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MASTER IN INTERNATIONAL BUSINESS AND ENTREPRENEURSHIP:
DIGITAL MANAGEMENT

“THE IMPACT OF AI IN DIGITAL MARKETING:
an analysis from both people and Generative AI perception”

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ABSTRACT

Digital marketing has always attracted the interest of many researchers and writers. This dissertation explores how digital marketing intersects with artificial intelligence, aiming to uncover the impact AI might have on the field of digital marketing.

This thesis aims to analyze the impact of the advent of AI on digital marketing from the two different points of views, such as the one of individuals and the one of generative AI. Furthermore, in order to make the development of the thesis more efficient , two objectives were added to the research question, focusing mainly on identifying the advantages and risks that may emerge from this study.

In this context, to answer the research question, both qualitative analysis, which allows for the interpretation of the obtained data, and quantitative analysis were employed, as a questionnaire was designed to gather individuals' perspectives.

A further interesting aspect offered by this dissertation is the possibility of figuring out the topic through two different perspectives: those of individuals and those of generative AI, in order to better grasp whether common ground or disagreements can be found between the two perspectives.

In conclusion, the study confirmed that artificial intelligence really does impact digital marketing. It explored the benefits and potential risks in depth, giving us a clear understanding of its influence

ITALIAN ABSTRACT

Il tema del digital marketing è sempre stato oggetto di studio da parte di numerosi autori e studiosi. Attraverso questa analisi, al tema del digital marketing è stato affiancato anche la tematica relativa all'intelligenza artificiale, col fine di comprendere l'impatto che quest'ultima possa avere nel settore principalmente del digital Marketing.

Questa tesi mira ad analizzare l'impatto dell'avvento dell'AI sul digital marketing dal punto di vista della prospettiva delle persone e dal punto di vista delle generative AI.

Pertanto, alla domanda di ricerca, sono stati aggiunti due obiettivi per rendere più efficiente lo sviluppo della tesi, concentrandosi principalmente ad individuare i punti di vantaggio e i rischi che possono emergere da tale studio.

In questo caso, per rispondere alla domanda di ricerca, è stato deciso di applicare sia un'analisi qualitativa, che dà la possibilità di interpretare i dati ottenuti, sia un'analisi quantitativa in quanto è stato redatto un questionario al fine di raccogliere la prospettiva delle persone.

Un aspetto interessante che offre questo studio, riguarda la possibilità di indagare il tema attraverso due prospettive, quelle delle persone e quelle delle generative AI, al fine di comprendere se si possa effettivamente trovare dei punti di accordo e/o disaccordo tra i due punti di vista.

Alla fine, si è concluso affermando che l'intelligenza artificiale ha un impatto nel digital marketing, individuando sia gli aspetti positivi sia le percezioni di rischio emerse.

1. INTRODUCTION

1.1. The background of the study

A story, taken from David Ogilvy's Copywriting Technique, talks about an elderly gentleman who begs for alms with a hat and a sign next to him where the following sentence is written:

"I am blind, please help."

The man didn't have much luck during the day, in fact he had collected a few coins until a woman nearby arrived. The woman left a few coins in the hat and did something big and important. In fact, right after, she took the sign and started writing something on the back. After writing what she wanted, she would put the sign back in place so other people passing by could see the new phrase. It wasn't long before the old man heard the sound of coins ringing loudly in the hat and in a moment the hat was filled with beautiful coins ("It's a beautiful day and I can't see..." on LinkedIn Dr. Cesar M . Limjoko 2016)

As the day drew to a close, the woman, who had changed the sign, reappeared. The old man recognized her by her unmistakable smell, and then he did not hesitate to ask what had happened, thus she replied:

"I only wrote the truth. I said what you said but in a different way. I wrote: 'It's a beautiful day and I can't see it.'"

Indeed, in both situations, the main information was known, namely that the old gentleman was blind; however, what had an impact on people's perception, in ending the day with a different result, was the way in which the message was conveyed. In this regard, in the

second case, what emerges is that the other people are lucky enough to be able to see and, thus, enjoy the beautiful day unlike the elderly gentleman who is blind. (Iezzi T. 2010)

Therefore, it can be inferred how being innovative, thinking differently - the so-called out of the box - can change perception and prompt people to do things they probably wouldn't have done.

Still, the main goal of marketing is to involve humans as much as possible in what is offered to them. And this can be achieved thanks to innovative content, interesting stories and significant interactions with the audience in question.

Although the field of marketing is constantly evolving, as is already known, the subject has been studied in detail over the years. Therefore, this dissertation is aiming not only to analyze marketing, but also to figure out the implications of Artificial Intelligence (AI).

Considering the latter, AI, it can be said that in recent decades its advent has revolutionized different industries, including marketing. As a matter of fact, Artificial intelligence, thanks to its ability to process large amounts of data in a very quick and efficient way, has given the opportunity to businesses to better understand customers' needs, to optimize marketing strategies and to have the possibility to create personalized experiences by using this powerful tool. (Lee J. 2022)

The implementation of artificial intelligence has meant that digital marketing, in particular, has benefited greatly in this regard.

Therefore, thanks to the existence of digital platforms, it has been possible to introduce a large number of data, both demographic and behavioral, to be allocated to companies, which, with the precious help of algorithms, have been able to study various

consumption models in depth, predictions about future consumer behavior and understand what the new trends were.

Considering this particular scenario exactly, artificial intelligence is seen as one of the most promising technologies for creating content appealing to the target audience itself and above all (Haleem A, Javaid M, Qadri MA, Singh RP, Suman R. 2022).

In this sense, it is important to underline how on the one hand artificial intelligence is a powerful marketing tool, and on the other hand this can also raise concerns and raise questions.

It is inevitable not to consider the fact that the misuse of this smart technology can raise questions on sensitive issues such as ethics, transparency and above all, customer data of the use of the.

Additionally, research into the topic of generative AI within the digital marketing field remains critical.

The research in this study aims to measure the perceptions of a sample of people on this topic, compared to the "feel" of the most common reproductive AIs currently in use

Considering that AI is a topic that still generates a lot of study today, it is therefore very interesting to explore and compare two different approaches: the human approach and the generative AI approach.

The first expectation from the analysis is linked to the fact that the answers given by people can have an emotional touch since they can be based on their personal experience and their level of empathy, unlike the responses expected from virtual assistance, which is expected to be pretty logical indeed.

1.2. Research question and its objectives

This paper aims to study in depth how artificial intelligence influences digital marketing, by focusing on understanding its pros and cons.

Thanks to numerous sources deriving from empirical research and critical literary reviews, this thesis aims to provide answers to the following research questions:

“What will be the impact of AI in digital marketing in the long term?”

The following objectives are set in order to provide the most accurate response to the research question:

- ❖ to recognize the pros of AI in the field of digital marketing
- ❖ to understand what risks AI can pose in digital marketing

Through this research, the aim is to also be able to provide a contribution regarding the impact of artificial intelligence in digital marketing in order to be able to provide interesting insights to better understand this context which continues to be increasingly complex and technologically advanced .

1.3. Delimitation

To provide an answer to the research question, the analysis of the thesis will be based mainly on theory, since it is essential to understand the topics of digital marketing and Artificial Intelligence in depth. Then, through the analysis of the data obtained from the questionnaire submitted to both a sample of people and some AI generators, an answer to the research question will be provided.

The theoretical framework of the thesis will be mainly divided into two macro areas.

