of the results for subsequent statistical analysis.

The high Cronbach’s Alpha values indicate that the study tool is highly reliable, and its results can be confidently used to interpret the relationships between the study variables and to test the hypotheses. This strengthens the credibility of the statistical analysis in the following chapters of the research.

8. Normality Test:

Table 4. Results of the Normality Test

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Test Statistic	df	Sig.	Test Statistic	df	Sig.
Electronic Marketing Mix	0.115	68	0.126	0.954	68	0.213
Customer's Perceived Image	0.085	68	0.200*	0.962	68	0.137

Source: Prepared by the researchers based on the output of SPSS V27

9. Results of the Normality Test:

To verify whether the data follows a normal distribution, two commonly used statistical tests were conducted: the Kolmogorov-Smirnov test and the Shapiro-Wilk test, for both variables — "*Electronic Marketing Mix*" and "*Customer's Perceived Image*." This step is essential in determining the appropriate statistical approach for data analysis, whether using parametric or non-parametric tests. It is worth noting that the Shapiro-Wilk test is considered more accurate for small to medium sample sizes (fewer than 100 observations — as is the case in this study), which had a sample size of ($n = 68$).

The Kolmogorov-Smirnov test for the *Electronic Marketing Mix* variable yielded a significance value of ($Sig = 0.126$), while the Shapiro-Wilk test gave ($Sig = 0.213$). Since both values are greater than the accepted significance level (0.05), this indicates that the data for this variable follows a normal distribution.

As for the *Customer's Perceived Image* variable, the Kolmogorov-Smirnov test produced a significance value of ($Sig = 0.200$), and the Shapiro-Wilk test resulted in ($Sig = 0.137$). Similarly, both values being above 0.05 suggests that this variable also follows a normal distribution.

From the above, it can be concluded that the study variables follow a normal distribution to an acceptable degree, which allows for the use of parametric statistical tests in the subsequent stages of analysis — such as the T-test for comparing means, ANOVA (Analysis of Variance), as well as the Pearson correlation coefficient for studying relationships between variables, and simple or multiple regression analyses.

10. Pearson Correlation Coefficient:

The Pearson Correlation Coefficient was used to examine the nature of the relationship between the dimensions of the Electronic Marketing axis (4Ps, P2, C2, S2), in order to determine the level of internal consistency and

conceptual interrelation among the components of this axis. The results were as follows:

10-1 Dimensions of the Electronic Marketing Axis:

Table 5. Pearson Correlation Results for the Electronic Marketing Axis

	4Ps Group: (Electronic Product, Pricing, Distribution, Electronic Promotion)	P2 Group: (Personalization, Privacy)	C2 Group: (Virtual Community, Customer Service)	S2 Group: (Website, Security)
4Ps Group	Pearson Correlation	1	0.509**	0.455**
	Sig. (2-tailed)		0.000	0.000
	N	68	68	68
P2 Group	Pearson Correlation	0.509**	1	0.227
	Sig. (2-tailed)	0.000		0.062
	N	68	68	68
C2 Group	Pearson Correlation	0.455**	0.227	1
	Sig. (2-tailed)	0.000	0.062	
	N	68	68	68
S2 Group	Pearson Correlation	0.523**	0.509**	0.364**
	Sig. (2-tailed)	0.000	0.000	0.002
	N	68	68	68

Note: Correlation is significant at the 0.01 level (2-tailed).

Source: Prepared by the researchers based on the output of SPSS V27

10-2 Relationship Between the 4Ps Group (Electronic Product, Pricing, Distribution, Electronic Promotion) and Other Dimensions:

With the P2 Group (Personalization, Privacy): The correlation coefficient reached (0.509) with a significance level of (Sig = 0.000), indicating a statistically significant positive relationship.

With the C2 Group (Virtual Community, Customer Service): The correlation was (0.455) at (Sig = 0.000), indicating a statistically significant, moderately strong positive relationship.

With the S2 Group (Website, Security): This dimension showed the highest correlation, reaching (0.523) at (Sig = 0.000), suggesting a relatively strong positive relationship.

There is a strong and consistent interconnection between the core 4Ps group and the other dimensions, reflecting a functional and conceptual overlap between traditional aspects of digital marketing and modern interactive and technical features.

✓ Relationship Between the P2 Group (Personalization, Privacy) and Other Dimensions:

With C2: The correlation coefficient was (0.227) at (*Sig* = 0.062), indicating a weak and statistically non-significant relationship.

With S2: The relationship was somewhat strong, with a correlation coefficient of (0.509) at (*Sig* = 0.000), indicating a statistically significant positive relationship.

