DEMOCRATIC AND POPULAR REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

Ecole Supérieure de Commerce

A Dissertation Submitted in Partial Fulfillment of the Requirements for Master's Degree in Commercial Sciences
Specialty: Marketing and Communication

ANALYSIS OF CONSUMER'S BEHAVIOR REGARDING THE DIGITALIZATION OF THE BANKING INDUSTRY

CASE STUDY : National Bank of Algeria (BNA)

Submitted by:
Abir Saadaoui

Supervised by:
Dr. Yahia Boukerch

Training address:BNA agence 800, Ain Beida, Oum El Bouaghi , Algeria
Training period: From March 1st, 2023 to May 18th, 2023

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Dedication

To my parents, my heroes, my eternal inspiration Mom & Dad, whose love and encouragement have been the source of strength throughout my journey, for believing in me when I doubted myself, for always reminding me of what I am capable of and pushing me to strive for excellence and to have fun while doing that, for offering me the friendship I needed before offering the most perfect parenthood a child could ever ask for . Without you I would never be the person I am today.

To my siblings: Khadidja, Ahmed Bader Eddine , Ayat Errahmane , Salsabil , Wala Nour Elyakine . My backbone, my insanely funny mates, I would never imagine my self succeeding anything without your warm laughs and countless silly late night talks.

Abir

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Introduction

T he digital revolution has significantly transformed various industries, and the banking sector is no exception. With the advent of technology and the proliferation of digital channels, traditional banking practices have evolved into a more digitized landscape.

The emergence of the different digital banking services, including online platforms, mobile applications, and contactless payment methods, has revolutionized the way consumers interact with financial institutions. This shift toward digitalization has not only changed the traditional banking landscape but also presented new opportunities and challenges for banks to understand and cater to evolving consumer behaviors.

However, the success of digital banking hinges on consumer adoption and acceptance. Despite the growing popularity of digital services, not all consumers have fully embraced them. Several factors can impede the widespread adoption of digital banking. Therefore, understanding consumer behavior and their attitudes toward digitalization is paramount for banks to design effective strategies and tailor their services to meet customer expectations.

This transformation has revolutionized the way consumers interact with their financial institutions, presenting both challenges and opportunities for banks in understanding and catering to consumer behavior in this digital era.

According to what was stated above this research aims to answer the following main question:

How and to what extent does the digitalization of BNA services influence consumer behavior?

This main research question is divided into the following sub-research questions in which an attempt will be made to answer them in this dissertation.

Research questions

- ➢ Does BNA customer's engagement with online buying influence BNA digital services usage frequency?
- ➢ Do perceived security and platforms password update by BNA customers towards its digital services mediate positive relationship between customer's trust and adoption of digital services?
- ➢ Do perceived ease of use of BNA digital platforms, online account access, number of offered digital services and satisfaction with BNA platforms interface, influence positively online customer experience?

➢ Does overall satisfaction of BNA customers with its digital platforms influence positively their loyalty towards BNA?

Based on these research questions, the following hypotheses were proposed:

Hypotheses

➢ **Hypothesis 01** The increase of BNA digital services usage frequency is related to the customer's engagement with online buying.

➢ **Hypothesis 02** The customer's perceived security and platforms password update of BNA digital platforms influence consumer's trust towards BNA digital services.

➢ **Hypothesis 03** The perceived ease of use of BNA digital platforms, the number of offered services , account access, and satisfaction with platform interface influence positively online customer experience.

➢ **Hypothesis 04** Customer's overall satisfaction towards BNA digital services influence positively their loyalty.

Reasons of choosing the Research

Personal reasons

➢ As an individual, I have always been fascinated by the intersection of technology and finance. The digitalization of the banking industry represents a significant development in this field, and studying consumer behavior in this context allows me to explore my passion for both technology and finance.

➢ By specializing in the analysis of consumer behavior toward the digitalization of the banking industry, I can provide my self with opportunities for a diverse range of careers, such as market research, customerexperience management, product development, and strategic planning within the banking and financial sectors.

➢ The digitalization of the banking industry has become a prominent aspect of modern life. Almost everyone interacts with digital banking services in some way. Investigating consumer behavior in this context allows me to explore a topic that has direct relevance to people's daily lives, making it personally fulfilling to study and contribute to this field.

Professional reasons

> The banking industry is undergoing rapid digital transformation, and understanding consumer behavior is crucial for banks and financial institutions to stay competitive. By researching and gaining insights into consumer attitudes and preferences towards digital banking, I can acquire knowledge and skills that are highly sought after in the industry.

> By conducting research on consumer behavior and digital banking, I can contribute to the growth and development of the industry. BNA bank can utilize the findings and recommendations from my research to design customer-centric digital strategies, enhance user experiences, and build stronger relationships with their customers. Being able to contribute positively to the industry's advancement is a motivating factor for pursuing this master topic.

Research importance

Despite previous researches conducted in the field of consumer behavior regarding digitalization of banking industry, Algeria is still facing endless challenges and obstacles and still growing slowly, what motivates any researcher to uncover the underlying reasons that led to the delay of this crucial transformation.

Objectives of this research

- By analyzing BNA customers' preferences, motivations, and concerns, BNA can tailor their services and offerings to meet customer expectations. This research will provide insights into the factors that drive consumer adoption of digital banking and help BNA enhance its digital platforms, contribute to the creation of seamless and intuitive digital banking experiences, fostering customer loyalty and satisfaction.

- This research can also provide valuable insights for BNA policymakers to create regulatory frameworks that protect its customer interests, ensure data privacy, and foster innovation. Understanding customer preferences and concerns will assist in the formulation of policies that strike a balance between consumer protection and promoting digital banking innovations for BNA platforms.

Research methodology

In order to answer the research questions, a quantitative research will be conducted right after the documentary research that aims to acquire insights and an overview of the main subject which is consumer behavior regarding digitalization of BNA services.

The quantitative research will take place in a form of a questionnaire that will be designed, administered to a judgmental none-probabilistic sample.

To test the hypotheses of this research, multiple tests and analyses are required. To test the first hypothesis, one-way ANOVA test will be performed. To test the second and the third hypotheses a multiple regression analysis will be conducted. Finally, to test the fourth hypothesis a simple regression test will be carried out.

Research structure

This research is divided into three chapters. Two of these chapters will be dedicated to the literature review regarding business digitalization and online consumer behavior, whereas, the last chapter consists of an empirical research that will put the hypotheses into test. In what next, the structure of each chapter is discussed.

➢ *First chapter*, entitled *Business Digitalization*, is structured into three sections. In the initial section, we will delve into the concept of digitization and digitalization, encompassing a comprehensive exploration of diverse definitions, primary types, and processes associated with both digitization and digitalization. Additionally, we will elucidate the obstacles and barriers specific to digitalization, particularly focusing on the Algerian context, while highlighting the distinctions between digitalization and digitization. Moving forward, the subsequent section will center around the themes of digital transformation and digital maturity. This section will examine the technological aspects of digital transformation, explore the key drivers that facilitate this process, and delve into the fundamental characteristics of digital maturity. Concluding this chapter, the final section will critically analyze digital banking, with a specific emphasis on security measures, fraud prevention methods, and the ever-evolving landscape ofmobile banking.

➢ *Second chapter* entitled *Online consumer behavior,* will delve into the realm of online consumer behavior, specifically focusing on its characteristics. In the first section, we will explore the disparities between offline and online consumer behavior. We will also

examine online impulsive buying behavior, exploring both its motivating and discouraging factors. Additionally, we will investigate the motivations and obstacles associated with online purchasing. Moving on to the second section, we will analyze the various factors that impact online consumer behavior. This analysis will commence with environmental factors, encompassing elements such as E-service quality, E-word of mouth, and product price and cost. Subsequently, we will delve into behavioral factors, including perceived risk, perceived ease of use, perceived usefulness, trust, and satisfaction. Furthermore, we will consider demographic factors, consisting of age, gender, and household income. Lastly, we will explore psychological factors, which encompass stress, self-justification, personality traits, and attitude. In the third section, we will shift our focus to online customer experience. This will involve discussing the key design elements and domains of online customer experience, while also highlighting the disparities between physical and online customer experiences.

➢ *Third chapter* which is entitled *the influence of digitalization of BNA services on consumer behavior*, includes the case study of the research which is conducted based on the main research question that aims to determine how and to what extent does the digitalization of BNA services influence consumer behavior. This chapter contains three sections, the first section gives a general overview of the host company BNA. The second section is dedicated to the research methodology that explains the research design. The final section presents the research findings that deal with descriptive data analysis, statistical analyses, and the interpretation of the results. That is to say, data analysis methods, study results and a discussion of the findings are presented.

Chapter 01: Business Digitalization

Introduction

The digital age has transformed the way businesses operate, connect with customers and compete in the market. Off the back of the emergence of digital technologies and its immense world-wide development, these technologies became strongly incorporated within all types of business processes providing them with unprecedented opportunities to grow and expand their reach. Shifting to digital is now a must for all business organizations in order to enhance outcomes and gain time and effort. Digitalization, digitization, digital transformation and digital maturity are the main pillars that any firm must spot the light on in order to sustain itself and compete in a world where digital technologies are envasing all types of business sectors.

This chapter is divided three sections. In the first section we will explore elucidation of digitization and digitalization, beginning with providing different definitions, main types, processes of both digitalization and digitization, we will also present obstacles and barriers of digitalization (the Algerian case) and the difference between digitalization and digitization. The second section will discuss digital transformation and digital maturity exploring technology aspects and key drivers of digital transformation and the main characteristics of digital maturity. By the end of this chapter, in the last section we will examine digital banking within its security and fraud prevention methods and mobile banking.

Main concepts

1. Digital technologies

They are the digital instruments, systems, devices and resources that give rise to, stock and approach data such as: tablets, laptops, smart phones, social media . etc (Elçi & Devran, 2020).

2. Web 4.0

Web 4.0 is the new expansion of the web paradigm based on different models, technologies and social relationships. The term web 4.0 consists of several features and is not entirely clear and consistent in the literature. (Almeida, 2017) . It is also a new web generation that consists of a qualified and interactive web technology which is associated with these four technologies such as : artificial intelligence , nanotechnology , telecommunications and controlled interfaces (Ibrahim, 2021) .

3. Digital-business

" How businesses apply digital technology and media to improve the competitiveness of their organization through optimizing internal processes with online and traditional channels to market and supply" (Chaffey, Edmundson-Bird, & Hemphill, 2019) .

4. Intranet

"A private network within a single company using internet standards to enable employees to access and share information using web technology" (Chaffey, Edmundson-Bird, & Hemphill, 2019) .

Section 01: Elucidation of Digitization and Digitalization

Digitalization and digitization are two related but distinct concepts that are often used interchangeably in discussions about technology and business. Both digitalization and digitization are strategic imperatives for companies seeking to compete in the modern business landscape, where digital technology has disrupted traditional business models and created new opportunities and challenges.

1.1 Digitization

Digitization has revolutionized various industries and sectors by enabling efficient storage, retrieval, and manipulation of information. It has transformed the way we consume media, communicate, conduct business, and access knowledge.

1.1.1 Definition of Digitization

The notion "digitization" has been used in different contexts, hence, it has more than one definition:

According to Gartner's IT Glossary "Digitization is the process of changing analog information into digital form".

Digitization refers to producing a digital representation of a material item or attribute, in other words, it is turning the non-digitized into digital artifacts in which operations and workflows are computerized (Gupta, 2020).

Digitization is the process of converting analog information into digital form, which involves converting physical pages or sound recordings into digital bytes through scanning or uploading. It can also involve transitioning from manual to digital processes, such as replacing paper forms with online versions that automatically populate a database (Gobble, 2018).

To sum up: digitization is the process of transiting the physical data into a digital form. (for example to convert a written text on a paper into a word or pdf form).

1.1.2 Types of Digitization

According to (Holbert, 2020) there are three types of digitization :

1.1.2.1 On demand digitization: (Ad-Hoc digitization)

The material (object) in question, is digitized based up on the request of a stakeholder. (patron, researcher, curator)

1.1.2.2 Programmatic digitization: (Systematic digitization)

The material (object) in question is digitized in its totality, in a planned method.

1.1.2.3 Forensic digitization

The material (object) in question is digitized before, during and / or after a specific event (eg: external loan, maintenance process).

1.1.3 Workflow of Digitization

In line with (Chisita, Durodolu, & Ngoaketsi, 2021) digitization workflow is an approach that describes how to arrange digitized information resources step by step to complete a digitization process that involves different phases. It consists of material selection, preparation of documents, scanning/OCR use scanner, processing for editing, quality assurance, metadata and indexing, back-up and archiving, publishing in a digital repository and finally checking out.

- The first stage of digitization is the selection of documents that requires expertise. Know what documents to attach and why. Documentation is key to enabling error-free formal procedures for selected documents objects such as: Document clips, sticky notes, pins and spiral bindings.

- Scanning/OCR (Optical Character Recognition) is the conversion of physical documents into electronic form and requires the use of efficient, reliable and fast electronic scanners. Optical character recognition is used to convert images, handwritten or printed text into machine-encoded text. This is important to make documents searchable and easy to find and retrieve from the Internet, whether they come from scanned documents or not.

- Document integrity is paramount in ensuring document quality assurance by properly modifying the information content so that the document is free of both content and grammar error.

- The next stage of the digitization process is backup and archivingThis ensures the security of digitized documents and information content. it protects them from Hacking, social engineering, cross-site script virus attacks, or other unexpected issues that may cause Document integrity damage.

- Finally, publish content within local network and make it publicly accessible on the Internet for the benefit of the general public.

1.2 Digitalization

Digitalization has played a crucial role in shaping the modern world, driving innovation, and transforming industries across sectors, leading to increased connectivity, automation, and the emergence of new opportunities and challenges in the digital era.

1.2.1 Definition of Digitalization

Since its emergence, there have been several definitions of the term "digitalization", according to the Gartner glossary, digitalization is "the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is the process of transitioning into a digital business".

Furthermore, digitalization has come to broadly refer to the structuring of different areas of social life around the digital communication and media infrastructure (D, Brennen, & Kreiss, 2016).

To sum up: digitalization is to make use of different digital technologies to modify the entire business process in order to enhance revenue and generate value.

1.2.2 Types of Digitalization

Pagani & Pardo (2017), identify three types of "digitalization" according to the nature of the most deeply impacted link between companies as made of: activity links, resource ties, and actor bonds type of digitalization:

Figure 1. 1: The emerging types of impact of digital technology
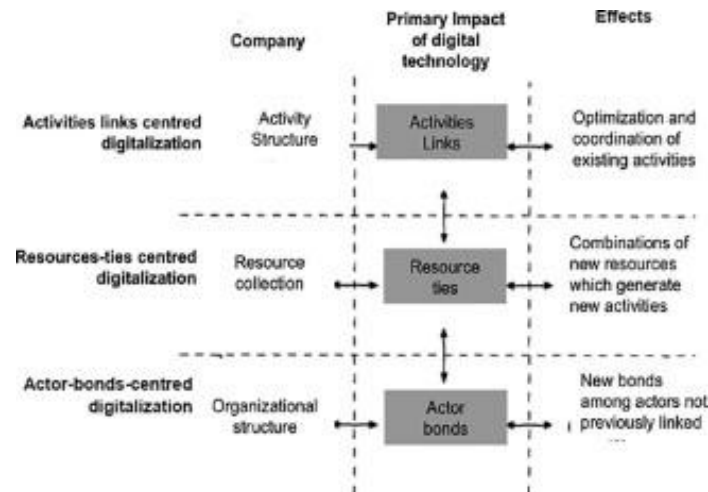
Source: (Pagani & Pardo, 2017)

1.2.2.1 An activity-links-centred type of digitalization

In this type of digitalization, the already existing activities are enhanced by the digital resource to maintain the best integration between them. This type of digitalization is called an "activity-links-centred digitalization" because the digital resource effects mainly on the links between activities. Activities that are better integrated thanks to the digital technology can be "internal activities" or "external activities" (activities between two business actors).

In fact, an EDI (Electronic Data Interchange) system does not basically change the nature of the activity between two actors (the exchange of information) but permits executing it in a more efficient way. All the same, an MRP (Material Requirements Planning) system does not change radically the operations of a company but allows an effective planning of all necessary resources. The term "does not change basically and radically the activities" is used on purpose, in the context that activities are as a matter of course slightly modified, in different ways, by digitalization, but they can't be considered "new activities".

1.2.2.2 A resource-ties-centred type of digitalization

This type of digitalization is to a great degree delineated by the fact that the already existing actors bring the creation of new activities supported by the digital resources. In that case, the digital resources possessed by one actor are amalgamated with the resources of another actor, which allows new activities to come into sight between the actors. This phenomenon leads to the arrival of digital ecosystems (different players collaborate to create value).

1.2.2.3 An actor-bonds-centred type of digitalization

In this type of digitalization, new associations (bonds) between actors are provoked by the digital resources through a new actor taking a position in the network. In that case, connections between actors that were not connected before or alterations to the nature of the connections that already existed are allowed by the new actor using digital systems. Take for instance a marketplace that uses the digital resource to allow selling and buying companies to meet (what they may not have been able to do in the absence of the marketplace).

1.2.3 Process of Digitalization

According to. (Marc & Peter, 2017) the process of digitalization consists of seven main steps that are mentioned below:

- Starting with the assessment of the company's level of maturity, because when the company takes the first step towards digitalization, it must make sure that the estimation of its maturity is completed by considering its technological knowledge combined with its motivation to improve and apply this knowledge.

- Moving to the identification of: possible markets, needed technologies for the digital transformation, target customers and their demands, this is why the company must identify its potential market, in order to capture all the possible opportunities to market and sell its future digital products, the needed technologies must also be well spotted in order to determine the company's requirements to the usage of digital resources. The target customers are the group of people that the company focuses on to sell their products or services depending on their demands, this group is prioritized by the company and therefore must be well pinpointed.

- In addition, we have the internal assessment on which an internal evaluation is needed to be executed at this phase and it includes: the company's processes, data and the related performance to its operations.

- Furthermore, there is the elaboration of the digital strategy that takes place after the collection of the required information from the internal assessment, the company must define a digital strategy and the objectives of its digital transition.

- Moreover, we have the identification of objectives in order to generate a road map in parallel to the implementation of the required changes to start the digital transition.

- Over and above that, an adoption of changes must occur and the company must focus on how these changes will be managed within the team of collaborators.

- Eventually, the company must launch the new business model on the market to advance digital tools in question.

1.2.4 Obstacles and barriers of Digitalization in Algeria

The emergence of industry 4.0 gave birth to a line-up of digital technologies, such as the internet of things, big data, cloud computing. etc., these technologies have made an immense modification on both organizational and operational level in enterprises.

In developed countries, firms have integrated the technological advances of the fourth industrial revolution by incorporating programs that support the web 4.0 applications.

As whereas, companies in countries in process of development including Algeria are trying to go along with these digital technologies and make the most use of it. Nonetheless , its adoption has many obstacles and barriers (Sedkaoui & Benaichouba, 2021) .

1.2.4.1 The absence of Digital Business Strategy

Before investing in digital technologies a digital business strategy must be established since it is considered as a main pillar in the conduction of the use of digital technologies. Many firms in Algeria are eager to adopt digital technologies regarding their unlimited benefits but they don't give sufficient attention for the digital business strategy which is the base of incorporating any type of digital technology (Tabrizi, Lam, Girard, & Irvin, Digital transformation is not about technology. 1-6., 2019) .

1.2.4.2 Full dependence on outside consultants

in order to figure out the most appropriate method for digital transformation , these consultants provide "one size fits all" services for all their customers , meanwhile , the company's staff known as the insiders are the ones having adequate knowledge about the most efficient actions that must take place in their regular activities and operations (Meraghni, Bekkouche, & Demdoum, 2021) .

1.2.4.3 Employee's fear of being replaced

The changes towards digitalization are often rejected by employees because they have the impression that the adoption if digital technologies threaten their jobs , hence , they try to spot the light on obstacles that show the ineffectiveness of digital transformation in order to convince the top management to quit the entire digitalization process so their jobs will be protected (Tabrizi, Lam, Girard, & Irvin, Digital transformation is not about technology., 2019)**.**

1.2.4.4 Technical issues

Alike all countries in process of development, in Algeria the technological infrastructure including hardware, software components to support the applications and information management requirements of the business, are not well maintained, hence they prevent the entire digitalization process.

1.2.4.5. Budgets allocated to digitalization

Companies in Algeria still don't give the necessary attention to digitalization since they are not imbued with the needed digital culture that should be integrated in the entire strategy of the company , therefor , the allocated budgets to be invested in digitalization are very low and hence insufficient to apply this technologies in an appropriate manner (Meraghni, Bekkouche, & Demdoum, 2021).

1.2.4.6 Information security risks

Companies in Algeria don 't have the enough trust in the entire process of digitalization. Since the technology of cloud computing is absent , they always have doubts about their information 's security which make them hesitating before making any move towards the adoption of these technologies (Meraghni, Bekkouche, & Demdoum, 2021) .

1.2.5 The Difference between Digitalization and Digitization

Since the arrival of the terms of "digitization" and "digitalization", a huge ambiguity between these two concepts took place.

"Digitization' and 'digitalization' are two conceptual terms that are closely associated and often used interchangeably in a broad range of literature", explains J. Scott Brennen, Doctoral Candidate in Communication at the University of North Carolina School of Media and Journalism.

As mentioned previously, digitization refers basically to the process of transiting the physical data into a digital form. As whereas, digitalization is to make use of different digital technologies to modify the entire process in order to enhance revenue and generate value, but the difference that must be considered is that digitization is related to the information, nevertheless digitalization is related to the entire process.

In the end both of "digitization" and "digitalization" work together for the sake of altering organizations into digital enterprises permitting for more promptitude and performance upgrade (Bloomberg, 2018) .