The first macro-area of the theory focuses on the represented theme of marketing, considering its evolution from traditional marketing to digital marketing, where the main models that have had an impact on the evolution of digital marketing itself will be reported.

The second part of the theory aims to expose the topic relating to AI within digital marketing, taking care to take into consideration its impact in this regard. Furthermore, the study will also consider its pros and cons.

As indicated earlier, the research will be examined from two perspectives, from a human sample and from the currently known and widely used genetic AI methods. The thesis aims to capture the impact of AI on digital marketing on people's perception and generative AI through theory and research.

1.4. Structure

The structure of the master's thesis will be indicated as follows:

- ❖ The first chapter will focus on the introduction, detailing the background of the study and defining the research question along with its objectives.
- ❖ Subsequently, the second chapter will delve deeper into the design process, which consists of two different components: digital marketing and artificial intelligence.
- ❖ Turning to the third chapter, attention will turn to methodology, describing the research methodology and the reliability of the data.
- ❖ Then, the fourth chapter will talk about the analysis by focusing on the processing of the acquired data.
- ❖ Finally, the last chapter will lead to a conclusion, which will not be presented as a simple summary of the results emerging from the paper, but will also give valid suggestions regarding research in order to improve future studies.

2. THEORETICAL BACKGROUND

2.1. Evolution of Marketing: from Traditional to Digital

Communication has always been the fulcrum of society, because it has allowed the evolution and progress of human culture; therefore, it is possible to affirm that technological advances are closely linked to communication.

The main information channels are naturally television and radio, which present advertising to passive viewers.

This communication approach, where companies were almost the sole creators of advertising spots for a mass audience, lead to the consequence of being able to influence the purchasing decision of the products or services

As communication has evolved, mass media have also experienced a strong evolution. In fact, social media have played a truly important role in introducing a new dynamic in the interaction between the final consumer and the company. Social media basically allows consumers to choose and compare the products or services of a particular company with those of another company. (Coumbassa A. 2019)

Thanks to social media, the consumer has the opportunity to make a more informed purchase, therefore, it will be this awareness that will lead companies to make concrete changes in their marketing strategy, needing to adapt not only to new needs but also to the most followed new channels.

2.1.1. Traditional Marketing

Marketing represents the process implemented by the company to make its product/service available for purchase to the final consumer. According to the economist Philip Kotler, marketing is defined as:

“the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit.”

It is therefore clear that according to Kotler, marketing represents the activity of analyzing consumer needs, underlining the interests of the latter in order to be able to create an efficient marketing strategy in reaching the final customer. (Kotler, P. 2001-2012)

The process employed by traditional marketing is a process of identifying market needs based on the 4 Ps - which are the foundations of target marketing: Product, Price, Placement, Promotion - thus leading to an exchange of value between the company and the consumer. (McCarthy, E.J. 1960)



Figure 1: 4P Marketing Mix

Source: “Cos’è Il Marketing Mix? Marketing in Bocconi”

The marketing mix of the 4Ps created a scenario where the company's goal was to produce a standardized product to offer to a mass of people willing to purchase it. As it was a non-personalized product, the company could offer a competitive price to the public, thus minimizing production costs. (McCarthy, E.J. 1960)

The most used communication channels were: TV, radio and newspapers and their method of conveying information was TOP-DOWN. This approach indicated that decisions were made exclusively by a small circle of people represented by executives, leading to disengagement within the team and a lack of creativity. Consequently, the conveyed messages resulted in low interaction among recipients. (Silberstein S. Eichler R. 2023)

Traditional marketing was about conducting market research; this led to less precise research as companies were forced to stereotype their consumers, so the communication adopted was very limited.

The model implemented is the so-called Outbound marketing, where the daily activity of potential customers is interrupted with the aim of driving them to purchase, seeking to generate interest through the offered product/service.



Figure 2: Interruption Marketing

Source: “Interruption Marketing: how it’s like bad in’laws”

Nowadays this approach is obsolete and above all very expensive in economic terms as generic contents were often offered to a mass audience; therefore, there was no customization of the product or service offered. Furthermore, it was difficult even for companies to measure the efficiency of similar marketing. In this regard, it can be said that the economic resources were converted into communicative power which could be seen, for example, as seconds of visibility when the advertising spot was offered via radio and television. (Di Faia G. 2015)

2.1.2. Digital Marketing

The advent of the Internet and in particular the birth of social networks, has caused an evolution of the market and consumer needs, therefore, at the same time, communication also requires an upgrade. Digital marketing aims to approach the market differently than in the past. In fact, the objective is not only to advertise the product or service, but mainly aims to involve the user, focusing more on the benefits of the experience.

Digital marketing is defined by Pulizzi himself as:

“ a technique of creating and distributing valuable, relevant and consistent content to attract and acquire a clearly defined audience – with the objective of driving profitable customer action.” (Pulizzi J. 2009)

From this definition, it is clear that there are new elements that are in contrast with traditional marketing.

First and foremost, it shines a spotlight on how crucial it is to inform the user, thus arousing interest through engagement, thereby placing the goal of sales in the background. The modification of objectives inevitably leads to a different approach, reflecting an awareness of the user, who may become more demanding and complex due to the greater information available to them.

Finally, both the brand and the final user find themselves in a win-win situation in terms of satisfaction and gain, both in profit and in the experienced outcome. (Pulizzi J. 2013)

Therefore, the focal points of digital marketing are:

- The presence of the Internet which allows real-time communication and connection between people who perhaps live on different continents, especially due to social networks, which can be accessed via smartphone, tablet or laptop.

- Listening: the company must be able to adapt its proposal after continuously listening to ideas and indirect advice from its users through the use of social media, so as to better understand their needs.
- The modernization of the marketing mix, where Kotler's theory of the 4Ps is revisited, but an interesting metamorphosis is witnessed towards the so-called 4Cs, namely Co-creation, Currency, Community, Conversation.

The first point of the 4C model, namely Co-creation, emphasizes the importance of listening, which is crucial for capturing real needs, in order to launch better products on the market than those already present. The second aspect focuses on the importance of expressing a product with a known currency and to as wide an audience as possible.

Consequently, interaction and listening lead to a consolidated community, thanks to the continuous maintenance of the conversation between the company and its audience. (Pellencin F. 2019)

Therefore, it can be said that, as far as the strategy of a company is concerned, digital marketing plays a crucial role, as significant as the market increasingly leans towards online channels to meet the needs of the final user.

A further important aspect is the change in the so-called “Customer Journey” which moves from a funnel model characterized by the 4As (Aware, Attitude, Act, Act again) to a circular model of the 5 As (Aware, Appeal, Ask, Act Advocate). (Pellencin F. 2019)

Customer Journey: 4A

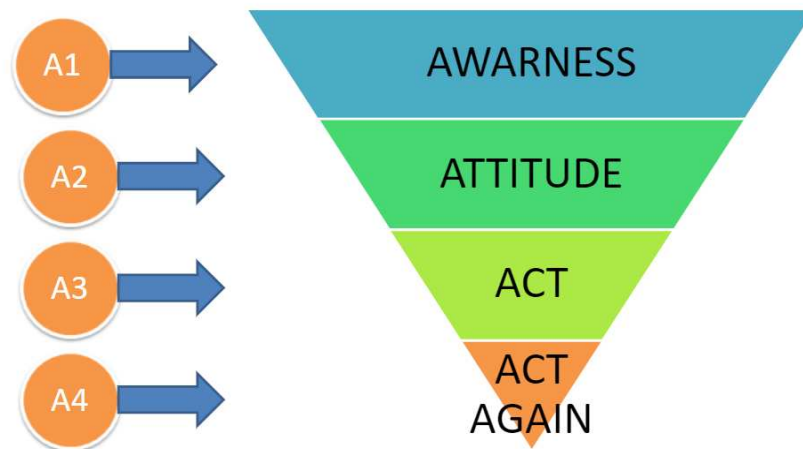


Figure 3: Customer Journey: 4A MODEL

Source: "Delivering WOW: Creating Customer Advocates Through Service Bandung, 29 Oktober 2013."