Although the relationship with the community and customer service group is weak, personalization and privacy are strongly linked to the security and technical dimension, suggesting that the customer's perception of privacy is directly tied to their sense of digital security.

✓ Relationship Between the C2 Group (Virtual Community, Customer Service) and Other Dimensions:

With S2: The correlation was (0.364) at (*Sig* = 0.002), indicating a statistically significant moderate positive relationship.

This relationship shows that improving digital social interaction and customer service can be clearly enhanced by a secure platform and an effective website, thus linking the social and technical aspects.

Overall, the results indicate statistically significant positive correlations at the 0.01 level between most dimensions, demonstrating good internal consistency within the components of the electronic marketing axis. This supports its use as a comprehensive composite framework for explaining digital banking customer behavior. It is recommended to strengthen the link between the technical and interactive aspects (*S2 with C2*), and to further develop personalization practices to enhance their integration with the customer's social experience.

10-3 Dimensions of the Customer's Perceived Image of the Bank:

Pearson's correlation coefficient was used to analyze the degree of association among the three dimensions that make up the customer's perceived image of the bank: the cognitive dimension, the affective (emotional) dimension, and the behavioral dimension. The results are presented in the following table:

Table 6. Earson Correlation Results for the Customer's Perceived Image Dimension

	Pearson Correlation	Cognitive Dimension	Emotional Dimension	Behavioral Dimension
Cognitive Dimension		1	0.579**	0.640**

The Impact of the Electronic Marketing Mix on the Bank Customer's Perception, A Case Study of the Banque Nationale d'Algérie and Gulf Bank Algeria – Tébessa Province
Ismahane Saidane/Mourad Mahdi

	Sig. (2-tailed)		0.000	0.000
	N	68	68	68
Emotional (Affective) Dimension	Pearson Correlation	0.579**	1	0.366**
	Sig. (2-tailed)	0.000		0.002
	N	68	68	68
Behavioral Dimension	Pearson Correlation	0.640**	0.366**	1
	Sig. (2-tailed)	0.000	0.002	
	N	68	68	68

Source: Prepared by the researchers based on the output of SPSS V27.

The results indicate the presence of statistically significant and positive correlation relationships at the 0.01 level, which reinforces the structural integration of this axis in representing the customer's perception.

▪ **Relationship between the Cognitive Dimension and Other Dimensions:** The results showed a strong and positive correlation between the cognitive and behavioral dimensions, with a Pearson coefficient of (0.640) at a significance level of (Sig = 0.000). This means that increased customer knowledge about the bank is directly associated with an increase in positive behaviors such as loyalty and repeated transactions. A moderate correlation was also recorded between the cognitive and affective dimensions, with a value of (0.579) at (Sig = 0.000), indicating that the customer's understanding of banking services and information enhances their emotional impressions and feelings toward the institution.

Thus, the cognitive dimension plays a central role in shaping both the emotional responses and subsequent behaviors of customers.

▪ **Relationship between the Affective and Behavioral Dimensions:**

The correlation coefficient between these two dimensions reached (0.366) at (Sig = 0.002), indicating a statistically significant positive relationship, although relatively weaker than the other correlations. This reflects that positive emotional impressions contribute to the formation of favorable behavioral intentions (such as loyalty or recommendation), but they are not the sole influencing factor.

The correlation coefficient between these two dimensions reached (0.366) at (Sig = 0.002), indicating a statistically significant positive relationship, although relatively weaker than the other correlations. This reflects that positive emotional impressions contribute to the formation of favorable behavioral intentions (such as loyalty or recommendation), but they are not the sole influencing factor.

The emotional dimension plays a supportive role in shaping behavior, but it interacts with cognitive perception to produce the full behavioral image. Pearson correlation results reveal significant and clear associations between the three dimensions of the customer's perceived image, indicating a coherent conceptual structure for this variable. This strengthens the possibility of adopting this axis as a composite variable when analyzing the impact of the electronic marketing mix on it, and it highlights the importance of building knowledge as a foundation for enhancing both emotional engagement and positive customer behaviors.

10-4- Pearson Correlation Coefficients Between the Two Axes

Table 7. Pearson Correlation Results for the Two Axes

	Electronic Marketing Mix	Customer's Bank Image Perception
Electronic Marketing Mix	Pearson Correlation	1
	Sig. (2-tailed)	
	N	68
Customer's Bank Image Perception	Pearson Correlation	0.744**
	Sig. (2-tailed)	0.000
	N	68

Source: Prepared by the researchers based on the outputs of SPSS V27.

