

**The Impact of Artificial Intelligence on Digital  
Marketing: The Case of Cosmetic Sector in Ivory  
Coast**

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**The Impact of Artificial Intelligence on Digital  
Marketing: The Case of Cosmetic Sector In Ivory  
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by

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**FINAL INTERNATIONAL UNIVERSITY  
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**APPROVAL**

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Cosmetic Sector In Ivory Coast

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*I dedicate this modest work to my dad*

*To My mother*

*To God*

*To my sisters and her husband*

*To my supervisor*

*To my friends*

## ETHICAL DECLARATION

I, Lou Tra Sissy Astride Kouassi, dedicate this modest work first to those who no one can compensate for the sacrifices they have made for my education and well-being, to my parents who have sacrificed themselves to take care of me throughout my education and who are the source of my success. To my family and my dear friends who gave me their support in the most difficult moments. Also to all my trainers and all the pedagogical and administrative staff of Final International University for the help, they have always given to the students. Finally to all the people who have participated in this work in any way.

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## ABSTRACT

The emergence of artificial intelligence (AI) has revolutionized the working techniques of many companies worldwide. This revolution is being felt in digital marketing that helps improve marketing strategies. The existence of the Internet has also radically changed our daily lives, and this is being felt through the digitalization that remains today, a process that is increasingly common. Therefore, companies are following this evolution, which remains virtual without forgetting that customers remain the core of concerns. Therefore, it is essential to understand consumer behaviour, especially in the cosmetics sector. This thesis is about the impact of artificial intelligence on digital marketing. The objective of this one is to question and thus pose a reflection on the influence that artificial intelligence has on digital marketing. See to what extent artificial intelligence will be integrated into the digital marketing of companies in West Africa and then specifically in the Ivory Coast in the field of cosmetics. Therefore, my study is divided into two parts. One is about the impact of some AI tools (chatbot, predictive analysis, digital advertising and creating and generating content) on digital marketing, and the other is about the impact of some tools (social media, blog and mobile app) digital marketing on consumer purchasing decisions. Quantitative research was carried out by a team of three investigators among 300 consumers in Abidjan, the political city of Cote d'Ivoire. However, a pilot test was carried out online via google form with a sample of 296 to verify the understanding of the questions. The Questionnaire consists of 20 questions. I used the qualitative research method that involved interviews with ten different digital marketers from different Ivorian companies. The findings questionnaire shows that the hypothesis tests indicated that consumers consider social media and mobile apps as having a positive influence on their purchasing decisions, while the effect of blogs on purchasing decisions is negative. For an interview, the results highlight the factors that contribute to the integration of AI in digital marketing and the challenges of this integration, the benefits of integrating AI into marketing strategy, and the use of AI in marketing. Companies have to be strategic to increase their sales and try tried to integrate AI tools into their digital marketing because this is the future.



**Keywords:** Artificial Intelligence, Digital Marketing, Ivory Coast, Cosmetics.

## ÖZ

Yapay zekanın ortaya çıkışı, dünya çapında birçok şirketin çalışma tekniklerinde devrim yarattı. Bu devrim, pazarlama stratejilerinin geliştirilmesine yardımcı olan dijital pazarlamada da hissediliyor. İnternetin varlığı günlük hayatımızı da kökten değiştirdi ve bu, günümüzde giderek yaygınlaşan bir süreç olan dijitalleşme yoluyla hissediliyor. Bu nedenle şirketler, müşterilerin kaygıların özü olmaya devam ettiğini unutmadan sanal kalan bu evrimi takip ediyor. Bu nedenle, özellikle kozmetik sektöründe tüketici davranışlarını anlamak çok önemlidir. Bu tez, yapay zekanın dijital pazarlama üzerindeki etkisiyle ilgilidir. Bunun amacı, yapay zekanın dijital pazarlama üzerindeki etkisini sorgulamak ve böylece bir yansıma ortaya koymaktır. Yapay zekanın Batı Afrika'daki ve daha sonra özellikle kozmetik alanında Fildişi Sahili'ndeki şirketlerin dijital pazarlamasına ne ölçüde entegre edileceğini görün. Bu nedenle çalışmam iki bölüme ayrılmıştır. Birincisi, bazı yapay zeka araçlarının (chatbot, tahmine dayalı analiz, dijital reklamcılık ve içerik oluşturma ve üretme) dijital pazarlama üzerindeki etkisi, diğeri ise bazı araçların (sosyal medya, blog ve mobil uygulama) dijital pazarlamanın tüketici satın alma kararları üzerindeki etkisiyle ilgilidir. Nicel araştırma, üç araştırmacıdan oluşan bir ekip tarafından Fildişi Sahili'nin siyasi şehri Abidjan'da 300 tüketici arasında gerçekleştirilmiştir. Bununla birlikte, soruların anlaşıldığını doğrulamak için 296 kişilik bir örnekleme google form aracılığıyla çevrimiçi bir pilot test gerçekleştirilmiştir. Anket 20 sorudan oluşmaktadır. Farklı Fildişi şirketlerinden on farklı dijital pazarlamacı ile görüşmeleri içeren nitel araştırma yöntemini kullandım. Anket bulguları, hipotez testlerinin tüketicilerin sosyal medya ve mobil uygulamaları satın alma kararları üzerinde olumlu bir etkiye sahip olarak gördüklerini, blogların satın alma kararları üzerindeki etkisinin ise olumsuz olduğunu göstermektedir. Bir röportaj için sonuçlar, yapay zekanın dijital pazarlamaya entegrasyonuna katkıda bulunan faktörleri ve bu entegrasyonun zorluklarını, yapay zekayı pazarlama stratejisine entegre etmenin faydalarını ve yapay zekanın pazarlamada kullanımını vurgulamaktadır. Şirketler satışlarını artırmak için stratejik olmalı ve yapay zeka araçlarını dijital pazarlamalarına entegre etmeye çalışmalı çünkü gelecek bu.

**Anahtar Kelimeler:** yapay zeka, dijital Pazarlama, Fildişi Sahili, makyaj malzemeleri.

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## LIST OF ABBREVIATIONS

AGI	Artificial General Intelligence
AI	Artificial Intelligence
ANI	Artificial Narrow Intelligence
Asimov	Artificial Superintelligence
DL	Deep Learning
DM	Digital Marketing
M L	Machine Learning
MM	Mobile Marketing
OM	Online Marketing
PD	Purchase Decision
SMM	Social Media Marketing
TRNC	Turkish Republic of Northern Cyprus

# CHAPTER 1

## INTRODUCTION

For fans of science fiction films as children, there is a good chance that artificial intelligence represents superhuman abilities, robots designed to do good or destroy. I can mention Terminator, iRobot, Space Odyssey, and Matrix among these films. I can think the fiction of our childhood inspired that science. The diversity of scenarios for the cinema is great, but the fundamental idea behind the fantastic character is today a component, although digital, of our reality. Artificial intelligence is here, feeding very different conceptions of our imagination.

The subject of artificial intelligence, with its emergence, is flooding the Internet with scientific articles that have ended up popularizing it. Although a supposedly "weak" version of artificial intelligence is already present in our daily lives, it is nevertheless now influencing different sectors such as finance, education, and cosmetics and is slowly but explicitly intruding into our homes. The applications are numerous, and it is in the process of redefining the global economic landscape to such an extent that the public can quite quickly be alerted to the lightning advance that is underway. In addition, the curve of technological advancement is not linear and undergoes excellent change as the world advances. This can be seen in the ever-increasing technical prowess. However, the concept of artificial intelligence is not recent. From Alan Turing to Elon Musk, from Bill Gates to Stephen Hawking, the topic of artificial intelligence has animated scientific debates until it suddenly became popular.

Studying the behaviour of the human and animal brains is one of the areas in which large companies and sometimes start-ups are working to develop this technology. Because in addition to specific particular applications in the scientific, computer or industrial fields, artificial intelligence is also infiltrating the digital marketing field: personalization, content production, advertising targeting, optimization of customer relations, and assistance with events. This thesis will not deal in depth with the technical aspects of artificial intelligence, as this requires in-depth knowledge of computer engineering and other scientific specialties. However, some principles and mechanisms will be explained.

## **1.1 Problem Statement**

In recent years, artificial intelligence and digital marketing have gained momentum on the African continent, especially in Côte d'Ivoire. They seem to have become a central concern to the point where I decided to study the impact of artificial intelligence on digital marketing by considering the Ivorian context. While it took radio and television about 30 and 15 years respectively to catch on, the Internet has arrived in only a few years. Thus, to generate one billion dollars in advertising revenue, it took only three years for the Internet, compared with ten years for television and forty-five years for the radio. This meteoric rise, amplified by other digital media, is not about to stop since Forrester estimates that in 2016, digital marketing will represent more than a third of advertisers' marketing investments in the United States. The future of marketing will, therefore, undoubtedly involve digital. As for artificial intelligence, it continues to evolve.

## **1.2 Purpose of the Study**

This study aims to analyze the relationship between Artificial Intelligence and digital marketing and the influences it could have on the cosmetics sector in the Ivory Coast.

## **1.3 Significance of the Study**

The interest for me in studying the impact of AI on digital marketing in the field of cosmetics is to show that AI has no limits and that it can be used in any sector of activity. In addition to that, I want to raise awareness of the African mentality to adapt to the new technology.

## **1.4 Research Questions and Hypotheses**

In Côte d'Ivoire, digital marketing and AI are slowly beginning to take hold despite the insufficient number of companies engaging in this practice. However, the actions taken by companies exploring AI in digital marketing remain somewhat scattered. Given all the benefits that AI could bring to digital marketing, this is troubling. Companies have long surrounded us with objects and services built on AI solutions. It's time we all educate

ourselves on this topic because if today it's embedded in our consumer products like our phones, tomorrow, AI solutions will change the way we look at different industries like cosmetics. For asking all doubts, the research questions and hypothesis are presented below in Table 1.

**Table 1**

*Research questions and hypotheses*

Research Questions	Hypotheses
<p><u>Research Question 1:</u> Is there any positive relationship between Artificial Intelligence tools and Digital Marketing in Cosmetics sector in Ivory Coast</p>	
<p><u>Research Question 1-a</u> Is there any positive relationship between chatbot and Digital Marketing in Cosmetics sector in Ivory Coast</p>	<p><u>Hypothesis 1-a</u> there is a positive relationship between chatbot and DM in Cosmetics sector in Ivory Coast</p>
<p><u>Research Question 1-b</u> Is there any positive relationship between predictive analysis and Digital Marketing in Cosmetics sector in Ivory Coast</p>	<p><u>Hypothesis 1-b:</u> there is a positive relationship between predictive analysis and DM in Cosmetics sector in Ivory Coast</p>
<p><u>Research Question 1-c</u> Is there any positive relationship between digital advertising and Digital Marketing in Cosmetics sector in Ivory Coast</p>	<p><u>Hypothesis 1-c:</u> there is a positive relationship between digital advertising and DM in Cosmetics sector in Ivory Coast</p>
<p><u>Research Question 1-d</u> Is there any positive relationship creating and generating content and Digital Marketing in Cosmetics sector in Ivory Coast</p>	<p><u>Hypothesis 1-d:</u> there is a positive relationship between creating and generating content and Digital Marketing in Cosmetics sector in Ivory Coast</p>

Research Question 2:

is the DM tools influence buying decision of the customer in cosmetics sector in Ivory Coast

Research Question 2-a:

is social media influence buying decision of the customer in cosmetics sector in Ivory Coast

Hypothesis 2-a:

social media influence buying decision of the customer in cosmetics sector in Ivory Coast

Research Question 2-b:

is online marketing influence buying decision of the customer in cosmetics sector in Ivory Coast

Hypothesis 2-b:

online marketing influence buying decision of the customer in cosmetics sector in Ivory Coast

Research Question 2-c:

is mobile marketing influence buying decision of the customer in cosmetics sector in Ivory Coast

Hypothesis 2-c:

Mobile marketing influence buying decision of the customer in cosmetics sector in Ivory Coast

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## 1.5 Assumptions

In my opinion, AI can only positively affect Digital Marketing without erasing human capital. In addition to this, I believe that Ivory Coast is struggling to come to terms with this wave of technology. It should be noted that using artificial intelligence in the field of cosmetics is not an easy task because of the prejudices that people have.