4A MODEL:

AWARE: Brand Awareness

ATTITUDE: Harmony between customer and brand

ACT: Customer purchases the product

ACT AGAIN: Customers makes a further purchase

Initially, therefore, the customer had to follow a funnel path, in the sense that each step corresponded to a lower number of consumers.

This approach assumes that the customer can purchase a product from a brand only when they have developed a good awareness and a certain alignment. (Pellencin F. 2019)

However, this approach is no longer applicable in today's world as the customer has access to more information to make an informed choice of purchasing a product, being

constantly digitally connected; therefore, it is not guaranteed that there will be alignment between the brand and the end user to prompt the latter to take action to finalize a purchase. (Kotler P. 2017)

5A MODEL

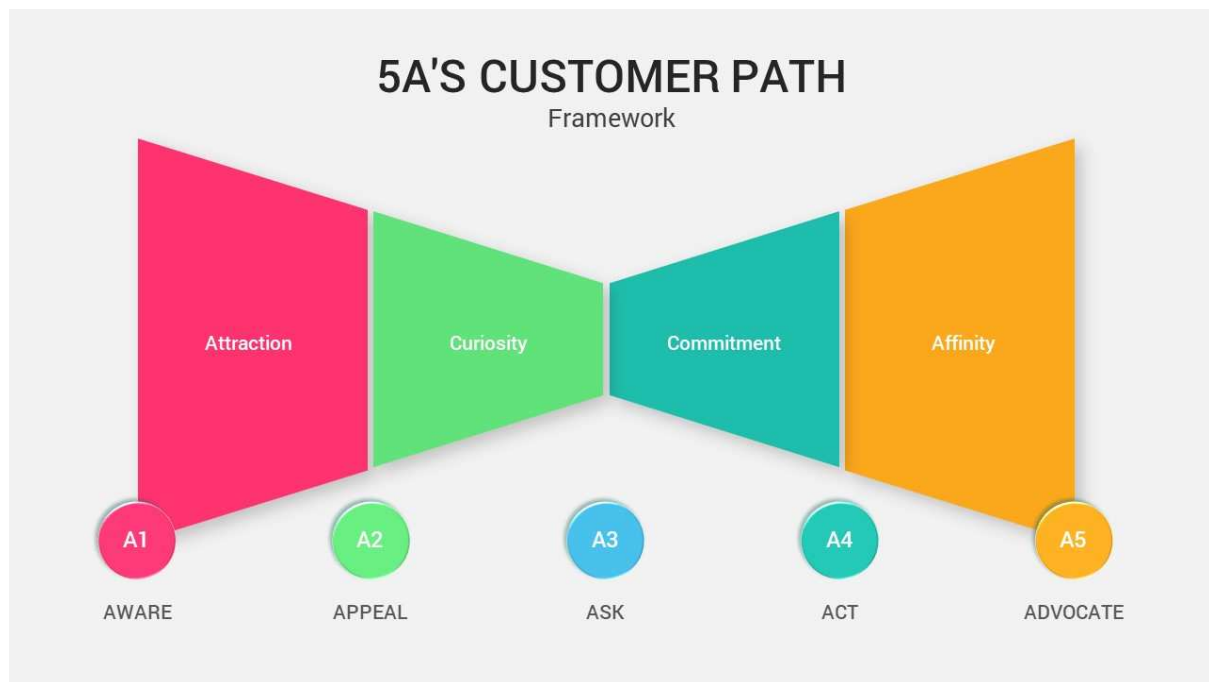


Figure 4: Customer Path: 5A MODEL

Source: "5A's Customer Path PowerPoint Template."

In this case, after initially becoming aware of the brand and identifying with its values (AWARE), thereby creating an interest in it and developing an appreciation for it (APPEAL), before proceeding with the purchase of the product, the customer seeks information (ASK), conducting research and checking reviews before committing to buy the product. At this point, even the purchase (ACT) is not merely a formal act but assumes a different experience because before reaching this point, there has been an investment from the customer.

Finally, the customer recommends the products to friends and acquaintances (Advocacy), who in turn will begin their journey thanks to the first step (Aware) due to the recommendation.(Kotler P. 2017)



Figure 5: 5A as a circular model

Source: “Customer Journey circolare: il modello delle 5A di Philip Kotler”

For this reason, this model is conceived as a circular model since the last point (Advocate) for a user can represent the first step (Aware) as it can be the reason why they become aware of that particular brand; indeed, in this regard, every brand must give maximum importance and care to each step of this journey. (Kotler P. 2017)

2.1.3. Strategies channels and best practice

Web marketing aims to both develop business relationships - using the web - and study the market through the online channel.

This approach is made possible by the development of new communication channels that are more direct between consumers and companies; indeed, thanks in particular to the emergence of social networks, companies can better understand the tastes and behaviors of potential consumers, thus implementing strategies that can be targeted to a particular type of consumer. (Brancale F. 2020)

This new way of communicating has led companies to support this new evolution. The result was to create many new profiles on the various social networks based on the most relevant target for the product, so as to be able to launch new initiatives - such as advertising campaigns or other types of contests - with the aim of promotion. Nowadays, therefore, it is highly unlikely not to find a company with at least one online profile, as their absence reflects a lack of collaboration with the end user, who, for example, has no way to review. (Exedere staff, 2022)

The main objective of a company is to make itself known to potential consumers online. And not only. In order to succeed in this undertaking, it is important for companies to renew and put into practice marketing models that allow them to overwhelm the competition.

- ❖ Il SEM (Search Engine Marketing), aims to attract as many visitors as possible to one's website who may be interested in the displayed content, leveraging both positioning and so-called search engine advertising. (Vasta D. 2008).

SEM is primarily composed of Search Engine Advertising (SEA) and Search Engine Optimization (SEO). (Toscano L. 2009)

➤ The main purpose of SEO is to attract users to one's website through a series of processes and operations aimed at increasing visibility through search conducted on search engines, such as Google, using specific keywords. These optimization techniques can be categorized into on-site and off-site techniques. Regarding the former, as the name suggests, it involves activities performed directly on the site to be optimized, while for the latter, it involves activities conducted outside the site. (Baye M.R., De Los Santos B, Wildenbeest M.R. 2016)

- On-site: focuses on improving the overall quality of content on various pages of the website. By pre-screening keywords based on search volume and user intent, targeted content can be written to satisfy visitors' curiosity, with the objective is to rank one's website in the top search engine results.(Gupta, S.; Agarwal, N.; Gupta, , Gupta, S.) by 2016)

- Off-site: focuses on the overall work done rather than the page itself, making it easier to build links from websites in the same market niche, pointing to the company website. The quality and quantity of those links influence the position of the website in search results. By interacting with other publishers and contributing guest posts on these platforms, and linking them to the site, it is possible to gain backlinks. (Gupta, S.; Agrawal, N.; Gupta, S 2016)