10-5- Analysis of the Relationship Between the Electronic Marketing Mix and the Customer's Mental Image: This value indicates a very strong positive correlation between the two axes, which means that the improvement of the components of the electronic marketing mix (in terms of product, pricing, distribution, promotion, customization, security, interaction, etc.) is positively reflected in the mental image formed in the mind of the banking customer.

This strong relationship paves the way for testing the hypotheses later, especially the main hypothesis. On the other hand, it becomes evident that the customer's mental image is not built solely on emotional experiences or information, but is also clearly influenced by the quality of the electronic marketing policies adopted by the banking institution.

According to the above result, it can be concluded that improving the electronic marketing mix is an effective tool to enhance the customer's mental image in its three dimensions (cognitive, emotional, and behavioral), as demonstrated by the previous detailed analyses.

11- Hypothesis Testing

11.1. Main Hypothesis: This hypothesis aims to test whether there is a

statistically significant effect of the dimensions of the electronic marketing mix on the customer's mental image in its three dimensions: cognitive, emotional, and behavioral. The main hypothesis was formulated as follows:

- **H0:** There is no statistically significant effect relationship between the dimensions of the electronic marketing mix and the customer's mental image in its three dimensions (cognitive, emotional, behavioral).
- **H1:** There is a statistically significant effect relationship between the dimensions of the electronic marketing mix and the customer's mental image in its three dimensions (cognitive, emotional, behavioral).

Table 8.Results of Testing the Main Hypothesis

Source/ Variable	Sum of Squares	df	Mean Square	F-value / B	Std. Error	Beta (β)	t- value	Sig.
Regression	19.457	1	19.457	81.854				0.000
Error	15.688	66	0.238					
Total	35.145	67						
Constant				0.725	0.291		2.489	0.015
Electronic Marketing Mix				0.808	0.089	0.744	9.047	0.000

- Correlation Coefficient (R): 0.744
- Coefficient of Determination (R²): 0.554
- Dependent Variable: Customer's Bank Image Perception

Source: Prepared by the researchers based on SPSS V27 outputs

To test this hypothesis, both Analysis of Variance (ANOVA) and simple regression analysis were used. The ANOVA test results showed that the calculated F value reached 81.854, which is relatively high, while the significance level was Sig = 0.000, which is less than the adopted significance threshold ($\alpha = 0.05$). This indicates the presence of statistically significant differences in the means, allowing for the rejection of the null hypothesis and acceptance of the alternative hypothesis. This confirms that the electronic marketing mix has a significant effect on the customer's mental image.

Likewise, the simple regression analysis used to study the impact of the electronic marketing mix dimensions on the mental image showed that the regression coefficient (B) for the electronic marketing mix was 0.808, reflecting a strong positive effect. The t-value reached 9.047, with a significance level of Sig = 0.000, reinforcing the statistical significance of

this effect.

Moreover, the standardized Beta coefficient (β) was 0.744, indicating that changes in the electronic marketing mix lead to considerable changes in the customer's mental image. The correlation coefficient (R) was 0.744, indicating a strong positive correlation between the two variables. The coefficient of determination (R^2) was 0.554, meaning that 55.4% of the variance in the mental image can be explained by changes in the dimensions of the electronic marketing mix.

Based on the results of the ANOVA and regression analysis, it was concluded that the relationship between the electronic marketing mix and the customer's mental image is statistically significant. This allows for the rejection of the null hypothesis (H_0) and acceptance of the alternative hypothesis (H_1). Consequently, the dimensions of the electronic marketing mix directly and effectively influence the formation of the mental image of banking customers, which confirms the importance of adopting effective electronic marketing strategies to enhance a positive mental impression among clients.

11-2- Sub-Hypotheses

11-2-1- First Sub-Hypothesis (Cognitive Dimension): This hypothesis aims to test the causal relationship between the dimensions of the electronic marketing mix (in its various components) and the cognitive dimension of the customer's mental image in the banking context. The hypothesis was formulated as follows:

H0: There is no statistically significant causal relationship between the dimensions of the electronic marketing mix and the dependent variable-the cognitive dimension of the customer's mental image.

H1: There is a statistically significant causal relationship between the dimensions of the electronic marketing mix and the dependent variable-the cognitive dimension of the customer's mental image.