In line with (Deere, 2023), the following table represents examples to highlight the difference between digitization and digitalization :

Table 1.1: The difference between digitization and digitalization with examples

	Digitization	Digitalization
Definition	Converting data , documents and processes from analog to digital .	Transforming business processes by leveraging digital technologies , ultimately resulting in opportunities for efficiencies and increased revenue .
Examples	-Scanning a photograph to create a digital file. -Converting a paper report to a digital file, such as a PDF . -Inputting an existing paper checklist into a digital checklist application , such as Apple reminders .	-Using digital technology to transform your reporting processes, collecting and analyzing data in real time and using insights to mitigate risk and promote efficiency on future projects.

Source : (Deere, 2023)

Section 02: Digital Transformation & Digital Maturity

Digital technology has revolutionized the way businesses operate, interact with customers, and compete in the global marketplace. As technology continues to evolve at a breakneck pace, companies need to adapt and transform their business models and processes to remain competitive and relevant in the digital age. Digital maturity and digital transformation are two key concepts that have emerged in this context.

2.1 Digital Transformation

2.1.1 Definition of Digital Transformation

The proliferation of new digital technologies makes digital transformation relevant for most sectors (Remane , Hanelt, Wiesboeck, & Kolbe, 2017). Therefore, since the appearance of the term and regarding its immense importance, there have been numerous definitions of digital transformation:

Digital transformation is the utilization of new digital technologies, alike social media, mobile technology, analytics and implemented devices to permit significant business upgrades, counting better customer experiences, efficient operations and new business models (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2014).

Digital transformation is the incorporation of new digital technologies into all areas of a business, basically modifying the way organizations work (Schwertner, 2017).

Digital transformation, as a rule, means the application and use of modern technologies in an organization's business processes to achieve its goals and improve its efficiency (Aslanova & Kulichkina, 2020).

To sum up, digital transformation is the use of digital technologies within an organization to enhance business processes in matter of models and operations.

2.1.2 Technology aspects of Digital transformation

According to (Schwertner, 2017) the main technology aspects of digital transformation consist of four main pillars mentioned in the following :

2.1.2.1 Cloud

It is a new technology for organizations, it consists of a big building full of servers (computers), where data and applications are being stored, processed and webs are being hosted to run on the cloud rather than on the local computer or any device the company owns and they are all networked together and accessed on the internet.

2.1.2.2 The internet of things IOT

It is the internetworking of physical devices, buildings and other objects inserted with electronics, software, sensors, actuators and network connectivity, this internetworking permits these objects to gather and interchange data.

2.1.2.3 Mobile technology

Mobile technologies are a main pillar of the digital transformation technologies. They achieve the aim of digital transformation and allow ideal interconnection with the customer at all touch points of the business.

The mobile digital business platform is enriched based upon smartphones or tablets.

A greater productivity is incorporated within the benefits of mobile technologies by 26 percent increasing of profits.

2.1.2.4 Big data

The traditional data-bases restrictions are gone thanks to the cloud that permits assembling data resources in order to get more suppleness and upheaval for dynamic business demand.

The cloud offers dynamic resources allocation, digitalization and economies of scale to a very large mass of data.

2.1.3 Key drivers of digital transformation

As stated by (Batat, 2019), digital transformation has several key drivers , divided into three categories : technological drivers , demographic drivers and socioeconomic drivers :

Figure 1 2: Key drivers of digital transformation
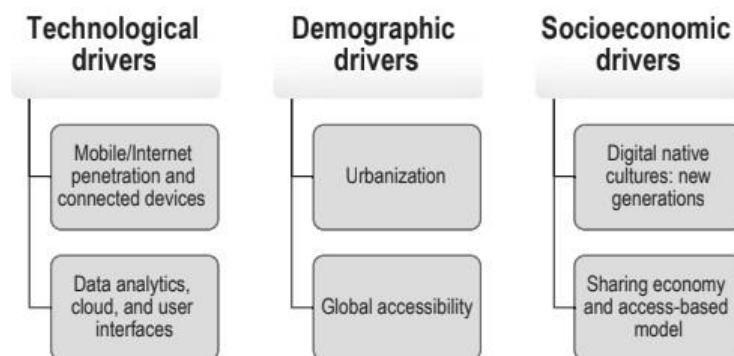
Source: (Batat, 2019)

2.1.3.1 Technological drivers

"The report of the World Economic Forum published in 2016 identifies four major technological drivers that led to today's digital transformation: mobile and Internet penetration, connected devices, big data and the cloud, and user interfaces" (Batat, 2019).

2.1.3.1.1 Mobile and Internet penetration

"The World Economic Forum report (2016) states mobile phone penetration has increased from 1% of the population in 1995 to 73% in 2014 and Internet penetration has almost doubledover seven years. The number of smartphone subscriptions is also predicted to reach 4 billion by 2025 mostly in emerging markets" (Batat, 2019).

2.1.3.1.2 Connected devices

(Batat, 2019) argued that real time customization is furnished due to the high rate of the translation of information from environments and behaviors into smart data. This process is established through the increased number of connected devices in the world.

2.1.3.1.3 User interfaces

Tasks are accomplished more rapidly and efficiently due to users interfaces that permit humans to interrelate with machines. Next era, physical user interfaces are expected to be replaced by interconnection through artificial intelligence (Batat, 2019).

2.1.3.1.4 Data analytics and the cloud

Boosting data collection through emails, mobile applications, connected devices and E-business platforms. Hence , the existence of wider virtual space or cloud for storage is a must to contain the automated advanced analytics (Batat, 2019).

2.1.3.2 Demographic drivers

2.1.3.2.1 Urbanization

Urbanization has provided the development of an advanced transporting methods and supply procedures to meet consumer's wants and needs. 60% of the world's population is expected to settle in urban zones by 2050 according to the united nations (2014) (Batat, 2019).

2.1.3.2.2 Accessibility

Mobile phones and internet access are within easy reach even in the world's most disadvantages consumer cultures. The accessibility of digital technology improved the expanded occurrence of new digital – driver consumption modes. Providing people who have disabilities with digital technologies is a main element in digital pure players strategies (Batat, 2019).

2.1.3.3 Socioeconomic drivers

According to (Batat, 2019), there are two basic pillars that drive digital transformation on a socioeconomic level the first one is the rise of digital native consumption cultures and the second one is the alternative sharing economy model :

2.1.3.3.1 The rise of digital native cultures

The Y generation and post Y generation (also known as the net generation), contribute on a large extent into the appearance of digital native culture that is a world – wide phenomenon. In these global youth cultures, young people born between 1980 and today are considered as digital natives and a distinct generation with different consumption habits from previous generations. The Y generation and post Y generation are the widest present day generation dominating the market place, they are also considered as digital experts who can employ their skills to enhance their consumption experiences yet, their social life (Batat, 2019).

2.1.3.3.2 The new sharing economy model

The shift from traditional ownership models to shared consumption stems from the idea that consumers have owned products and services over the past decades and have an interest in verifying, argumenting and even transforming their self-identity at the time of purchase. Today's consumers prefer to combine resources, products or services and share everything they have access to. The sharing economy model and its underlying processes, governance modes and consumer motivations are driven by multiple macroeconomic factors. A main factor is the declining consumer confidence in businesses as a result of the recent economic crisis. Moreover, while unemployment rises and consumer spending power collapses, consumers need to figure out new ways and behaviors to make and save money. This is why consumers are quick to respond to alternative business models. For example "peer to peer" model that concentrates on consumers as possible suppliers and buyers (Batat, 2019).

2.2 Digital Maturity

2.2.1 Definition of Digital Maturity

The rise of digital technology has become an important driver of change in many industries. Therefore, companies need to develop digital capabilities to manage successful conversion that leads to higher digital maturity . (Rossman, 2018). Therefore, scholars have given importance to the term and thus many definitions of "digital maturity" appeared:

Digital maturity is the incorporation of processes and human capital of the organization into digital processes and vice versa (Westerman, Bonnet, & McAfee, 2014).

Digital maturity is the way organizations get ready for the adaptation of ongoing digital modifications which means to respond appropriately to the digital environment (Kane, Palmer, & Phillips, 2017).

"Digital maturity is an adequate reaction of a company on changes in the digital sphere, implementation of digital achievements into business processes as well as the development of staff's digital competences" (Aslanova & Kulichkina, 2020).

To sum up: digital maturity is the degree organization is responding (reacting) to the happening digital transformation and changes.

2.2.2 Characteristics of Digital maturity

According to (Aslanova & Kulichkina, 2020) in order to attain digital maturity within an organization , the below mentioned characteristics must be established :

2.2.2.1 Strategy

The company must be awared of the prerequisite existence of a digital transformation strategy and its incorporation within the entire development strategy of the firm, and also the necessity of coordination between these two strategies, as well as, a well precised measures must take place to create a high magnitude of digital maturity.Meanwhile, the required changes, technologies and resources must be conducted in order to optimize the organization's performance indicators.

2.2.2.2 Organization

The main pillar of accomplishing a high magnitude of digital maturity is the eagerness of the organization's top management to adapt modifications within the cultur of the firm, the restructuring of the business processes and enhancing the management skills.

2.2.2.3 People

The willingness of the staff and their recognition of upcoming changes is implied by the successful execution of the digital strategy, the key to success within the firm is motivation, involvement and taking part of people in strategic changes.

2.2.2.4 Technologies

The main pilot of digital transformation is technologies. A high magnitude of digital capacity for employees engaged with digital transformation process is implied by a high magnitude of digital maturity.

2.2.2.5 Data

The cornerstone of digitalization is the right utilization and management of data. this includes the adjustment of data creation and generation and also other related processes. The focus of

the organization is prerequisite in order to enlarge data volumes and quality. The main pillar for digitalization is accurately managed and dependable data.

Section 03: Digital banking

Digital banking has revolutionized the banking industry, it has transformed the way customers interact with banks and financial institutions, offering greater convenience, security, and flexibility in managing their finances. Digital banking has become an essential part of modern banking and its popularity continues to grow worldwide.

3.1 Definition of Digital banking

Digital banking is a banking system that enables customers to conduct financial and non-financial transactions using electronic devices such as ATMs (Automated teller machines), the internet, cell phones, smartphones and other alternative delivery channels. This system is available anytime and anywhere, providing customers with access to a range of products and services designed by banks to offer banking information conveniently (Shaikh & Karjaluoto, On some misconceptions concerning digital banking and alternative delivery channels., 2016).

3.2 Security and fraud prevention

As the world becomes more digitized, banking has also evolved to become more digital, with customers relying on mobile and online banking services to conduct their financial transactions. While this convenience has made banking more accessible, it has also created new opportunities for cybercriminals to carry out fraudulent activities.

Following the tactics followed by most banks to prevent fraud for both banks and customers we have:

3.2.1 Security and fraud prevention for banks

In response to this trend, banks and other financial institutions have implemented a range of security measures to safeguard their customers' accounts and prevent fraud. These measures include:

3.2.1.1 Two-factor authentication (2FA)

2FA is a security process that requires users to provide two forms of identification before accessing their accounts. This can include a password and a one-time code sent to the user's mobile device or email address.

3.2.1.2 Biometric authentication

Biometric authentication uses physical characteristics, such as fingerprints or facial recognition, to confirm a user's identity. This technology is becoming increasingly popular in digital banking due to its convenience and security.

3.2.1.3 Fraud monitoring

 Financial institutions use sophisticated algorithms to detect and prevent fraudulent activities. These systems can flag suspicious transactions, such as large withdrawals or purchases made in different locations, and alert the customer or block the transaction.

3.2.1.4 Education and awareness

 Banks also provide educational resources to help customers identify and prevent fraud. These resources can include tips on password management, how to recognize phishing emails, and what to do if they suspect fraud.

3.2.2 Security and fraud prevention for customers

Despite these security measures, cybercriminals are constantly adapting their tactics and finding new ways to exploit vulnerabilities. As a result, it's important for customers to take their own steps to protect their accounts. These steps can include:

3.2.2.1 Strong passwords

 Customers should use unique and complex passwords for each of their accounts and change them regularly.

3.2.2.2 Avoiding public Wi-Fi

Customers should avoid accessing their banking information while using public Wi-Fi, as these networks can be easily compromised.

3.2.2.3 Monitoring accounts

Customers should regularly check their account statements and transaction histories for any suspicious activity.

3.2.2.4 Reporting suspicious activity

Customers should immediately report any suspicious activity to their bank or financial institution.

3.3 Mobile banking

3.3.1 Definition of Mobile banking

Mobile banking permits customers to perform various banking activities using their mobile devices. It is defined as banking activities carried out using mobile internet technologies (Alkhowaiter, 2020).

Table 1 2: Main services offered through mobile banking

Financial services	Non-Financial services
- Bill payments - Peer – to – peer payments - Fund transfers - Remittance - Shopping and donations - Mobile balance recharge	- Balance enquiry - PIN change - Checkbook request - Due alerts for payments - Locate ATM's

Source : (Shaikh & Karjaluoto , Mobile banking adoption: A literature review, 2015)

3.3.2 Impact of online convenience on Mobile banking adoption intention

In line with (Jebarajakirthy & Shankar, 2021), convenience refers to the sum of a person's time and effort spent to receive services or purchase products. Similarly, in the mobile banking context, convenience can be defined as the total amount of time and effort a consumer spends to avail banking services through m-banking platform. Bank customers want to spend less time and effort on banking services, therefor, banks focus on minimizing them by enhancing convenience aspects. Access convenience, search convenience, evaluation convenience, transaction convenience, benefit convenience and post-benefit convenience are key aspects of convenience that motivates consumers to adopt the mobile banking platformfor their banking services.

3.3.2.1 Access convenience

Access convenience refers to the ease and minimal time required by consumers to avail services. In the context of online services, elements such as website accessibility, product availability, time, and place flexibility are crucial for online access convenience. This factor plays a significant role in overall online service convenience. Consumers may visit the bank branch to avail banking services due to non-awareness or non-accessibility of m-banking services. However, m-banking offers a more accessible and flexible option for users who can

access banking services using mobile phones from anywhere and anytime. To increase adoption rates, banks should advertise their services on digital and social media platforms and provide m-banking services even in the absence of the internet. M-banking platforms offer several options to avail banking services, which makes it more accessible and convenient for consumers who value flexibility in terms of timing and location.

3.3.2.2 Search convenience

The ease of searching for information about a particular product or service is known as search convenience. With technological advancements and widespread internet access, consumers now have access to various online platforms that allow them to quickly and easily search for information. When it comes to banking services, consumers often turn to online platforms to gather information before making a decision. This is because searching for banking information online is much faster and more convenient than visiting a physical branch. Mobile banking platforms, in particular, offer consumers a wider range of banking products and services, as well as the ability to access reviews from other customers. When consumers perceive that they can easily search for banking services information over mobile banking platforms, they are more likely to adopt this method.

3.3.2.3 Evaluation convenience

Evaluation convenience refers to the availability of easy-to-understand and detailed product descriptions, which are crucial for consumers in making purchase decisions. Consumers typically evaluate product information, price comparisons, product performance, and brand comparisons before making a final decision to buy. In traditional branch banking, consumers often collect information about specific banking products and compare them with similar products in terms of time, effort, and cost. However, with the rise of mobile banking platforms, consumers can easily access detailed information about banking products and compare the performance of similar products in a more convenient manner. Moreover, consumers can also access the experiences of existing customers to better evaluate product performance and engage in discussions with other customers to discuss the pros and cons of a particular product. By using mobile banking platforms, consumers can stay updated on the latest information, read online reviews, and access relevant content that helps them in selecting suitable banking products.

3.3.2.4 Transaction convenience

Transaction convenience refers to the speed and ease with which consumers can complete a transaction, with minimizing the time and effort required being the key element. For online transactions, easy checkout, uninterrupted processes, transaction confirmation, several options, and price consistency are major factors that contribute to transaction convenience. In contrast, performing transactions in a branch banking context requires consumers to visit the branch, wait in long queues, and adhere to specific banking services. On the other hand, mobile banking platforms enable consumers to perform transactions anytime and from anywhere with just a few clicks, making the process faster and more convenient. Additionally, consumers can schedule future transactions and perform multiple transactions simultaneously over mobile banking platforms. If any issues arise during a transaction or if it fails, several options such as a toll-free number, live chat, and email are available to provide consumer support and resolve the issue.

3.3.2.5 Benefit convenience

Benefit convenience refers to the time and effort required to access the core benefits of a service. Major elements of benefit convenience include immediate possession, timely delivery of promised services, and the attitude of service employees. In online platforms, there may be a time difference between purchasing and possessing products, which can lead to uncertainty and perceived delays in delivery. However, online platforms allow consumers to access services from anywhere without having to visit a physical store. In the context of banking, consumers may need to visit banks multiple times to access specific services, which can be time-consuming and require significant effort. In contrast, m-banking platforms offer immediate access to banking services without requiring consumers to spend time and effort visiting a physical bank. This is particularly beneficial in urgent situations where consumers need immediate access to banking services. Additionally, consumers may only be able to access banking services during specific hours in a branch banking context, whereas m-banking platforms enable consumers to access banking services anytime, anywhere. Thus, benefit convenience can motivate consumers to adopt m-banking services.

3.3.2.6 Post-benefit convenience

Post-benefit convenience refers to the ease and speed with which consumers can contact their service provider to resolve any issues they may face after availing a service. After-sales services have a significant impact on consumers' evaluation of the service. In traditional branch banking, consumers have to physically visit the bank to get their issues resolved, which can be time-consuming and inconvenient. In contrast, m-banking platforms offer more convenient options

to contact customer support, such as email, live chat, and toll-free numbers. Consumers can also track the status of their complaints in real-time, which is not possible in branch banking. Effective complaint management, live complaint tracking, multiple options to contact support, and fulfilling warranty commitments are crucial post-benefit services that encourage consumers to adopt m-banking services.

Conclusion

Digitalization is to make use of different digital technologies to modify the entire business process in order to enhance revenue and generate value. There are three main types of digitalization, an activity-links-centred type, a resource-ties-centred type and an actor-bonds-centred type. The digitalization process consists mainly of the assessment of the company's level of maturity, moving to the identification of possible markets, then we have the internal assessment followed by the elaboration of the digital strategy that leads to the identification of objectives to generate a roadmap and finally launching the new business model on the market. The main barriers of digitalization faced in Algeria mainly consist of the absence of digital business strategy, the full dependence on outside consultants, technical issues, lack of budgets allocated to digitalization, and the fear of employees of being replaced.

Digitization is the process of transiting the material data into a digital form. It consists mainly of three types: on demand digitization (Ad-hoc digitization), programmatic digitization (systematic digitization) and forensic digitization. Digitization workflow consists of material selection, preparation of documents, scanning, processing for editing, quality assurance, metadata and indexing, backup and archiving, publishing and finally check out. The difference between digitalization and digitization lies in the fact that digitization is related to the information nevertheless digitalization is related to the entire business process.

Digital transformation is the use of digital technologies within an organization to enhance business processes in matter of models and operations. Technology aspects of digital transformation are composed of: cloud technology, the internet of things (Iot), mobile technology and big data technology. Key drivers of digital transformation are divided into technological drivers that contain mobile and internet penetration , connected devices , user interfaces and data analytics , we have also demographic drivers that include urbanization and accessibility , then we have socioeconomic drivers that are made up of the rise of digital native cultures and the new sharing economy model .On the other hand we have digital maturity that is known as the degree an organization is responding to the happening changes and transformation of digital technologies .It encompasses five main characteristics : strategy , organization , people , technologies and data .

Digital banking is a system created by a bank, permitting customers to establish financial and non-financial transactions by making use of digital technologies. Its security and fraud prevention methods consist mainly in two factor authentication, biometric authentication, fraud

monitoring, education and awareness, strong passwords, avoiding public Wi-Fi , monitoring accounts and reporting suspicious activity . Moving to mobile banking that consists of performing banking activities using mobile devices, we have also the impact of online convenience on mobile banking adoption intention that is composed of access convenience, search convenience, evaluation convenience, transaction convenience, benefit convenience and post-benefit convenience.

Chapter 02: Online Consumer Behavior

Introduction

Virtually all businesses nowadays opted for selling their products online therefore, online shopping has experienced explosive growth and has become an integral part of many people's lives. With the rise of e-commerce, consumers now have access to a vast array of products and services at their fingertips, making online shopping more convenient and accessible than ever before. As consumers increasingly turn to the internet for their shopping needs, it's important for businesses to understand online consumer behavior and the factors that influence it. One aspect of online consumer behavior that has gained significant attention in recent years is online impulse buying. In addition to understanding online impulse buying, businesses must also focus on creating a positive online customer experience to attract and retain customers.

In this chapter, we will explore online consumer behavior pinpointing its features, in the first section we will discuss the difference between offline and online consumer behavior, online impulsive buying behavior, with both its encouraging and discouraging features, we will also go through its motivations and barriers of online buying. In the second section we will examine the factors that influence online consumer behavior starting with environmental factors that consist of E-service quality, E- word of mouth and product price and cost, moving to behavioral factors that include perceived risk, perceived ease of use, perceived usefulness, trust and satisfaction. Then we have demographic factors that are made up of age, gender and household income. Last we have Psychological factors that encompass stress, self-justification, personality traits and attitude. In the third section we will discuss online customer experience mentioning its design elements and realms and the difference between physical and online customer experience.

Section 01: Digital Impulsive Buying Behavior

As technology has evolved, the way people shop has changed, and the rise of online shopping has given consumers access to a vast array of products and services from the comfort of their own homes. Online shopping has become a common phenomenon in modern society, with the proliferation of e-commerce platforms and digital marketplaces. As a result, researchers and marketers have shown a keen interest in understanding the attitudinal elements and behavioral patterns of online consumers. In this context, understanding the attitudinal drivers and features of online impulse buying is critical to developing effective marketing strategies and enhancing consumer experiences. This section aims to explore the attitudinal elements of online consumer behavior and the features of online impulse buying, shedding light on both encouraging and discouraging ones.