➤ SEA: The SEA concept aims to promote different strategies designed to ensure concrete outcomes when SEO is not able to provide immediate results. SEA utilizes advertising, banners, sponsored links, and other forms of paid promotion, targeted through careful selection of relevant keywords within the context. These advertisements and content are always in line with user searches through search engines. Among the most used tools, Google Ads stands out, which offers a series of paid services; in these cases, companies have the option to set a daily budget and will only pay for actual link clicks. However, the scope of SEA applies not only to search engines but also extends to social networks; in fact, Twitter Ads and Facebook Ads have recently been introduced, which have the aim of promoting the chosen contents in order to make them more visible and popular compared to other contents; for this reason, unlike SEO, SEA-related practices are more business-oriented. As for SEO, the latter can be implemented even without special skills as it focuses on generating organic links, while SEA requires a deeper understanding of the market. It is necessary, precisely, that a study of the competition is carried out but that the timing is also respected, otherwise the set results will not be achieved. A further difference between the two marketing methods lies in the duration of the impact: if on the one hand SEO does not offer immediate results as it provides lasting benefits that can have an impact in building the credibility of the site over time, on the other hand the On the contrary, SEA offers immediate results, although unfortunately this tends to disappear quickly. (Wenyu D, Kai H. L, Chenting S, Nan Z., Nan C. 2010)

❖ SMM (Social Media Marketing)

In recent years the expansion of social networks has been astonishing. What is truly important about this phenomenon, in addition to counting posts, shares, stories and tweets, is its ubiquity. It is precisely this characteristic that has meant that the social network has become an undeniable reality which in turn represents a growth opportunity for companies that want to gain visibility quickly and effectively.

For a company, in fact, one of the first fundamental steps to collect important data on users, starting from personal data (sex, age) up to habits, is to create a company profile on platforms, such as LinkedIn, and share updates and news relating to the company itself or relating to the products it offers. This information is then processed and analyzed using specialized tools to maximize the effectiveness of social media campaigns.

There are many and different social media platforms around the world. The most widely used ones include Instagram, TikTok, Facebook, YouTube, LinkedIn, etc. At the core of social networks are two basic principles: nodes (representing individuals) and connections (including friendships, relationships, and family connections). Through these social networks, social media becomes active and grows. (Brancale F. 2020)

❖ EMAIL MARKETING

The goal of email marketing is to be able to reach a specific audience by sending an email quickly with low cost for the brand. Since, economically speaking, it is one of the most convenient practices compared to the others in marketing, thus it is usually managed internally. Furthermore, the audience target is carefully selected; in fact it is usually made up of people who are really interested in the company's products/services, which is why this practice is effective.

The care in creating targeted emails in order to promote the contents, the current offers or report the events organized by the brand, is the central concept around which the practice relating to email marketing revolves, precisely because its aim is to involve the audience.

In recent years we have seen more and more evidence of the growth of this practice which retailers are actively using. In fact, even the personalization of the text within the email has become a distinctive and crucial sign, starting from the header. As regards this last aspect, there has been an evolution regarding the content of the email which from a simple "Dear user" we have moved on to a much more welcoming form such as "Hello [Recipient's name]". With this simple but effective evolution, the aim is to make the recipient feel that he is unique to the company, leading him to become positively predisposed towards the content of the email as he feels appreciated. (Oleg V.P, Nigel P.M, Robert K.P. 2008):

- Welcome messages for new customers
- Invitations to users to download resources and write their personal information.
- Blog subscription through newsletters and article sharing
- Product promotion
- Help customers who want to be buyers

❖ INFLUENCER MARKETING

Influencer marketing represents an opportunity for companies to collaborate with online figures in order to expand the visibility of their brand. This form of marketing leverages the popularity of people on social media who are going to promote the company's products or services through their social media channels. Since people tend to follow

individuals they trust on social media, an influencer's endorsement can generate an automatic sense of trust, thus increasing the chances of conversion. (Lou, C., and S. Yuan. 2019)

Therefore, it is fundamental for a company to choose the right influencers according also to the product or service offered by the brand. Even though it is known that the success of a campaign depends mostly on the adopted strategy, however, there are tangible benefits to adopting this approach.

One of the first benefits is found in the fact that it is a valid resource in order to increase credibility and trust towards the brand. In fact, having the opportunity to work with influencers with a certain credibility from the public can quickly increase the credibility of the company itself. From a certain marketing point of view, the figure of the influencer can also sometimes be economically advantageous, which in turn translates into a significant return on investment when the right people with whom to start a collaboration are identified.

Furthermore, the strategy is able to attract high-quality leads and attract potential customers who are already ready to purchase the offered products or services.(Hudders, L., De Jans S., De Veirman M. 2021)

Last but not least, collaborating with the right influencers has the benefit of increasing brand awareness on a large scale, having the opportunity to showcase your products and services to a wide range of potential customers who could be more difficult to reach otherwise. (Schouten, A. P., L. Janssen and M. Versaget. 2020)

2.1.4. Introduction of data in digital marketing

It is undeniable how important it is for a company to be not only customer-oriented, but also data-driven. As a matter of fact, in the old days of traditional media, the data regarding campaign performance was valuable but at the same time scarce; therefore, it was particularly difficult to get a detailed knowledge of consumer responses to company's messages.

Today, in the so-called digital era, data is ubiquitous, as it is said before; in fact, there is the possibility to record and track every interaction among users, thus generating a vast treasure trove of information capable of determining the reason for a specific user action.

Data analysis mainly concerns monitoring user habits and marketing campaign trends. However, the time factor must also be considered: to fully grasp trends and patterns, the data must be observed in different periods of time to obtain a dynamic and complete view of the data. (Barberis R, 2024)

To evaluate the effectiveness of online marketing programs, performance must be continuously monitored, analyzed and optimized based on the information collected.

- ❖ It is needed to observe behavioral data to grasp more information about visitor's intentions; in fact, it is important to understand why people visit a particular website, as user behavior can reveal a lot about their needs and motivations. By analyzing the referring URLs and keywords used to reach the site, it is possible to identify the problems that visitors are willing to solve. Furthermore, by conducting an in-depth SEO analysis to identify which keywords the site is best positioned for, it is essential to ensure that relevant users can thus reach the site.

- ❖ Analysis of results is also important to ensure that visitors have successfully completed all set goals and are on the verge of taking actions such as purchases or subscriptions. Furthermore, analysis of goals and key performance indicators (KPIs) has an impact on the capture areas that need to be improved. Finally, it is also important to check if the website has met the user's expectations.
- ❖ In conclusion, understanding how important individual user feedback is is fundamental, especially to understand the general attitudes of users and how it is possible to influence them in order to achieve its goals. In these cases, therefore, it is necessary to test different models of users' attitudes in order to understand what influences their experience. This will be of great help to improve users' attitude on the website in order to achieve more positive results.

2.1.4.1. The role of data and analytics in digital marketing

People always think of revolutions as past or future historical events. Sometimes it is hard to perceive the current fourth industrial revolution, the so-called “Big Data revolution.” According to the Worldwide Semiannual Big Data and Analytics Spending Guide, in 2024, 53 countries and 28 industries are trying to leverage big data.