## 1.6 Limitations

Unfortunately, the study has some limitations. Firstly, due to the rapid development of society, including digitalisation, the development of digital marketing, the results of the study and the conclusion are only valid for a period. Secondly, the conclusion presented in the study might be vague to be applied by some companies.

## 1.7 Definition of Key Terminology

In previous years, marketers were hesitant to apply artificial intelligence to their marketing strategies. Now, many successful brands have adopted it and are using it in their marketing. Artificial intelligence in digital marketing is now a reality, offering a range of benefits and options. I think that Côte d'Ivoire should not be left on the sidelines. Even if it remains almost non-existent, can it still catch up with the US or even China? In other words, does Côte d'Ivoire have enough resources to compete with this possibility?

- Côte d'Ivoire is a country located in West Africa, in the northern hemisphere, between the Tropic of Cancer and the equator. It is bordered to the north by Burkina Faso and Mali. To the west, it is bordered by Liberia, to the northwest by Guinea, to the east by Ghana and to the south by the Atlantic Ocean. It has an area of 322,462 km<sup>2</sup> and a population of approximately 26,380,000. The political capital of the country is Yamoussoukro, and its economic capital is Abidjan.
- According to the Merriam Webster dictionary, artificial intelligence is a branch of computer science that deals with the simulation of the intelligent behaviour of computers. The definition is given by Marvin Lee Minsky, one of the creators of the concept, who considers AI to be the construction of computer programs that perform tasks that are, for the time being, more satisfactorily accomplished by human beings because they require high-level mental processes. According to ISO 2382-28 (ISO/CEI 2382-28:1995), AI refers to the ability of a functional unit to perform functions typically associated with human intelligence, such as reasoning and learning. In other words, AI aims to replicate the cognitive abilities of the human brain by combining the unlimited memory capacity and data processing of the machine.
- Digital marketing is a marketing in which the company integrates digital technologies to achieve its marketing objectives, which are evolving due to the impact of digital on the whole environment. In digital marketing, one key concept stands out, interactivity, and unlike traditional marketing, it places the customer at the heart of its strategy. Digital marketing is the result of two developments: marketing applications linked to the Internet and those linked to new information and communication technologies.



- What is a cosmetic? We all feel we know, but the answers are varied. To settle this debate, the cosmetic regulation gives an official definition. According to it, a cosmetic product is defined as "any substance or mixture intended to be placed in contact with the superficial parts of the human body (epidermis, hair and capillary systems, nails, lips and external genitalia) or with the teeth and oral mucous membranes with a view, exclusively or mainly, to cleaning, perfuming, modifying the appearance of, protecting, maintaining in good condition or correcting body odours." There are several types of cosmetic products:

- Hygiene and toiletry products: make-up remover, skin-cleansing products, deodorants, shaving products;
- Beauty care products: face and body scrubs, masks, facial creams and other serums;
- Suncare Product: self-tanners, sun protection creams;
- Hand and foot care products: nail polish, nail polish remover and other treatment products;
- Hair removal products: wax, depilatory creams;
- All make-up products: powders, foundations, lipsticks;
- Haircare products: shampoos, conditioners, masks, hair-colouring products;
- Perfumes.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Artificial Intelligence

##### 2.1.1 Definition

The dictionary definition of AI is general. AI is the set of theories and techniques used to make machines capable of simulating human intelligence. According to a report written in 2017, AI is a set of concepts inspired by human cognition or the biological brain, and designed to assist or replace the individual in processing massive amounts of information. The term "information" plays an important role in the effectiveness of AI.

Based on these definitions, it can be said that AI combines several areas of knowledge and thus attempts to reproduce as closely as possible, with the help of machines, mental activities of the order of understanding, perception or judgement. AI involves 'rational' methods, in which what is to be done is done because of available information and performance. A logical process is, for example, the buying process. The individual recognizes a need, seeks information to identify potential solutions, analyses the alternatives and makes a purchasing decision. Human processes, on the other hand, involve other less observable characteristics, such as instinct, intuition and other factors. It is also possible that human processes do not take into account existing data. There are two types of artificial intelligence:

- Weak AI: defined by Ray Kurzweil (KURZWEIL R. 2005), this intelligence has very restricted capabilities because it only works with a series of algorithms created by humans to imitate intelligence. The robot has no independence because humans generally assist this simulation of intelligence even if they try to build increasingly complex autonomous systems. In the 1950s, Alan Turing set up a test to reproduce a conversation between men. He simulated a form of intelligence in his test that seemed to act as if it had intellectual capacity. Unfortunately, this test was not very successful.

- Strong AI: this refers to a machine capable of producing intelligent behaviour and attempting to give the impression of genuine self-awareness and an understanding of its own reasoning (STONE P.; 2016).

### **2.1.2 Background**

All the excitement around AI today can make us think we are dealing with a brand new technology. Yet the term already existed in the 1950s with the test of Alan Turing. However, it's in 1956, John McCarthy first spoke about it at a Dartmouth University seminar to solicit financing for the formation of a research group comprising ten scientists. He and the co-authors explain the purpose of the research as follows: "to proceed based on the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it" (McCarthy et al., 2006, p. 2). So, they would have devoted months to researching computers' ability to learn and replicate human thinking processes. This created several potential, such as the machine's use of language, self-improvement, and capacity to address challenges formerly reserved for people. All of this has given rise to the term artificial intelligence in order to combine them and form a new autonomous branch of study (Ezratty, 2017: 11).

Nevertheless, John McCarthy and his group could not achieve satisfactory results. To this day, nobody has been able to provide convincing findings (Ezratty, 2017). This program increased the number of researchers and funds available for artificial intelligence (United States National Research Council, 1999, p. 201). This was followed by around 30 years of innovation, including the debut of the first chatbots, the formation of the foundations of neural networks and expert systems, and the development of John McCarthy's LISP programming language. Joseph Weizenbaum, simulating a psychotherapist through his pattern recognition technology, created the first conversational agent in 1966. According to the timeline presented by Claude De Ganay and Dominique Gillot (De Ganay and Gillot, 2017, p. 36), around 1973, the world of artificial intelligence experienced many slowdowns. Between 1987 and 1993, systems arose that are algorithms where the engineer codes rule into them, creating rule engines. These can take the form of "If... and... then..." which is common in mathematics. Many organizations adopted them in their processes in less than ten years, but they rapidly ran

out of steam due, among other things, to a lack of processing capacity, which prevented computers from running expert algorithms (Ganay and Gillot, 2017, p. 38-42).

Statistics will provide computers the capacity to learn from data in the 2000s. As a result, computers can enhance their performance at performing problems without being specifically designed to do so. This is referred to as Machine Learning. This advancement will be bolstered by the introduction of Big Data, which is complimentary to Machine Learning. During the same time, what is known as Deep Learning emerged, which is nothing more than an upgraded form of Machine Learning that employs a specific technology.

### **2.1.3 Machine Learning and Deep Learning**

Machine Learning is the ability to make the machine capable of learning without being explicitly programmed to do so, according to Arthur Samuel (1959). To do this, ML relies on a variety of strategies, all of which have one thing in common: their capacity to automatically update their methodology and improve their findings as more data is received (Brynjolfsson & McAfee, 2014). Regression, classification, clustering, and dimension reduction are examples of these approaches. The idea behind Machine Learning software is to identify patterns or generate predictions or suggestions from a huge database without the need for a person to write instructions. Moreover, the program may adapt and self-improve as a result of experience and the inclusion of fresh data (Chui, Kamalnath and McCarthy, 2018). When these algorithms are constructed, they go through an initial training phase to confirm that the mathematical functions utilized operate. People who use these algorithms will then need to train them on their own data so that the software can adapt to them and satisfy their demands. Once the AI solution has been trained on a specific database, it will be ready to be deployed on a bigger database. This is referred to as supervised training, in which the program employs human input to better itself. There are also unsupervised pieces of training where the software detects patterns in a given base on its own (Chui, Kamalnath and McCarthy, 2018). In all situations, AI solutions need a lot of data. It is what drives the algorithms, and its quality affects the AI software's performance (Rogati, 2017). Even the greatest algorithms will fail to produce the intended results in the absence of high-quality data (Ezratty, 2017). ML remains the most promising

approach for teaching robots cognitive skills such as picture, text, and speech recognition. This is the technology that powers Apple's virtual assistant, Siri.

Deep learning is an evolution of machine learning. It works like the neural networks of the human brain. The information passes through several successive layers of artificial neurons and is linked together (Wotton, D., 2018). The greater the number of neurons, the deeper the network is considered to be. The system can be trained to its task in a supervised or unsupervised way. In the first case, the network arrives at a response that it will compare to the response considered correct by humans. If they match, the experience is kept in memory, if not; the network adjusts to obtain what is expected. In the case of unsupervised training, the system must recognise data patterns to learn by itself (Bastien, L., 2018b). Deep Learning is used in many areas such as chatbots

#### **2.1.4 Three levels of intelligence**

There are three levels of AI:

-Narrow Artificial Intelligence (NIA), sometimes known as Weak AI or Narrow AI, is the sole kind of artificial intelligence developed to far. Narrow AI is goal-oriented, designed to execute single tasks - such as facial recognition, speech recognition/voice assistants, driving a car, or browsing the Internet - and is extremely intelligent at the job for which it is developed.

- Artificial General Intelligence (AGI), also known as strong AI or deep AI, is the notion of a computer with general intelligence that can learn and use its intellect to solve any issue by imitating human intelligence and/or behavior. In a particular context, AI can think, comprehend, and act indistinguishably from a human person.

- Artificial superintelligence (ASI) is the hypothetical AI that does not simply imitate or understand human intelligence and behaviour; ASI is where machines become self-aware and outperform human intelligence and capability

Also known as high intelligence, it refers to a computer that is as intelligent as a human, which means it can accomplish anything we can (Urban, 2015b). This, of obviously, sparks a lot of discussion about what human intellect is and what distinguishes it.

Professor Linda Gottfredson (1997) offers this definition: "a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience"

Gottfredson (1997, p. 1). When AI has achieved this level, some scientists predict it will swiftly grow to the level of superintelligence, ASI, greatly surpassing humans (Kurzweil, 2005), but still at a level of intelligence that does not consider emotional intellect. Many issues remain unresolved concerning the consequences of AGI and ASI, so nobody knows how this development will proceed. Because AI is a computer created and programmed by humans, it is critical to consider how to construct this new technology now (Sullins, 2006).

## **2.2 Marketing Digital**

### **2.2.1 Definition**

Several studies have focused on digital marketing in the 90s after the advent of the Internet, generating several terms: web marketing, e-marketing or digital marketing, which are terms that have emerged to refer to “the use of the Internet and other digital technologies for commercial purposes” (Chaffey et al., 2014, p. 5). Yet there is no unanimous agreement on the meaning of each term. Even today, the definitions given to digital marketing are diverse. The most famous one is the belief that having a presence on the internet, via a website and/or social networks, is sufficient to declare oneself an expert or at least skilled in digital marketing. According to the website *Définitions-Marketing.com* Marketing may be described as a series of actions whose goals are to research and influence customers' requirements and behaviors while also continually adapting the production and commercial equipment to the previously determined demands and behaviors. On this basis, we can say that digital marketing is the online version of marketing. Moreover, Järvinen et al. (2012) argue that digital marketing represents a new approach to marketing and that it is not just traditional marketing enhanced by digital tools. Indeed, digital marketing has its own characteristics and dynamics that need to be well understood in order to implement effective marketing strategies and tactics (Taiminen & Karjaluoto, 2015). Digital marketing attempts to develop more direct and personalized relationships with consumers and encourages companies to have an open dialogue with their target customers (Järvinen et al., 2012). These definitions focus on the objective of digital marketing in addition to the means adopted, as the technology evolves over time, but the marketing objectives are the same.

Marketing.com website defines it as all digital media and channel marketing strategies as marketing becomes more "inherently digital," the word will most likely become obsolete. Marketing applications related to the "conventional" Internet, as well as those linked to mobile phones, tablets, GPS, and other apps and connected items, are fundamentally covered by digital marketing. Mobile marketing (mobile sites + mobile applications) is becoming increasingly important. Therefore, we can deduce that digital marketing integrates traditional marketing techniques, statistics, commerce, and communication with cutting-edge information systems and multimedia. All of this is done within a given user interface (website, blog, social networks, emails, etc.) with the primary and ultimate objective of winning over and retaining users. Digital marketing is also defined as the use of digital means to carry out marketing activities. The term "digital" refers to current modes of communication that emerged with the advancement of information technology, the Internet, and social media (izmeçi, Ercan, 2015). Build relationships with customers through 24-hour work. Digital marketing can also reach customers quickly without forgetting the effects of online advertising (Afrina et al., 2015), and some people believe that digital marketing offers great potential for brands or companies (Otero, Rolán, 2016).