1.1 Definition of Offline Consumer Behavior

Offline consumer behavior encompasses the behaviors, attitudes, and decision-making processes that individuals demonstrate when buying products or services in physical establishments such as brick-and-mortar stores, shopping malls, or any other location that involves face-to-face interactions (Yao, Osman, Sabri, & Zainudin, 2022) .

1.2 Definition of Online Consumer Behavior

With the rapid development of information technology (IT) in recent years, the Internet and e-commerce boom have contributed greatly to the emergence of different opportunities characterized by the absence of spatial boundaries since , the Internet is having an increasing impact on people's daily life, communication, entertainment, social activities and shopping . (Shiau & Luo, 2012) . These developments and alterations led to the appearance of the concept of online consumer behavior.

According to (Javadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012), online consumer behavior indicates the process of how consumers make decisions to purchase goods and services over the internet.

1.3 Difference between Online and Offline Consumer Behavior

Having distinct preferences, expectations, and decision-making processes, online and offline consumers require tailored approaches from businesses. By recognizing these differences,

companies can customize their strategies to engage effectively with their specific target audience, deliver smooth and satisfying shopping experiences, and effectively address the needs of consumers in both online and offline realms (Díaz, Gómez, & Molina, 2017) .

1.3.1 Accessibility and convenience

One key difference between online and offline consumer behavior is accessibility and convenience. Online consumer behavior provides the advantage of round-the-clock access to a diverse range of products and services from anywhere with an internet connection. On the other hand, offline consumer behavior necessitates physical presence and is limited by factors such as store hours, location, and travel constraints (Jiang, Yang, & Jun, 2013) .

1.3.2 Information search

Another distinction between online and offline consumer behavior lies in the information search process. Online consumers have the advantage of accessing abundant product information, reviews, and comparisons, enabling them to conduct thorough research before making a purchasing choice. Conversely, offline consumers typically depend on the limited information available in-store or through traditional media sources (Sands, Ferraro, & Luxton, 2010) .

1.3.3 Social influence

The influence of social factors varies between online and offline consumer behavior. In the online realm, consumer behavior is strongly shaped by social media, online reviews, and recommendations from peers and influencers. On the other hand, offline consumer behavior is more influenced by personal interactions with sales staff, as well as the opinions and input from family and friends (Confente & Vigolo, 2018) .

1.3.4 Personalization and customization

Distinguishing online and offline consumer behavior further, personalization and customization play a significant role (Bleier, De Keyser, & Verleye, Customer engagement through personalization and customization, 2018).

Online platforms leverage user data to provide personalized product recommendations, targeted advertising, and tailored shopping experiences (Anshari, Almunawar, Lim, & Al-Mudimigh, 2019) .

In contrast, offline consumer behavior leans more towards personal preferences and interactions with sales associates to identify suitable products.

1.3.5 Purchase Process

Online consumers have the convenience of making quick purchases with just a few clicks, while offline consumers usually go through a more time-consuming purchase journey that includes physically choosing a product, making a payment, and occasionally organizing transportation logistics (Kim, Liabaque-Saenz, & Park, 2019).

1.3.6 Transaction Security

Online consumers may express apprehensions regarding online security, data privacy, and fraudulent activities. In contrast, offline consumers enjoy the benefit of being able to physically examine products and engage in cash transactions (Datta & Roy, 2022) .

1.3.7 Return and Exchange Processes

Online consumers frequently have the choice of convenient returns and exchanges through shipping or drop-off locations, whereas offline consumers can directly return or exchange products at physical retail stores (Liao, Widowati, & Hsieh, 2021).

1.3.8 Tangible Experience

Offline consumer behavior provides the opportunity to engage in a sensory experience by physically touching, trying, and examining products before making a purchase. In contrast, online consumers rely on product descriptions, images, and videos to simulate this experience. It's worth noting that these distinctions are not entirely rigid, as there can be overlap and evolving trends in consumer behavior with the advancement of technology and the increasing integration of online and offline experiences (Moon & Armstrong, 2020) .

1.4 Online impulse buying

An online impulse is defined as an instant and immediate online purchase without any preemptive intent . Recent researches have conceptualized impulse buying as a process-outcome mechanism within the realm of individual psychological approaches that occurs when consumers experience an instant, often persistent desire to purchase something immediately. Such impulses are hedonistically compounded and can lead to emotional dispute. Moreover, online impulse purchases are common among today's consumers since online shopping frees consumers from the restrictions they experience in brick-and-mortar stores, increasing the likelihood of impulse purchases (Chan, Cheung, & Lee, 2017).

In line with (Sofi & Nika, 2017), impulse buying takes place when customers make purchase decisions based on spontaneous emotions without considering the possibleconsequences decision .

1.5 Encouraging and discouraging features for online impulse buying

(Aragoncillo & Orus, 2018) argued that the distinctive features of online and offline channels may either promote or deter impulse buying behavior mentioned in the following:

1.5.1 Encouraging features

- The availability of a wider range of products is a key determinant that drives online shoppers towards impulsive buying. Unlike brick-and-mortar stores, e-commerce platforms are not restricted by physical space, enabling them to provide a more extensive selection of items to choose from.

- The second determinant is the use of sophisticated marketing tactics, such as tailored emails based on past purchases or showcasing new products with direct links to the online store, which can significantly increase the likelihood of impulsive buying in e-commerce. While sales promotions are also present in physical stores, they appear to be more impactful in online shopping. With fewer opportunities for multisensory engagement in the virtual world, sales promotions and offers are more likely to capture the attention of online shoppers. Moreover, online promotions can be more personalized than their offline counterparts, increasing the chances of offering consumer's products that are highly relevant to their specific needs and preferences

- The third determinant is the role of credit cards in promoting impulsive buying behavior. Although this payment method is also prevalent in physical stores, it is more widely used in online transactions. As a result, the online channel may be more conducive to impulse buying than its offline counterpart. When using digital payment methods, consumers often perceive money as less tangible, leading to the belief that they are not actually spending it. Consequently, the financial implications of impulsive purchases are not immediately apparent.

- The internet's ability to provide anonymity and eliminate human interaction can also foster impulsive buying behavior in the online realm. The circumstances that promote anonymity are more conducive to impulse buying, making this feature a significant advantage of e-commerce over brick-and-mortar stores. Online shoppers may feel more at ease purchasing items that could potentially cause embarrassment in a physical store. Additionally, most online purchases

are conducted alone and in private, whereas offline shopping typically involves interacting with salespeople or companions, which can help to control impulsive buying tendencies. Therefore, the absence of human contact in the online environment may further facilitate impulsive buying behavior.

- Lastly, physical store shopping is restricted by location and operating hours, whereas these constraints are nonexistent in the online world. In addition, accessing an e-commerce platform requires no expenditure or physical exertion, such as transportation or parking, which can increase the probability of spontaneous visits that result in impulsive purchases. Onlineshoppers are also frequently presented with products that may catch their attention, even if theywere not actively seeking them or had no prior intention of buying them. As a result, purchasingthese items is as simple as clicking a button, which can facilitate impulsive buying behavior toa greater extent than in physical stores.

1.5.2 Discouraging features

 - The urgency to possess a product is a defining feature of impulse buying, as immediate satisfaction reinforces impulsive behavior. However, online shoppers are often faced with a delay in product delivery for physical goods, which goes against the need for instant gratification and can discourage impulsive buying.

- Impulse buying is the outcome of sensory experiences such as seeing, touching, hearing, smelling, and/or tasting. Nevertheless, the virtual realm lacks the ability to elicit all five senses as efficiently as physical stores, which may result in a weaker inclination towards impulsive purchases online. Unlike offline channels, online stores can only offer sound and visual stimuli, but are currently unable to engage the other senses. This shortcoming could be crucial in the clothing industry, where touch is a crucial sense that can trigger impulse buying.

- Online impulse buying may be deterred by the accessibility of online product and price comparisons, as well as the potential expenses associated with shipping and refunds. Consumers can use the internet to compare products and prices, but they also seek to minimize shipping and refund costs, which can dampen their impulse to buy. Consequently, high shipping and refund costs can curb their purchasing impulses.

- Convenience and easy access, despite being regarded as a catalyst for online shopping, can also act as a deterrent. In a physical store, consumers may be more prone to impulsive buying to avoid the inconvenience of returning to the store later. However, in the online setting,

revisiting a store is relatively effortless, and consumers can exercise greater restraint over their purchasing impulses, leading them to postpone their buying decision.

1.6 Barriers and motivations of online buying

1.6.1 Barriers

- As (Jain & Kulhar, Barriers to online shopping.., 2019) argued that , perceived risks related to personal information and privacy risks related to address and contact numbers are also areas of concern when making online shopping decisions , privacy risk is also one of the sources of subjective internet risk perceived by consumers , awareness of privacy and security risks is the biggest obstacle in the development of consumer-centric e-commerce activities. Consumers often perceive more risk when shopping online than in traditional shopping channels such as brick-and-mortar stores. Perceived risks may also negatively impact consumers' willingness and intentions to shop online (Pentz, Preez, & Swiegers, To bu (Y) or not to bu (Y): Perceived risk barriers to online shopping among South African generation Y consumers., 2020) .

- There may also be security risks when placing an order and inconvenience when shopping online. Another significant obstacle to investigate. Inconvenience is caused by the complexity of navigating and submitting orders, inappropriate websites, or delaysin receiving products. Stores give shoppers the opportunity to touch products and obtain information directly from sellers. In an online shopping environment, on the other hand, shoppers do not have the opportunity to touch, feel, or smell products during their purchase (Jain & Kulhar, Barriers to online shopping.., 2019) .

- Poor website quality, slow download speeds, insufficient productinformation Unreliable retailers negatively impact online shopping acceptance.consumer Behavior is influenced by accuracy of products displayed in decision making of online purchase. Different technologies can make it difficult to display true colors or product dimensions. Products may look different online than in reality (Jain &Kulhar, Barriers to online shopping.., 2019) .

- Another aspect that can have a significant effect on a consumer's online purchasing behavior is previous purchase experience , consumers new to online shopping however, who might be interested in finding products or shopping online are called "Inexperienced" online shoppers , by reason of the lack of experience these consumers have , perceived risk may play a main role in their decision to shop online

(Pentz, Preez, & Swiegers, To bu (Y) or not to bu (Y): Perceived risk barriers to online shopping among South African generation Y consumers., 2020).

-   Off the back of the physical separation of buyers and sellers that characterize online purchasing. For customers, this separation creates concerns about the delay between placing an order and receiving the product and additional shipping charges. products are very expensive, and shipping costs increase the total cost of the product and make it cheaper to buy locally. Therefore ,the service offered by online retailers is a major barrier to online purchases (Jain & Kulhar, Barriers to online shopping.., 2019) .

-   In the context of online shopping, time risk is defined as potential loss of time and effort. This includes issues related to website navigation, waiting times to receive products, the time it takes to return incorrect items, and delays in processing and delivery. Furthermore, since online shopping involves remote transactions, consumers who shop online cannot use or consume the product immediately and have to wait for the product to be delivered. The delay between purchase and actual receipt and consumption can result in consumer dissatisfaction, low repurchase intent and dissatisfaction. (Pentz, Preez, & Swiegers, To bu (Y) or not to bu (Y): Perceived risk barriers to online shopping among South African generation Y consumers., 2020) .

-   Psychological risk is also a major barrier to online shopping. Physical distancing and lack of face-to-face contact increase consumer anxiety and perceived risk in online shopping. Correspondingly that psychological risk influences consumers' online purchasing decisions, explaining why many consumers first research products in stores and then purchase them online increase. As a result, consumers are more likely to find online shopping more complex and difficult than traditional shopping, and are hesitant to participate in it. (Pentz, Preez, & Swiegers, To bu (Y) or not to bu (Y): Perceived risk barriers to online shopping among South African generation Y consumers., 2020).

1.6.2 Motivations

-   Hedonic motives are defined as enjoyments or pleasures derived from the use of technology and are associated with the pursuit of happiness, indulgence, imagination, awakening, and sensuality that can provide consumers with experiential and emotional benefits. increase. Pleasure motives are positively correlated with celebrity intentions. Hedonic consumers share information to meet social needs and emotional attachments. Hence , hedonic value can be realized through the emotions that arise from the social experience of shopping (Akram, Junaid, Zafar, Li, & Fan, 2021) .

- Utilitarian motivations are related to rational, important, decision-making, and goal-oriented tasks. As a result, utilitarian motivation begins with a task or goal. Perceived benefits depend on whether the task or goal is completed effectively during the process. Utilitarian motivations are responding to consumer needs , ease of use and satisfying results (Akram, Junaid, Zafar, Li, & Fan, 2021) .

- Online shopping is advantageous in terms of accessibility, compared to brick-and-mortar retailers, online retailers are freed from inventory pressures, so consumers have a greater choice of diverse products available online. Potentially increased availability of a wide range of products without risk of loss increases motivation for consumers to shop online (Akram, Junaid, Zafar, Li, & Fan, 2021) .

- Searching and shopping online can be viewed as a beneficial activity for online shoppers due to the wide availability of information. Information-gathering motives are considered in brick-and-mortar stores that are more prominent in online shopping. The wealth of information produced by online environments, as opposed to the limited information produced by offline environments, is a key feature of information availability. Online consumers can also benefit from information gained from the interconnectivity of some of the other websites as well. So , they can reduce time , effort and energy of information – gathering (Akram, Junaid, Zafar, Li, & Fan, 2021) .

- Openness to experience that expresses one's willingness to consider alternative approaches, intellectual curiosity, and enjoyment of artistic pursuits reflect the ability to try new things, appreciate new ideas, and have new experiences (Aydin, 2019) .

- Through online shopping, consumers are seeking their need for uniqueness and individuals are looking for establishing a unique image in society. This will give them a unique social image. This trend is related to an individual's desire to move away from conformity. It is a trait that evokes the motive of otherness due to an individual's propensity to move away from social norms, the individual wanting to be different from others, but only to a certain extent. When people feel similar to another person, they try to create modest differences through online purchasing (Aydin, 2019) .

Section 02: Key factors of online consumer behavior

Understanding the factors that influence online consumer behavior is essential for businesses operating in the digital marketplace. As consumers increasingly shift towards online shopping and interactions, it becomes crucial to identify and analyze the key determinants that drive their behavior in the online realm. This section aims to explore the fundamental factors that shape online consumer behavior, providing valuable insights for businesses to develop effective strategies and enhance their digital presence.

2.1 Environmental factors

Environmental factors have a significant impact on online consumer behavior, shaping their decision-making process and preferences in the digital realm. Understanding these environmental factors is essential for businesses to align their strategies and offerings with the evolving needs and concerns of environmentally conscious online consumers.

2.1.1 E-Service quality

(Bauer, Hans, Tomas, & Maik, 2006) stated that the online shopping process has four stages: information stage, contract stage, fulfillment stage and post-sale stage. They argue that the attributes used by online shoppers differ according to customer needs at different stages of the online shopping process.

(Blut, 2016) claimed that e-service quality is best conceptualized as a hierarchy within four dimensions, four of which influence the overall perception of service quality: website design, order fulfillment, customer service and security / privacy.

2.1.1.1 Website design

(Blut, 2016) stated that website design is the first aspect of e-service quality and receives the most attentiveness in the literature. According to (Holloway, Betsy, Sharon, & Beatty , 2008) customers who are new to online shopping at the information stage are more interested in product information, and the easier it is to access information, the higher is the evaluation of the website. (Blut, 2016) argued that customers at this stage are interested in the quality of the information provided, the aesthetics of the site when making a purchase decision, the smoothness of the purchasing process, the ease of browsing the site, product selection, product availability, information about pricing, personalization of information and permanent availability of the website.

2.1.1.2 Fulfillment

Order fulfillment refers to the ability of an online store to guarantee that customers receive what they think they ordered (Blut, 2016). Order fulfillment includes all activities from the moment a consumer makes a purchase online until the product is delivered to the consumer. It can make or break your online business. In online commerce, out-of-stock is strongly negatively correlated with a consumer's loyalty to his web store, so failure to meet order fulfillment promises can negatively impact online sales (Nguyen, De Leeuw, & Dullaert, 2018).

2.1.1.3 Customer service

In line with (Blut, 2016) customer service includes attributes related to the general service level of the online store and return handling/policy. The online store does not offer face-to-face contact, but can provide an 800 number for customer service or contact a service agent via email.

2.1.1.4 Security / Privacy

One of the primary concerns of online consumers is the security of their personal and financial information. Consumers must trust that their data will be protected from unauthorized access and that their transactions will be secure.

As (Blut, 2016) stated that security/Privacy refers to customer worries about potential security/privacy vulnerabilities. Customers often avoid online stores if they feel that credit card payments are not secured and that their information is not private during or after the sale. Nonetheless, online shoppers expect their online stores to protect them from fraud, theft, and "junk" email after they make online purchases. Against this background, website security and privacy are important features of online shops, and security and privacy aspects are considered to influence the overall consumer evaluation of online shops.

2.1.2 Electronic word of mouth (eWOM)

Referred to as positive or negative statements made by potential, actual, or former customers about a product or company that are made available to a large number of people or institutions via the Internet . eWOM is believed to have a greater impact on Internet users, and consumers are more likely to believe approved eWOMs for products provided by reliable sources. By reading and frequently interacting with eWOM sources such as blogs and websites, consumers become familiar with and trust the eWOM platforms and the content they provide. Moreover, building this trust can be heavily dependent on previous interactions with the eWOM platform. Customers can trust positive eWOM and shop on website based on blogger/website

recommendations for specific products and services. For online shoppers, online opinions and (Chetioui, Lebdaoui, & Chetioui, 2021).

2.1.3 Product price and cost

Product Price is the product element that has been reported to play a significant role in a consumer's purchasing decision and as the monetary value of a product increases, so does the financial risk associated with the purchase (Pentz, Du Preez, & Swiegers, To bu (Y) or not to bu (Y): Perceived risk barriers to online shopping among South African generation Y consumers, 2020) Online product prices influence customers' purchase intentions because they can compare prices across many other products and across many different websites to make the final decision. Accordingly , the costs incurred by purchasing a product affect the consumer's experience, such as the cost of installing an application or software to use an e-shopping service, or the cost of paying for Internet services when processing payment for a purchase (Pham, Do Thi , & Ha Le, 2020).

2.2 Behavioral factors

Behavioral factors play a pivotal role in shaping online consumer behavior, influencing their decisions and actions in the digital marketplace. Understanding these factors is essential for businesses seeking to optimize their strategies and effectively engage with their target audience.

2.2.1 Perceived usefulness

Defined as an individual's perception that the use of new technology enhances or improves their performance , it is also refered to as consumers' perception of the outcome of the experience, perceived ease of use, is related to consumer perception of the process leading to the final outcome (Cho & Sagynov, 2015) .

Moreover, perceived usefulness is one of the fundamental precursors of leveraging innovation it refers to the advantage that mobile technology offers to users, It also indicates the degree to which the target customer believes that the use of IT (Information Technology) will create significant added value. (Modified from Amin, M., Rezaei, S., & Abolghasemi, M. 2014).

2.2.2 Perceived ease of use

Referred to by how much people believe that new technology will be easy to use and free of effort (Cho & Sagynov, 2015).Consumers are more likely to adopt and uses digital technologies if they perceive them to be easy to use and accessible . (Hansen, Saridakis, & Benson, 2018) , argued that perceived ease of use enhances the effect of behavioral discipline on intent to use

social networking services for transactions. It has been identified as a key component for researching and evaluating user embracing of a particular technology , and considered as an essential motivational factor for consumers' technology using intention (Amin, Rezaei, & Abolghasemi, 2014) .

2.2.3 Perceived risk

The online transactions separate payment and product delivery in time. Consumers are required to provide shipping-related financial information and personal information in order to complete the checkout process. There is a perceived or actual risk due to technical failures or human errors most often. The risks associated with online shopping that are mentioned include financial risks , product risks , and convenience and non-delivery risk (Sinha & Kim, 2012) .

2.2.4 Trust

Trusting an organization as a second party for online transactions means mediator of user engagement in online transactions. Lack of trust leads to transaction avoidance. Recent advances in understanding user behavior in commercial and research contexts have increased interest in trust and its determinants within the digital environment. Online trust is considered a critical success factor for any online business, e-service, e-communication or digital initiative (Hansen, Saridakis, & Benson, 2018) .

2.2.5 Satisfaction

In general, satisfaction refers to how customers rate a brand based on all encounters and involvements, and, also to the feeling of joy that emanates from comparing ongoing product performance to original expectations. It is a post-purchase evaluation of consumers, and an emotional reaction to the overall product or service experienced. Satisfaction in online consumer behavior is marked as mobile user's overall positive assessment of, and feeling for, the given mobile services (Amin, Rezaei, & Abolghasemi, 2014) .

2.3 Demographic factors

2.3.1 Gender

As modified from (Lin, Featherman, Brooks, & Hajli, 2019) , men show a more positive attitude towards online shopping. This endorses the influence of gender on users' online behavior on technical and social factors. For example, the influence of trust on online shopping intentions is stronger for women than men because of their different communication styles. Women are network oriented and men are task oriented. Therefore, gender mitigates the impact of relative dominance and compatibility on consumer online shopping adoption.

2.3.2 Age

The impact of technology use on individual responses can be explained by the generation gap caused by the digital divide. Research so far has shown that digital natives fall into two categories: first generation digital natives (older digital natives born between 1980 and 1992) and second generation digital natives (younger digital natives born after 1993) that has given rise to by the advent of the web 2.0 technology. Compared to older digital natives, young digital natives value self-efficiency and focus on accomplishing multiple tasks. As such, using new technology to accomplish tasks and outcomes was more likely to generate positive attitudes. Compared to younger digital natives, older digital natives tend to be more cautious or rational. As such, it may focus more on economic activities, such as financial transactions and obtaining financial gains (Zhang, Shao, Li, & Freng, 2021).