Nowadays it is very common to hear the term “big data ” in many different contexts and many times this concept is used by people who do not truly understand its meaning or the reason why it represents an evolution in many sectors. It is believed, for some of them, it would be really impressive to discover what is going on behind the scenes and what can be potentially done with those data. However, it is also understandable their concern about privacy, their scepticism regarding prediction models or their fear of consequences in case of data misuse. While navigating on the internet, it is possible to notice that there is not a general standard definition for big data and various authors would give their own opinions. Therefore, in the context of this study, it is opted to select the most significant definition which refers to it as “a proliferation in data volumes and types which are very large, diverse and unstructured” (Pavolotsky, 2012).

The crucial point here is to understand the distinction between the concept of “information” and “data”. Data are all the symbols that represent every single property of objects and events, while information consists of a huge amount of data which is then processed in order to bring out a useful pattern and learn something new (Ackoff, 1989).

To explain it better with an example: when someone buys an item on Amazon for the first time, that is just a piece of data, but after searching for things online for some time, their algorithm will derive information about the items that you are interested in buying or the price

you are willing to pay for them. Then similar suggestions will be shown in order to incentivize the customer to buy.

This example emphasizes the distinction between single data and information, but it shows the first benefit we get from data and the algorithms: personalized commercial offers. Sometimes, it seems like the computer knows what people have in mind before you even start looking for it, and many times things that users were looking for, pop up on the right side of a Google page as an advertisement.

Even more impressive is the case in which Netflix suggests and recommends other films and series they believe people will enjoy based on their previous viewing history (“How Netflix Uses Big Data”). In fact, the article "How Big Data Analytics Enables Service Innovation: Materiality, Affordance, and the Individualization of Service" written in 2018 by Lehrer states that:

“service innovation provides businesses with opportunities to create customer value and has shifted from a focus on firms’ output to clients’ satisfaction.”

Utilizing data analysis and digital technologies has the potential to revolutionize and expand the reach of marketing initiatives for companies. Data analysis is the best ally of companies in a fast-changing world that is being impacted by technological upheaval across all industries, as it can provide accurate KPIs on marketing activities including “sales development, delivery, price, product qualities, TV, and print ads on the market share, sales revenue, or the brand value of a product’s brand. It leads businesses to become more customer-oriented and work harder to make them have notable experiences” (Cavlak and Cop, 2021).

To dig deeper into the potentiality of data, the Journal of System Integration provides a well written article entitled “Benefits, Challenges and Tools of Big Data Management” in which Almeida divides the benefits into two macro groups: cost savings and competitive advantage (Almeida, 2017). He states that Big Data is a tool which contains a massive volume of data at a cheaper price than a traditional database, and at the same time it offers businesses new competitive advantages such as new products and services or new business models. The consciousness that information means power, has pushed firms to enrich their databases by extracting the browsing habits of consumers, visit durations and frequencies of websites, IP addresses, viewing histories, search keywords, device and browser usage, session durations, location etc (Cavlak and Cop, 2021).

Many businesses benefit from increased sales, improved insights into consumer behavior, and greater returns on investment. However, not everyone immediately embraced the data explosion: there are many who see big data as a threat to their privacy, there are managers who still judge statistics, for business decisions, as an unreliable science and there are some entrepreneurs who still view investment as a waste of resources of Data Mining.

In fact, owning a dataset is not a guarantee through which it is possible to immediately find all the answers that are needed, but for sure it is possible to have some useful interpretation of the variables of interest. The most important thing is to know the research question. Only in this way it is possible to try to improve services by gathering customer insights, redefine the strategic position of a company, and survive in this digitalized world. Those companies that do not take this task seriously are very likely to disappear in a few years, others will have to adapt, and new innovative businesses will arise.

2.2. Embracing the influence of AI

2.2.1 Introduction to Artificial Intelligence

Although AI is known to everyone, only a few people can truly say they know the definition of Artificial Intelligence, understand its complex nature and its potential. To get a precise idea, below are the definitions that various authors have given to clarify the concept:

“AI aims at programming intelligence into machines by learning from experiences and adapting to changes in the environment to simulate human decision making and reasoning processes” (Muthukrishan et al, 2020);

“AI is defined as the ability of machines to communicate with humans (using electronic output devices)” (Jiang et al, 2022);

“Artificial intelligence (AI) is the Science and Engineering domain concerned with the theory and practice of developing systems that exhibit the characteristics we associate with intelligence in human behavior.” (Tecuci, 2012).

These different definitions though have a common denominator: they all try to explain how AI tries to replicate the human capacity to learn from the past, make decisions, solve problems and predict the future. Artificial Intelligence serves as the fundamental framework, wherein machine learning operates as a subset, and Deep Learning represents a specialized field embedded within machine learning. (“AI vs. Machine Learning vs. Deep Learning vs. Neural Networks: What’s the difference?”)

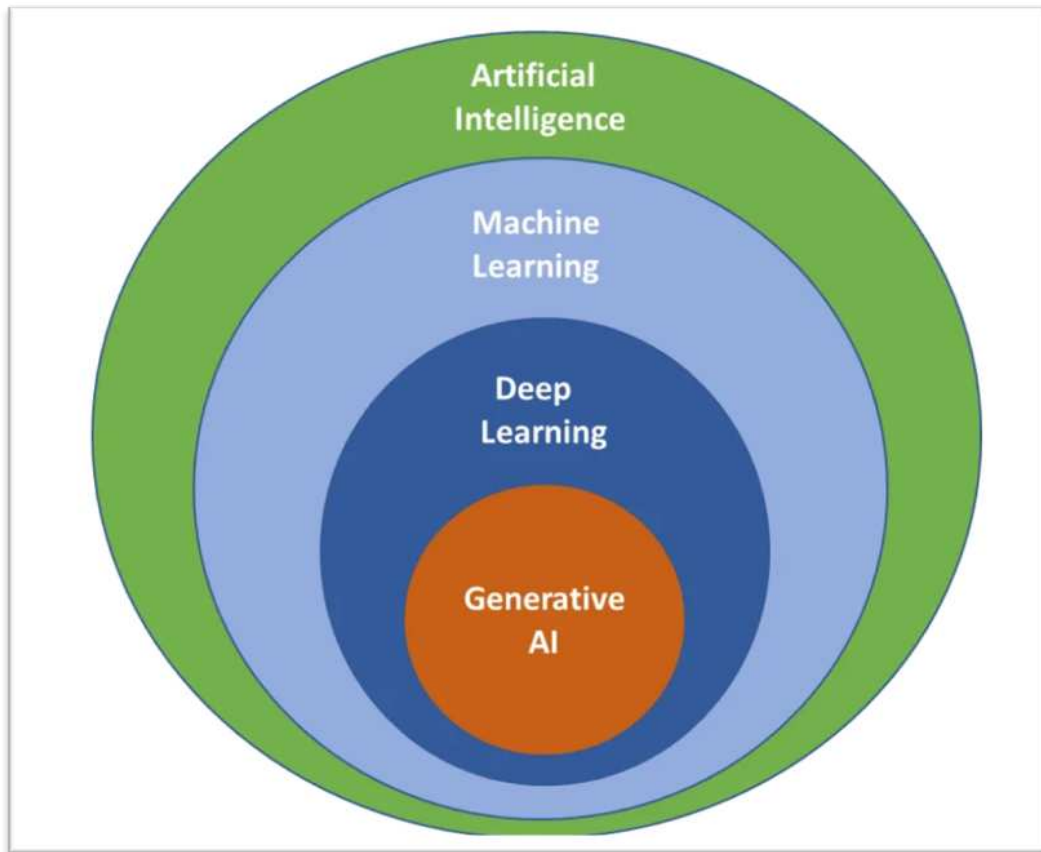


Figure 6: Artificial Intelligence and subfields

Source: “What’s Generative AI? Explore Underlying Layers of Machine Learning and Deep Learning”

Machine learning focuses on optimization, identifying patterns from data and is widely used to identify strange situations that appear to be clues to detected fraud. When properly formulated, it enables accurate predictions while reducing errors compared to hypotheses.