Table 9.Test of the First Sub-Hypothesis

Independent Variable	Dependent Variable	Correlation Coefficient (R)	Coefficient of Determination (R^2)	Beta (β)	t-value (Calculated)	Sig.	F-value (Calculated)	Sig.	Variable X	Variable Y
----------------------	--------------------	-----------------------------	--	------------------	----------------------	------	----------------------	------	------------	------------

The Impact of the Electronic Marketing Mix on the Bank Customer's Perception, A Case Study of the Banque Nationale d'Algérie and Gulf Bank Algeria – Tébessa Province
Ismahane Saidane/Mourad Mahdi

Ps Group 4 (E-product, E-pricing, E- distribution, E- promotion)	Cognitiv e Dimensi on	0.695	0.483	0.294	2.459	0.017	14.714	0.000	0.272	
P2 Group (Customizati on, Privacy)				0.090	0.808	0.022			0.106	
C2 Group (Virtual Community, Customer Service)				0.121	1.172	0.004			0.120	
S2 Group (Website, Security)				0.363	3.175	0.002			0.338	

Source: Prepared by the researchers based on SPSS V27 output

The results of the statistical analysis showed that the Ps4 group, which includes (electronic product, pricing, distribution, and electronic promotion), has a significant effect on the cognitive dimension of the customer's mental image in the banking context. The correlation coefficient reached (0.695), indicating a strong correlation between the variables. The coefficient of determination was (0.483), meaning that 48.3% of the variance in the cognitive dimension is attributed to these components. The regression coefficient β was (0.294), and the calculated t-value was (2.459) at a significance level of (0.017), which is less than 0.05, confirming its statistical significance.

These results indicate that the Ps4 group has a statistically significant and positive effect on the cognitive dimension, highlighting the importance of enhancing the quality of digital marketing offerings in shaping customer perceptions.

The P2 group included two dimensions: (personalization and privacy). The analysis showed that the regression coefficient β was (0.090), the calculated t-value was (0.808), and the significance level was (0.022), which is below 0.05, indicating a statistically significant but weak effect.

Although the statistical effect of this group exists, its magnitude is limited. Nonetheless, privacy and personalization remain important factors in the digital marketing environment and should be developed in a complementary

manner alongside the more impactful dimensions.

The C2 group includes (virtual community and customer service). The analysis revealed that the regression coefficient β was (0.121), the calculated t-value was (1.172), and the significance level was (0.004), which is well below 0.05, indicating strong statistical significance. The results suggest that digital social interaction and electronic customer service have a meaningful impact on the cognitive dimension, emphasizing the importance of building an interactive community that enhances the customer's perception of their relationship with the bank.

The S2 group includes website and cybersecurity dimensions. The results showed that the regression coefficient β was (0.363), the highest among all groups, with a t-value of (3.175) and a significance level of (0.002), which is highly significant. Therefore, the website and level of security are among the strongest influencers of the cognitive dimension, as these two factors play a fundamental role in shaping the customer's impression and trust in the banking institution within the digital environment.

Based on the above, it is clear that all four groups of the electronic marketing mix have varying degrees of significant influence on the cognitive dimension, with the S2 group having the strongest impact, followed by Ps, then C2, and finally P2. Consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted. On this basis, the findings alert the banks under study to focus on improving the technical and security infrastructure of their websites, as well as developing digital product strategies and customer interaction mechanisms to build a stable and positive cognitive image among their digital audience.

11-2-2- Sub-Hypothesis Two (Affective Dimension): The second hypothesis aims to verify whether the dimensions of the electronic marketing mix have a statistically significant effect on the affective dimension of the customer's mental image in the banking sector. The relationship was measured between four sub-groups of electronic marketing dimensions (Ps4, P2, C2, S2) and the dependent variable. The second hypothesis was formulated as follows:

H0: There is no statistically significant relationship between the dimensions of the electronic marketing mix and the dependent variable—the affective

(emotional) dimension of the customer’s mental image.

H1: There is a statistically significant relationship between the dimensions of the electronic marketing mix and the dependent variable—the affective (emotional) dimension of the customer’s mental image.

Table 10. Test of Sub-Hypothesis Two

Independent Variable	Dependent Variable	Correlation Coefficient (R)	Coefficient of Determination (R ²)	Beta (β)	t-value (Calculated)	Sig.	F-value (Calculated)	Sig.	Variable X	Variable Y
Ps Group 4 (E-product, E-pricing, E-distribution, E-promotion)	Affective Dimension	0.602	0.362	0.212	1.598	0.015	8.943	0.000	0.205	
P2 Group (Customization, Privacy)				0.052	0.420	0.060			0.064	
C2 Group (Virtual Community, Customer Service)				-0.027	-0.235	0.015			-0.028	
S2 Group (Website, Security)				0.442	3.477	0.001			0.429	

Source: Prepared by the researchers based on SPSS V27 output.