2.3.3 Household income

Income is expounded as money consumer receives regularly from work or investments. Interestingly, another set of studies suggested that self-perceptions of financial stability were a better determinant of consumer behavior than actual income. Usually, people try to report subjective feelings of inadequate income, even when objective economic conditions do not support such attitudes. A study by(Karlsson et colleagues) , households who feel worse off financially than others report buying less goods compared to households who feel they are in better financial standing , recognizing the impact it has, they indicated that they planned their purchases more carefully (Di Crosta, et al., 2021) .

2.4 Psychological factors

In situations of uncertainty and threat, such as health crises , natural disasters and pandemics, primitive parts of our brains typically come to the fore, driving individuals to behaviors they perceive as necessary for survival (Di Crosta, et al., 2021) .

2.4.1 Stress

Previous research has shown that individuals can become introverted and passive in response to stress, and this lazy response can lead to decreased purchase intentions. Nonetheless, some studies show that stress can lead to aggressive reactions that reinforce impetuous spending behavior. Additionally, event-related stress can lead to depressed mood. Under some certain circumstances , depressed mood may be reflected in the development of dysfunctional spending behaviors such as Impulsiveness (a sudden need to buy something with an exaggerated

emotional response) and/or Compulsive Purchasing (repeated purchases due to inability to control impulses) (Di Crosta, et al., 2021) .

2.4.2 Self – justification

Self – justification refers to the cognitive reassessment process that seeks to reduce cognitive discordance arising from conflicts between beliefs, values, and behaviors. In order to maintain positive self-esteem, people often try to justify their decisions without feeling wrong. In consumer behavior research, it is generally accepted that consumers emphasize positive arguments that support their choices and devalue counterarguments that challenge their actions . We must pinpoint that self-justification strategies can also be associated with things consumer doesn't need. Fun and entertainment products may be better suited to challenge boredom for freedom (Di Crosta, et al., 2021) .

2.4.3 Personality traits

The consumers'personality traits affect their buying behavior. In spite of that, conscientiousness, openness, and emotional stability are personality traits that were associated with compulsive buying, impulse buying, and utilitarian shopping. However, it is always an open matter of how different personality traits are related to consumer behavior (Di Crosta, et al., 2021).

2.4.4 Attitude

The cognitive-affective-conative model has received increasing attention in recent years and is considered effective in helping to understand user adoption of new technologies (Wang, Liu, He, WUJI, & Luo, 2020).

Figure 2 1: The association between emotion, conation and cognition
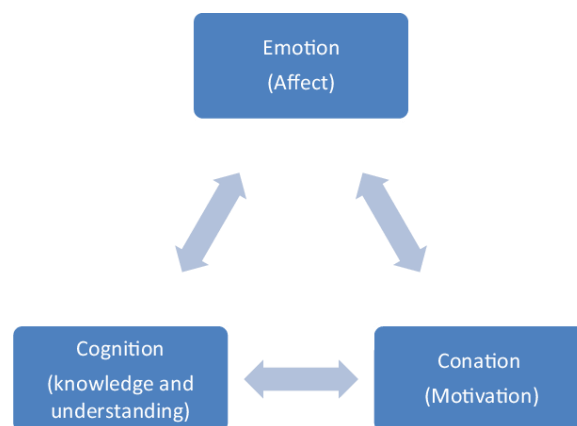
Source : (Bate,Hommes,Duvivier & Taylor ,2013)

2.4.4.1 Cognition

(Wicaksono & Putra, 2022) argued that cognition is the component associated with knowledge, mindset, and beliefs that influence an individual's perception regarding objects.

As modified from (Shahpasandi , Zarei, & Nikabadi , 2020)in line with researches in environmental psychology , cognitive responses are associated with the processes that occur in an individual's psyche as a result of interaction with stimuli. In the context of online flow, the cognitive experience of online shopping stems from the mental processes that take place when a consumer browses the web while online shopping.

Richard & Chebat (2016), argued that online cognition relates to the functional characteristics of a website (i.e. informational content effectiveness and informational content). In the context of e-commerce, the cognitive factor consists of emotional intelligence and purchase value (eg, utility value and hedonic value) (Lim & Kim, 2020).

The online cognitive dimension represents the knowledge or skills that encompass the comprehension and competencies of the shoppers. In this dimension, shoppers develop a wide range of personal functions to meet challenges (Akram, et al., 2021)

2.4.4.2 Affect

In line with (Wicaksono & Putra, 2022) , affect is a group of elements that related to feelings and emotions regarding an object .

The affective dimension relates to mental energy, emotions and motivation, and learners develop personal sensitivity to ensure mental balance. Emotional appraisals are related to feelings, emotions, and gut reactions (Akram, et al., 2021) .

Since, customers anticipate the positive and negative emotional consequences of their decisions at various stages of the buying process online or offline . The affective part of the attitude is the expected customer experience, depending on what the customer thinks the customer experience will be like at the various retailers they choose to search for information about the products they want to purchase (Viejo-Fernández, Sanzo-Pérez, & Vázquez-Casielles, 2019) .

2.4.4.3 Conation

Conation is the component related to propensity to action and desire for objects (Wicaksono & Putra, 2022) .In the conative phase , consumers' sentiment is translated into actions (Han & Choi, 2019) . Nonetheless, during the conation stage, the behavioral outcome is based on the emotional experience where consumers make the final decision about the behavioral intention.

Also , Intentions to purchase are defined by conative experiences, which are the result of both cognitive and affective experiences (Yuruk-Kayapinar, 2020).

Section 03: Online Customer Experience

In this section, we'll explore the attitudinal elements that underpin online consumer behavior and design elements and realms that shape the digital customer experience. By understanding the mentioned elements, businesses can gain insights into what drives consumer behavior in the digital marketplace and how they can create more engaging and satisfying customer experiences. Whether you're an online retailer looking to build customer loyalty or a marketer seeking to better understand the online consumer mindset, this section will provide you with valuable insights.

3.1 Customer Experience

Customer experience has quickly become one of the key marketing concepts for both experts and scientists. 93% of today's executives agree that delivering relevant and credible customer experience is important to their organization's overall performance (De Keyser, Verleye, Lemon, Keiningham, & Klaus, 2020).

The decision of digital consumers to purchase a product or service is influenced by a combination of their thoughts, beliefs, emotions, dreams, and current moods, all of which reflect their online shopping journey. As a result, each purchase provides a unique experience for digital consumers that can be observed in their post-purchase behavior. Following their purchase and experience, consumers provide feedback to businesses to express their level of satisfaction. If they are satisfied, they are more likely to become loyal customers who will continue to purchase products and revisit the website. As they share their positive experiences with others, businesses can better predict future customer behavior. Therefore, post-purchase experiences are critical for businesses to understand and improve customer loyalty (Yuruk- Kayapinar, 2020) .

3.2 Definition of Online Customer Experience

According to (Becker & Jaakkola, 2020) customer experience is the reaction and response of the customer to a particular stimulus .

 "Customer experience is a non-deliberate, spontaneous responses and reactions to particular stimuli" (Becker & Jaakkola, 2020) .

In line with (Godovykh & Tasci, 2020), customer experience is the sum of the cognitive, emotional, sensory and conative responses on the spectrum from negative to positive evoked by all the stimuli encountered before, during and after consumption influenced by contextual and brand-related factors that filter consumer differences .

To sum up customer experience is an unprompted response that a customer displays to a certain stimulant.

3.3 Difference between Physical and Digital Customer Experience

The difference between physical and digital customer experiences lies in the way customers interact with businesses and their products or services.

3.3.1 Physical Customer Experience

In a physical customer experience, customers engage with a business or its offerings in a physical environment. This could involve visiting a brick-and-mortar store, interacting with sales representatives face-to-face, examining products firsthand, and utilizing the senses to make decisions. Physical customer experiences often provide tactile sensations, immediate assistance, and a more personalized interaction . (Jain, Aagja, & Bagdare, Customer experience–a review and research agenda., 2017).

3.3.2 Digital Customer Experience

On the other hand, a digital customer experience occurs in an online or digital setting. Customers interact with businesses through websites, mobile applications, social media, or other digital platforms. They browse products or services virtually, relying on images, descriptions, reviews, and virtual assistance. Digital customer experiences offer convenience, ease of access, and the ability to compare options quickly. However, they may lack the physical interaction and sensory elements present in a physical customer experience (Hoyer, Kroschke, Schmitt, Kraume, & Shankar, 2020).

It's important to note that advancements in technology have led to a blurring of these distinctions, with businesses striving to integrate physical and digital elements to create a seamless and holistic customer experience. For example, some businesses offer augmented reality (AR) or virtual reality (VR) experiences to bridge the gap between physical and digital interactions. Ultimately, the goal is to provide customers with a positive, engaging, and personalized experience, regardless of whether it's physical or digital (Hasan, Weaven, & Thaichon, 2021) .

3.4 Design elements of Online Customer Experience

In line with (Bleier, Harmeling, & Palmatier, Creating effective online customer experiences., 2019) , the products' website is the heart of online customer experience. It is composed of basic design elements defined as verbal and/or visual stimuli that grant building material for a particular page. The spotlight was on design elements because they are directly related to product presentation and typically available. There are three design elements of online customer experience, respectively: verbal elements that use text and typographical features, visual elements that use images and pictures, and combined visual and verbal elements.

3.4.1 Verbal elements

Verbal elements include written language. This division considers writing style, descriptive details, number of bullet points, and information about return policies testify. The most basic aspect of a text element is how it displays information. The linguistic style of spoken content, or textual features (word choice, use of questions, specific pronouns (you, your), adjectives, etc.) can influence consumer perceptions of product conversions and can affect website persuasiveness. In general, the more demographic information you provide, the more likely the product is to rate and be purchased. We must pinpoint that return policy information is a crucial element in a website since it indicates whether the website contains information about the conditions under which customers can return products (Bleier, Harmeling, & Palmatier, Creating effective online customer experiences., 2019).

3.4.2 Visual elements

A visual element summarizes all content presented in photographic or graphical form and can convey symbolic meaning and pictorial information. The main visual elements to be taken in consideration are signature crops, lifestyle photos, photo sizes and product videos. Unlike full product images, feature crops zoom in on key product features that are otherwise invisible. Lifestyle photography connects your product to your life by capturing people using and living with your product in normal settings. They explicitly capture or imply human interaction with the product. In addition, you can increase the purchase intention by enlarging the product image. Finally,a product video can showcase the product and its main features. Videos containing human voices serve as cues about human traits, influencing perceptions of social presence and sensory attraction. (Bleier, Harmeling, & Palmatier, Creating effective online customer experiences., 2019).

3.4.3 Combined verbal and visual elements

Customer Star Ratings, expert endorsements, comparison matrices, recommendations agents and content filters combine verbal and visual elements. A customer star rating is a summary of user-generated product reviews, represented visually next to a series of stars and total review count. Expert endorsements are also product reviews, but compiled by reputable experts in categories like products test company and usually contains graphic representations like stickers. comparison matrices are a table that compares a focus product to other products within the same category based on multiple characteristics. Product information is typically presented as images of substitutes (columns) and text describing attributes (rows). Recommendation agents combine verbal and visual information to create a list of alternatives for focus products. Comparison table and recommendation agents can improve the quality of purchasing decisions. Content filters such as The "More" button allows customers to control when and how much verbal and visual content appears on your website. Of the combined factors, star ratings have received the most empirical attention, but studies usually test their direct impact on purchases without considering the underlying mechanisms (Bleier, Harmeling, & Palmatier, Creating effective online customer experiences., 2019).

3.5 Online Customer Experience

According to (Bolton, et al., 2018) in order to truly understand and co-create value in the customer experience, businesses need to take a holistic view of the customer experience over time that integrates digital, physical, and social realms. Without this integration, organizations face many challenges related to customer experience. The challenges and opportunities facing service organizations are enormous and significant because customer experience lies at the intersection of digital, physical, and social domains for every customer.

3.5.1 Digital realm

The Internet is a platform that supports many important markets for goods and services, including information services. Thus, an organization's ability to leverage digital technology is an increasingly important source of competitive advantage because businesses must respond to market dynamics in an efficient and timely manner. Digital technologies can provide an immersive and highly personalized environment that enables rich interaction and information exchange between organizations and consumers. Digital technology is changing customer expectations and behavior, how organizations are organized

and networked, and the role "people" play in the marketplace, where the line between humans and machines is being erased.

3.5.2 Physical realm

As organizations move to a digital platform, components of the physical domain remain essential for understanding customer experiences - indeed, they can serve as references indicate. The physical domain includes the arrangement of furniture and appliances affecting their function, the arrangement of spaces to enhance convenience and comfort, the surrounding elements and cultural resources, i.e. signs and symbols that invite customers to participate in the service experience. Signals from the physical domain directly affect how clients act and react during service encounters.

3.5.3 Social realm

Interaction is at the heart of the social realm of customer experience. The social domain is defined by the interactions between actors. Because customers actively co-create experiences, organizations need to facilitate customer interactions with other actors. Customers can influence other customers through smartphones, social media and other means. The social sector assists customers in meeting the pragmatic, social, and psychological needs of their customers. In addition, in the virtual context, interactive media devices connect customers inside and outside the boundaries of the physical environment, giving customers a shared sense of "social presence" that happens between people in both physical and virtual contexts.

Conclusion

Online consumer behavior refers to the actions and decisions that individuals make while browsing and purchasing products or services on the internet. The difference between online and offline consumer behavior consists mainly of accessibility and convenience, information search, social influence, personalization and customization, purchase process, transaction security, return and exchange processes and tangible experience.

Online impulse buying is one of the insights that has taken place within the emergence of online consumer behavior, it is an instant and immediate online purchase without a previous intention to buy. The main encouraging features for online impulse buying are the availability of a wider range of products, the use of sophisticated marketing tactics, the role of credit cards and digital payment methods, the internet's ability to provide anonymity and eliminate human interaction and also the restriction of physical stores by location and operating hours. On the other hand, there are discouraging features of online impulse buying that consist of the urgency to possess a product, the outcome of sensory experiences, the accessibility of online product and price comparisons and also convenience and easy access to physical stores.

Barriers of online buying are mainly perceived risks, security risks, poor website quality, previous purchase experience, the physical separation of buyers and sellers, time risk and psychological risk. Moreover, motivations of online buying are hedonic motivations, utilitarian motivations, the wide availability of information, openness to experience and the need of uniqueness.

The factors that influence online consumer behavior are regrouped into environmental factors, which comprise components such as E-service quality, E-word of mouth, and product price and cost. Following that, we delved into behavioral factors, encompassing perceived risk, perceived ease of use, perceived usefulness, trust, and satisfaction. Moreover, demographic factors were taken into account, including age, gender, and household income. Lastly, we will explore psychological factors, which involve stress, self-justification, personality traits, and attitude.

Online customer experience is an unprompted response that a customer displays to a certain stimulant. The main difference between physical and digital customer experience lies in the way customers interact with businesses and their products or services. Design elements of online customer experience are verbal elements, visual elements and combined verbal and visual elements. Digital , physical and social realms are crucial to understand and co-create value in the customer experience .

Chapter 03:The Influence of Digitalization of BNA Services on Consumer Behavior

Introduction

In today's fast-paced and interconnected world, digitalization has transformed the way we conduct business, communicate, and interact with the world around us. One area where digitalization has made significant strides is in the realm of banking and financial services. The advent of digital technology and the rise of online platforms have revolutionized the way consumers engage with their financial transactions and interact with banks and other financial institutions.

The digitalization of BNA services has brought about a paradigm shift in its consumer's behavior, redefining the ways in which individuals engage with financial services.

This chapter will provide insights that will not only contribute to a deeper understanding of the influence of digitalization on BNA customer's behavior but will also provide valuable implications for BNA. By recognizing and leveraging the transformative effects of digitalization on consumer behavior, BNA can tailor its offerings, enhance customer satisfaction, and develop effective marketing strategies to meet the evolving needs and expectations of digital-savvy consumers.

This chapter will be divided into three section as following:

- First section that includes general overview of BNA bank, its history, its digital offers and services and the evaluation of its website.
- Second section that explains the way how the research will be conducted by presenting the research design.
- Third section shows the different tests and analyses performed in order to analyze the collected data, confirm or reject hypotheses and answer the research questions.

Section 01: General Overview of BNA

1.1 Overview of BNA

Since its creation in 1966, BNA has made the support of its clients, both individuals and professionals and companies, its primary vocation. This has made it one of the most active banks in the market today, with over 2.5 million customers.

Thanks to its proactive banking engineering, BNA stands out with a rich and diverse range of products and services. The bank also offers banc assurance products, aimed at covering various risks.

Simple and competitive, BNA's products and services comply with current regulations and are tailored to meet all the needs of its customers.

With over 5000 employees, BNA deploys its workforce across the entire national territory to be closer to its customers. The quality of its services, ensured by teams of professionals, allows the bank to offer tailored financing solutions to professionals and businesses, addressing all of their needs. This actively contributes to the economic progress of our country.

With its 262 branches 8 of them dedicated for Islamic finance, and 31 of them as digital branch, overseen by 21 Regional Directorates (RD) located throughout the national territory, BNA establishes itself as an excellent local bank.

Being fully committed to the digitalization of its products and services, as well as the expansion of digital payment methods, BNA provides its customers with free CIB cards, making their daily banking operations easier. This is achieved through the installation of 99 Automated Bank Counters (ABC) and 180 Automated Teller Machines (ATM).

Renowned for being a training ground, BNA places the qualification of its staff at the center of all interests. It is crucial for the quality of its services and offerings. That is why the Bank makes training and professional equality key strategic development areas.

By its vocation, BNA is a financial institution, indeed, but also a responsible company that emphasizes quality, progress, ethics, and the recognition of timeless values.

Being an excellent local bank, BNA places listening to and satisfying its customers at the heart of its concerns. That is why the Bank deploys its banking expertise upstream to offer its clientele a wide range of diversified products and services, focused on anticipating and meeting all financing needs.

Furthermore, BNA adopts a multi-channel listening approach downstream: website, call center, listening unit, handling complaints, Point of Sale (POS) advertising, and In-store Information (ISI), enabling constant interaction with its customers.

In addition to these various listening tools made available to its clients, BNA mobilizes its customer representatives to serve customers for their guidance and assistance needs in their procedures, providing advice and support.

1.2 History of BNA

1966: The National Bank of Algeria (BNA) was established on June 13th, 1956, as the first national commercial bank. It carried out all the activities of a universal bank and was also responsible for financing agriculture.

1982: The restructuring of BNA has given birth to a new bank, BADR, specialized in financing and promoting the rural sector.

1988: The law No. 88-01 of January 12, 1988 on the orientation of economic enterprises towards autonomy had undeniable implications on the organization and missions of BNA, notably:

The withdrawal of the treasury from financial circuits and the decentralization of the distribution of resources by the treasury.

The free choice of domiciliation of businesses with banks.

The non-automaticity of financing.

1990: The law number 90-10 of April 14th, 1990, regarding currency and credit, led to a radical overhaul of the banking system in line with the country's new economic policies. It established fundamental provisions, including the transition to autonomy of state-owned enterprises. The BNA, like other banks, is considered a legal entity that carries out, as a habitual profession, mainly operations related to the receipt of public funds, client operations, means of payment, and their management.

1995: The BNA was the first bank to obtain its accreditation by deliberation of the Money and Credit Council on September 5, 1995.

2009: In June 2009, the capital of BNA increased from 14.6 billion Algerian Dinars to 41.6 billion Algerian Dinars.

2018: In June 2018, the capital of BNA increased from 41.6 billion Algerian dinars to 150 billion Algerian dinars.

2020: Launch of Islamic finance.

1.3 BNA Digital Offers and Services

1.3.1 CIB Cards (+SMS CARD)

1.3.1.1 CIB Card

The BNA CIB card is an interbank card linked to the checking account. It comes in two forms, depending on the cardholder's income: there is the Classic CIB card, and the Gold CIB card.

The CIB card allows for withdrawals from all bank ATMs, online payments, proximity payments on Electronic Payment Terminals (EPTs), checking the account balance on BNA's ATM (Automated Teller Machines) and BTM (Bank Teller Machines), depositing money on BTM, transferring money on BTM, and a range of other features are available through BTM and ATM.

1.3.1.2 Prepaid Card

The BNA prepaid CIB card is an interbank withdrawal and payment card funded by transfer from the main account of the individual customer. It can be in the name of the account holder or the cardholder. It allows for the same operations as a Classic or Gold CIB card.

1.3.1.3 Elite Card

The Elite card is an interbank card linked to the checking account. It comes in two forms: Elite card (for individuals), and Elite Business Card (for professionals and businesses). It allows for withdrawals, proximity payments, online payments, transfers, and cashing. Other features are available through BTM and ATM.

The Elite card also offers a range of additional medical assistance, support, and foresight services that can be found on the following link: Carte ELITE services .

Two packages are available for this service, the Classic Net Pack intended for individual and professional clients, and the Gold Net+ Pack intended for businesses.

As for the features of the Net Pack we have the account balance and account history consultation for up to 23 months, account transactions inquiry, search for specific transactions on the account, downloading account statements and generating account statements for one year in various formats, printing bank identity statements (RIB), viewing card information and

performing monetary operations (card ordering, card blocking, checkbook ordering, etc.) and messaging service (SMS Banking).

In the matter of the features of the Net+ Pack it includes all the benefits of the Net Pack, with the addition of one-time transfer between accounts of the same client, transfers to beneficiaries domiciled at BNA branches and other banks, multiple transfers, multiple direct debits from BNA and other bank clients who are debtors and domiciled at BNA branches and other banks.

1.3.2 Savings Card

The savings card is a withdrawal card linked to savings accounts: savings account with or without interest, Junior savings account "Moustakbaly" with or without interest, plus savings account. It allows you to have access to your saved money at any time (24/7) and anywhere through the ATM network. It also allows you to check your savings account balance at any time through the ATMs.

1.3.3 E-Banking + (SMS banking)

 A secured digitalized service by a personal confidential code for each user.