Deep learning facilitates feature extraction by reducing the need for manual intervention. In this way, it also facilitates the use of big data to achieve scalable machine learning. This capability is particularly interesting because it provides insight into unstructured data, which makes up more than 80% of an organization’s data. (“AI vs. Machine Learning vs. Deep Learning vs. Neural Networks: What’s the Difference?”)

Another significant aspect of AI that has disrupted the concept, leaving no one indifferent, is generative AI. The latter uses computational methodologies in order to create unique contents such as texts, audio files and even images, thus helping human capabilities as intelligent assistants in answering different questions. (Feuerriegel et al.,2024)

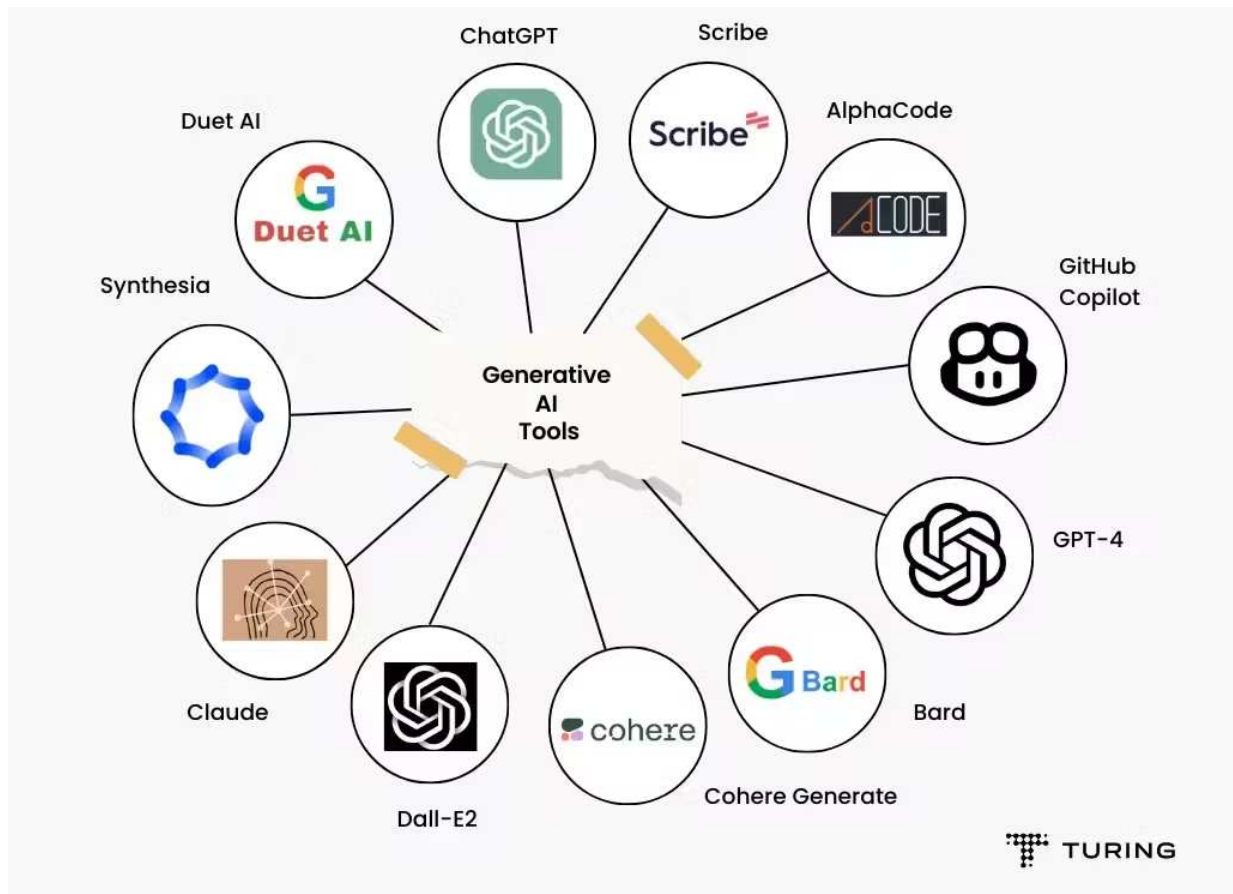


Figure 7: Top 11 generative AI platforms

Source: “11 Best Generative AI Tools and Platforms”

To have a better understanding of the capacity and their potential here are some deepen researches regarding some of the most famous generative AI tools more in details:

- ❖ GPT-4 represents the latest model of AI, which can be accessed via a user-friendly textual interface and can perform various tasks such as entity detection, classification, text generation, content synthesis, etc. Businesses get it benefits from four key

advantages of GPT-4 : diversity, ease of use, scalability, and readability. The introduction of GPT improves data capture to obtain important information, especially in emails. In addition, GPT-4 allows businesses to make the best use of studying customers across e-commerce platforms, understanding what they prefer and overriding current market positioning. (“GPT-4 e le principali applicazioni esplorate”)

- ❖ ChatGPT is an artificial intelligence based on GPT architecture (Generative Pre-trained Transformer), developed by OpenAI, founded by Elon Musk and Sam Altman in 2015. ChatGPT is simply an intelligent chatbot that lets users use the user responses, information, in different areas of natural language in conversational communication. Built to provide support and Developed through machine learning and reinforcement techniques, it filters multiple entries in response to user queries efficiently and appropriately. Its abilities include: writing procedural rules based on given instructions, delivering explanations on a variety of topics, solving mathematical problems step by step, organizing texts in various formats, and composing music and poetry.(“ChatGPT: cos’è, come funziona e come si usa”)
- ❖ AlphaCode and GitHub Copilot are massive language models designed for code generation. AI is currently acquiring programming skills and is emerging as a trusted ally for developers. In 2021, the San Francisco-based company behind GPT-3 introduced GitHub Copilot, a product developed in partnership with GitHub. Copilot functions similarly to GPT-3 but is trained on extensive public code available on Microsoft platform. It helps developers tackle repetitive tasks and offer innovative solutions. AlphaCode managed to overcome a large number of programming challenges that involved logic, algorithm design, critical analysis, natural language understanding and also in-depth knowledge, even at a practical level, of codes.(“AlphaCode e Copilot, cosa sono e i risvolti per gli sviluppatori”)