The results showed that the Ps4 group had a moderate correlation with the affective dimension, with a correlation coefficient (R) of 0.602 and a coefficient of determination (R²) of 0.362. This means that approximately 36.2% of the variation in the affective dimension can be explained by this group. The regression coefficient β was 0.212, with a calculated t-value of 1.598 and a significance level (Sig) of 0.015. Since the significance level is less than 0.05, this indicates a statistically significant impact between the Ps group and the affective dimension. This implies that the quality of the digital product, pricing strategy, ease of distribution, and promotion strategy positively influence the customer’s emotional impressions and feelings toward the bank.

The P2 group, in turn, recorded a low β value of 0.052 and a t-value of 0.420, with a significance level (Sig) of 0.060, which is higher than the standard threshold of 0.05. Therefore, this group does not have a statistically

significant effect on the affective dimension. This indicates that personalization and privacy in this context do not represent influential emotional factors for banking customers, despite their functional importance.

The results for this group showed a negative β value of -0.027 and a t-value of -0.235 , with a significance level (Sig) of 0.015 . This suggests that the relationship is inverse but statistically significant. Although the impact is negative and weak, its statistical significance suggests that some aspects of social interaction and customer service may generate negative emotional impressions in certain contexts. This calls for a reassessment of how banks interact with digital customers in order to enhance the emotional and positive side of their experience.

This group (S2) achieved the strongest significant effect on the affective dimension, with a β value of 0.442 and a calculated t-value of 3.477 , at a significance level (Sig) of 0.001 . This result indicates that the quality and security of the website are fundamental factors in reinforcing the customer's positive emotional impressions. The more professional and secure the site is, the more it increases feelings of comfort and reassurance, which strengthens the emotional bond with the banking institution.

The calculated F-value (8.943) at a significance level (Sig = 0.000) indicates that the overall model explains the affective dimension in a statistically significant way. Therefore, the alternative hypothesis H1 is accepted. The results show that the most influential group is S2, followed by Ps, while P2 showed no significant effect, and C2 showed a slight negative effect.

Accordingly, the banking institutions under study are encouraged to focus on the technical and security features of their websites, enhance the quality of digital products and promotional services, and strengthen the customer experience in an emotionally engaging and satisfying way.

2-3- Third Sub-Hypothesis (Behavioral Dimension): This hypothesis aims to verify whether the dimensions of the electronic marketing mix have a statistically significant effect on the behavioral dimension of the bank customer's brand image. The relationship was measured between four sub-groups of the electronic marketing mix dimensions (Ps4, P2, C2, S2) and the dependent variable. The hypothesis was formulated as follows:

H0: There is no statistically significant effect relationship between the dimensions of the electronic marketing mix and the dependent variable—the behavioral dimension of the bank customer's brand image.

H1: There is a statistically significant effect relationship between the dimensions of the electronic marketing mix and the dependent variable—the behavioral dimension of the bank customer's brand image.

Table 11. Test of the Third Sub-Hypothesis

Independent Variable	Dependent Variable	Correlation Coefficient	Coefficient of Determination	Beta (β) Value	Calculated t Value	Significance	Calculated F Value	Significance	Variable X	Variable Y
4 Ps Group (E-product, Pricing, Distribution, E-promotion)	Behavioral Dimension	0.642	0.412	0.097	0.760	0.450	11.044	0.000	0.086	
P2 Group: (Customization, Privacy)				0.301	2.528	0.014			0.341	
C2 Group: (Virtual Community, Customer Service)				0.129	1.174	0.245			0.123	
S2 Group: (Website, Security)				0.296	2.425	0.018			0.265	

Source: Prepared by the researchers based on SPSS V27 outputs.

This group recorded a correlation coefficient (R) of **0.642** and a coefficient of determination (R^2) of **0.412**, indicating that **41.2%** of the variation in the behavioral dimension is explained by these dimensions. However, the value of the β coefficient was **0.097**, which is weak, while the calculated t-value was **0.760** with a significance level (Sig) of **0.450**, which is higher than 0.05. The calculated F-value reached **11.044** at **Sig = 0.000**.

Although the overall model is statistically significant, the effect of the **Ps4** group on the behavioral dimension is not significant at the 0.05 level. This indicates that the traditional marketing mix components do not directly affect the banking customer's behavior in the same way they influence the cognitive or emotional dimensions.

The analysis results showed that the β coefficient reached **0.301**, and the calculated t-value was **2.528**, with a significance level (Sig) of **0.014**, which is below 0.05. These results, therefore, indicate a significant effect of this group on the behavioral dimension. This suggests that when the customer feels the service is personalized and their privacy is respected, it may lead to positive behavioral responses, such as increased engagement or loyalty.