The BNA e-banking service (BNA.net) allows you to stay continuously connected to your bank accounts. It offers availability of an SMS banking messaging service to stay connected to your bank. This service is accessible 24/7 via the web platform (https://ebanking.bna.dz/customer/) and the mobile platform by downloading the free BN@tic application from the Play Store and App Store.

1.3.4 E-Payment + (SMS OTP)

WIM-PAY Wimpay-BNA is a contactless payment solution based on QR codes, downloadable for free via PlayStore and AppStore.

 This e-payment service allows you to pay for purchases and bills (Sonelgaz, SEAAL, AADL, etc.) online on websites that accept this method of payment. To ensure the security of payment transactions, a unique password (SMS OTP) is sent to the subscriber's phone number for each new transaction. Operations are secured by real-time authentication service "SMS OTP". This service is free and available anywhere 24/7.

 The WIMPAY-BNA Features allows its users to perform payment transactions via smart barcodes (QR code); also perform transfer operations for "WIMPAY-BNA" users, also to send a money request to another "WIMPAY-BNA" user, Share the bill, manage the budget , check

the balance , check the history of transactions made , pay for purchases and bills (AADL, SONELGAZ, SEAAL, Algérie Télécom, Mobilis, etc.).

1.3.5 Online Account Pre-Opening

The online account pre-opening service is a free service, available 24/7 through the BN@tic application, the e-banking platform, and the online account pre-opening website https://ouverture-de-compte.bna.dz/accountsignup/. It allows you to start the process of opening a bank account online and make an appointment at a BNA branch to finalize the account opening.

1.3.6 Online Financing Request

The online financing request service is a free service, accessible 24/7 through the BN@tic application, the e-banking platform, and the online financing request website https://demandefinancement.bna.dz/. It allows you to submit a financing request directly online and make an appointment at a BNA branch to complete the financing request application.

1.3.7 Corporate Business Cards

The BNA Business Corporate Card is an interbank card linked to the current account. It comes in two forms, depending on the cardholder's income: Classic Business Corporate Card, Gold Business Corporate Card. It is a withdrawal and payment card designed to simplify the management of your business. It allows the client to perform withdrawal from all bank ATMs, online payment, proximity payment on Electronic Payment Terminals (EPT), account balance inquiry on BNA ATMs and ABMs, deposit on BNA ATMs, transfer transactions on ATMs, a variety of other functionalities are available through Gab and DAB ATMs.

1.3.8 Integrating Online Payment

It is a process that allows merchants to integrate online payment on their e-commerce website, thereby enabling customers to make payments for their purchases or settle their service fees directly online using their interbank CIB card or their Eddahabia card.

It is destinated to merchants who wish to integrate online payment on their e-commerce website, developers of online payment modules who wish to certify their module.

As for its features they consist of collecting sales transactions 24/7 from the merchant's website, acceptance of purchase transactions using interbank cards - CIB and EDDAHABIA cards.

1.3.9 Electronic Payment Terminal

The Electronic Payment Terminal (EPT) is provided free of charge to BNA customers who are merchants, businesses, and major billers in order to facilitate and secure payment transactions related to their activities.

The EPT (Electronic Payment Terminal) also allows customers to have an alternative payment method for their purchases/bills without the need to handle cash. Also the settlement of transactions via the CIB card, secure transactions by avoiding the handling of funds, quick processing of transactions and time-saving, and user-friendly interface.

1.3.10 E-Trade

The "E-Trade BNA" service is a service for consulting and receiving notifications of "Swift" foreign trade operations through the e-banking platform. It aims to assist customers engaged in foreign trade activities through the following operations: Domiciliation (direct debit), international trade operations (Swift) that consist of documentary Credit (CREDOC), documentary Collection (REMDOC), free Transfer and international Guarantees.

This service is intended for individual clients, businesses, and professionals of the Bank who engage in "International Trade" activities.

1.4 BNA Website Evaluation

Table 3. 1:Global , Country , Category Rank for BNA website

Global Rank	Country Rank	Category Rank(Government in Algeria)
339,336	1204	27

Source : https://www.similarweb.com/(visited on 14th may , 2023 at 17h.15)

Table 3. 2: Total visits , Bounce rate , Pages per visit , Avg visit duration for BNA website

Total visits	Bounce Rate	Pages per Visit	Average Visit Duration
128.1 K	35.26 %	4.03	00:06:49

Source : https://www.similarweb.com/(visited on 14th may , 2023 at 17h.17)

1.4.1 BNA Website Ranking

Over the last three months (March, April, May), bna.dz's global ranking has increased from 480,751 to 339,336.

Figure 3.1 : bna.dz's global ranking increasing over the last three months
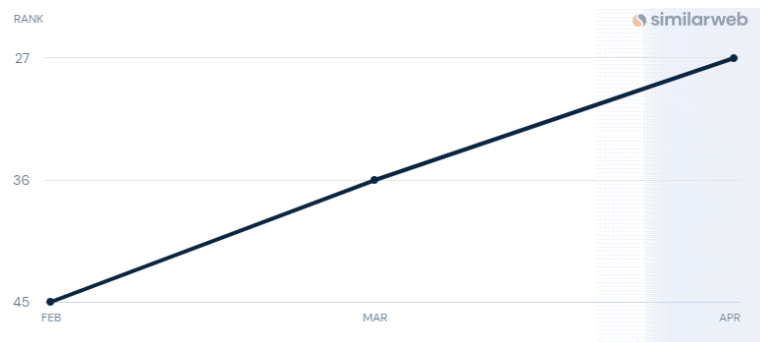
2   *Source :https://www.similarweb.com/(visited on 14ᵗʰ may , 2023 at 17h.20)*

3

3.1.1 BNA Website Traffic and Engagement Analysis

bna.dz's traffic has increased by 55.64% compared to last month (April , 2023).

Figure 3.2: bna dz's traffic and engagement over last three months
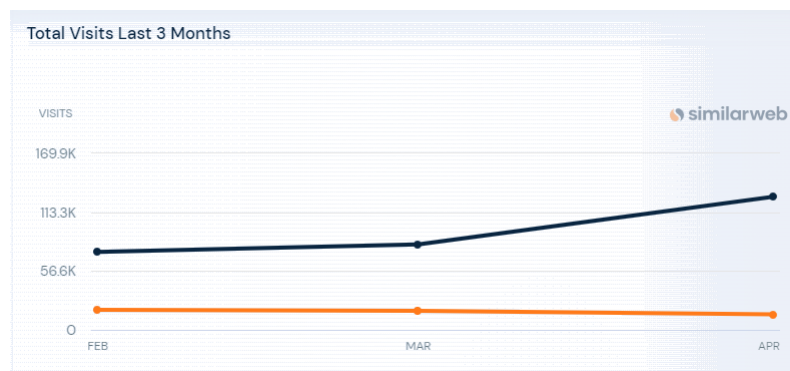
Source : https://www.similarweb.com/(visited on 14ᵗʰ may , 2023 at 17h.22)

3.1.2 Geography & Country Targeting

The countries that send the most traffic to bna.dz lately are Algeria, France and Tunisia. Last month Algeria was the top country sending desktop traffic to bna.dz .

Figure 3. 3: bna.dz geography & country targeting within last month (April,2023)

Source :https://www.similarweb.com/(visited on 14th may , 2023 at 17h.25)

3.1.3 Audience Demographics

Audience composition can reveal a site's current market share across various audiences.

bna.dz's audience is 60.21% male and 39.79% female. The largest age group of visitors are 25-35 years old.

Figure 3 4: Gender and age distribution
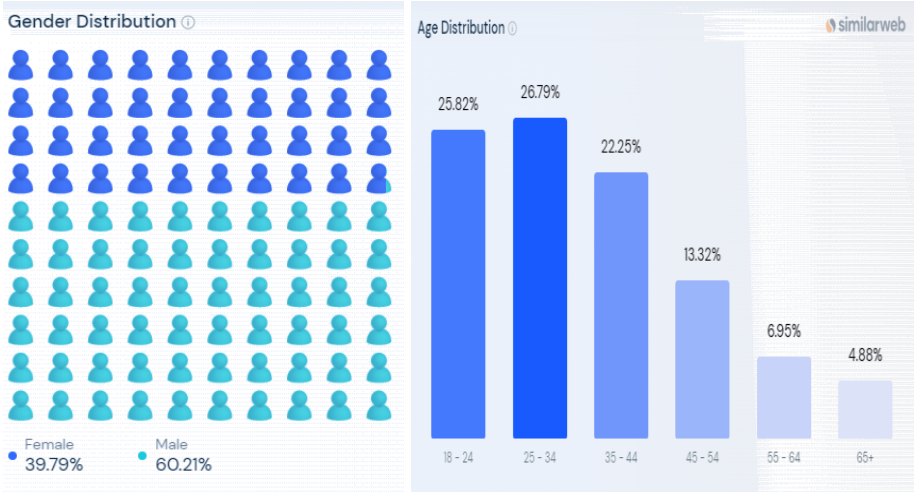
Source :https://www.similarweb.com/(visited on 14th may , 2023 at 17h.28)

3.1.4 Top bna.dz Audience Interests

Audience interests reveal key details on the browsing interests of bna.dz's visitors. bna.dz's audience is interested in law and government.

Figure 3.5 : bna.dz's audience interests (top categories and top topics)
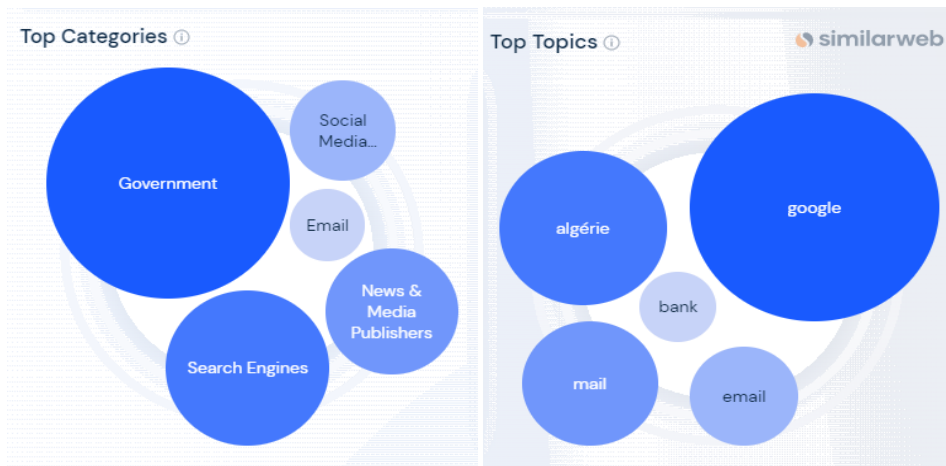
Source :https://www.similarweb.com/(visited on 14th may , 2023 at 17h.35)

3.1.5 Similar Websites & bna.dz Competitors

Reveal bna.dz top alternatives and find potential or emerging competitors. bea.dz is the website with the highest similarity score to bna.dz.

Figure 3.6: Similar websites and bna.dz competitors

Site	Affinity	Monthly visits	Category	Category rank
bea.dz	100%	14.8K	Law and Government > Government	#33,882
allpttn.com	96%	104.2K	Law and Government > Government	#15,651
bank-of-algeria.dz	96%	43.8K	Law and Government > Government	#20,458
bnconline.com	96%	65.4K	Law and Government > Government	#15,682
algerian-embassy.be	86%	9.3K	Law and Government > Government	#73,633

Source :https://www.similarweb.com/(visited on 14th may , 2023 at 17h.40)

3.1.6 bna.dz Top Marketing Channels

The top traffic source to bna.dz is Organic Search traffic, driving 43.28% of desktop visits last month, and Direct is the 2nd with 41.33% of traffic. The most underutilized channel is Paid Search. Drill down into the main traffic drivers in each channel below:

Figure 3. 7: bna.dz's top marketing channels
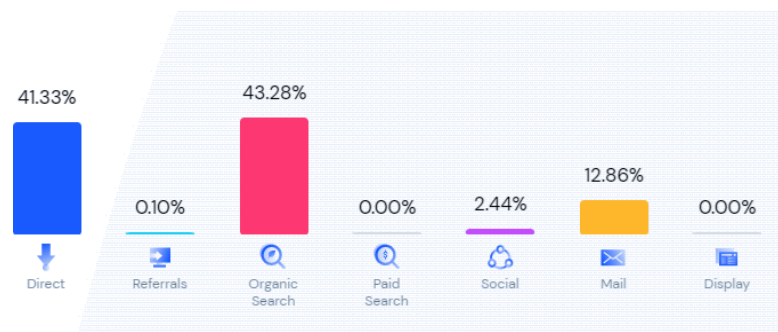
Source :https://www.similarweb.com/(visited on 14ᵗʰ may , 2023 at 17h.42)

3.1.7 Social Media Traffic to bna.dz

bna.dz gets most of its social media traffic from Facebook, followed by Youtube and WhatsApp Webapp . Engaging audiences through WhatsApp Webapp may reveal new opportunities.

Figure 3.8: bna dz social media traffic
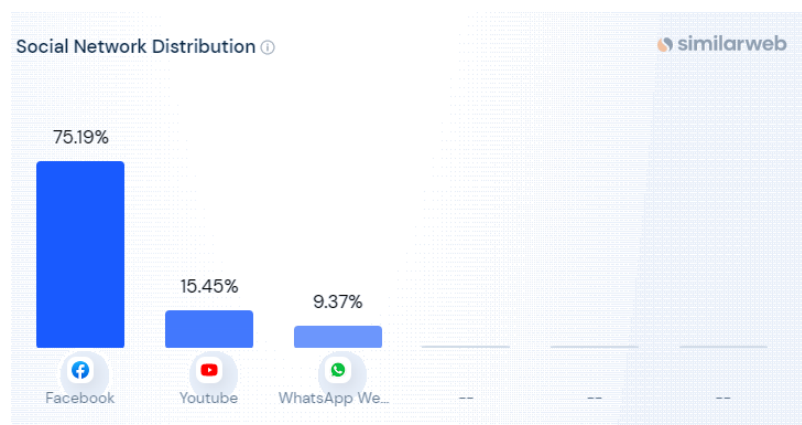
Source :https://www.similarweb.com/(visited on 14ᵗʰ may , 2023 at 17h.50)

Section 02 : Research Methodology

This section describes in detail the research methodology that will be used in this study. Firstly, a brief definition of the research design is provided, including exploratory and conclusive research. Exploratory research involves secondary data and qualitative research, while conclusive research includes descriptive and causal designs. Secondly, the primary scales of measurement and the major scaling techniques used are described. Thirdly, a simple explanation of how questionnaire is designed and how sampling is processed. Finally, a preliminary plan for data analysis is addressed.

Overall, this section reveals the details regarding the research methodology implemented with the aim of answering the research's sub-questions, and to test hypotheses.

Main question: How and to what extent does the digitalization of BNA services influence consumer behavior?

This main research question is divided into the following sub-research questions in which an attempt will be made to answer them in this dissertation.

Research questions

➢ Does BNA customer's engagement with online buying influence BNA digital services usage frequency?

➢ Do perceived security, and platforms password update by BNA customers towards its digital services mediate positive relationship between customer's trust and adoption of digital services?

➢ Do perceived ease of use of BNA digital platforms, online account access, number of offered digital services and satisfaction with BNA platforms interface influence positively online customer experience?

➢ Does overall satisfaction of BNA customers with its digital platforms influence positively their loyalty towards BNA?

Based on these research questions, the following hypotheses were proposed:

Hypotheses

➢ **Hypothesis 01** The increase of BNA digital services frequency usage is related to customer's engagement with online buying.

➢ **Hypothesis 02** The customer's perceived security of BNA digital platforms increases consumer's trust towards BNA digital services.

➢ **Hypothesis 03** The perceived ease of use of BNA digital platforms, the number of offered digital services, account access, and satisfaction with platform interface influence positively online customer experience.

➢ **Hypothesis 04** Customer's overall satisfaction towards BNA digital services influence positively their loyalty.

2.1 Research Design

In tune with the nature of the research questions, this study employs both exploratory and conclusive approach.

2.1.1 Exploratory Research

The study uses this approach in order to define the research problem more accurately and to get a deeper understanding of the topic. In this study, it is necessary to use exploratory research to gain more information for developing a reliable theoretical framework for digital banking and online consumer behavior. The main methods used in explanatory research are qualitative research and secondary data.

2.1.1.1 Secondary data

Sources of secondary data includes books, personal sources, journals, newspapers, websites, government records…. etc. Secondary data are known to be available and requires very little research and need for manpower to use compared to primary data especially with the advent of electronic media and the internet.

2.1.1.2 Qualitative research

The main methods used in qualitative research are divided into direct and indirect methods. Direct methods include focus groups (small groups of respondents interviewed in an unstructured manner where a well-trained regulator is in charge) and depth interviews (unstructured and personal interviews in which a single respondent is involved, the interview is conducted by a highly qualified interviewer), while projective techniques (including word association, sentence completion, picture response, cartoon test, role playing, and third person techniques) represent indirect methods.

The present research employs secondary data analysis, in which, both internal and external secondary data were collected and reviewed. The first and second chapters reveals the most relevant information obtained after analyzing the secondary data about the topic of this research.

2.1.2 Conclusive Research

Research designs may be either descriptive or causal, and descriptive research designs may be either cross-sectional or longitudinal

2.1.2.1 Descriptive research

Descriptive research is used to describe phenomenon or characteristics of consumers, organizations, or market areas. It is also used to estimate the percentage of units in a specified population proving a certain behavior.

2.1.2.2 Causal research

Causal research is used to obtain evidence of cause and effect relationship.

Since the research questions are problematic in nature and to examine the proposed hypotheses, a descriptive single cross-sectional research is conducted. In single cross-sectional designs, only one sample of respondents is drawn from the target population, and information is obtained from this sample only once.

2.2 Questionnaire design

2.2.1 Mode of Administration

An online, self-administered survey is initiated, where in a questionnaire is designed to include different types of questions based on the specific information needed.

2.2.2 Measurement scaling

The questionnaire that includes the research questions of the study was prepared as one form that is composed of eight sections. The first section contains dichotomous qualifying question about account ownership. The second section contains a dichotomous question about the use of e-banking services. The third section is composed of introductive questions, the first question is a short answer question about the years of account opening, the second is a scale question in which 7-points Likert scale question is posed about the BNA branch visit, the third question is a multiple-choice question which investigates the main reasons for branch visit, the last question is a multiple-choice question about the preferred interaction mode with BNA branch.

The fourth section is about customer's engagement with the internet , the first question is a short answer question about the number of hours of phone usage per day , the second is a short answer question about the number of hours of internet usage per day , the third question is a dichotomous question about online buying , the fourth is a scale question in which 7-points Likert scale question is posed about the customer's state of mind when the internet is slow , the fifth question is a 7-points Likert scale about the frequency of e-banking services usage per year , the sixth question is a multiple-choice question about the used e-banking services .

The fifth section about perceived security and trust, the first question is a single choice question about the most used BNA platform, the third question is a dichotomous question about suspicious activities in BNA digital platforms, the second question, fourth, fifth, sixth, seventh, eighth question are 7-points Likert scale question about factors that influence perceived trust of BNA customer.

The sixth section is about satisfaction and customer experience that contains 8 questions of 7-points Likert scale about factors that influence customer's satisfaction and loyalty and contains two short answer questions about the technical issues encountered and also suggestions about the desired offers and also there is a dichotomous question about the importance of e –banking.

The seventh section was conducted to the non-BNA clients where 04 questions were posed: one dichotomous question about BNA notoriety, three short answer questions about the chosen bank, reasons for choosing it and the most important criteria to choose a bank.

The eighth section is the data sheet there were one dichotomous question about gender, a short answer question about age and a single answer question about occupation.

2.2.3 Types of questions

To examine the proposed hypotheses and collect empirical data, an online, self-administered survey is launched. The questionnaire is composed of several types of questions chosen according to the type of information required.

It consists of 35 questions divided into 7 sections, and includes the following question forms:

• Dichotomous questions.

• Multiple choice questions.

• Single choice questions.

• Scale questions.

As mentioned earlier, the content of questionnaire is separated into eight sections. First of all, the questionnaire starts with a dichotomous qualifying question which allows to check whether the respondent belongs or not to the target population. (questions of the non-BNA clients are excluded)

➢ Questions from 3 to 6 measure branch visit rate, branch visit reasons and preferred interaction mode.

➢ Questions from 7 to 12 examine internet engagement

➢ Questions from 13 to 20 are questions perceived security,

➢ Questions from 21 to 31 investigate account access, BNA platforms ease of use, number of offered services, satisfaction with platform interface and overall satisfaction toward online customer experience.

The eighth section is the basic demographic survey which consists of three questions in measuring respondent's profiling such as gender, age, and occupation.

The data collection process of the research was carried out between 19/04/2023 to 18/05/2023. The sample of the study was drawn from BNA customers. Within this period, the respondents were reached via social media, and bank branch. The questionnaire was answered by giving link to google forms where it was made. The questionnaire was answered by 223 respondents. However, after editing, only 99 remained for analysis.

2.3 Sampling Design

The process of sampling design starts by determining the target population, also known as the mother population, which encompasses all the elements or objects that contain the necessary information. Once the target population is defined, it becomes crucial to identify and access the elements within it. This is achieved through a sampling frame, which is a comprehensive list that includes all the elements of the target population. To choose the study sample from this predetermined sampling frame, various sampling methods are available, which can be categorized as probabilistic or non-probabilistic methods.

Non-probability sampling relies on the personal judgment of the researcher (nonprobability sampling techniques include convenience sampling, judgmental sampling, quota sampling, and snowball sampling).

In probability sampling, sampling units are selected by chance (techniques involving simple random sampling, systematic sampling, stratified sampling, and cluster sampling).

In this case, the target population consist of individuals who have an account at BNA.

Due to the absence of sampling frame from which the selection of elements will be made, the method of sampling used in this research is a non-probability sampling technique. In particular, a judgmental sampling technique is used.