### 2.2.2 Digital marketing tools

Philip Kotler separates digital marketing into three categories: internet marketing, social media marketing, and mobile marketing.

**2.2.2.1 Online marketing.** It concerns, email company's website, display and sponsored links.

- **Website:** A website is a collection of web pages that can be viewed over the internet and often portrays a person or company's image. Through the website, the firm hopes to assist consumers satisfy their needs, obtain information, and save cash and effort (Kotler et al., 2015).
- **Sponsored links:** Paying for an ad to show in the search engine results list to attract more users, often known as "pay-per-click" advertising or search engine advertising (Ryan, Jones, 2009);
- **Email:** Email marketing is a type of direct marketing that is used to communicate with current and potential customers (Fariborzi, Zahedifard, 2012); email allows for the wide dissemination of messages at a low cost

and has a number of advantages, including the ability to track the number of opened messages and the percentage of clicks (Kotler et al., 2015)

**2.2.2.2 Social media.** Social media is a virtual world that allows its users to share information. There are social networks, virtual communities and blogs.

- **Social networks:** Social networking sites are a set of applications that connect businesses and consumers to develop relationships in a quick and cost-effective manner. (Vinerean et al., 2013) The main social networks currently used in marketing are:
  - **Facebook:** the most used social network. It allows users to post images, videos and files and to create or join groups. Its advantage is the cultural mix.
  - **Twitter** allows users to send free text messages, called tweets, online via instant messaging.
  - **Google+:** it allows you to upload and share images and videos
  - **LinkedIn** is a professional communication site generally used by companies and is the most popular.
- **Online communities:** A virtual community is a community found on the internet of people who share common interests, feelings or ideas (Scheid et al., 2012).
- **Blogs:** The blog is a streamlined website that seeks to give a solution to people browsing, to assist visitors receive information, and to help reach the company's advertising campaigns to produce a reaction (Ahuja, Medury, 2010). Today, blogs are revolutionizing how businesses gain awareness and interest among customers. It is also a mode of communication that allows clients to maintain ongoing contact with the firm (Kenneth, 2011).



**2.2.2.3 Mobile marketing.** Telephone marketing is any marketing action carried out with consumers utilizing a mobile phone (Yadav, 2015); it is also referred to as any activities linked to connecting with the client through phone to encourage sales of products or services or to deliver information (Latto, 2014). Mobile marketing enables businesses to communicate with their customers at any time and from any location (Lamarre et al., 2012).

It is important to know that each tool has a specific purpose.

**Table 2**

*Objectives for using digital marketing tools*

Tools	Objectives
Online marketing	<ul style="list-style-type: none"> <li>- Converting visitors</li> <li>- Improve the company's image</li> <li>- Provide information about</li> <li>- products/services</li> <li>- Interact with prospects/customers</li> </ul>
Social media	<ul style="list-style-type: none"> <li>- Share information with the community</li> <li>- Recruit and retain a community of subscribers</li> <li>- improve natural referencing (Search Engine Optimization, SEO)</li> </ul>
Mobile marketing	<ul style="list-style-type: none"> <li>- Develop a new service for customers</li> <li>- Improve the company's image</li> <li>- Diversify communication channels</li> </ul>

### **2.3 How does Artificial Intelligence relate to Digital Marketing?**

Artificial intelligence is extremely significant in digital marketing. Its goal is to leverage data collection techniques to better understand consumers' wants and preferences, allowing marketers to give more accurate information and create tailored experiences. A few years ago, the use of Artificial Intelligence in marketing campaign strategies in companies was not developed because of the lack of knowledge of marketing

experts on the subject. Nevertheless, nowadays, using the advantages offered by artificial intelligence has become an essential part of developing a company's activities.

In addition, AI tools continue to evolve to a point where they are able to outperform humans in certain activities to revolutionize digital marketing. Therefore, to better understand its development, I will propose some solutions.

### **2.3.1 Chatbots**

Chatbots will automate many tasks, mainly the answers to frequently asked questions by prospects, by offering those ways to search for the product or service they are looking for. A chatbot, in other terms, is a computer software meant to imitate a discussion with human users, particularly on the Internet. The goal of bots, chatbots, and other chat robots is to give Internet users with appropriate and timely responses before, during, and after an online transaction. Customer services based on rules and predetermined dialogue situations are the most basic chatbots. The most powerful are built on Machine Learning and natural language recognition via iterative learning (over time, learning from mistakes).

### **2.3.2 Predictive Analysis**

Predictive analytics is a prediction-based AI strategy. Using historical sales data, AI can conduct industry-wide comparisons and discover economic patterns to anticipate your sales outcome. This outcome can assist you in making educated judgments during important moments and forecasting immediate and long-term consequences.

### **2.3.3 Digital Advertising**

AI in marketing has made advertising even more effective through predictive targeting. When applied to programmatic advertising, AI can regulate campaign parameters such as the best time of day to run an ad or the likelihood of an impression turning into a sale. Digital marketers must target more fine-grained categories and reach out to clients with greater personalisation. As a result, they may deploy AI to do this. If an adolescent is shopping for a present for an older relative, dynamic segmentation will position them in the segment best matched to their current purchasing behavior. Companies may display relevant offers while avoiding the use of obsolete data for targeting by employing real-time data.

### **2.3.4 Creating and generating content.**

For content creators, it is always difficult to come up with an unparalleled marketing strategy. In this area, AI can provide creative solutions and create content for the creators, if it is short texts. However, this practice is not new. Using machines to generate content automatically has been common practice for several years. For example, a robot has written hundreds of articles in the Washington Post. You may have already come across content created by an algorithm without even knowing it.

## **2.4 The Relationship between Cosmetic Industry, Marketing and Artificial Intelligence**

In a market where cosmetics are booming, it is now moving towards a multi-channel offer, targeting all types of individuals. A fact that can be explained by the importance of appearance in our society. A study conducted by INSEE indicates that 32.2% of the average household budget is devoted to aesthetics, whereas in 1960, it was only 8.8%. This traffic of influence amplified by social networks makes the digital eruption in the beauty sector. By merging artificial intelligence and algorithms, companies with their marketing strategy are now offering products that are made for you. On the one hand, chatbots deliver ultra-personalized advice and, on the other hand, applications that help you choose the right product.

It is not uncommon today to see many consumers being influenced by the advice of fashion and beauty bloggers, but that day could soon be over. Artificial intelligence is beginning to conquer the cosmetics sector by offering applications that allow consumers to try on a product before buying it virtually. Thus, artificial intelligence and machine learning technologies have been infiltrating the beauty sector more widely in recent years. This is a trend that is not surprising since cosmetic brands have everything to gain. Indeed, according to Marie-Claire Riquier, beauty expert at Superbelles, "More than 80% of interactions between customers and cosmetic brands will be managed by artificial intelligence within two years". The marketing of beauty products or cosmetics follows very specific rules. Artificial intelligence via marketing has accompanied well-known make-up brands on social networks but also participated in the launch of dermo-cosmetic care ranges by developing complete communication campaigns centered around the

philosophy of inbound marketing. In a few words, inbound marketing proposes to generate a qualified audience on a website and put it at the brand's service. To bring in and convert. This way of doing things is based on the production of quality content, the improvement of natural or paid references, social media marketing, press relations and other well-known digital marketing tools. Although the tools are well known, they are unfortunately rarely used in synergy to serve a very specific objective: to make you visible and convert visitors to your websites into customers. In a digital world, without content marketing, there is no brand. Information is becoming more frequent on social networks and blogs, and all brands must propose a story, a universe, and values and bring them to life via appropriate marketing content. Think of highlighting your products with quotes, high-quality images, and graphically reworked illustrations. To promote natural referencing and to humanize your discourse, videos or blog posts will give your brand a personality and give you a strong presence on social networks. Social networks are an important channel for brand messaging in the cosmetics sector. Instagram, Facebook, and Twitter are essential. Indeed, these networks will allow you to promote products and promotions and interact directly with loyal customers, fans, detractors and influencers of your sector. There are hundreds of influential beauty bloggers whose sites attract hundreds of thousands, if not millions, of consumers every month. Therefore, this media space is a prime environment for cosmetic brands to position themselves, and most brands have already understood this. In addition to their informative role, women bloggers are generally perceived as more objective by consumers as they are (historically) not paid by brands or only in the form of free samples (this is tending to change).

## **2.5 Industry of Cosmetics in COTE D'IVOIRE**

The Ivory Coast is a land of opportunity for multinationals in the cosmetics sector. Faced with such a vast market, many international groups are interested in its potential. Moreover, the outside world has been the largest supplier of cosmetic products by far. The Ivorian beauty market has a long history for international brands Giants such as L'Oréal, Unilever and CFAO benefit from a historic local presence in Côte d'Ivoire. Today, Unilever is behind several brands dedicated to Ivorian consumers and has been for several decades. Present in the toilet soap, toothpaste, deodorant, skincare and haircare segments,

Unilever has notably developed the Monsavon, Dove and LUX brands in the country. Thanks to a portfolio of international brands, the group benefits from a significant reputation and a long history with Ivorian consumers. Nevertheless, in order to conquer Ivorian consumers and adapt to local demand for products adapted to their needs, some groups have chosen to set up production lines in sub-Saharan Africa. Some have even chosen to launch specific ranges for the African market. Unilever launched in August 2017, under the Belvoir brand, a "Shea Butter" variant designed mainly for West African countries. More recently, the French group Yves Rocher has chosen to open up to the African market. In Côte d'Ivoire, in Abidjan, Yves Rocher now has two shops. For its establishment, the group has chosen to rely on local manufacturing, using ingredients that come from Africa through eco-responsible plant-based channels. This is an opportunity for the French brand to meet the demand of Ivorian consumers looking for natural and ethical products. In terms of image, international brands have a great deal of legitimacy. Despite the notable presence of international brands in the beauty sector, made in Africa is on the rise. Many national and regional champions offer products that compete directly with the biggest brands in the beauty sector by using their local knowledge and market specificities but this is still unfair competition.

## **Conclusion**

Artificial intelligence is a science that is used in many fields and remains the potential to be exploited in digital marketing. Artificial Intelligence is a cutting-edge technology that can do wonders. Using AI digital marketing methods will assist firms in improving the customer experience and successfully selling their brand.

## CHAPTER 3

### METHOD

This chapter explains the different methods by which I obtained the data for this study. Part of the chapter is devoted to the pilot phase. Details of the data collection procedure follow this. The chapter ends with an overview of the instruments used to analyze the data.

#### 3.1 Methodology

Given the nature of the study issues, a quantitative approach of data collection that could be generalized and compared was chosen. Quantitative approaches enable prediction and generalization, as well as the investigation of casual interactions which is necessary for this study and more structure and objectivity. I also decided on a qualitative research method. This is a good method for understanding opinions to solve one of the research problems, which is the relation between AI and DM. In this chapter, I set out the operational framework for my research. In the following pages, I present the methodology, sampling and data analysis. It is best to obtain information directly from consumers to collect relevant information. Therefore, it is preferable to collect data by Questionnaire. As English is not the respondents' first language, I decide to organize the Questionnaire in French. Distance and we are assuming all have internet access and knowledge about internet usage. Screening question, who uses and accesses the Internet. The questions start with artificial intelligence tools and their impact on digital marketing. The second part of the question is about the influence of digital marketing tools on the buying decision of consumers. The last one is the personal information of the customers, i.e. name, age, education, profession, etc.

#### 3.2 Pilot test

The study was conducted in two phases; the first phase took place over a period of 3 weeks in December 2021. The second phase, which took place in February 2022 over a period of two weeks, was designated as the data collection phase. The pilot phase of the

study was conducted using google forms. The pilot phase of the study was conducted using google forms. This technique was chosen for its ease of use in terms of distance and for the reduction of costs. One hundred ninety-six people took part in the pilot phase. The choice of participants was completely random. The objective of this phase was to check whether the questions asked were understandable. To carry out this test, I shared the link to the Questionnaire with as many people as possible.