This group recorded a β value of **0.129**, and a calculated t-value of **1.174**, with a significance level of **0.245**, which is above 0.05, thus indicating no statistical significance. The results suggest that the **C2** group has no significant effect on the behavioral dimension of customers. This may be attributed to the fact that social interaction and customer service generally affect emotional or cognitive aspects without necessarily translating into actual behavior.

The **S2** group, on the other hand, achieved positive results, with a β coefficient of **0.296** and a calculated t-value of **2.425**, at a significance level (Sig) of **0.018**, which is statistically significant. These results show that the quality and security of the website play a direct role in influencing customer behavior, such as using the digital platform or deciding to engage with the bank online. The more the customer feels secure and finds the platform easy to use, the more likely their positive perception will turn into actual behavior.

Overall results indicate that certain components of the electronic marketing mix—such as personalization, privacy, website quality, and security—have a significant impact on the behavioral dimension of the brand image. Meanwhile, the traditional mix (**Ps4**) and the virtual community and customer service group (**C2**) did not show statistically significant effects.

In general, since the overall model is statistically significant, the null hypothesis is rejected and the alternative hypothesis is accepted. Consequently, these results recommend the development of digital services that respect customer privacy and strengthen trust in the security system, in addition to improving the functional design of the website, as these are essential pillars that lead to positive behavior and actual loyalty among banking customers.

12. Test of Statistic

al Differences:

In light of the personal data previously analyzed, it was found that the sample individuals exhibit variation in their personal characteristics in terms of gender, age, educational level, type of bank, and the nature of their bank account. This diversity provides an important foundation for testing whether there are statistically significant differences in customer perceptions of the dimensions of the electronic marketing mix and its impact on brand image, based on personal variables.

To achieve this, appropriate statistical difference tests were used, such as

- **Independent Samples T-test:** Used to test the differences between only two groups (e.g., male/female).
- **One-Way ANOVA:** Used to test differences between more than two groups. In this case, different educational levels were selected.

These tests aim to determine whether the differences in respondents' perceptions of the electronic marketing mix dimensions or the brand image are due to personal variables (such as gender, age, or type of bank), or whether the differences are statistically insignificant.

A. Independent Samples T-test:

To verify whether there are statistically significant differences between males and females in their evaluation of both the electronic marketing mix and the customer's brand image, the Independent Samples T-test was used. The results were as follows:

Table 12. Results of the "T" Test

Levene's Test	T-Test	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	95% Confidence Interval	Lower	Upper
Electronic Marketing Mix	Equal variances assumed	2.643	0.109	2.051	66	0.044	0.325	0.159	0.009	0.642	
	Equal variances not assumed			2.113	64.255	0.038	0.325	0.154	0.018	0.633	
Bank Customer's Mental Image	Equal variances assumed	0.010	0.920	1.499	66	0.139	0.262	0.175	-0.087	0.611	
	Equal variance			1.523	65.999	0.132	0.262	0.172	-0.081	0.605	

	s not assumed										
--	------------------	--	--	--	--	--	--	--	--	--	--

Source: Prepared by the researchers based on SPSS V27 outputs

12-1- Differences in the Evaluation of the Electronic Marketing Mix

According to Gender: The results of Levene’s Test for the assumption of equal variances between males and females showed a significance value (Sig) of 0.109, which is greater than 0.05. This indicates acceptance of the hypothesis of equal variances, and therefore, the T-test results from the first row are adopted.

The calculated T-value was 2.051 with 66 degrees of freedom, and the significance value (Sig) was 0.044, which is less than the 0.05 level of significance. The difference in means between the genders was 0.325, with a 95% confidence interval ranging between 0.009 and 0.642.

These results indicate a statistically significant difference between males and females in their evaluation of the electronic marketing mix. This suggests that gender affects customers’ perception of the components of the electronic marketing mix, which may be attributed to differences in usage preferences or levels of interaction with digital channels between the sexes. The results also point to a tendency by one gender—according to the data—to evaluate certain aspects of electronic marketing more positively or negatively.

12-2- Differences in the Evaluation of Brand Image According to

Gender: Regarding the evaluation of brand image, the results of Levene’s Test showed a significance value (Sig) of 0.920, which is much higher than 0.05, indicating homogeneity of variances between males and females.