- ❖ Gemini (formerly Bard) is a chatbot created by Google. Thanks to its powerful technology, Gemini knows how to study what users ask and use natural language processing (NLP) in order to understand human language, study it and provide appropriate answers. This allows Gemini to translate important words, thus creating answers that make strong logical sense. By developing its communication skills, Gemini uses LLM to make responses more "human." LLM uses deep learning, facilitating answers to user questions and suggestions. Thanks to its enormous ability to nuance its language and make it sophisticated, LLM is considered an important generator of written texts and translations. ("Google Bard: Uses, Limitations, and Tips for More Helpful Answers")
- ❖ Synthesia is an AI video is a tool that revolutionizes the traditional approach to video creation by using AI avatars instead of real human actors or voice acting. It specifically targets the business technology segment with complete video needs for onboarding, training and educational content. Unlike traditional methods, Synthesia facilitates easy modification and rapid interpretation without the need for re-cutting, thus improving efficiency and flexibility. Exclusive avatars of real actors on stage granted to Synthesia put on incredible and realistic shows. With over 120 languages, sounds and voices, Synthesia allows users to easily adapt their videos to various cultural and linguistic situations. ("Synthesia AI: A Deep Dive into Using Synthesia to Generate AI Video")
- ❖ DALL-E2, by OpenAI, uses GPT-3 AI to transform descriptive text into accurate graphics, so that concepts can be easily translated into graphics. The possibility of having images created upon verbal request is useful when, for example, you need to create relevant content, adapted according to the advertising in question, personalized images or applications. It facilitates web graphic design, marketing materials design,

and image customization for a target audience, overall, it strengthens the company's image and efficiency. (“Generate and edit images with AI: 7 tools to try”)

- ❖ Scribe AI aims to improve business efficiency, therefore it comes up with innovative solutions to solve common analytics and programming challenges. In this context, this platform uses AI to automate workflow documentation, so that users don't waste time on repetitive tasks. The platform offers flexibility, leaving users the choice of customizing documents depending on what they prefer, anytime, anywhere, and encourages a culture of efficiency and knowledge sharing. ("AI Tool Review: Scribe AI")

2.2.2 Possibilities and challenges of AI

With AI already here and there, it's only natural to think about the biggest impact: the impact on productivity. The recent study titled "Experimental Evidence from Generative AI to Productivity" by Noy and Zhang aimed to show how the generative AI tool in ChatGPT, in a specific case, affected the productivity of middle managers in writing jobs. To test whether that is the case, the researchers conducted an online survey, where participants were asked to write a task based on their work. Half of the participants were given access to ChatGPT, while the other half completed the tasks without assistance. The results clearly show that the productivity of generative AI users when they were able to complete tasks was, on average, 40% faster than others who did not and also, an impressive 18% increase in AI-supported writing. Not surprisingly, after the experiment, many participants reported that they continued to use AI-enabled tools in their work. (Noy and Zhang, 2023)

According to a Goldman Sachs article published in 2023, which focuses on the transformative potential of generative AI in the global economy, advances in natural language processing are the generative tools of AI that in 10 years could boost global GDP substantially, by as much as 7%; productivity could also improve by growing by 1.5 percent over the decade. The rise of AI systems has the potential to reshape the job market, with an estimated 300 million full-time jobs facing automation. The economists of Goldman Sachs analyzed databases encompassing the task content of over 900 occupations and estimated that approximately two-thirds of U.S. occupations face some level of automation by AI, but can not be fully replaced arguing that while AI's impact on the labor market is expected to be substantial, most jobs and industries are only partially exposed to automation. Hence, AI is to be considered more like a complement rather than a substitute of human labor ("Generative AI could raise global GDP by 7%").

Share of occupational workload exposed to automation by AI

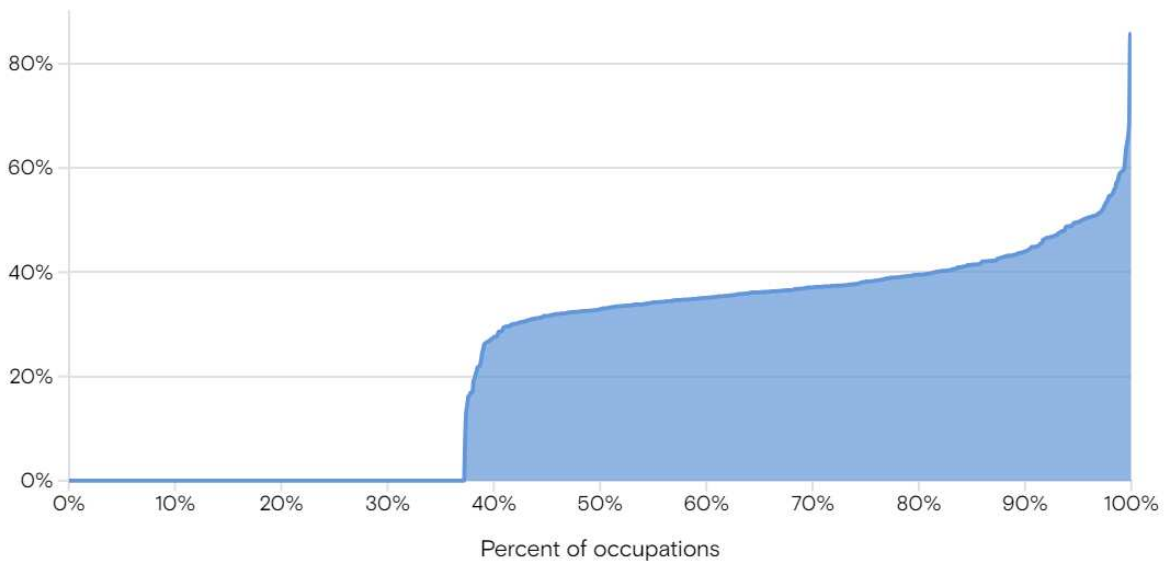


Figure 8: Percent of occupational workload that could be automated by AI

Source: "Generative AI could raise global GDP by 7%"

Even though the replacement of human capital seems to be today's main concern when we look at the capacities of AI, other researchers encourage a shift in perspective on AI risk. One of them is Toby Walsh who wrote the article "Stop talking about tomorrow's AI doomsday when AI poses risks today". Through this article, he criticizes the tendency to fixate on hypothetical scenarios of superintelligent AI causing human "extinction" which in his opinion distract from the very real and present dangers of AI in use today which include:

- Bias in AI algorithms that can provide incorrect results and therefore be a source of discrimination in areas such as facial recognition and legal aspects;
- "AI arms race" between nations developing autonomous weapons under the most rational circumstances, where nations arm themselves with weapons that can make lethal decisions without human intervention, raises serious ethical and safety concerns.

However, the author does not want to eliminate the use of artificial intelligence, but he wants to make people understand that there is a need to have responsible and regulated AI

to avoid any type of risk and to ensure its ethical use. He proposes to introduce international directives and promote transparency in the development of AI. (Walsh 2023).

In addition, as happens many times throughout history, new technologies always have advantages, but also limitations. One of these is the fact that access to the digital world is of great importance, particularly considering that a global population still no longer has access to the Internet, thus limiting the development of artificial intelligence.

As it can be understood so far, AI's impact on tomorrow's world is expected to be transformational, however what happens today depends on many factors; first, its impact will vary greatly from sector to sector and from economy to economy, depending on the acceptability of this technology. Furthermore, the convergence of artificial intelligence and other cutting-edge technologies - such as robotics and distributed laser technology - holds great promise, as historical past shows that unprecedented progress is often the result of connectivity of different technological domains (De La Parra Solomon, A. 2023).

AI has a remarkable ability to transform business processes, making tasks like report writing and data processing more efficient. This streamlining helps facilitate quicker decision-making. Additionally, AI empowers investors by offering tools to explore new investment opportunities. It enhances market sentiment analysis by providing real-time data insights. (LeewayHertz, 2024).

Moreover, as highlighted in an article by McKinsey & Company, AI is already making waves in today's marketing strategies, particularly by enhancing personalized customer experiences. Thanks to AI, marketers can better coordinate their teams and target customers more precisely. It also helps in boosting production and delivery quality while automating repetitive tasks like email marketing or managing social media programs. This

automation frees up employees to focus on more valuable tasks. ("The State of Marketing, Personalization, and AI").