### **3.3 Research Design**

The collection of methodologies and processes that explain how, when, and where data is gathered and processed is referred to as the research design (Churchill, brown and Suter, 2009). Malhotra (2010) provides a more general definition: it is the researcher's framework for finding answers to research questions or testing research hypotheses. This part provides an overview of the methods used to conduct research on the impact of artificial intelligence on digital marketing.

This thesis will investigate how Artificial Intelligence affects the field of digital marketing in the case of the cosmetic sector in the Ivory Coast. This section will also look at what respondents think and how digital marketing tools influence consumers' buying decisions. To find out more about this topic, I have made a series of questions that will be addressed to different people. In Addition, Interviews were conducted with a sample of 10 participants selected to obtain the best results.

#### **3.3.1 Exploratory analysis**

The concept of digital marketing is measured through four dimensions: marketing via social networks, marketing via websites & blogs, email marketing, and marketing via mobile applications. Each sub-dimension is composed of a set of items recommended by the literature. The correction process eliminates the items that are not well represented in the factorial structure. This technique has three objectives:

- Understand the structure of a group of variables (in a questionnaire, determine which variables are related),
- Design and refine measuring instruments to assess latent constructs, such as our Questionnaire based on Likert-type scales (which cannot be measured directly).

- Consolidate the information contained in a large number of variables (questionnaire items) into a limited amount of new composite dimensions with little information loss (Hair et al., 1998). As a result, we strive to reveal the structures or dimensions underlying a set of variables.

**3.3.1.1 Preparing the factor analysis.** Before the factor analysis, it is recommended to ensure that there are minimal correlations between the items (variables) that will be the subject of the analysis. If the relationships are weak or non-existent, identifying one or more components will be challenging. In this regard, a correlation matrix containing all of the variables of the analysis may be created and the size of the coefficients examined. This matrix is an option for factor analysis in the SPSS menu. This issue is addressed by Bartlett's test. Bartlett's sphericity test confirms the measurement of inter-item correlations. This metric determines whether the correlation matrix is an identity matrix in which all correlations are equal to zero. We expect the test to be significant ( $p < 0.05$ ) so that we can reject the null hypothesis that this is an identity matrix, which means that all variables are perfectly independent of each other.

**3.3.1.2 Measuring the adequacy of sampling.** The measure of sampling adequacy is the KMO index of Kaiser Meyer and Olkin. This metric provides an overall assessment of the quality of inter-item correlations. The KMO index, which ranges from 0 to 1, gives extra information when evaluating the correlation matrix. Its interpretation goes as follows:

- 0.80 and above Excellent
- 0.70 and above Good
- 0.60 and above Poor
- 0.50 and above Miserable
- Less than 0.50 Unacceptable



**3.3.1.3 The choice of factor analysis method.** Analysis of common factors (factor analysis) and component study are two approaches for extracting factors that are based on particular theoretical considerations relating to the components of the total variance of the set of variables in the analysis.

Common factor analysis (Principal axis factoring) is based on a similar variance shared by the examined variables and is useful when the researcher is looking for the latent structure or structures underlying the variables.

The principal component analysis (Principal component) is based on the specific variance of the variables and makes it possible to extract a minimum of factors which explain the largest possible part of the specific variance. This is usually the preferred method.

**3.3.1.4 Analysis of the quality of variable representation.** Interpreting the factors or components entails discovering the variable combinations that are most connected with each of the important factors. We propose three approaches to do this:

- Examine the component matrix (without rotation)

This matrix contains the variable weights on each component. These weights represent the relationship between the variable and the factor. They are used to comprehend each variable's involvement in the definition of each factor. As a result, they represent the level of correspondence between the variable and the factor. The higher the weight, the more representative the variable is of the component.

In general, the first extracted component explains the most variation and is hence the best feasible combination of variables. The remaining variables have less variation to explain. As a result, they represent less and fewer ideal combinations until the variation to be explained is exhausted. Although intriguing, this matrix is not particularly instructive in terms of interpretation. It is necessary to rotate factors to simplify the correlation matrix between factors and variables in almost all cases.

- Examination of the component matrix after rotation

The rotation of the elements entails practically rotating the axes of the factors around the point of origin in order to disperse the variation to be explained more evenly. The generated factorial answer is therefore easier to comprehend and theoretically more relevant than the solution without rotation. When the elements are believed to have

independent dimensions from each other, the rotation can be orthogonal; however, when the factors are associated with each other, the rotation can be oblique.

The ultimate goal of the rotation is always to simplify the reading of the weights of the variables on the factors. In the weight matrix, this means that in each row, there are several weights close to 0 and very few very high weights (ideally only one). In practice, the orthogonal rotation method VARIMAX is very regularly used. This method is preferred, among other things, when one wishes to reduce the number of variables of a data matrix into a smaller number of factors not correlated between them and used, for example, within the framework of multiple regression.

### **3.3.2 Confirmatory analysis**

The internal consistency analysis is the purpose of the confirmatory factor analysis. The objective of the internal consistency reliability analysis is to test the homogeneity of the sub-scales, i.e. the capacity of a set of items to represent only the same facet of the Rousset instrument (2005) and not too unevenly. The reliability indicator is Cronbach's alpha. For exploratory analysis, Cronbach's alpha is acceptable if it is between 0.6 and 0.8. For confirmatory analysis, a value of Cronbach's alpha greater than 0.8 is recommended.

### **3.4 Population and Sampling**

The target population for this research is the population that uses the Internet in Côte d'Ivoire. In this study, the accessible population includes both women and men who purchase cosmetic products. Table 2 below shows the number of people who use the Internet in the Ivory Coast and the sample sizes. The Questionnaire was conducted in the Ivory Coast by a group of three interviewers. They approached the population and asked them questions via a platform called ENKETO. The collection was done using a phone or tablet, and the data was stored automatically on ONA. By choosing this method of distribution, I consider my sample to be a random sample. A random sample is a valid way of gathering information in which each member of a population is picked at random. Each person has the same chance of being picked to be a part of a sample.

The number of people who use the Internet is 12,500,000 in Côte d'Ivoire. With a confidence level of 95% and a margin of error of 5.5%, this gives a sample of 318 people using the Internet. The 318 people selected for this study in Côte d'Ivoire are essentially Internet users of all genders and ages.

**Table 3**

*Sample size calculator*

Confidence level	95%
Margin of error	5.5%
Population proportion	50%
Population size	12 500 000
Sample size	318

**Table 4**

*Demographic Profiles of Respondents*

CHARACTERISTICS	CATEGORIES
GENDER	Male Female
AGE	Under 18 18 – 25 26 – 30 31 – 35 36 – 40 Above 45
EDUCATIONAL LEVEL	Lower than high school High school Bachelor's degree Master's degree Doctorate or higher
EMPLOYMENT STATUS	Student Employee Unemployed Self-employed

For the interview, I am mainly interested in people who have either knowledge in digital marketing or in artificial intelligence. I decide to take 3 people living in Cote d'Ivoire.

**Table 5***List of interviewed*

Name of company	Name and surname	Position
Orange Cote d'Ivoire	Kouakou Raphaël Yellow	Data scientist
MTN Cote d'Ivoire	Jean Jacques Abe	Marketer
Société Générale	Matebou Paul-synthia	Marketer

**3.5 Instruments and Procedures of Data Collection****3.5.1 Questionnaire.**

Data collection allows us to gather the information we want about our objects of study. The questionnaire was initially decided to be conducted online with Google Form, as this is the simplest and most efficient approach to contact as many people as possible in the shortest time. However, the questionnaire was eventually conducted face-to-face in Abidjan.

The content of our Questionnaire is based on the responses of the respondents.

The Questionnaire has two sections: 1 and 2:

- Section "1" deals with the impact of digital marketing on consumer purchasing behavior in the cosmetics sector, and it will use to analyze hypotheses H2a, H2b, and H2c. It contains 20 questions. I use the Likert scale to analyze the following questions.

**Table 6***Survey*

Construct	Original	Adaptation	French version	Sources
Social media marketing	-“Social media marketing for fast fashion products is frequently seen.”	-“ Social media marketing (Facebook, Instagram, twitter...) for cosmetics	- Le marketing des médias sociaux pour les produits cosmétiques est fréquemment observé.	“Schivinski and Dabrowski

- 
- products is frequently seen. “
- “The social media advertisements for fast fashion products are very attractive.”
  - “The social media advertisements for cosmetics products are very attractive.”
  - “The social media advertisements for fast fashion brands can be easily remembered.”
  - “I like to use social media to get information about cosmetics products.”
  - “I like to use social media to get information about fast fashion products, services, and brands.”
  - “Social media sites of fast fashion brands enable opinions exchanging with others.”
  - “Social media sites of fast fashion brands enable opinions
- is frequently seen. “
- Les publicités sur les médias sociaux pour les produits cosmétiques sont très attrayantes.
  - Les publicités sur les médias sociaux pour les marques de cosmétiques peuvent aider à la décision d'achat.
  - J'aime utiliser les médias sociaux pour obtenir des informations sur les produits cosmétiques.
  - Les sites de médias sociaux des marques de cosmétiques permettent d'échanger des opinions avec d'autres personnes.
- (2014); Kim and Ko (2012).”

	exchanging with others.”		
Online Marketi ng	<p>“Information related to fast fashion (products, trends, etc.) from fashion blogs/websites is credible”</p> <p>“Information related to cosmetics products from sponsored linked/websites is credible.”</p>	<p>“Information related to cosmetics products from sponsored linked/websites is credible.”</p> <p>“Communication activities related to fast fashion brands of bloggers (complimenting, criticizing, evaluating, etc.) are credible.”</p> <p>“I frequently browse cosmetics websites.”</p> <p>“I frequently browse fashion blogs/websites.”</p> <p>“I feel good about browsing cosmetics websites.”</p> <p>“feel good about browsing fashion blogs/websites.”</p> <p>“Given the chance, I intend to buy cosmetics products</p>	<p>Les informations relatives aux produits cosmétiques provenant de sites web/liens sponsorisés sont crédibles.</p> <p>Les activités de communication relatives aux marques de cosmétiques des blogueurs (complimenter, critiquer, évaluer, etc.) sont crédibles.</p> <p>Je consulte fréquemment les sites de cosmétiques.</p> <p>Je me sens bien lorsque je consulte des sites de cosmétiques.</p> <p>Si j'en ai l'occasion, j'ai l'intention d'acheter des produits cosmétiques qui sont affichés (ou</p>
			<p>Malär, Nyffen eggr, Krohm er, and Hoyer (2012); Hsu and Tsou (2011).</p>

clothes that are that are posted (or discutés) sur les sites  
 posted (or discussed) websites.” web.  
 discussed) in the  
 fashion  
 blogs/websites”

Brande -“I frequently use - “I frequently use -J'utilise fréquemment Mittal(  
 d fast fashion cosmetics branded les applications des 1995);  
 mobile branded apps to apps to see their marques de cosmétiques Zang  
 applicat see their products. “ pour voir leurs produits.  
 ions products.” (2014).

- Les applications de  
 marque de cosmétiques  
 sont agréables à utiliser.  
 - “Fast fashion apps are pleasing to  
 branded apps are use”  
 pleasing to use.”

- après avoir utilisé les  
 applications de produit  
 cosmétiques, je pense  
 qu'ils sont plus attractifs  
 - “After using a cosmetic branded  
 fast fashion app, I think the brand  
 branded app, I is more attractive.” - Après avoir utilisé une  
 think the brand is application de marque  
 more attractive.” de cosmétiques, j'ai une  
 meilleure perception de

la qualité des produits et  
 services de la marque.  
 - “After using a cosmetic branded  
 fast fashion app, I have a better  
 branded app, I perception of the  
 have a better quality of the brand's  
 perception of the products and  
 quality of the services.” - J'ai l'intention  
 d'acheter des produits  
 par le biais  
 d'applications de





- "I will positively recommend fast fashion products to other people."
  - "I will positively recommend cosmetics products to other people."
  - "I intend to purchase again from fast fashion brands in the future."
  - "I intend to purchase again from cosmetics brands in the future."
  - "Overall, I am satisfied about my purchase of products from fast fashion brands"
  - "Overall, I am satisfied about my purchase of Brands."
- produits de mode rapide à d'autres personnes.
- J'ai l'intention d'acheter à nouveau auprès de marques de mode rapide à l'avenir.
- Dans l'ensemble, je suis satisfait de mon achat de produits de marques de mode rapide

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- Section "2" deals with the respondents' personal data;

The Questionnaire was structured according to the modified Likert model on a 5-point scale, ranging from "strongly agree" (SA) to "Agree" (A), through "Neutral" (N), "disagree" (D) and 'Strongly Disagree' (SD). Subjects were then asked to respond to their level of agreement with the statements in the instrument.