As for the T-test results, the calculated T-value was 1.499 with 66 degrees of freedom, and the significance value (Sig) was 0.139, which is greater than 0.05. The mean difference was 0.262, but the 95% confidence interval ranged from -0.087 to 0.611, meaning it includes zero

These results indicate that there is no statistically significant difference between males and females in their evaluation of the bank's brand image. This suggests that gender is not a determining factor in shaping the overall perception of the banking institution, and may reflect a consistency in customer perceptions of the brand image, regardless of gender.

12-3- One-Way ANOVA Test: To examine whether there are statistically significant differences between respondents' educational levels in relation to their evaluation of the electronic marketing mix and the bank customer's brand image, a One-Way ANOVA test was used. The results were as follows:

Table 13. One-Way ANOVA Test

Variable	Source of Variation	Sum of Squares	Degrees of Freedom (df)	Mean Square	F	Significance (p-value)
Electronic Marketing Mix	Between Groups	0.926	3	0.309	0.684	0.565
	Within Groups	28.880	64	0.451	—	—
	Total	29.806	67	—	—	—
Bank Customer's Mental Image	Between Groups	1.588	3	0.529	1.010	0.394
	Within Groups	33.557	64	0.524	—	—
	Total	35.145	67	—	—	—

Source: Prepared by the researchers based on the outputs of SPSS V27

12-4- Evaluation of the Electronic Marketing Mix According to Educational Level

The results of the ANOVA test showed that the F value = 0.684, while the significance level (Sig) = 0.565, which is greater than the accepted significance level (0.05). Accordingly, the null hypothesis is accepted, which states that there are no statistically significant differences between the mean evaluations of the respondents regarding the dimensions of the electronic marketing mix based on their educational level.

This result indicates that customers' perception of the electronic marketing mix dimensions (such as product, price, promotion, place, people, process, and physical evidence) does not significantly differ among individuals with different levels of education. This consistency may be attributed to the similar nature of their digital experiences with banks, especially since the majority of the sample belongs to the "university" and "postgraduate" categories, which grants them a similar level of knowledge and interaction with electronic services.

12-5- Evaluation of Brand Image According to Educational Level

Regarding the evaluation of the bank customer's brand image, the ANOVA test results showed that the F value = 1.010 and the significance level (Sig) = 0.394, which is also greater than 0.05. This leads to the acceptance of the null hypothesis, which states that there are no significant differences in the

respondents' evaluations of the brand image based on their educational level.

This result also suggests that the impressions customers form about banking institutions — in terms of reputation, trust, and emotional connection — are largely shared across different educational groups. This implies that the brand image of the bank is relatively stable and is not significantly influenced by the client's level of education, but rather relates more to objective factors such as service quality, responsiveness, and professionalism.

In general, the results of the ANOVA test indicate that educational level does not lead to statistically significant differences in the evaluation of the electronic marketing mix or the brand image among banking customers. This suggests that the digital banking experience and the associated perception of the institution are consistent in customers' minds regardless of their educational attainment, which reinforces the importance of adopting unified and inclusive digital marketing strategies that target all customer segments without discrimination.

4. CONCLUSION

Through this study, which focused on the impact of the electronic marketing mix on the brand image of banking customers — specifically in two bank branches located in Tébessa, namely the Local Development Bank (BNA) and the Gulf Bank Algeria (AGB) — a set of results was reached, followed by recommendations as outlined below:

Findings:

- The study showed that the dimensions and components of the electronic marketing mix effectively influence the construction and formation of the brand image among banking customers.
- The elements of the electronic marketing mix affect the cognitive dimension of the brand image to varying degrees.
- The traditional elements of the marketing mix (4Ps) have a greater impact on the emotional dimension of the brand image compared to other components of the electronic marketing mix, which means that the latter does not represent a strong emotional factor for banking customers.

- The behavioral dimension of the banking customer, as a modern customer, is influenced by the technological components of the electronic marketing mix such as personalization, privacy, website, and security.

Recommendations:

- Enhance the level of electronic banking products and services to meet the needs of the modern banking customer and develop competitive electronic pricing and promotional strategies, in addition to focusing on creating more diverse distribution channels to facilitate access to these electronic products and services.
- Draw banks' attention to the importance of focusing more on improving the technical and security infrastructure of various electronic marketing operations for products and services.
- Pay greater attention to customer service and diversify the methods and mechanisms of interaction with customers to build a positive and stable brand image in their minds.