Regarding the sample size, the research adopts the method which is adequate to one-way ANOVA and the linear regression analysis (both the test which the study will use for data analysis) and that's for the same reason of choosing a non-probability sampling technique.

2.4 Preliminary Plan for Data Analysis

2.4.1 ANOVA one-way analysis

Since one research question of the study aims to examine the impact of an independent variable on a dependent variable, ANOVA one-way analysis is the most suitable way.

This test is performed through Descriptive table, test of significance, and strength association to find out if there is a relationship between the tested variables.

2.4.2 Linear regression analysis

Since three research questions of the study aims to examine the nature and the degree of association between dependent and independent variables, linear regression analysis is the most suitable analysis to conduct. From this perspective, multiple regression analysis is carried out to test the hypotheses of the research using SPSS software for data analysis.

The multiple linear regression model helps to understand how much will the dependent variable change when the independent variables change, it describes the relationship between variables by fitting a line to the observed data. Linear regression models use a straight line, while logistic and nonlinear regression models use a curved line.

 The multiple regression analysis can be used only if the following preliminary assumptions are tested and approved:

2.4.2.1 Sample size

According to the formula N>= 15n. Where n represents the number of independent variables.

2.4.2.2 Outliers

The extreme values that can be identified through the Mahalanobis distance which is determined by the value of chi-square in which the number of independent variables is the degree of freedom and using 0.001 as level of significance. All of Mahalanobis values must be lower than the chi-square square (number of independent variables, 0.001) value.

2.4.2.3 Normality

There are two different ways to test the assumption of normality: the first is examined through normality plot, and the second depends on the standardized residuals values, which must be neither above +3, nor below -3 .

2.4.2.4 Multicollinearity and Singularity

Multicollinearity refers to the high correlation among independent variables ($\geq$ .90). This condition can be examined either by tolerance statistic where this latter should be above 0.1 or

through the correlation between independent variables (must be lower than 70%). Whereas singularity refers to the redundancy of variables, in which one variable is a combination of other variables.

2.4.2.5 Independence of residuals

This can be assessed using Durbin Watson (DW) test; the DW value is always between 0 and 4, when it is 2 there is no autocorrelation and residuals are independent. Each DW has two values: DL (LOWER) and DU (UPPER). If the calculated value is lower than DL residual are not independent, if calculated value is higher than DU residuals are independent, and if the calculated value from SPSS is between DU and DL then the result is inconclusive.

In case of outliers, the Mahalanobis values that are higher than chi-square value is removed. To get rid of Multicollinearity and to group correlated variables, factor analysis must be conducted.

Section 03: Hypotheses Tests

3.1 Descriptive Analysis

In order to analyze the characteristics of the respondents, the research opted for a descriptive analysis based on the various socio-demographic criteria namely; gender, age and occupation is opted. The objective was to draw up the profile of the respondent and to summarize the information collected relating to the studied sample.

3.1.1 Gender

Figure 3.9: Respondent's Gender
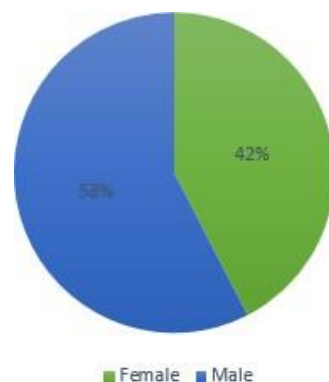
Source: Personal effort using Excel

Respondents were asked to indicate their gender by placing a tick next to the relevant option provided (male or female). Of the 99 respondents, (58%) were male ,and (42%) were female.

3.1.2 Respondent's age

Figure 3.10: Respondent's Age
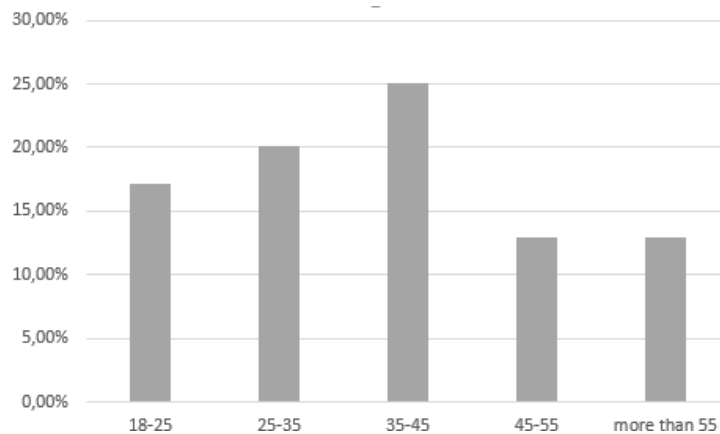
Source: Personal effort using Excel

Participants were asked to insert their age in years, 17.1% were between (18-25 years) , 20.1% were between (25-35%) , 25.1% were between (35-45 years) , 13% were between (45-55 years) and 13% were more than 55 years .

3.1.3 Respondent's Occupation

Figure 3. 11 : Respondent's Occupation
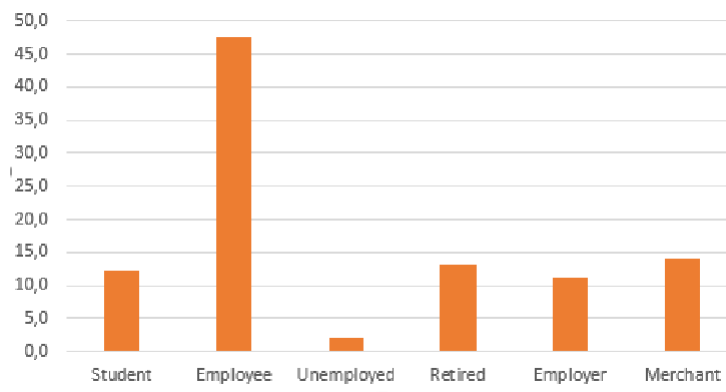
Source: Personal effort using Excel

Respondents were asked to indicate their occupation by placing a tick next to the relevant option provided (Student, Employee, Unemployed, Retired, Employer, Merchant). Of the 99 respondents 12% were students, 48% were employees, 2% were unemployed, 13% were retired, 11% were employers and 14% were merchants.

3.1.4 Most Used BNA Platform

Figure 3.12: Respondent's Most Used BNA Platform
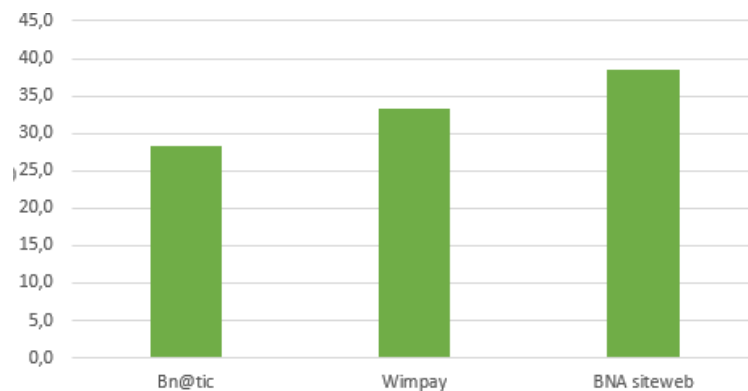
Source: Personal effort using Excel

Respondents were asked to indicate their most used BNA platform by placing a tick next to the relevant option provided (Bn@tic , Wimpay and BNA website). Of the 99 respondents, 28.3% used Bn@tic , 33.3% used Wimpay and 38.4% used BNA website .

3.1.5 Respondent's Preferred Modes of Interaction

Figure 3.13: Respondent's Preferred Modes Of Interaction with BNA
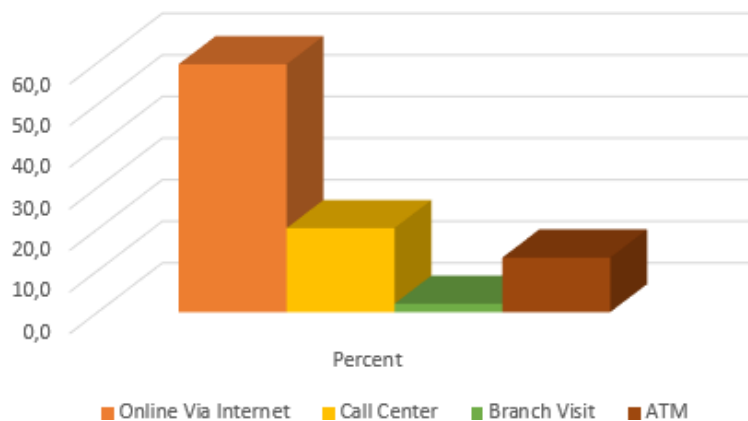
Source: Personal effort using Excel

Respondents were asked to indicate their preferred mode of interaction with BNA by placing a tick next to the relevant options provided (Branch visit, ATM, Call Center, Online Via Internet) through a multiple choice question. Of the 99 respondent's customers preferred following modes of interaction with their respective percentages: 59.6% preferred branch visit, 57.6% preferred ATM, 20.2% preferred call center and 59.6% preferred Online via internet interaction. (we must pinpoint that a respondent can select more than one mode of interaction).

3.1.6 Respondent's Main Reasons to Visit BNA Branch

Figure 3.14: Respondent's Main Reasons to Visit BNA Branch
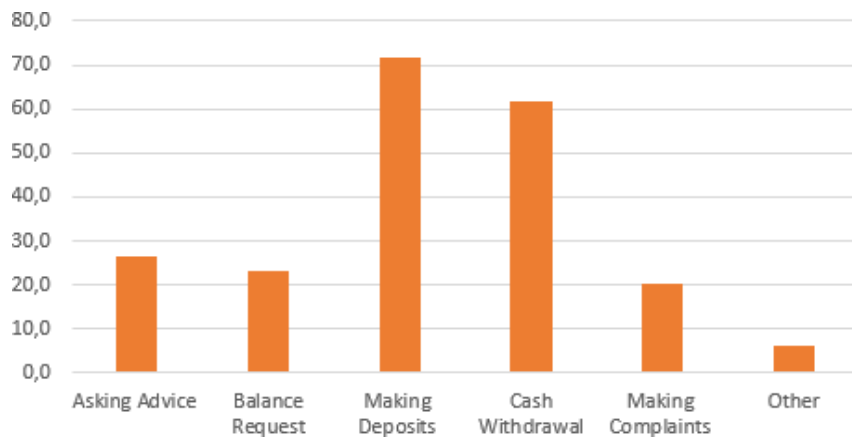
Source: Personal effort using Excel

Respondents were asked to indicate their main reasons to visit BNA branch by placing a tick next to the relevant options provided (Asking Advice, Balance Request, Making Deposits, Cash Withdrawal, Making Complaints and Other). Of the 99 respondent's customers opted for the following reasons with their respective percentages: 26.3% visit the BNA branch to ask advice, 23.2% for balance request, 71.7% to make deposits, 61.6% for cash withdrawal, 20.2% to make complaints and 6.1% other reasons. (we must pinpoint that a respondent can request more than one digital service).

3.1.7 Respondent's Most Used E-Banking Services

Figure 3.15: Respondent's Most Used E-Banking Services
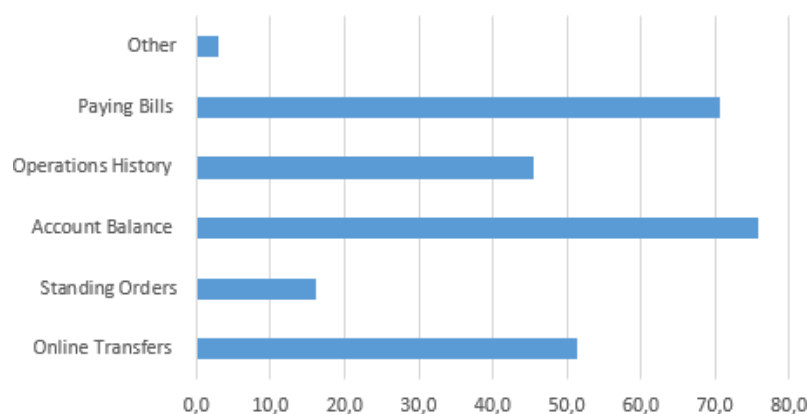
Source: Personal effort using Excel

Respondents were asked to indicate their most used e-banking services by placing a tick next to the relevant options provided (Online Transfers, Standing Orders, Account Balance,

Operations History, Paying Bills, Other). Of the 99 respondents, customers selected the following services with their respective percentages: 51.5% have chosen Online Transfers, 16.2% have chosen Standing Orders, 75.8% have chosen Account Balance, 45.5% have chosen Operations History, 70.7% Paying Bills, 3% Other. (We must pinpoint that a respondent can request more than one digital service).

3.2 Testing Hypothesis 01

The first hypothesis claims that the increase of the BNA digital services is related to the customer's involvement with online buying. A one-way Anova analysis is used to test this hypothesis considering E-banking usage frequency as a dependent variable to online buying.

The following hypotheses are proposed:

$$\begin{cases} H_0: That\ is, Online\ buying\ doesn't\ influence\ e-banking\ services\ usage\ frequency \\ H_1: That\ is, Online\ buying\ influences\ e-banking\ services\ usage\ frequency \end{cases}$$

3.2.1 Descriptive Table

Table 3. 3: Descriptives Table

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
No	12	3.17	2.167	.626	1.79	4.54	1	7
Yes	87	5.10	1.739	.186	4.73	5.47	1	7
Total	99	4.87	1.893	.190	4.49	5.25	1	7

Descriptives — E-banking usage frequency

Source: Personal effort using SPSS

From (table 3.3), when BNA customers engage with online buying, they use e-banking services with a mean of 5.10, while when they don't engage with online buying they use e-banking services with a mean of 3.17.

3.2.2 Test of significance

Table 3. 4: ANOVA

ANOVA					
E-banking usage frequency					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	39.557	1	39.557	12.309	.001
Within Groups	311.736	97	3.214		
Total	351.293	98			

Source: Personal effort using SPSS

➢ The value of F is statistically significant, P<0.000, therefore H1 is accepted.

3.2.3 Strength Association

Eta² = (Sum squares E-banking usage frequency /Sum squares Online buying) × 100

Eta² = (39.557/351.293) × 100 = 11.26%

Online buying influences E-banking services usage frequency by 11.26%

To summarize, the first hypothesis suggests the existence of a relationship between the rise of BNA digital services and customer engagement in online purchasing. To investigate this hypothesis, a one-way ANOVA analysis is employed, with the dependent variable being the frequency of E-banking usage while considering online buying as the dependent variable.

The test conducted yielded significant results.

The two groups of customers that engage or not with online buying generated two different means, those who engage with online buying uses e-banking services by 5.10 on average while those who don't engage with online buying uses e-banking services by 3.17 on average. The difference is statistically significant at alpha=5%, hence, the analysis revealed that there is a statistically significant relationship between online buying and the frequency of e-banking services usage among BNA customers.

It is concluded that engagement with online buying accounts for 11.26% of variation in e-banking services usage frequency.

3.3 Testing Hypothesis 02

The second hypothesis stipulates that the BNA customer's perceived security of its digital platforms and password update increases consumer's trust towards BNA digital services. A multiple regression analysis is used to test this hypothesis.

3.3.1 Screening Data for Regression

There is a set of preliminary assumptions that must be approved before conducting a multiple regression analysis. Thus, we will verify at first that the data collected are suitable for regression analysis.

3.3.1.1 Sample Size

A trustworthy regression equation requires a sample size of 15 respondents for each explanatory variable (predictor). Which means if we have four explanatory variables or predictors for example, the sample size will be 15 times 4. Therefore, sixty respondents would be enough to obtain a reliable equation.

In our case, the number of independent variables (predictors or explanatory variables) is two , which requires a minimum sample size of 30 respondents. A sample size of 99 respondents was used, which means that the sample size allows the use of regression analysis.

3.3.1.2 Normality

Figure 3.16: Normal P.P Plot
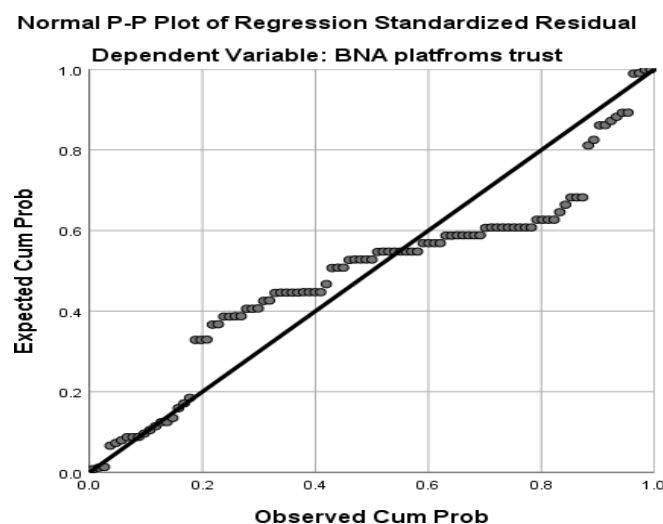
Source: Personal effort using SPSS

Figure 3.17: Regression Standardized Residual's Histogram
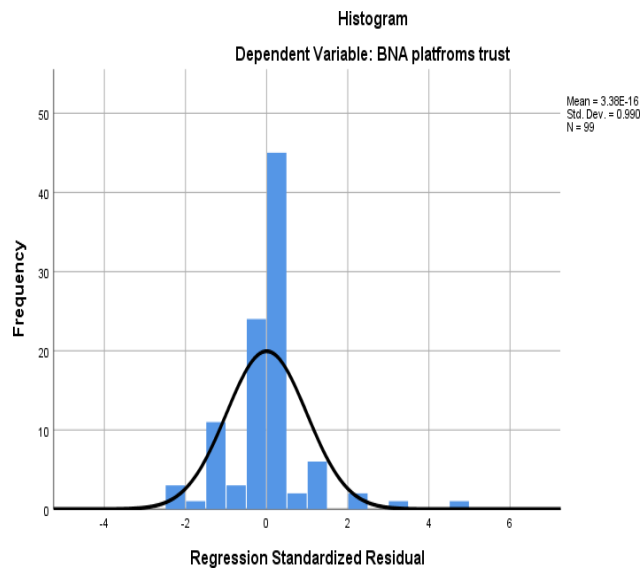
Source: Personal effort using SPSS

Figures (Figure 3.16) and (Figure 3.17) above show that the residuals are aligned diagonally. Thus, the distribution of residuals follows the normal distribution.

Normality can also be tested through a second method which depends on the standardized residuals values, which must be neither above +3, nor below -3. Hence, regression standardized residual's histogram is used. In this case, figure below demonstrates that mostly all standardized residuals are included in the interval [-3,3] which means that residuals are normally distributed.

3.3.1.3 Outliers

The extreme values that can be identified through the Mahalanobis distance which is determined by the value of chi-square in which the number of independent variables is the degree of freedom and using 0.001 as level of significance. All of Mahalanobis values must be lower than the chi-square (number of independent variables, 0.001) value. Thus, more simply, outliers can be detected by comparing Mahalanobis values obtained by SPSS to the chi-square critical value. In our case, all Mahalanobis distance values are lower than $(x^2_{2,0.001}) = 13.82$, which means the absence of outliers .

3.3.1.4 Multicollinearity

Multicollinearity refers to the high correlation among independent variables (≥ 0.90). This condition can be examined through the correlation between independent variables. According to the coefficient correlations table below, all the correlations between independent variables are less than 90%. Hence, we can infer that multicollinearity does not pose any problem.

Table 3. 5: Correlation Matrix

Correlations		BNA platfroms trust	Security	Platforms password update
Pearson Correlation	BNA platfroms trust	1.000	.868	-.324
	Security	.868	1.000	-.326
	Platforms password update	-.324	-.326	1.000

Source: Personal effort using SPSS

3.3.1.5 Independence of residuals (Autocorrelation)

The absence of the autocorrelation indicates that respondents answered the questionnaire independently. Durbin-Watson is the test used to identify the existence or the absence of autocorrelation. Durbin-Watson = 1.870 which is greater than the maximum critical value (DL 1.635 / DU 1.714).

This leads to the acceptance of the alternative hypothesis H1 that stipulates the absence of autocorrelation.

Table 3. 6 : Model Summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.869a	.756	.751	.819	1.870

Source: Personal effort using SPSS

3.3.2 Evaluation of the model

3.3.2.1 Significance of the model

Table 3.7: Significance of the model

ANOVA					
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	199.539	2	99.769	148.676	.000[b]
	Residual	64.421	96	.671		
	Total	263.960	98			

Source: Personal effort using SPSS

The overall model is significant P<0.000, hence, the variation in BNA platforms trust can be explained in terms of perceived security and password update.

3.3.2.2 Usefulness of the model

From anova table , this model is statistically significant for alpha 5%, Fisher value is equal to 148.676 and greater than the critical value $F_{(2,96,5\%)} = 3.091$. The model is statistically significant; BNA can base its decisions on this model. Since the model is useful because Fisher value 148.676 is greater more than four times than the critical value 3.091.

3.3.2.3 Parametric evaluation

Table 3 .8: Parametric evaluation

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.777	.381		2.040	.044		
	Security	.875	.055	.853	15.998	.000	.894	1.119
	Platforms password update	-.041	.047	-.047	-.876	.383	.894	1.119

Source: Personal effort using SPSS

The model is statistically significant but only Perceived Security is the variable that can individually contribute to the variation of the dependent variable. The sign of the coefficients indicates the direction of the relationship. In our case, perceived security is positively related to BNA platforms trust, where an increase of perceived security will result an augmentation of BNA platforms trust. We can also notice that when perceived security decreases, BNA platforms trust decreases too (from standardized beta perceived security is positively related to BNA platforms trust).