### 3.5.2 Interview

The quantitative study that I carried out via the Questionnaire enabled me to obtain trends and statistical elements on the influence that digital marketing has on customers' purchasing decisions. In order to complete and deepen these elements, I felt it was necessary to complement these results with qualitative interviews. This exercise is particularly suited to understanding the relationship between Artificial Intelligence and Digital Marketing.

For the interview method, the directive interview was chosen. This type of Interview is similar to the questionnaire method. A series of questions are asked in the same way to all respondents, and they will have to respond in their own words.

I found it the most relevant in order to obtain as much information as possible on the subject. This research will be done online on Google Form. The preparation for the Interview has two important phases:

- The selection of the people to be interviewed. I chose to take a small sample size. However, my sample had to be heterogeneous so that I could have a view of all the angles of the subject.

This is why I opted for interviews with people with different profiles:

- AI specialists
- Digital marketing specialists
- Marketers
- Academics who have worked on my subject of study

- Preparation of the interview guide: I prepared a list of questions and themes that served as a guide throughout the interviews. The main interview questions are presented below:

*Table 7*

<i>Interview</i>		
Original	Adaptation	French version
- "What are the major benefits of integrating AI in marketing?"	- "What are the major benefits of integrating AI tools in digital marketing?"	- Quels sont les principaux avantages de l'intégration des outils d'IA dans le marketing numérique ?
- "What are the major challenges of integrating AI in marketing?"	- "What are the major challenges of integrating AI tools in digital marketing?"	- Quels sont les principaux défis de l'intégration des outils

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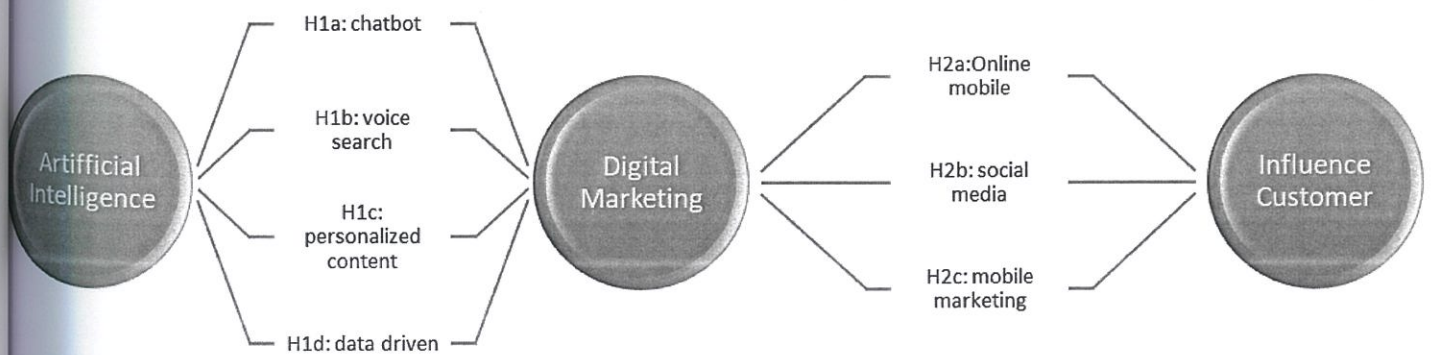
		d'IA dans le marketing numérique ?
- "What are the uses of AI in the marketing functions of your company?"	- "What are the uses of AI tools in the marketing functions of your company?"	- Quels sont les usages des outils d'IA dans les fonctions marketing de votre entreprise ?
- "What are the pre and post AI marketing strategy for your company?"	- "What is the best aspect of using AI tools in digital marketing?"	- Quel est le meilleur aspect de l'utilisation d'outils d'IA dans le marketing numérique ?

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Sources: Muhammad Zafeer Shahid & Gang Li

**Figure 1**

*Hypotheses Model*



### 3.6 Data Analysis Procedures

Once the data was collected and extracted from the survey software, it was entered into SPSS. The data was then adjusted by removing invalid responses, including

incomplete questionnaires. For missing entries, fields were left blank. It was chosen because it is one of the most comprehensive and widely used statistical software packages in marketing research. A representative sample is essential for the validity and generalization of the results. Our methodology allowed us to collect information to elaborate on the different stages of digital marketing measurement and the consumers' purchase decisions. Each instrument was developed in two stages: an exploratory analysis to correct the measurement instrument and a confirmatory analysis to validate it. Now that this stage has been completed, we can move on to the results phase of my research.

## CHAPTER 4

### DATA ANALYSIS RESULTS

This chapter shows the data analysis and conclusions of the study. Firstly, I analyze the interview of the participants. Then the second part presents the descriptive statistics of the questionnaire responses in order to shed light on the data collected.

#### 4.1 interview analysis

##### 4.1.1 Chatbot

**4.1.1.1 What are the main benefits of chatbot integration in digital marketing?** When asked about the benefits of chatbot integration in digital marketing, respondents gave answers differently. According to Raphael Kouakou, the chatbot will facilitate interactions with the customer and ensure efficiency in operations with marketing teams. According to Jean Jacques Abe, who goes in the same direction, he would also have noticed that the chatbot improves response times; therefore, we are witnessing this again in response to the marketing teams. Meanwhile, Paul-Synthia declares that the chatbot helps first contact the target, then target the need, and finally collect information.

**4.1.1.2 What is the best aspect of using a chatbot in digital marketing?** According to the interviewees, they all agreed that the chatbot helps save time considerably. "With the chatbot, the answers to the most frequent customer questions are automated," said Jean- Jacques Abe. For Raphael and Paul-Synthia, the time saving is also felt in terms of travel. Because this time, the company moves toward the customer and not the other way around.

**4.1.1.3 What are the main challenges of integrating a chatbot in digital marketing?** According to those interviewed the main challenge of chatbot integration in digital marketing. For this answer, two of the respondents agree in their answer. According to Jean Jacques Abe and Raphael Kouakou, understanding the customer and giving him answers accurately remains one of the major challenges. Raphael Kouakou goes further by declaring, "the difficulty in choosing the language or the way of interacting for a customer who cannot read or write remains a challenge for the integration of the chatbot

in digital marketing. Paul-Cynthia when thinks on the contrary, that succeeding in convincing the target and understanding their needs is not a negligible thing.

**4.1.1.4 What are the uses of the chatbot in the marketing functions of your company?** All respondents gave the same answers when using the chatbot in the marketing functions of their company. For Jean- Jacques Abe, Raphael Kouakou and Paul-Synthia, the chatbot assists customers. The first frequent customer concerns and responses are answered automatically.

## 4.1.2 Predictive Analysis

**4.1.2.1 What are the main benefits of integrating predictive analytics into digital marketing?** According to the respondents, the main benefit of integrating predictive analytics in digital marketing is to help make better decisions for the marketing department and for the customer. "Thinking about the place of the customer leads to tailor-made offers to suitably meet their expectations," said Raphael Kouakou. In simpler terms, predictive analytics would improve decision-making and predict risks. Possible and to be able to improve them (Paul-Synthia).

**4.1.2.2 What is the best aspect of using predictive analytics in digital marketing?** It is undeniable that the best aspect of using predictive analytics in digital marketing will be to meet the needs of the customer better and, at the same time, generate gains. That is what Raphael Kouakou says when he says: "predictive analysis helps to personalize offers and know the customer". According to JEAN-JACQUES ABE, it also anticipates the next best interesting offer and always with the aim of pleasing the customer. When a Paul-Synthia, doing all this inevitably leads to increased productivity.

**4.1.2.3 What are the main challenges of integrating predictive analytics into digital marketing?** On this question, the respondents are the opposite. To begin with, Raphael Kouakou is concerned about the ability to have a model that is less wrong and adjusts to timeless changes in the market. Jean-Jacques Abe states, "The availability of data to make predictive models ever more accurate remains a challenge in integrating predictive analytics into digital marketing. Paul-Synthia has not commented on the matter.

**4.1.2.4 What are the uses of predictive analytics in your company's marketing functions?** For Jean-Jacques Abe and Raphael Kouakou, predictive analytics in their company's marketing functions allows them to make a prediction churn, i.e. the anticipation of the customer's future behaviour. Raphael Kouakou goes further; predictive analysis allows his company's marketing department to make a scoring appetite, which translates the probability that a prospect will become a consumer of the product or service. For Paul-Synthia, predictive analysis is used in the financial service.

### 4.1.3 Advertising digital

**4.1.3.1 What are the main benefits of integrating digital advertising into digital marketing?** Raphael Kouakou and Paul-Synthia both agree on the fact that digital advertising helps the good visibility of the products by the customer since it is a visual, so it is immediate. Raphael Kouakou also declared, "The integration of digital advertising in the field of digital marketing represents an advantage since it creates an important media impact for the brand because advertising creates the audience". According to Jean-Jacques Abe, it will help to reach more customers by much more precise criteria than traditional advertising.

**4.1.3.2 What is the best aspect of using a digital advertisement in digital marketing?** Respondents all agree that the best aspect of using digital advertising is its effect on the customer. Raphael Kouakou translates it by stating, "The visual creates sparks in the consumer's head because he will certainly see the effect that the product has". For Jean-Jacques Abe, it facilitates the virality of advertising content, and according to Paul-Synthia, it arouses envy in the customer.

**4.1.3.3 What are the main challenges of integrating digital advertising into digital marketing?** Respondents gave different answers regarding the main challenges of integrating digital advertising into digital marketing. According to Raphael Kouakou, digital advertising generates costs that are still important depending on how it influences the consumer. For Paul-Synthia, it would be difficult to use the right support and to be able to adapt it to the population

**4.1.3.4 What are the uses of digital advertising in your company's marketing functions?** Respondents gave answers \_ different regarding the use of digital advertising in their company's marketing functions. "The digital advertising allows the highlighting of our products, the images and the posts of the offers encourage the customer to use", declared Raphael Kouakou. According to Jean-Jacques Abe, the uses are similar to digital advertising.



#### **4.1.4 Content creation and generation**

**4.1.4.1 What are the main benefits of integrating content creation and generation into digital marketing?** Respondents gave different answers. The answer received by Raphael Kouakou deserves to be mentioned. He said that the customer feels important since the offers are at his leisure and cut according to his requirements. According to Jean Jacques Abe, content gives all it means to digital marketing: content is king. Paul-Synthia, meanwhile, says, "Content is an integral part of a good digital marketing campaign."

**4.1.4.2 What is the best aspect of using content creation and generation in digital marketing?** The client does not always use the same thing as Raphael Kouakou said, so it requires flexibility and dynamism. According to Jean- Jacques Abe, 90% of content engagement makes a digital marketing campaign a success.

**4.1.4.3 What are the main challenges of integrating content creation and generation into digital marketing?** The answer received by Jean-Jacques Abe merit to be mentioned. He states that he can continue to create engaging and relevant content for his target audience, whose attention is continually shrinking. According to Raphael Kouakou, it is the ability to find attractive content for the customer.

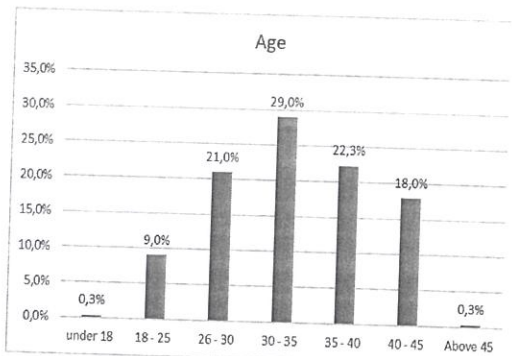
**4.1.4.4 What are the uses of content creation and generation in your company's marketing functions?** In Raphael Kouakou's business, he uses it most in newsletters to promote an offer or talk about a management activity. Regarding that Jean-Jacques Abe, the company creates content on social networks and the company's blog.