5. Bibliography List :

- Abdullah Al-Ahmad .(1998) .Internet, Intranet and web Design (المجلد) Firsty edition .(Damascus ,Syria: Al-Rida Computer Center.
- Ahmed Nafei Al-Mdadha .(2014) .*Electronic Publishing and Information Protection* (المجلد) Second edition .(King Hussein Street ,Amman ,Jordan: Safaa Publishing and Distribution House.
- Al & Beth Simone Noveck .(2021) .*The Power of Virtual Communities* . THE GOVLAB.
- al & Philip Kotler .(2017) .*Marketing(Part five : Promotion)* .(Mazen Nfaa (المترجمون) ,Jaramana ,Damascus ,Syria: Dar Raslan for Printing, Publusing and Distribution.
- Ali Ajwa .(2003) .*Public relations and Mental Image* .Cairo ,Egypt: Alam AL-Kutub.
- Ali Al-Zoubi & Salah Al-Nasr .(2020) .*Electronic Marketing in the Twenty-First Centry* .Amman: Al-Yazouri Scientific publishing & Distribution House.

- Bachir al Alaq .(2009) .*Fundamentas and Applications of Electronic and Traditional Promotion:An Integrated Introduction* (المجلد) Arabic Edition .(Amman ,Jordan: Yazouri Scientific Publishing and Disribution House.
- Baker Moussa .(2014) .*Mental Image In public Relation* (المجلد) First edition .(Amman ,Jordan: Ossama Publishing and D istribution House.
- Chandrika Gosh .(2022) .Virtual communities and Tourism : facebook travel communiyies as a communication platform for SME in New Zeland . .06School of Communication Studies.
- Dhib Ben Ayed AL-Qahtani .(2015) .*Information Securuty* .King Abdullaziz City For Science and Technology ,Riyadh ,Kingdom of Saudu Arabia: kING fAHD National Library.
- Fadi Abdel Moneim & Ahmed abd Al Fattah .(2011 ,07 20) .the Role of E-Marketing in Improuving the Mental Image Of Health Services .32-31 .Departement of Business Administration ,College of Business ,Middle East Uvinversity.
- Gandolfo Dominici) .september, 2009 .(From Marketing Mix to E-Marketing Mix : a Ltirature Overview and Classification .*International Journal of Business and Management* ,Vol 4)Issue 9.19-18 الصفحات ،(
- Hardan El-HADI El-Janabi .(2019) .*The Mental Image of Civil Society Organisations* (المجلد) Arabic Edition .(Amman ,Jordan: El - Yazouri Scientific House for Publishing and Distribution.
- Hassan Ali AL-Ababneh .(2025) .Electronic Marketing .Amman ,Jordan: Dar AL-Sawaqi SCIENTIFIC.
- karima & others Dubyan) .June, 2020 .(Theoretical foundations of the mental image and the difference between it and the perceived image .*Journal of Modern Economics and Sustainable Development* ,Issue 2 صفحة ، .88
- Kelley D.Martin & Patrick E.Murphy 22) .September, 2016 .(The role of the Data Privacy in Marketing .*Journal of the Academy of Marketing science*.152-136 الصفحات ،
- Nevin Ahmed Ghabachi .(2008) .*The dynamics of internal public relations,the image of the institution - crisis management mechanisms* . Cairo ,Arab Republic of Egypt: Dar AL Nahda Al Arabia.

- Nouri, M. (2014). E-commerce and E-Marketing. Algeria: Office of University Publications.
- Others & PHILIP KOTLER. (بلا تاريخ). Marketing 4.0 (moving from traditional to digital .(Canada: John & sons.
- PR Smith & Dave Chaffey .(2008) .e Marketing excellence .Oxford ,U.K: elsevier.
- Sadiq Zahra .(2016-2015) .Managing the Mental Image of Institutions According to the Relationship Marketing Approach .72 .faculty of Economics,Business and Management Sciences ,University of Abu Bakr Belkaid Tlemcen ,Algeria.
- Soufiane Ragui & ALI Ezeddine .(2016 ,06 20) .Moderne Trends in the Electronic Marketing Square in the Lihght of the New Digital Age .
(الصفحات 1392-391 Issue 1, Volume 03) *Economic Generation Magazine* ,
- Wahab Naamoun) .December, 2008 .(Contemporary systems for distribution of banking sevice as an Approach to increasing the competitveness of commercial banks , with reference to the case of Algeria .
(الصفحات 117-116 Issue 02, Volume 2) *Journal of Economic and Administrative Research* ,
- Yousef Ahmed Abu Fara .(2018) .Electronic Marketing .Amman ,Jordan: Wael Publishing and Distribution House.
- Youssef Abu Fara .(2003) .*E-Marketing; elements of E-Marketing Mix* . Amman ,Jordan: Wael Publishing and Distribution House.