However, the negative association between password update and BNA platforms trust can be justified by the existence of a security measure at BNA digital platforms that requires updating platform's password periodically. By comparing standardized coefficients obtained in the table, we conclude that perceived security is the most important predictor of BNA platforms trust and has the biggest impact with a standardized beta of 0.853. While password update does not contribute to the variation of BNA platforms trust due to the security measure mentioned before

3.3.2.4 Strength of association

Based on the model summary table (table 3.6) and the adjusted R square value, the model explains 75.1 % of the variation of the dependent variable. That is to say, the significant studied variable (BNA platforms perceived security) explains 75.1% of the variation of customer's perceived trust towards BNA platforms.

3.3.2.5 Regression Equation:

$$BNA\ PLATFORMS\ TRUST = 0.777 + 0.875\ X_1 - 0.41\ X_2$$

To summarize, the second hypothesis posits that an increase in the perceived security of BNA's digital platforms by its customers leads to greater consumer trust in BNA's digital services. To examine this hypothesis, a multiple regression analysis is employed.

Based on the results of the multiple regression test, it can be concluded that there is a significant relationship between BNA customer's perceived security of its digital platforms and consumer's trust towards BNA digital services. However, the hypothesis stating that password update significantly increases consumer's trust was not supported by the data.

The analysis revealed that BNA customer's perceived security of its digital platforms has a statistically significant positive effect on consumer's trust towards BNA digital services. This finding suggests that when customers perceive BNA's digital platforms as secure, they are more likely to trust the digital services provided by BNA.

On the other hand, the data did not show a significant relationship between password update and consumer's trust towards BNA digital services due to the security measure that requires password update periodically.

3.4 Testing Hypothesis 03

The third hypothesis specifies that perceived ease of use of BNA digital platforms, the number of services offered, online account access and satisfaction with platform interface influence positively online customer experience. Similarly, to hypothesis 02 a multiple regressionanalysis is conducted to test this hypothesis.

3.4.1 Screening Data for Regression

As mentioned earlier, regression analysis cannot be implemented unless its preliminary conditions are approved.

3.4.1.1 Sample size

In this case, the number of independent variables is 4, which imposes a minimum sample size of 60 respondents (4×15). A sample size of 99 respondents is used, which means that the sample size is sufficient for the use of multiple regression analysis

3.4.1.2 Normality of residuals

As stated earlier, residuals are aligned diagonally in the Normal P.P Plot , and also normality depends on the standardized residuals values, which must be neither above +3, nor below -3. This can be verified using the Normal P P Plot and the histogram of regression standardized residual . It is shown on figure3.18 and figure 3.19 bellow that normality condition is verified.

Figure 3 18: Normal P.P Plot
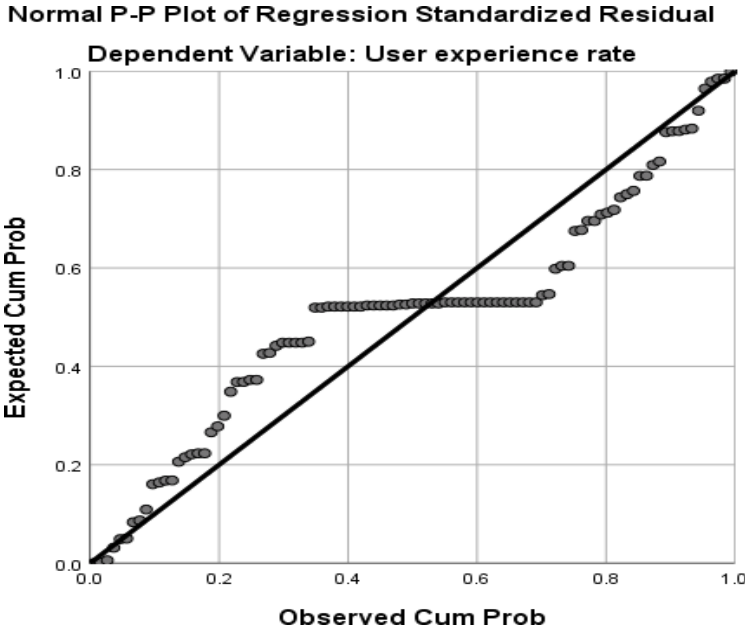
Source : Personal effort using SPSS

Figure 3. 19 : Standardized Residual's Histogram
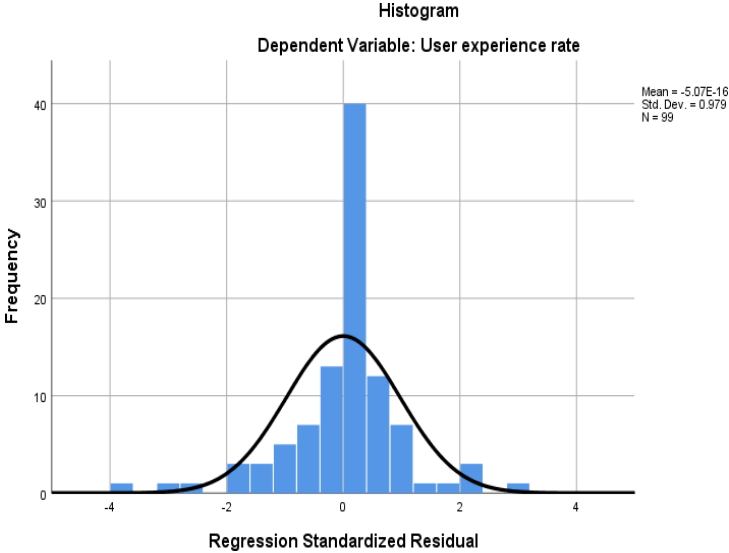
Source : Personal effort using SPSS

3.4.1.3 Outliers

To identify outliers with Mahalanobis distance, this latter, is calculated using SPSS. The obtained values are compared against ($x^{2}_{24,0.001} = 18.47$), where every value above chi square critical value is considered as an outlier and must be excluded. Hence, no outliers are detected.

3.4.1.4 Multicollinearity

Table 3.9 : Correlation Matrix

Correlations		User experience rate	Account access 24h/7	BNA platforms ease of use	Offered number of services	BNA platforms interface satisfaction
Pearson Correlation	User experience rate	1.000	.634	.897	.826	.869
	Account access 24h/7	.634	1.000	.580	.593	.537
	BNA platforms ease of use	.897	.580	1.000	.807	.805
	Offered number of services	.826	.593	.807	1.000	.780
	BNA platforms interface satisfaction	.869	.537	.805	.780	1.000

Source: Personal effort using SPSS

According to the coefficient correlations table above, all the correlations between independent variables are less than 90%. Hence, we can observe the absence of multicollinearity.

3.4.1.5 Autocorrelation

Table 3. 10: Model summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.939[a]	.882	.877	.517	2.013

Source: Personal effort using SPSS

Independence of residuals is examined using Durbin-Watson (DW) test. Each DW value has two critical values: DL (LOWER) and DU (UPPER). If the calculated value is lower than DL residual are not independent, if calculated value is higher than DU residuals are independent, and if the calculated value from SPSS is between DU and DL then the result is inconclusive. Based on the model summary table, Durbin-Watson value = 2.013 which is greater than the

maximum critical value (DL1.592/ DU 1.758). The alternative hypothesis H1 that stipulates the absence of autocorrelation is accepted and residuals are independent.

3.4.2 Evaluation of the model

3.4.2.1 Significance of the model

Table 3.11 : ANOVA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	187.744	4	46.936	175.324	.000[b]
	Residual	25.165	94	.268		
	Total	212.909	98			

Source: Personal effort using SPSS

The overall model is significant P<0.000 , hence , the variation in BNA customer's online customer experience can be explained in terms of perceived ease of use of BNA platforms , number of services offered , account access and BNA platform interface satisfaction .

3.4.2.2. Usefulness of the model

From anova table , this model is statistically significant for alpha 5%, Fisher value is equal to 175.324 and greater than the critical value $F_{(4,94,5\%)} = 2.469$.The model is statistically significant, BNA can base its decisions on this model. Since the model is useful because Fisher value 175.324 is greater more than four times than the critical value 2.469.

3.4.2.3 Parametric evaluation

Table 3.12 : Parametric evaluation

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.020	.209		-.094	.925		
	Online account access 24h/7	.101	.041	.111	2.458	.016	.616	1.622
	BNA platforms ease of use	.442	.067	.453	6.546	.000	.263	3.801

Offered number of services	.125	.067	.123	1.861	.066	.286	3.499
BNA platforms interface satisfaction	.329	.061	.349	5.414	.000	.303	3.304

Source: Personal effort using SPSS

The model is statistically significant. Based on the analysis of coefficient table above, Account access, BNA platforms ease of use, and BNA platforms interface satisfaction are the independent variables that can individually contribute to the variation of the dependent variable (Online customer experience). While offered number of services does not contribute to the variation in online customer experience. The sign of the coefficients indicates the direction of the relationship. In our case, online account access, BNA platforms ease of use, and BNA platforms interface satisfaction are positively related to online customer experience, where any increase of one of these variables causes an increase of positive online customer experience. By comparing standardized coefficients obtained in the table, it is concluded that the BNA platforms ease of use is the most important predictor of positive online customer experience and has the biggest impact with a standardized beta of 0.453, followed by BNA platforms interface satisfaction with a standardized beta of 0.349 and last online account access with a standardized beta of 0.111.

3.4.2.4 Strength of association

Based on the model summary table (table 3.10) and the adjusted R square value, the model explains 87.7 % of the variation of the dependent variable. That is to say, the studied variables that are statistically significant (perceived ease of use of BNA digital platforms, online account access and satisfaction with platform interface) explains 87.7% of the variation of BNA online customer experience.

3.4.2.5 Regression Equation

$$\text{"}\textbf{\textit{ONLINE CUSTOMER EXPERIENCE}} = -\textbf{0.20} + \textbf{0.101}\,X_1 + \textbf{0.442}\,X_2 + \textbf{0.125}\,X_3 + \textbf{0.329}\,X_4\text{"}$$

To summarize, the third hypothesis postulates that online customer experience is positively influenced by factors such as perceived ease of use of BNA digital platforms, the variety of services offered, online account access, and satisfaction with the platform interface. To examine this hypothesis, a multiple regression analysis is performed, similar to hypothesis 02.

The test was conducted to examine the relationship between perceived ease of use of BNA digital platforms, the number of services offered, online account access, satisfaction with

platform interface, and their influence on online customer experience. The findings indicate that perceived ease of use, online account access, and satisfaction with the platform interface have a significant positive impact on online customer experience, while the number of offered services does not have a significant positive influence on online customer experience.

The analysis revealed that customers who perceive the BNA digital platforms as user-friendly, have easy access to their accounts, and are satisfied with the platform interface tend to have a better online customer experience. These factors contribute to creating a positive environment that enhances the overall satisfaction and engagement of customers during their online interactions with BNA.

However, the number of services offered by the platform did not demonstrate a significant influence on online customer experience in this study. It suggests that while the breadth of services provided by BNA is important, it may not be the primary driver for enhancing the online customer experience.

3.5 Testing Hypothesis 04

The fourth hypothesis states that customer's overall satisfaction towards BNA digital services influence positively customer's loyalty. A simple regression analysis is conducted to test this hypothesis.

3.5.1 Model Evaluation:

3.5.1.1 Significance of the model

Table 3.13 : ANOVA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	91.479	1	91.479	80.939	.000[b]
	Residual	109.632	97	1.130		
	Total	201.111	98			

Source: Personal effort on SPSS

As mentioned in ANOVA table, the model that explains customer's loyalty in terms of overall satisfaction towards BNA digital services is significant.

3.5.1.2 Evaluation of parameters

Table 3.14: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.955	.379		5.164	.000
	Overall satisfaction towards BNA digital services	.651	.072	.674	8.997	.000

Source : Personal effort on SPSS

According to the table above, the value of t-test associated with the overall satisfaction towards BNA digital services is significant ($P<0.000$). Therefore, this variable influences customers's loyalty positively. (standardized beta = 0.674).

3.5.1.3 Strength of association

Table 3. 15: Model Summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.674ª	.455	.449	1.063	1.917

Source : Personal effort on SPSS

The variation in customer's loyalty is explained by 45.5% of the variation in overall satisfaction towards BNA digital services.

3.5.1.4 Regression equation

CUSTOMER LOYALTY $= \mathbf{1.955} + \mathbf{0.651}\,X$

To summarize, the fourth hypothesis suggests that there is a positive relationship between customers' satisfaction with BNA digital services and their loyalty. To test this hypothesis, a simple regression analysis is performed.

In conclusion, the results of the simple regression test provide strong evidence to support the hypothesis that customer's overall satisfaction towards BNA digital services positively influences customer loyalty. The statistical analysis revealed a significant positive relationship between overall satisfaction and loyalty, indicating that as overall satisfaction increases,

customer loyalty also increases. This finding suggests that BNA digital services play a crucial role in fostering customer loyalty by ensuring high levels of customer satisfaction. Therefore, it is imperative for BNA to prioritize and enhance their digital services to maintain and strengthen customer loyalty, ultimately leading to long-term success and sustainable growth for the organization.

3.6 Summary of Findings

The primary objective of this study is to gain a deeper understanding of the factors that impact BNA customer behavior in relation to the digitalization of its offers and services. The aim is to identify the key psychological, behavioral, and environmental variables that have the most significant influence on online purchase behavior concerning BNA's digital banking offerings.

To collect empirical data and examine the proposed hypotheses, a self-administered survey was designed and distributed online. The survey consists of eight sections comprising various types of questions tailored to gather specific information.

The overall research aim is to validate or refute the study hypotheses, a one-way ANOVA test was conducted to assess the first hypothesis, focusing on examining the impact of an independent non-metric variable on the dependent metric variable. For the second and third hypotheses, multiple regression analysis was performed, enabling a more comprehensive exploration of the relationships, nature, and degree of associations between dependent and independent metric variables. The fourth hypothesis was tested using a simple regression analysis.

Ultimately, the findings of this research confirm the influence of environmental, behavioral, and psychological factors on BNA online customer behavior regarding the digitalization of its offers and services. The study reveals that BNA customers' online consumer behavior is significantly influenced by their level of engagement with online buying, perceived security, perceived ease of use, online account access and overall satisfaction. These factors play a crucial role in shaping customers' behavior and decision-making processes in the context of BNA's digital offerings.

The findings of this study indicate that the introduction of online buying has had a noticeable effect on the frequency with which Algerian BNA customers utilize e-banking services. It suggests that the convenience and accessibility of online buying platforms have influenced consumers to engage more frequently with BNA e-banking services.

These results have important implications for the banking sector in Algeria. BNA can capitalize on this trend by enhancing its online banking services and investing in user-friendly platforms that align with consumer preferences. Likewise, online buying platforms can leverage the increasing usage of e-banking services by providing secure and convenient payment options to attract and retain customers.

However, it is essential to note that further research is required to explore the underlying factors contributing to this relationship and to consider other potential variables that may influence e-banking services usage frequency. Nonetheless, the significant findings of this ANOVA test provide valuable insights into the evolving landscape of BNA e-banking in Algeria.

Nonetheless, it is important for BNA to prioritize enhancing the perceived security of its digital platforms to foster consumer trust. This can be achieved by implementing robust security measures, transparent communication about security protocols, and providing assurances to customers regarding the safety of their personal information. While password update may still be an important aspect of maintaining security, this study suggests that it may not be a significant driver of consumer trust on its own due to the required security measure by BNA that requests a password update periodically. BNA should consider other strategies and initiatives to build and maintain consumer trust in their digital services, such as offering multi-factor authentication, educating users about security best practices, and promptly addressing any security concerns or incidents that may arise. Overall, this study underscores the significance of perceived security in shaping consumer trust towards BNA's digital services and provides insights for BNA to prioritize its efforts in building and maintaining trust in the digital realm.

Overall, the results of the second multiple regression test highlight the significance of perceived ease of use, online account access, and satisfaction with platform interface in positively shaping online customer experience on BNA's digital platforms. These findings provide valuable insights for BNA to focus their efforts on improving these specific areas to further enhance the online customer experience and strengthen their digital presence in the market.

Moreover, the results of simple regression test highlight the vital role played by BNA digital services in nurturing customer loyalty by ensuring a high level of satisfaction. It is crucial for BNA to prioritize and improve their digital services to not only maintain but also strengthen customer loyalty. By doing so, BNA can ensure long-term success and sustainable growth for

the organization, as satisfied and loyal customers are more likely to engage with the company's offerings and promote positive word-of-mouth recommendations.

Conclusion

In this chapter, a general overview of BNA was highlighted. BNA stands as a pivotal institution in the Algerian banking sector. hence, the digitalization of its offers and services marks a significant milestone as where it stands . This conducted to address the following research question: **How and to what extent does the digitalization of BNA services influence consumer behavior?**

In the last section of the chapter, data analysis methods, study results and a discussion of the findings have been presented. Some findings from this study have been found to be consistent with the findings of several related studies on online consumer behavior, while other findings were in contrast with them. This is due to the fact that every external or internal variable is affected by the context in which the study is implemented. The study aimed to test four hypotheses and the results were the following:

➢ **H1**: The increase of BNA digital services usage frequency is related to the customer's engagement with online buying. **Accepted.**

➢ **H2**: Customer's perceived security and password update of BNA digital platforms increases consumer's trust towards BNA digital services. **Rejected.**

➢ **H3**: The perceived ease of use of BNA digital platforms, the number of offered digital services, account access and satisfaction with platform interface influence positively online customer experience. **Rejected.**

➢**H4**: Customer's overall satisfaction towards BNA digital services influence positively their loyalty. **Accepted.**

In order to test these hypotheses, a questionnaire was designed and administrated online to respondents chosen in a none probabilistic way using the judgmental sampling technique.

The process of data analysis was completed using both SPSS and Excel , which allowed to answer the research questions and either confirm or reject the hypotheses using One way ANOVA test , Simple regression and multiple regression analysis .

Conclusion

While the digitalization of the banking industry in Algeria has made significant strides, there are still challenges to overcome. Furthermore, there is a need for continuous investment in technology and digital skills training to keep pace with evolving customer expectations and global trends.

The basic research question is formulated as follows: **"How and to what extent does the digitalization of BNA services influence consumer behavior?".** Attempting to answer the main research question, four sub-questions posed:

➢ Does BNA customer's engagement with online buying influence BNA digital services usage frequency?

➢ Do perceived security, and platforms password update by BNA customers towards its digital services mediate positive relationship between customer's trust and adoption of digital services?

➢ Do perceived ease of use of BNA digital platforms, online account access, number of offered services at BNA platforms and satisfaction with BNA platforms interface influence positively online customer experience?

➢ Does overall satisfaction of BNA customers with its digital platforms influence positively their loyalty towards BNA?

This research is conducted in order to:

Analyzing BNA customers' preferences, motivations, and concerns, BNA can tailor its services to meet customer's expectations. This research provides insights into the factors that drive consumer adoption of digital banking, enabling BNA to enhance its digital platforms and create seamless experiences that promote customer loyalty and satisfaction.

-Additionally, the research aids BNA policymakers in creating regulatory frameworks that protect customer interests, ensure data privacy, and promote innovation, striking a balance between consumer protection and digital banking advancements on BNA platforms.

The present research is divided into three major chapters, the first and second are theoretical and the third is empirical in nature:

➢ The first chapter, titled "Business Digitalization," is divided into three sections. The initial section provides an in-depth exploration of digitization and digitalization, including various definitions, types, and processes. It also examines the obstacles and barriers specific to digitalization, with a focus on the Algerian context, while

distinguishing it from digitization. The subsequent section focuses on digital transformation and digital maturity, discussing the technological aspects, drivers, and characteristics involved. Concluding the chapter, the final section emphasizes digital banking, emphasizing security measures, fraud prevention, and the evolving landscape of mobile banking.

➢ The second chapter, entitled "Online Consumer Behavior," delves into the characteristics of online consumer behavior. The first section explores the differences between offline and online behavior, including impulsive buying behavior and its motivating and discouraging factors. It also investigates motivations and obstacles related to online purchasing. In the second section, various factors impacting online consumer behavior are analyzed, such as environmental factors (e-service quality, e-word of mouth, product price), behavioral factors (perceived risk, ease of use, usefulness, trust, satisfaction), demographic factors (age, gender, household income), and psychological factors (stress, self-justification, personality traits, attitude). The third section focuses on online customer experience, discussing design elements, domains, and disparities compared to physical experiences.

➢ The third chapter entitled "The influence of digitalization of BNA services on consumer behavior", consists of a case study conducted to answer the main research question on how the digitalization of BNA services influences customer behavior. It is divided into three sections. The first section provides a general overview of the host company, BNA. The second section explains the research methodology and design. The final section presents the research findings that deal with descriptive data analysis, statistical analyses, and the interpretation of the results. That is to say, data analysis methods, study results and a discussion of the findings are presented.

Major Finding

To carry out this study, a quantitative approach is used, in which, a judgmental sampling method (non-probabilistic sampling technique) is employed. The questionnaire was sent via social media and distributed in the internship BNA branch, it has been answered by 223 participants from which only 99 were appropriate. After all, the test of the research's initial hypotheses reveals the following results:

➢ The first hypothesis that posits that there is a connection between the expansion of BNA digital services and customer engagement in online buying is **accepted** because one-

way ANOVA analysis revealed that there is a statistically significant relationship between online buying and the frequency of e-banking services usage among BNA customers.

➢ The second hypothesis that states that perceived security and password update of BNA's digital platforms by customers enhances their trust in BNA digital services is **rejected** because, based on the results of the multiple regression test, there is a significant relationship between BNA customer's perceived security of its digital platforms and consumer's trust towards BNA digital services. However, the second part of the hypothesis stating that password update significantly increases consumer's trust was not supported by the data.

➢ Hypothesis three that specifies that factors such as the perceived ease of use of BNA digital platforms, the number of services offered, account access, and satisfaction with the platform interface have a positive influence on the online customer experience is **rejected** since multiple regression test indicates that perceived ease of use, online account access, and satisfaction with the platform interface have a significant positive impact on online customer experience, while the number of offered services does not have a significant positive influence on online customer experience .