## 4.2 Descriptive Analysis of Questionnaire

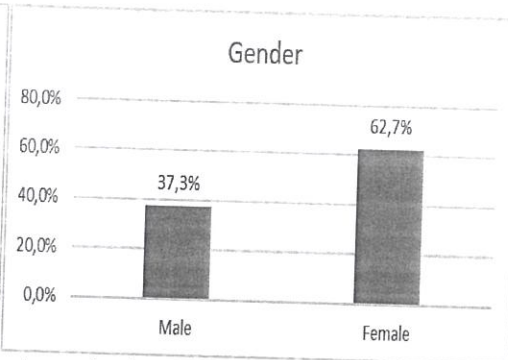
### 4.2.1 Sample characteristics

300 people participated in the survey, which resulted in 300 questionnaires. The demographic statistics are summarized graphically as follows.

**Graph 1-Age of respondents**

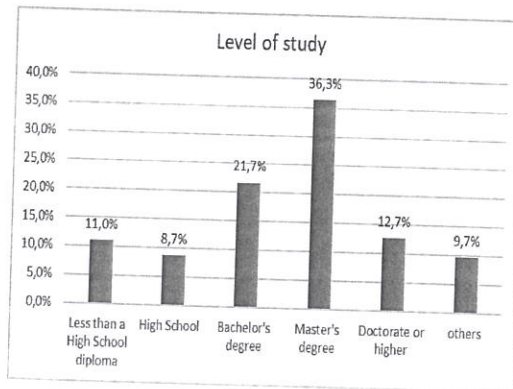


**Graph 2- Gender of respondents**

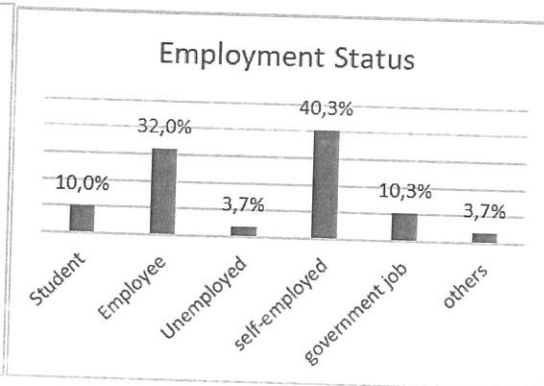


The age of the majority of respondents varies between 30 and 35 years (29%). as far as gender is concerned, I noticed that more women answered the questionnaire with a percentage of 62.7% against 37.3% for men

**Graph 3 - Level of study**

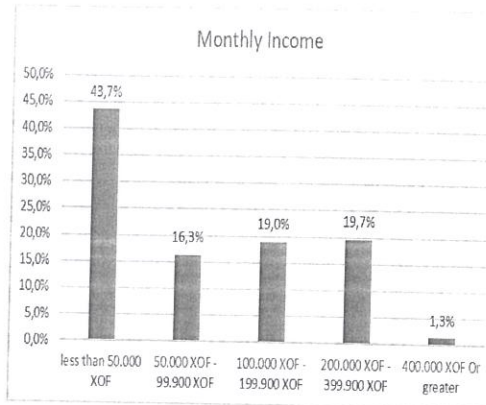


**Graph 4- Employment status**

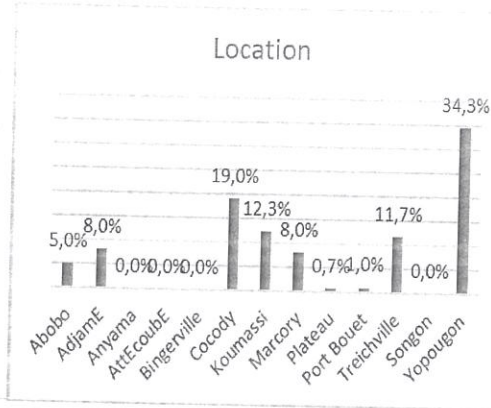


The level of education of the majority of respondents is Master's degree. I observe a percentage of 36.3%. For employment status, the one with the highest percentage is self-employed (40.3%).

**Graph 5 - Monthly Income**



**Graph 6 - Location**



Most of my respondents live mainly in Yopougon as we can see from the graph with a percentage of 34.3%. As far as income per month is concerned, I can see a significant percentage of 43.7% for incomes under 50.000XOF.

#### 4.2.2. Questionnaire's descriptive statistics

The following table presents the descriptive statistics of the questionnaire to get an overview of the data.

**Table 8**

*Frequency Table*

N=300	1	2	3	4	5
<b>Social Media Marketing</b>					
SMM 1	15.3%	1.7%	1.0%	43.7%	38.3%
SMM 2	7.0%	5.3%	6.0%	55.7%	26.0%
SMM 3	4.3%	2.3%	7.0%	61.3%	25.0%
SMM 4	7.7%	4.7%	12.7%	54.0%	21.0%
SMM 5	4.7%	4.0%	7.0%	51.0%	33.33%
<b>Online Marketing</b>					
OM 1	9.0%	2.7%	10.7	57.3%	20.3%
OM 2	8.3%	6.0%	6.7%	56.7%	22.3%
OM 3	7.7%	7.7%	19.0%	46.3%	19.3%
OM 4	6.3%	3.7%	19.3%	54.0%	19.7%
OM 5	10.0%	3.0%	10.7%	56.0%	20.3%

Mobile Marketing					
MM 1	8.0%	6.3%	27.3%	<b>40.7%</b>	17.7%
MM 2	6.0%	4.3%	20.0%	<b>49.7%</b>	20.0%
MM 3	10.3%	4.3%	16.0%	<b>52.0%</b>	17.3%
MM 4	7.7%	3.7%	19.3%	<b>51.7%</b>	17.7%
MM 5	4.7%	5.3%	15.7%	<b>52.7%</b>	21.7%
Purchase Decision					
PD 1	8.7%	3.0%	12.3%	<b>56.3%</b>	19.7%
PD 2	8.7%	4.0%	10.7%	<b>57.3%</b>	19.3%
PD 3	9.3%	2.7%	5.3%	<b>57.3%</b>	25.3%
PD 4	7.3%	2.7%	5.7%	<b>61.0%</b>	23.3%
PD 5	4.0%	0.7%	6.0%	<b>57.0%</b>	32.3%

The table provides an understanding of each respondent's ratings. Overall, the majority of respondents "agreed" with all of the questions asked. SMM 3 scored 61.3% for social media marketing, which means that respondents are more likely to remember advertising on social networks. Regarding online marketing, participants find blogger advertising credible (56.7%). For mobile marketing, participants agree with an average of 52.7% that they intend to buy cosmetics on mobile applications. It is undeniable that respondents intend to buy cosmetics in the future, which translates into a rate of 61%.

**Table 9**

*Descriptive statistics*

		Mean
<b>Social</b>	<b>Media</b>	
<b>Marketing</b>		
SMM1	“Social media marketing (Facebook, Instagram, twitter...) for cosmetics products is frequently seen.”	3.88
SMM2	“The social media advertisements for cosmetics products are very attractive.”	3.88
SMM3	“The social media advertisements for cosmetics brands can be easily remembered.”	4.00

SMM4	“I like to use social media to get information about cosmetics products”	3.76
SMM5	“Social media sites of fast cosmetics brands enable opinions exchanging with others”	4.04
<b>Online Marketing</b>		
OM1	“Information related to cosmetics products from sponsored linked/websites is credible.”	3.77
OM2	“Communication activities related to cosmetics brands of bloggers (complimenting, criticizing, evaluating, etc.) are credible.”	3.79
OM3	“I frequently browse cosmetics websites.”	3.62
OM4	“I feel good about browsing cosmetics websites”	3.74
OM5	“Given the chance, I intend to buy cosmetics products that are posted (or discussed) websites”	3.74
<b>Mobile Marketing</b>		
MM1	“I frequently use cosmetics branded apps to see their products.”	3.54
MM2	“Fast fashion branded apps are pleasing to use.”	3.73
MM3	“After using a cosmetic branded app, I think the brand is more attractive”	3.62
MM4	“After using a cosmetic branded app, I have a better perception of the quality of the brand’s products and services”	3.68
MM5	“I intend to buy products through cosmetic branded apps.”	3.81
<b>Purchase Decision</b>		
PD1	“I frequently purchase cosmetics products”	3.75
PD2	“I feel good when I decide to purchase cosmetics products”	3.75
PD3	“I will positively recommend cosmetics products to other people.”	3.87
PD4	“I intend to purchase again from cosmetics brands in the future”	3.90
PD5	“Overall, I am satisfied about my purchase of products from cosmetics brands”	4.13

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For the description of the statistics, it is also important to evaluate the average of the answers of the respondents on a scale of 1 to 5. All the respondents in the majority

agreed with all the questions which were asked in the questionnaires. For the question SMM5, the respondents agreed on average at 4.04 that the social media sites of the cosmetics brands make it possible to exchange opinions with other people. Concerning online marketing, the majority of respondents "agree" with an average of 3.79 for question OM2. Mobile marketing has an average of 3.81 for MM5. Finally, for the purchase decisions, the respondents agreed with the PD5 question with an average of 4.13

### 4.3 Exploratory Factor Analysis of Questionnaire

The first step of the exploratory analysis is to ensure the existence of a correlation between the different items of the 3 dimensions of digital marketing (SMM, OM, MM) and the dimension concerning the purchase decision (PD). Bartlett's test tests the null hypothesis of equality of the correlation matrix between the items with an identity matrix. The calculated chi-square value is 1853.940 with a degree of freedom of =300 and the p-value  $p=0.000 < 0.001$ . The null hypothesis is then rejected. In other words, the different items are correlated with each other, and the correlation matrix is therefore not an identity matrix. This result justifies the application of factor analysis to identify "constructed" factors from the items or to validate the instruments that we have adopted, thanks to the literature review. The KMO index is 0.834, thus indicating excellent adequacy of the sampling.

**Table 10**

*The result of KMO and bartlett's test*

Kaiser-Meyer- Olkin index for measuring sampling quality.		0.834
Bartlett's sphericity test	Chi-square approx.	1853,940
	Df	300
	Sig.	0.000

#### 4.3.1 Social Media Marketing (SMM) Measurement Scale Validation.

The exploratory analysis at the Social Media Marketing (SMM) component level shows that the calculated chi-square value is 159.079 with a degree of freedom  $ddl=10$  and the p-value  $p=0.000 < 0.001$ . The null hypothesis is then rejected. In other words, the different items are correlated with each other, and the correlation matrix is therefore not

an identity matrix. The KMO index is 0.713, thus indicating good adequacy of the sampling

**Table 11**

*The result of KMO and Bartlett's test of SMM*

Kaiser-Meyer- Olkin index for measuring sampling quality.		0.713
Bartlett's sphericity test	Chi-square approx.	159.079
	Dof	10
	Meaning	.000

The extraction method used is principal component analysis with a Varimax rotation method with Kaiser normalization. The scores in the component coefficient matrix below show the items to retain in this dimension (quality of representation >0.3). Therefore, item SMM3 is removed from this dimension.

**Table 12**

*Pattern matrix of SMM*

Matrix of component coefficients	Representation quality	
SMM1	.363	.536
SMM2	.330	.443
SMM3	.193	.151
SMM4	.335	.457
SMM5	.325	.429

#### **4.3.2 Online Marketing (OM) Measurement Scale Validation.**

The exploratory analysis at the level of the online marketing (Blogs and Websites) component shows that the calculated chi-square value is 115.59 with a degree of freedom  $ddl=10$  and the p-value  $p=0.000 < 0.001$ . The null hypothesis is then rejected. In other words, the different items are correlated with each other and the correlation matrix is therefore not an identity matrix. The KMO index is 0.692 indicating an acceptable adequacy of the sampling.

**Table 13***The result of KMO and Bartlett's test of OM*

Kaiser-Meyer- Olkin index for measuring sampling quality.		.692
Bartlett's sphericity test	Chi-square approx.	115,590
	Dof	10
	Meaning	.000

The extraction method used is principal component analysis with a Varimax rotation method with Kaiser Normalization. The scores in the component coefficient matrix below show the items to retain in this dimension (quality of representation >0.3). Therefore, items OM3 and OM4 are removed from this dimension.

**Table 14***Pattern matrix of OM*

Matrix of component coefficients		Representation quality
OM1	.324	.364
OM2	.384	.511
OM3	.286	.284
OM4	.292	.296
OM5	.343	.408

#### 4.3.3 Mobile marketing Measurement Scale Validation

The exploratory analysis at the level of the Mobile Marketing component shows that the calculated chi-square value is 206.391 with a degree of freedom ddl=10 and the p-value  $p=0.000 < 0.001$ . The null hypothesis is then rejected. In other words, the different items are correlated with each other and the correlation matrix is therefore not an identity matrix. The KMO index is 0.617, thus indicating an acceptable adequacy of the sampling.

**Table 15***The result of KMO and bartlett's test of MM*

Kaiser-Meyer- Olkin index for measuring sampling quality.		.617
Bartlett's sphericity test	Chi-square approx.	206,391
	Dof	10
	Meaning	.000



The extraction method used is principal component analysis with a Varimax rotation method with Kaiser Normalization. The scores in the component coefficient matrix below show the items to retain in this dimension (quality of representation >0.3). Therefore, the MM3 item is removed from this dimension because the quality of representation is very close to 0.3.

**Table 16**

*Pattern matrix of MM*

Matrix of component coefficients		Representation quality
MM1	.302	.389
MM2	.314	.421
MM3	.270	.312
MM4	.311	.414
MM5	.352	.530

#### 4.3.4 Purchase Measurement Scale Validation Decision (PD)

Exploratory analysis at the Purchase component level Decision (PD) shows that the calculated chi-square value is 116.571 with degree of freedom  $ddl=10$  and p-value  $p=0.000 < 0.001$ . The null hypothesis is then rejected. In other words, the different items are correlated with each other and the correlation matrix is therefore not an identity matrix. The KMO index is 0.680, thus indicating good adequacy of the sampling.

**Table 17**

*The result of KMO and bartlett's test of PD*

Kaiser-Meyer- Olkin index for measuring sampling quality.		.680
Bartlett's sphericity test	Chi-square approx.	116,571
	Dof	10
	Meaning	.000

The extraction method used is principal component analysis with a Varimax rotation method with Kaiser Normalization. The scores in the component coefficient

matrix below show the items to retain in this dimension (quality of representation >0.3). Therefore, item PD5 is removed from this dimension.

**Table 18**

*Pattern matrix of PD*

Matrix of component coefficients		Representation quality
PD1	.307	.317
PD2	.381	.488
PD3	.319	.342
PD4	.409	.564
PD5	.191	.123

**4.4 Internal consistency reliability**

In the following, we analyze the reliability of each dimension of social marketing retained at the stage of the exploratory factor analysis. All indicators show good trends. Cronbach's alpha indices exceed their reference value. The same is true for the dimensions of digital marketing and the purchase decision.

**Table 19**

*Reliability statistics-cronbach's Alpha*

	Before the exploratory analysis		After the exploratory analysis		
	Cronbach's Alpha	Number of items	Cronbach's Alpha	Number of elements	
SMM	0.624	5	0.642	4	
OM	0.576	5	0.517	3	
MM	0.638	5	0.619	4	
PD	0.555	5	0.574	4	

**4.5 Hypotheses testing**

The exploratory and confirmatory analysis made it possible to validate our various instruments for measuring latent “constructs” related to digital marketing and the purchase decision. The variables associated with these dimensions have been created and will be

used in the multiple regression to see the impact of digital marketing on the purchase decision. It should be noted that the impact of digital marketing will be analyzed through the 3 dimensions: Social Media Marketing -SMM, Online Marketing- OM, Mobile Marketing -MM.

Before moving on to the regression, we perform a multicollinearity test to ensure the absence of collinearity between our explanatory variables and the explained variable. The results in the table below show a tolerance greater than 0.2 and the VIF less than 10. This clearly confirms the absence of multicollinearity between the explanatory variables

**Table 20**

*Multicollinearity statistics*

Collinearity statistics	Social Media Marketing-SMM	Blogs & Websites – BW	Branded Mobile Apps-BMA
Tolerance	0.676	0.631	0.655
LIVELY	1,479	1,585	1,527

The model summary shows that the total variance of our interest variance is 41% explained by the digital marketing dimensions. This average value of the model's adjustment coefficient reveals the existence of other additional factors that could explain consumers' purchasing decisions.

**Table 21**

*Model summary*

Model	R	R-square	Adjusted R-square	Standard error of the estimate
1	.641	.411	.403	,77236833

The ANOVA test verifies the overall significance of the model. The Fisher test statistic equals 51.553 with a p-value  $p=0.000 < 0.05$ . Consequently, the model is globally significant ie there is then a non-zero coefficient.

**Table 22***ANOVA test*

Model	sum of squares	Df	mean square	F	Sig.
Regression	123.017	4	30,754	51,553	0.000
Residue	175,983	295	.597		
Total	299,000	299			

Following the overall significance of the coefficients, the Student test makes it possible to check the individual significance of each coefficient. As shown in the results table below, the p-value associated with the Student statistic is equal to  $p=0.000 < 0.05$  for the coefficients of the SMM and OM dimensions. Therefore, these two dimensions are significant. Social Media Marketing has an impact of 0.333 (or 33.3%) on the purchase decision while the impact of Online Marketing (OM) is equal to 0.335 (or 33.5%). Conversely, the p-value associated with MM dimensions is greater than 0.005. Therefore, these last dimensions of digital marketing do not significantly influence consumers' purchasing decisions.

**Table 23***Coefficients*

Model	Non-standardized coefficients		Standardized coefficients	t	Sig.
	B	standard error	Beta		
(Constant)	1.01E-16	0.045		0.000	1,000
SMM	0.333	0.054	0.333	6,131	0.000
OM	0.335	0.056	0.335	5.963	0.000
MM	0.015	0.055	0.015	0.278	0.782

Regarding the proposed hypotheses, the results are stated as follows.

**Table 24**

*Hypotheses results*

Hypothesis	Result
Hypothesis 2-a: social media influence buying decision of the customer in cosmetics sector in Ivory Coast	Supported
Hypothesis 2-b: online marketing influence buying decision of the customer in cosmetics sector in Ivory Coast	Supported
Hypothesis 2-c: Mobile marketing influence buying decision of the customer in cosmetics sector in Ivory Coast	Rejected

Predicted customer purchase choices = 0.333 (social media marketing) + 0.335 (online marketing) + 0.015 (mobile marketing) (mobile marketing). Standardized regression coefficients, often known as "beta" weights, allow the independent variables to be ranked in terms of their contribution to explaining the dependent variable, regardless of their sign. The standardized coefficients indicated that the internet marketing variable (= 0.335) was the most significant variable in explaining the variation in purchase decisions in this scenario. It was closely followed by social media marketing (= 0.333), with online marketing (= 0.335) being the least influential component in purchase choices. In summary, it has been proven that there digital marketing channels influence strongly consumer purchasing decisions when it comes to buying cosmetics. Hypotheses H2a and H2c were supported, suggesting that social media marketing and online marketing have a significant impact and positive influence on final purchasing decisions. Contrary hypothesis H2-b which was rejected because online marketing negatively affects consumers' purchasing decisions.

## CHAPTER 5

### CONCLUSIONS AND IMPLICATIONS

The findings from the analysis in Chapter 4 will be explored and evaluated in light of the literature and past research in this chapter.

They will then be developed into marketing implications. The final section will explore the limits of the current study while also making some comments and ideas for future research. The least significant aspect in purchasing decisions

#### 5.1 Conclusions and Discussions

This study consists of two parts; the first part is Interview. This study aims to discover the impact of AI on digital marketing, including the perspective of Digital marketing professionals and Ivorian artificial intelligence. To achieve the objective of this research, different steps were taken. In the beginning, a literary review made a description of the comprehension of IA and its use in digital marketing that includes the perspective of different authors. Second, I used the qualitative and quantitative research method that included interview and survey.

The first part concern interview, results related to the main benefits of integrating AI tools into digital marketing, various responses were collected from respondents. Not all of the AI tools were listed in this study, so I looked at only 4 aspects (chatbots, predictive analytics, digital advertising and content creation). The main advantages of integration in digital marketing are, according to the professionals, the time savings in marketing, improved conversion rates, a better knowledge of consumer information, more attainable marketing decision-making, increased ROI, intelligence, improved service, and customer happiness Other advantages include enhanced data analytics and more effective marketing process management. Concerning the usage of AI tools in the company's marketing function, experts stated that these tools contribute to the formulation of sales and marketing strategies that lead to significant gains in business performance.

The second part is survey questions. In the survey question part, the study overall offers insights into three major digital marketing channels used by the cosmetics sector, as well as how these tools might affect customer purchasing decisions A substantial

association between the three digital tool factors and customers' ultimate choice to purchase cosmetics was established by multiple regression analysis..

The results showed that social media marketing positively affected consumers' purchasing decisions in the cosmetics sector. This result is similar to previous studies in other industries (Kim & Ko, 2012; Khatib, 2016; Yogesh & Yesha, 2014). Indeed, consumers are influenced by every comment left on Facebook, Instagram, etc. While it is true that comments can be positive as well as negative, According to one study, good remarks had a bigger influence than negative comments (East et al., 2008). Furthermore, one author noted that negative information is often rarer than good information, making it more valuable and reliable than positive information, which may sometimes be misleading. According to the survey result, about 60% of the respondents agree that they can easily remember advertisements made on social networks. Companies share material on social media and run ongoing advertising efforts to generate impressions and attract consumers. These many practices of cosmetic businesses assist consumers in making purchasing decisions for a product.

Secondly, if it is true that cosmetic companies want to remain competitive in the market, the use of online marketing such as channels is proving to be cost-effective for them. For instance, prior studies (Hoffman and Novak, 1996; Shavitt et al., 1998; Varshney, 2003) reveal that emails can contain messages from and information on new product offerings that might catch consumers' attention and pique their curiosity. Online searches by consumers to learn more about desired products are occasionally common. All of these actions encourage them to want to buy something.

Dufrene et al(2005) .'s assertion that internet marketing affects the likelihood that customers learn about the offer and that the attractiveness of the offer in turn enhances the likelihood that they make a purchase choice is consistent with this. mobile marketing present risks such as brand devaluation, entering a price war, risks related to consumer privacy, the risk of annoying consumers with messages.

Indeed, Lin et al. (2016) have shown that risks concerning personal data have a more negative impact on consumer behaviour. On the other hand, users with negative experiences of disclosing personal information are more vigilant about advertising messages, and demand a high degree of control over access (Okazaki et alii, 2009).

Customers who download the app are mostly loyal customers, who are used to using that brand's products and use it frequently over a long period of time. Apps can therefore encourage loyal consumers to use them permanently. A person who has just discovered a brand will not immediately download the app without testing and establishing a relationship of trust.

Finally, the results show that companies have a strong financial interest in social media marketing. They give them the opportunity to mark the minds of consumers. There are certain critical factors to consider while running social media marketing. The common mistake that some companies make when it comes to social media is to rush to create a Facebook page or Twitter feed without an action plan. A social media strategy is essential if you want your investment to pay off. It is important to identify the main objectives of your social media presence. Is it to attract more customers?

To do this, you need to determine your target and the extent to which it is receptive to different social media platforms. Focus their efforts at the beginning on the platforms that are most likely to be used by your audience, and experiment at the same time. Think about the kind of content that will appeal to your target audience. Balance entertainment and information. Most importantly, avoid over-promotion (a fatal social media mistake). The proposed content should encourage fans and subscribers to interact with the company and become or remain a customer. To do so, it will have to present the human side of the business and offer benefits to subscribers, such as information, advice or entertainment. From time to time, take action by asking people to buy a new product, take advantage of a special offer or register.

## **5.2 Implications and Limitations**

This study suggests that it could be useful for digital marketers in general, but even more so for those in the cosmetics industry. With the help of this study, he could try to develop an effective digital marketing strategy to generate interest and finally increase sales to targeted consumers. The key marketing implications for each channel in this work are presented as follows.