➢ The fourth hypothesis that suggests a positive correlation between customers' satisfaction with BNA digital services and their loyalty is **accepted** because the simple regression test statistical analysis revealed a significant positive relationship between overall satisfaction and loyalty, indicating that as overall satisfaction increases, customer loyalty also increases.

At this stage, the sub-questions of this research can be answered as the followings:

➢ BNA customer's engagement with online buying influence their digital services usage frequency.

➢ The perceived security by BNA customers towards its digital services mediate positive relationship between customer's trust and adoption of digital services while platforms password update doesn't contribute to enhancing customer's trust.

➢ Perceived ease of use of BNA digital platforms, online account access, and the BNA platforms interface satisfaction influence positively online customer experience while the number of offered services doesn't influence online customer experience.

➢ Overall satisfaction of BNA customers with its digital platforms influence positively their loyalty towards BNA.

Future Research Directions

Future studies should aim for a broader scope to facilitate generalization. To complement this study and provide avenues for future researchers, several themes can be considered. For example :

➢ The Impact of Digital Banking Adoption on Customer Loyalty: Investigate how the digitalization of the banking industry affects customer loyalty and retention. Analyze the factors that contribute to increased customer loyalty and explore strategies that banks can implement to enhance customer loyalty in the digital era.

➢ Trust and Security in Digital Banking: Examine the role of trust and security in shaping consumer behavior towards digital banking. Assess consumers' perceptions of trustworthiness and security measures in the digital banking environment and identify strategies to build and maintain trust among digital banking customers.

➢ User Experience and Interface Design: Explore the influence of user experience (UX) and interface design on consumer behavior in the digital banking industry. Investigate how factors such as ease of use, navigation, responsiveness, and aesthetics impact customer satisfaction, engagement, and adoption of digital banking services.

➢ Personalization and Customization in Digital Banking: Analyze the effectiveness of personalized and customized offerings in digital banking. Investigate how personalized services, targeted marketing, and customized experiences influence consumer behavior and satisfaction in the digital banking sector.

➢ Adoption of Emerging Technologies in Digital Banking: Study the impact of emerging technologies, such as artificial intelligence (AI), chatbots, blockchain, and biometrics, on consumer behavior in the digital banking industry. Assess consumers' perceptions, attitudes, and adoption levels of these technologies and their influence on the overall digital banking experience.

➢ Cultural and Socioeconomic Factors in Digital Banking Adoption: Explore the influence of cultural and socioeconomic factors on consumer behavior towards digital banking. Investigate how cultural norms, beliefs, and socioeconomic disparities impact the adoption and usage patterns of digital banking services across different demographic groups.

➢ Omni channel Banking Experience: Examine the consumer behavior aspects of an Omni channel banking experience, where customers interact with a bank through multiple

channels (e.g., online, mobile, branches). Analyze the preferences, motivations, and challenges associated with utilizing different channels and their impact on customer satisfaction and loyalty.

➢ Digital Financial Literacy and Consumer Behavior: Investigate the relationship between digital financial literacy and consumer behavior in the context of digital banking. Assess how consumers' knowledge, skills, and understanding of digital financial services influence their adoption, usage, and decision-making processes in the digital banking industry.

➢ Ethical Considerations in Digital Banking: Examine the ethical implications of digital banking on consumer behavior. Investigate consumers' awareness, concerns, and decision-making processes regarding privacy, data security, and ethical practices in the digital banking environment.

➢ Comparative Analysis of Consumer Behavior in Traditional vs. Digital Banking: Conduct a comparative study to analyze consumer behavior and preferences in traditional banking versus digital banking. Investigate the factors that drive consumers to choose one banking channel over the other and explore the implications for the future of the banking industry.

Recommendations

Implementing the following recommendations should help BNA Bank enhance its digital services and better cater to consumer behavior, ultimately leading to increased customer satisfaction, engagement, and loyalty:

➢ Improve User Experience by focusing on enhancing the overall user experience of BNA digital platforms by ensuring a user-friendly interface, intuitive navigation, and seamless transactions. Nonetheless, conducting user testing and gather feedback to identify pain points and make necessary improvements.

➢ Personalization by implementation personalization strategies to cater to individual customer preferences and needs. Utilize data analytics to gather customer insights and offer personalized recommendations, product suggestions, and targeted promotions.

➢ Mobile Optimization, due to the increasing use of mobile devices, ensure that BNA's digital services are optimized for mobile platforms. Develop a responsive mobile application that offers all the features and functionalities available on the web platform.

➢ Security Measures to strengthen the security of the digital platforms by implementing robust authentication methods, encryption techniques, and fraud detection systems. Educate customers about the security measures in place to build trust and confidence in using the digital services.

➢ Seamless Integration by integrating the digital platforms with other financial management tools and services that customers commonly use. This can include budgeting apps, personal finance software, and digital wallets, providing customers with a seamless and integrated financial experience.

➢ Real-Time Customer Support by offering real-time customer support through various channels such as live chat, chatbots, or instant messaging. Promptly address customer queries and concerns to provide a high level of customer service and support.

➢ Gamification and Rewards by implementing gamification elements and loyalty programs to incentivize customer engagement and encourage active use of the digital services. Offer rewards, discounts, or exclusive benefits for using specific features or achieving certain milestones.

➢ Continuous Improvement by regularly collecting customer feedback through surveys, ratings, and reviews to identify areas for improvement. Actively seek customer suggestions and implement necessary enhancements to meet evolving consumer expectations.

➢ Providing educational resources, tutorials, and guides to help customers make the most of the digital services. Offer online demos, video tutorials, and FAQs to address common queries and assist customers in using the digital platforms effectively.

➢ Seamless Onboarding Process by streamlining the onboarding process for new customers by making it quick, easy, and intuitive. Simplify account opening procedures, automate document submission, and provide clear instructions to facilitate a seamless digital onboarding experience .

Research Limitations

➢ The sample for this study was limited to a small portion of Algeria, specifically focusing on a small subset of customers who are customers of BNA.

➢ The sampling method used in this research is not suitable for generalizing the study's findings. Instead, a simple random sampling would be more appropriate.

➢ To enhance the value of this research, it would be beneficial to include a broader range of participants, not solely focusing on those who have BNA accounts.

➢ This research does not focus on the study of a specific e- product or service of BNA, but rather examines an entire organization as a whole.

➢ The online behavior of BNA customers is represented in this study by only online buying engagement, perceived ease of use of BNA digital platforms, perceived security of BNA platforms, Online BNA account access, satisfaction of BNA platforms interface and the overall satisfaction with BNA's online customer experience, while customer's online behavior in fact represents every interaction possible.

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Appendices

Appendix (A) : BNA organizational chart

President directeur génerale

Secrétariat génerale

Cellule d'audit

D.E.J.C

Inspection générale

Division engagements

Division exploitation et action commerciale

Division internationnale

Division organisation et système d'information

Division gestion moyens et ressources humaines

D.G.E

D.P.M.E

D.J.E

D.S.E.R.S

D.M.C

D.F.T

D.R.I.C.E

D.T.O.E

D.P.O

D.C

D.I

Dpt.I.P

D.P.R.S

D.M.G

D.P.P

D.F

D.E.R

Direction de réseau d'exploitation

Agence principale

Agence catégorie a

Agence catégorie b

Agence catégorie c

Structures rattachées au Président Directeur Général:

Le Secrétariat général ,

L'Inspection Générale,

La Cellule Audit,

La Direction des Etudes Juridiques et du Contentieux (DEJC).

Structures rattachées à la Division Internationale:

DMFE : Direction des Mouvements Financiers avec l'Etranger.

DRICE : Direction des Relations Internationales et du Commerce Extérieur.

DOD : Direction des Opérations Documentaires.

Structures rattachées à la Division Exploitation et Action Commerciale:

DER : Direction Encadrement du Réseau.

DMC : Direction Marketing et Communication.

DIPM : Direction des Instruments de Paiement et de la Monétique.

Structures rattachées à la Division des Systèmes d'Information:

DDEP : Direction du Développement Etudes et Projets

DTA : Direction des Technologies et de l'Architecture

DPS : Direction de la Production et des Services

Structures rattachées à la Division du Recouvrement des Etudes Juridiques et du Contentieux:

DSERC : Direction du Suivi des Engagements et du Recouvrement de Créances.

DEJ : Direction des Etudes Juridiques et du Contentieux

DRG : Direction des Réalisations des Garanties

Structures rattachées à la Division Engagements:

DGE : Direction des Grandes Entreprises.

DPME : Direction des Petites et Moyennes Entreprises.

DCPS : Direction de Crédit aux Particuliers et Spécifiques

Structures rattachées à la Division Financière:

DC : Direction de la Comptabilité

DOMP : Direction de l'Organisation des Méthodes et Procédures

DCG : Direction du Control de Gestion

DMF : Direction de Marches Financières

Structures rattachées à la Division Gestion des Moyens Matériels et des Ressources Humaines:

DPRS : Direction du Personnel et des Relations Sociales.

DMG : Direction des Moyens Généraux.

DPP : Direction de la Préservation du Patrimoine.

DF : Direction de la Formation.

CGOS : Centre de Gestion des Œuvres Sociales.

Appendix (B) : Mahalanobis Values

MH2	MH3	MH4
1,75110	6,57770	1,77867
,24536	1,31552	,43564
1,75110	,53166	,43564
2,11013	2,54840	,43564
1,24756	2,11978	,47231
6,93604	2,36940	1,85201
2,11013	,11586	,47231
,08476	,82781	,47231
,67641	13,29635	,43564
1,24756	2,07521	,00019
,69691	,82781	,47231
2,11013	9,62504	,00019
1,70421	,21921	,00019
,24536	,21921	,00019
2,11013	3,79950	,47231
1,24756	6,44645	1,77867
1,43454	2,00356	,00019
3,34224	,82781	,47231
,11624	8,46730	,47231
3,34224	5,96985	,47231
1,31417	,97929	,43564
,95274	6,83188	1,77867
,79136	2,42431	,47231
2,11013	2,23225	,47231
3,34224	4,77091	,00019

1,95271	1,31552	,43564
1,77940	4,03056	,00019
4,20369	10,75705	,43564
4,20369	4,48420	1,85201
3,34224	14,07662	,00019
,95274	1,67884	,00019
2,80451	19,12654	,00019
2,26516	2,07521	1,77867
1,70421	2,11978	,43564
2,26516	2,07521	,43564
2,26516	2,07521	1,77867
1,96447	4,70422	,00019
1,70421	4,65223	,43564
2,47726	,53166	,43564
1,95763	11,48274	4,13929
,86021	5,47948	,47231
6,93604	2,07521	1,77867
4,26060	6,50536	,47231
,08476	4,60636	1,85201
1,24756	2,07521	1,77867
1,70421	2,40644	,00019
1,43454	13,06890	,00019
4,26060	4,70547	4,13929
1,95271	3,60362	,00019
2,81404	3,33087	,00019
1,31417	2,84412	,00019
2,26516	2,07521	1,77867

1,77940	5,63495	4,13929
1,75110	8,68087	4,13929
1,70421	2,54840	1,77867
4,26060	8,44761	1,85201
2,81404	2,72859	1,85201
2,84930	2,66751	1,85201
,79136	2,66751	1,85201
2,47726	2,66751	1,85201
,67641	1,60732	,43564
,69691	,11586	,00019
,58465	,82781	,47231
6,93604	2,07521	1,77867
1,75110	1,55406	,00019
4,54845	2,07521	1,77867
2,11013	6,10424	,47231
2,11013	23,48969	,47231
1,24756	,53166	1,77867
1,24756	2,07521	1,77867
2,84930	5,98484	1,85201
1,24756	2,07521	1,77867
8,16139	2,07521	1,77867
8,16139	4,03056	1,77867
1,43454	2,07521	,43564
1,43454	2,07521	1,77867
,24536	2,35935	,43564
,67641	11,18495	,43564
,67641	1,55406	,00019

,24536	,53166	,43564
,24536	,21921	,43564
4,60723	5,63495	4,13929
1,43454	,21921	,00019
,67641	2,25992	,43564
1,43454	2,07521	1,77867
1,24756	2,07521	1,77867
2,08165	4,60131	1,77867
1,31417	11,90367	,43564
,24536	,53166	,43564
,58465	3,41071	,00019
,24536	6,75119	1,85201
,45794	,53166	,43564
2,08165	2,66751	1,85201
,58465	,82781	,47231
2,08165	2,66751	1,85201
,58465	2,67861	,47231
1,95763	2,66751	1,85201
,08476	1,33930	,00019
,58465	3,10841	,47231

Appendix © : The questionnaire

Electronic banking

Thank you for participating in this survey which is a part of a master dissertation elaboration at Ecole Supérieure de commerce Kolea .

This survey aims to assess customers' perspectives on electronic banking , focusing onthree crucial aspects : customers'internet involvement , customers' perceived security and perceived trust towards electronic banking and customers' overall satsifaction regarding customer experience . Your valuable insights will contribute to enhance electronic banking services at BNA bank and improve customer experience .

 Please take a few moments to complete this survey honestly and provide your feedback ,your answers will be kept anonymous and used only for research purposes .

* Indique une question obligatoire

Section sans titre

1.   Do you have a BNA bank account ? *

Une seule réponse possible.

◯ Yes

◯ No   Passer à la question 32

Filter question

2.   Do you use electronic banking ? *

Une seule réponse possible.

◯ Yes

◯ No   Passer à la question 36

Introductive questions

3.   1-How long has the BNA bank account been open ? (in years) *

_____

4.   2- To the best of your knowledge , how often do you visit the BNA bank branch   *
      per year ?

Une seule réponse possible.

Rarely
_____

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Very often
_____

5.   3-What are the main reasons that lead you to visit the BNA bank branch for ? *

Plusieurs réponses possibles.

☐ Make deposits

☐ Ask for advice

☐ Request balance inquiries

☐ Withdraw cash

☐ Make complaints

☐ Autre : _____

6.   4-What is your preferred interaction with your BNA bank branch ? *

Plusieurs réponses possibles.

☐ Online via internet

☐ Call center

☐ Visit to the bank

☐ ATM (Automated Teller Machine)

Internet involvement

7.   1-Approximately , how many hours per day do you use your phone ? *

_____

8.   2-On average , how many hours per day do you use the internet ? *

_____

9.   3-Have you ever purchased a product from the internet ? *

Une seule réponse possible.

◯ Yes

◯ No

10.   4-When the flow of the internet is slow , i feel :

Une seule réponse possible.

Nervous

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Calm

11.   5-To the best of your knowledge , how often do you use e-banking services per *
      year ?

Une seule réponse possible.

Rarely

1 ⬭

2 ⬭

3 ⬭

4 ⬭

5 ⬭

6 ⬭

7 ⬭

Very often

12.   6-Which of the following e-banking services do you use ? *

Plusieurs réponses possibles.

☐ Online transfers

☐ Standing orders

☐ Checking account balance

☐ Operations history

☐ Paying bills

☐ Autre : _____

Perceived security and trust

13. 1- Among the following , choose the e-banking platforms that you often use ? *

Une seule réponse possible.

◯ Bn@Tic

◯ WimPay

◯ BNA website

14. 2-How confident are you in the security measures implemented by BNA e-   *
      banking platform that you use the most ?

Une seule réponse possible.

Inconfident
_____

1 ◯
_____

2 ◯
_____

3 ◯
_____

4 ◯
_____

5 ◯
_____

6 ◯
_____

7 ◯
_____

Confident
_____

15.   3-Have you ever experienced any suspicious activities that may have resulted   *
       from unauthorized acces ?

       Une seule réponse possible.

       ◯ Yes

       ◯ No

16.   4-E-banking is secure : *

       Une seule réponse possible.

                    Totally disagree

       1   ◯

       2   ◯

       3   ◯

       4   ◯

       5   ◯

       6   ◯

       7   ◯

                    Totally agree

17.   5-How often do you update your e-banking account password to enhance   *
      security ?

Une seule réponse possible.

Rarely

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Very often

18.   6-It is essential to visit the bank branch : *

Une seule réponse possible.

Totally disagree

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Totally agree

19.   7-Would you open a bank account at the BNA bank without physically visiting   *
       the branch ?

Une seule réponse possible.

Totally disagree

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Totally agree

20.   8-If all my banking needs could be fulfilled online , i won't visit the bank : *

Une seule réponse possible.

Totally disagree

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Totally agree

Satisfaction and customer experience

21.   1-E-banking gives you account access 24/7 : *

Une seule réponse possible.

Totally disagree

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Totally agree

Une seule réponse possible.

22.   2-E-banking saves time : *

Une seule réponse possible.

Totally disagree

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Totally agree

23.   3-How satisfied are you with the user interface of the BNA e-banking platform   *
       that you use the most ?

Une seule réponse possible.

Strongly dissatisfied

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Strongly satisfied

24.   4-How would you rate your user experience of the BNA e-banking platform that *
         you use the most ?

Une seule réponse possible.

Poor

1   ⬭

2   ⬭

3   ⬭

4   ⬭

5   ⬭

6   ⬭

7   ⬭

Excellent

25.   5-How satisfied are you with the ease of use of the BNA e-banking platform   *
      that you use the most ?

Une seule réponse possible.

Strongly dissatisfied

1 ◯

2 ◯

3 ◯

4 ◯

5 ◯

6 ◯

7 ◯

Strongly satisfied

26.   6-How satisfied are you with the number of services offered on the BNA e-   *
       banking platform that you use the most ?

Une seule réponse possible.

Strongly dissatisfied

1   ◯

2   ◯

3   ◯

4   ◯

5   ◯

6   ◯

7   ◯

Strongly satisfied

27.   7-Did you encounter any technical issues or difficulties while using the BNA e-banking
       services ? If yes please describe the issue

_____

_____

_____

_____

_____

28.   8-How satisfied are you with the overall e-banking experience ? *

Une seule réponse possible.

Strongly dissatisfied

1   ( )

2   ( )

3   ( )

4   ( )

5   ( )

6   ( )

7   ( )

Strongly satisfied

29.   9-In your opinion are e-banking services important ? *

Une seule réponse possible.

( ) Yes

( ) No

30. 10-Do you have any suggestions or services you would like to see offered at the BNA platforms ?

_____

_____

_____

_____

_____

31. 11-I would recommend BNA e-banking services to others *

Une seule réponse possible.

Totally disagree

1 ⬭

2 ⬭

3 ⬭

4 ⬭

5 ⬭

6 ⬭

7 ⬭

Totally agree

Section sans titre

32.   1-Do you know the BNA bank ? *

Une seule réponse possible.

◯ Yes

◯ No

33.   2-Which bank do you have an account with ? *

_____

_____

_____

_____

_____

34.   3-Why did you chose this bank to meet your banking needs ? *

_____

_____

_____

_____

_____

35.   4-To the best of your knowledge , what are the most important criteria for a   *
       customer to choose a bank ?

_____

_____

_____

_____

_____

Demographics

36.   You are : *

Une seule réponse possible.

( ) Male

( ) Female

37.   Your date of birth : *

_____

Exemple : 7 janvier 2019

38.   Your occupation : *

Une seule réponse possible.

( ) Student

( ) Employee

( ) Unemployed

( ) Retired

( ) Employer

( ) Merchant

Google Forms

Abstract

The rapid digitalization of banking and financial services has transformed the way consumers engage with financial institutions, making it imperative to understand the underlying shifts in consumer behavior. This master dissertation aims to analyze and uncover the key factors influencing consumer behavior towards the digitalization of BNA bank services by examining consumer attitudes and preferences, this research seeks to provide valuable insights into the implications and opportunities presented by the digital revolution in the banking industry in Algeria. This study was divided into two major parts, a theoretical part which begins with giving a general overview of business digitalization and online consumer behavior . The second part is the empirical research, a survey was conducted using an administrated questionnaire to BNA customers .

Key words : Digitalization / Online consumer behavior / Banking / Key factors of influence.

Résumé

La digitalisation rapide des services bancaires et financiers a transformé la manière dont les consommateurs interagissent avec les institutions financières, rendant impératif de comprendre les changements sous-jacents dans leur comportement. Cette thèse de master vise à analyser et mettre en lumière les principaux facteurs influençant le comportement des consommateurs à l'égard de la digitalisation des services bancaires de la BNA en examinant les attitudes et préférences des consommateurs. Cette recherche vise à fournir des informations précieuses sur les implications et opportunités présentées par la révolution numérique dans l'industrie bancaire en Algérie. Cette étude est divisée en deux parties majeures : une partie théorique qui offre un aperçu général de la digitalisation des entreprises et du comportement des consommateurs en ligne, et une deuxième partie consacrée à la recherche empirique, où une enquête a été menée auprès des clients de la BNA à l'aide d'un questionnaire administré.

Mots clés : Digitalisation / Comportement des consommateurs en ligne / Banque / Facteurs clés d'influence.

ملخص :

تطور الرقمنة السريع للخدمات المصرفية والمالية غير القاعدة التفاعل بين المستهلكين والمؤسسات المالية، مما يجعل من الضروري فهم التغيرات الأساسية في سلوك المستهلكين. تهدف رسالة الماجستير هذه إلى تحليل واستكشاف العوامل الرئيسية التي تؤثر في سلوك المستهلكين تجاه رقمنة خدمات بنك الجزائر الشمالية عن طريق دراسة مواقف وتفضيلات المستهلكين، وتسعى هذه البحث لتوفير نظرة قيمة حول الآثار والفرص المتاحة نتيجة للثورة الرقمية في صناعة البنوك في الجزائر. تم تقسيم هذه الدراسة إلى جزئين رئيسيين، الجزء النظري الذي يبدأ بتقديم نظرة عامة عن التحول الرقمي في الأعمال التجارية وسلوك المستهلكين عبر الإنترنت. والجزء الثاني هو البحث التطبيقي، حيث أجريت استبيانات باستخدام استبيان إداري لعملاء البنك الوطني الجزائري.

الكلمات الرئيسية: الرقمنة / سلوك المستهلكين عبر الإنترنت / البنوك / العوامل الرئيسية للتأثير .