The above findings emphasize the significance of AI in company marketing. AI has altered landscape marketing and is assisting in the modernization of outmoded



marketing strategies. Companies must always prepare for the future and educate their personnel on digitization. This study emphasizes the significance of AI in marketing and the primary benefits related with its incorporation. Furthermore, the key hurdles, ethical considerations, and applications have enabled businesses to implement artificial intelligence in their digital marketing. While incorporating AI into digital marketing, businesses should keep an eye out for potential issues and obstacles. First, social media marketing is a critical channel. Consumers of cosmetic products use it extensively to obtain product information and reviews. Social media marketing is a good way to get consumers' attention. With this momentum, marketers are creating specific objectives, budgets and concrete action plans. To get the greatest results, cosmetic businesses must ensure that they have precisely identified their target audience from the start of their campaigns. They allow a better distribution of the contents; they allow seducing the targeted clientele with effective demographic precision. It should also be noted that companies should avoid promoting their product without an action plan. They communicate their thoughts about the whole process leading up to the purchasing choice when they post their experiences, views, and opinions on social media. No matter how involved the company is in its marketing strategy, there will inevitably be negative feedback that they are uncontrollable. However, it has been shown by several authors that generally, the negative feedback flow is lower than those that are positive. Regardless, shoppers must be handled with adequate care and respect to create a great shopping experience that results in favorable word of mouth in the future. Negative feedback should not be ignored and should be taken into account in order to give a better customer experience. Every favorable or negative remark is a chance to interact with the consumer. It helps cosmetic companies better understand consumer expectations and intentions about their products. This will allow them to make the changes they need to improve their performance.

Second, With just one click, firms can use online marketing to reach consumers' inboxes, thoughts, and ultimately closets with their newest fashions. For instance, there are some crucial factors that need be taken into account for email marketing to succeed. No matter what the exact object is, the content should be rich and ideally create a story that emphasizes the core values of the offered goods or services. With the use of content

marketing, customers may make wiser selections about the things they need. Understanding your audience to the very core is essential for email communication success.

Thirdly, It is challenging for cosmetic companies to create their own mobile applications, and when they do, few are able to use them to increase sales and generate revenue.

According to another studies, people discard more than half of downloaded apps after just using them once (Kim et al.). Therefore, marketers should create apps that are educational, fun, and make users feel good while exploring. Consumers will have a positive first experience with an app with quality content, making them more likely to use it again in the future. This feature is crucial because consumers frequently abandon applications after their initial use. In order to develop applications that are valuable to their intended users, businesses should perform research before launching any applications.

Finally, the results are a reminder for cosmetic companies that are not refining their advertising on social networks enough. Social marketing creates great opportunities to impress consumers. Marketers should also pay attention to how they advertise on social media to make a good impression. As far as content is concerned, it must be diversified so as not to confuse the consumer. Content should be rich to tell a story that highlights key product values. As with all research, there are a number of limitations to this work. First, our research is limited because it includes only a portion of the population. As our sample consists of 300 respondents, we inevitably have a problem of generalisation. Furthermore, our findings are based on the results of the Questionnaire, which is a subjective tool; it is possible that our findings are also subjective. Future research may therefore benefit from repeating this tool with a larger sample.

Furthermore, the questions are general in our research, as we did not focus on one product or product line. Therefore, it will be possible to make comparisons between different types of products. It would be interesting to subdivide the contexts according to each variable. For example, for the variable "costs", we could generally divide them into two categories: monetary costs and non-monetary costs. In addition, future research could focus on just one or more variables. We could ask why this variable influences the consumer. For the research method, it was decided that the research would be done online. Unfortunately, I was unable to continue due to collection difficulties and respondent

resilience. In addition, the method of administering the Questionnaire online is a limitation of this study, as we have no way of monitoring the environment in which the respondent is responding to the Questionnaire at the time and whether they have understood the different questions.

This research does not cover all the variables of digital marketing. Future studies may consider analysing other marketing channels, such as search engine marketing, display advertising or video marketing, in order to better understand consumers' purchasing decisions in the cosmetics industry.

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# APPENDICES

## APPENDICES A

### Final International University Informed Consent Form

Dear Participant,

This research project is being conducted by Astride Kouassi Lou of Institute Of Graduate Studies. This research project aims to investigate The influence of digital marketing on consumer purchase decisions toward cosmetics sector. This survey is intended for people (18 years or older).

The proposed study is entitled the impact of Artificial Intelligence On Digital Marketing: Case Of Cosmetic Sector In Ivory Coast. You will be a participant of the project if you read and approve this informed consent form. The survey link will be active between 03<sup>rd</sup> December and 14<sup>th</sup>. You are expected to participate in this survey study only once. [The survey will be online]. This survey is anonymous. Other than being anonymous, no information is required to identify you and you cannot be identified by the answers you supply. Information to be obtained within the scope of this study will only be shared in scientific publications, presentations and online environments for educational purposes by the researcher. The data collected is anonymous and will be kept safely in an encrypted file on a computer. [In our medical research, we accept and apply the basic principles for all medical research, which are stated in the Declaration of Helsinki, and the terms and rules of the Council of Europe Convention on Human Rights and Biomedicine.]

Participation in this study is voluntary. Your participation in this project can contribute to your opinion about Digital Marketing tools and its influence on buying decision of the customer in cosmetics sector in Ivory Coast. None of the steps in the survey can cause personal discomfort. However, if you feel uncomfortable for any reason, you are free to quit the survey and leave the research without explaining the reason. In such a case, the information you provide will only be used by the researcher with your consent.

Thank you in advance for participating in this study. If you need any further information about the study or if you have any question, you would like to ask you could contact me on (email: [astride.kouassi@final.edu.tr](mailto:astride.kouassi@final.edu.tr)

phone: +90 533 877 06 01 ), the researcher.

Thank you,

*The title, the name, and the signature of the researcher*

Teroslar Cad. No: 6 Gime, Cyprus

I accept to participate in this research. Yes / No

[I allow research use of my photos and videos Yes / No

I allow my photos and videos to be used in the following:

Online Education environments Yes / No

Visual and written materials such as reports, articles, related news. Yes / No]

Name and Surname of the participant:

Date:

If you have questions about your participation in the research and the protection of your rights, or if you believe that you are at risk or will be exposed to stress in any way, you can contact Final International University Ethics Committee (0392-6506666) by phone or via email [iaek@fiu.edu.tr](mailto:iaek@fiu.edu.tr)

*Note: If the form is used online as a preamble, the wording should be adapted to suit this. Then, Radio buttons Yes/No should be added allowing the participant to proceed to the survey if and only if the Yes option is selected. In this case, Yes/No sections above should be deleted together with the participant's details. Text in between [ and ] should be deleted if not relevant.*

Fin de document ■

## APPENDICES B

### INTERVIEW

I am Astride Kouassi Lou, an MBA student at Final International University in Northern Cyprus. I am writing thesis about to search the impact of artificial intelligence on digital marketing in Ivory Coast. In order to analyze my study 16 questions have been prepared. All your answers will be used to analyze the relationship between Artificial Intelligence Tools and Digital Marketing.

**Would you like to answer this Interview? :**

Please respond entire questions by the best suits your answer. Thank you for your participation in this questionnaire. I would like to assure you that your answers will be used only for research purposes and will be treated confidentially.

Name and Surname:
Position:
Name of society:

**Part 1: Chatbot**

In 1<sup>st</sup> part, all your answers will be used to analyze the relationship between Chatbot (Artificial Intelligence Tools) and Digital Marketing.

1. What are the major benefits of integrating chatbot in digital marketing?
2. What is the best aspect of using a chatbot in digital marketing?
3. What are the major challenges of integrating chatbot in digital marketing?
4. What are the uses of chatbot in the marketing functions of your company?

**Part 2: predictive analysis**

In 2<sup>nd</sup> part, all your answers will be used to analyze the relationship between predictive analysis (Artificial Intelligence Tools) and Digital Marketing.

5. What are the major benefits of integrating predictive analysis in digital marketing?
6. What is the best aspect of using a voice predictive analysis in digital marketing?
7. What are the major challenges of integrating predictive analysis in digital marketing?
8. What are the uses of predictive analysis in the marketing functions of your company?

**Part 3: digital advertising**

In 3<sup>rd</sup> part, all your answers will be used to analyze the relationship between digital advertising (Artificial Intelligence Tools) and Digital Marketing.

9. What are the major benefits of integrating digital advertising in digital marketing?
10. What is the best aspect of using a digital advertising in digital marketing?
11. What are the major challenges of integrating digital advertising in digital marketing?
12. What are the uses of digital advertising in the marketing functions of your company?

**Part 4: creating and generating Content**

In 4<sup>th</sup> part, all your answers will be used to analyze the relationship between creating and generating content (Artificial Intelligence Tools) and Digital Marketing.

13. What are the major benefits of integrating creating and generating content in digital marketing?
14. What is the best aspect of using a creating and generating content in digital marketing?
15. What are the major challenges of integrating creating and generating content in digital marketing?
16. What are the uses of creating and generating content in the marketing functions of your company?

## APPENDICES C

**FIU HUMAN SUBJECTS ETHICS COMMITTEE  
Parental Approval Form**

Date:

.....

Dear Parents,

The person conducting The Impact Of Artificial Intelligence On Digital Marketing: The Case Of Cosmetic Sector In Ivory Coast. I am currently studying at Final International University. The study aims to investigate if the Digital Marketing tools influence buying decisions of the customer in cosmetics sector in Ivory Coast in under 18 years old children and the purpose of sending this form/letter is to give your consent for your child to respond to my survey.

The aim of this study is to analyse the results and see what really influences consumer decisions in the cosmetic sector in Cote d'Ivoire.

The study concerns the entire Ivorian population, women, men and even children. It is important that the children answer so as not to have a biased analysis and to represent the Ivorian population as faithfully as possible. The study will be carried out through a questionnaire consisting of 20 questions. It will take 5 minutes to be able to answer the different questions. The process of this study is simple, a team of investigators will ask questions and they will be recorded in a database, which will be updated any time a person responds.

The consent of the child will also be requested in addition to the parent's one, before starting the study.

Contact information of the people to whom questions related to the study and/or your child's participation will be addressed.

Thanks,

Name: Kouassi

Surname: Lou Tra Sissy Astride

Signature:

Address and phone number: YILMAZ SAMI 1APT; +90 533 877 06 01

.....

I give my consent for my child's participation in the study about which I have read the explanations above.

Parents:

Name,

Surname \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Please hand in the signed form to \_\_\_\_\_ via \_\_\_\_\_

If you have questions about your child's participation and/or preservation of his/her rights or believe that he/she might be subjected to any risks or stress, contact the Final International University Human Subjects Ethics Committee [jnek@final.edu.tr](mailto:jnek@final.edu.tr)

## APPENDICES D

### Survey

I am Astride Kouassi Lou, an MBA student at Final International University in Northern Cyprus. I am writing thesis about to search the impact of artificial intelligence on digital marketing in Ivory Coast. In order to analyze my study 20 questions have been prepared. Please respond entire questions by the best suits your answer. Thank you for your participation in this questionnaire. I would like to assure you that your answers would be used only for research purposes and will be treated confidentially.

Would you like to answer this Survey? :

Part 1. The influence of digital marketing on consumer purchase decisions toward cosmetics sector

Please state your agreement with each of the following statements, using a 1 to 5 scale (1 = strongly disagree; 5 = strongly agree):

1. Social media marketing (Facebook, Instagram, twitter...) for cosmetics products is frequently seen.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

6. Information related to cosmetics products from sponsored linked/websites is credible.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

7. Communication activities related to cosmetics brands of bloggers (complimenting, criticizing, evaluating, etc.) are credible.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

11. I frequently use cosmetics branded apps to see their products.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

12. Fast fashion branded apps are pleasing to use.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

13. After using a cosmetic branded app, I think the brand is more attractive.

2. The social media advertisements for cosmetics products are very attractive.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

3. The social media advertisements for cosmetics brands can be easily remembered.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

4. I like to use social media to get information about cosmetics products.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

5. Social media sites of fast cosmetics brands enable opinions exchanging with others.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

8. I frequently browse cosmetics websites.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

9. I feel good about browsing cosmetics websites.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

10. Given the chance, I intend to buy cosmetics products that are posted (or discussed) websites.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

14. After using a cosmetic branded app, I have a better perception of the quality of the brand's products and services.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

15. I intend to buy products through cosmetic branded apps.

Strongly disagree					Strongly agree
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

*Part 2. Demographic information*

1. What is your gender?

- Male
- Female

2. How old are you?

- Under 18
- 18 - 25
- 26 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- Above 45

3. What is the highest degree or level of education you have completed?

- Less than a High School diploma
- High School
- Bachelor's degree
- Master's degree
- Doctorate or higher

4. What is your current employment status?

- Student
- Employee
- Unemployed
- Self-employed
- Government job

5. Approximately what is your monthly income?

- Less than 50,000 XOF
- 50,000 XOF - 99,900 XOF
- 100,000 XOF - 199,900 XOF
- 200,000 XOF - 399,900 XOF
- 400,000 XOF or greater