However, to truly harness the power of AI, we need to tackle some critical success factors, primarily access to high-quality data and the right skill sets. For AI to be effective, data must be accurate and readily available, as algorithms depend on structured and secure data to perform well. Additionally, it's vital for both individuals and organizations to prioritize skill development. This isn't just about technical skills, but also about critical thinking and social skills, such as understanding and addressing socioeconomic diversity. By committing to learning and growth in these areas, we can not only coexist with AI but also thrive in a future where artificial intelligence is integrated into every aspect of our lives.

2.3 Specific areas of AI automation in the field of marketing

The marketing sector is facing an important transformation, with AI is emerging as a transformative force similar to the impact printing presses had on communication.

Charles Darwin stated: *"It is not the strongest of the species that survives, nor the most intelligent, but the one more responsive to change."* Therefore, companies that manage to adopt AI in the field of digital marketing will develop significantly in this evolutionary phase.

Common tasks such as data entry, report generation and email management will be relegated to the past, run by intelligent systems. (McKinsey Global Institute, AI, automation, 2018).

2.3.1. Intelligent Automation: Campaigns, Lead Nurturing, and Customer Journey

Thanks to AI businesses can understand their customers beyond just age and location. By tapping into data from various sources like CRM systems, online behavior, and social media interactions, and using advanced algorithms, businesses can create highly personalized customer segments. These segments can reflect people's interests, such as being avid readers or sports fans, and behaviors, like being loyal customers or brand advocates, adapting in real-time as customers change.

Thanks to AI segmentation, targeted and relevant messages can be delivered, increasing engagement and conversion rates. However, AI is not limited to divisions and targeting campaigns; It's also a way to automate lead nurturing, making it smarter and more personalized:

- ❖ AI-powered chatbots: These bots engage leads in real-time, answer questions directly, and provide relevant feedback.
- ❖ Predictive analytics: By identifying leads with a high conversion probability, sales teams can prioritize their efforts on the most qualified prospects (IBM, What is predictive analytics?).
- ❖ Dynamic content delivery: Leveraging lead preferences and behavior, content is designed to keep them engaged and progress through the sales funnel.

By implementing this comprehensive approach, businesses can expect significant benefits, including increased qualified leads, streamlined sales cycles and increased conversion rates.

2.3.2. Chatbots and virtual assistants: personalized customer interaction

Chatbots have come a long way since their early days when they simply mimicked human conversation. Thanks to the advancements in artificial intelligence (AI) and natural language processing (NLP), these virtual entities are now revolutionizing the business landscape. Modern chatbots are capable of comprehending complex customer queries, crafting personalized responses, and delivering engaging experiences.

❖ From Simple Beginnings to Sophisticated AI Companions

Early iterations of chatbots rely on preprogrammed Q&A scripts, which limited their functionality. (Siau, 2018).

However, the advent of machine learning and NLP ushered them into a new era. Modern chatbots are being developed as "intelligent virtual assistants" (IVAs) or "virtual agents" (VAs). (Belkhodja & Nasreddine, 2020).

Today, many companies around the world are developing chatbots to improve customer service. Some well-known types are:

- Voice bots: AI-powered communication channels that convert voice from text to text to speech, enhancing customer interaction with human-like responses, are embedded in IVRs and other customer service tools and seamlessly in their own service systems.
- Hybrid chatbot: this combines automation with support through a real chat, allowing those who assist customers to work in the best possible way. This is to ensure that what customers ask for is satisfied quickly and effectively.

- Social messaging chatbots, such as those found on platforms like Facebook Messenger and WhatsApp, use advanced AI algorithms to boost customer engagement. This approach helps companies save on resources that would otherwise be spent on traditional contact centers.
- Menu-based chatbots: rely on clickable buttons in fixed decision trees to guide users through interactions. While they are quite effective for handling straightforward questions, they may struggle when faced with more complex situations.
- Skills chatbots: are designed to expand their capabilities with pre-defined software, allowing them to perform specific tasks like providing weather updates or placing orders.
- Keyword-based chatbots: leverage natural language processing (NLP) to analyze and respond to user actions that initiate conversations. However, they can sometimes falter when dealing with frequently asked questions. Combining keyword recognition with button-based navigation can enhance their overall functionality.

Overall, chatbots are continually evolving, offering innovative solutions to enhance customer service and engagement across various channels. (Basumallik, 2022).

TYPES OF CHATBOTS

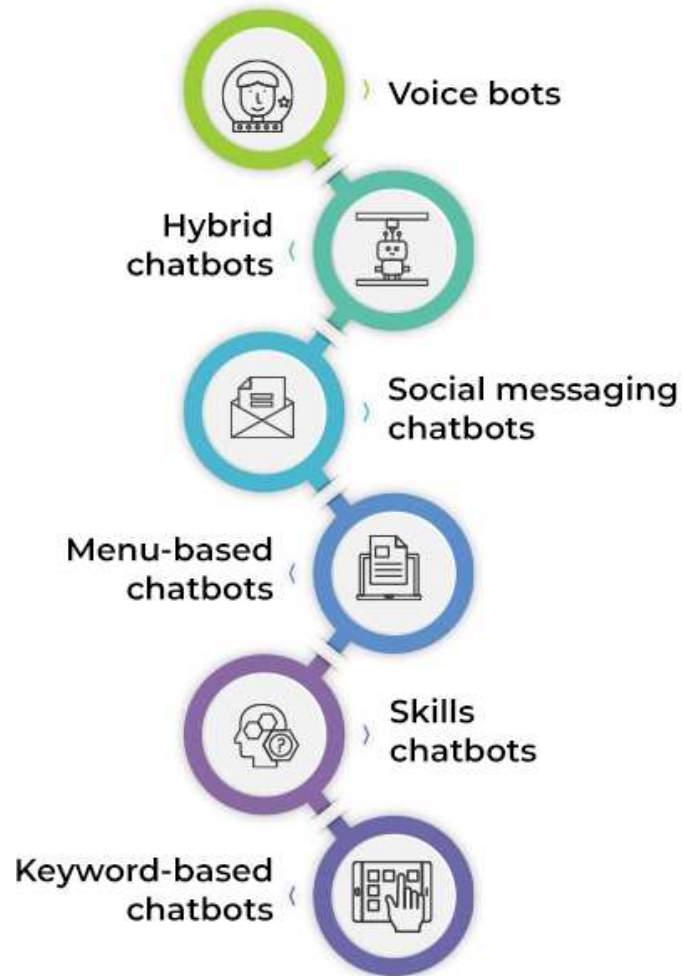


Figure 9: Types of Chatbots

Source: “Generative AI could raise global GDP by 7%What Is a Chatbot? Meaning, Working, Types, and Examples”

❖ Demystifying Virtual Assistants and Virtual Agents

excel at insightful user requests. They can anticipate needs, participate in contextual discussions, and continue to learn from past interactions to shape future interactions (Xu et al., 2020). In contrast, virtual assistants (human agents) go beyond just providing information. They are empowered to do things in the real world, such as solving technical problems or assisting with purchases (Belkhdja & Nasreddine, 2020).

❖ A Symbiotic Relationship: Benefits for Businesses and Customers

The introduction of chatbots within marketing strategies provides advantages to businesses and customers:

- Stronger customer loyalty persists: the personalized and instant experiences offered by chatbots satisfy them a lot and make them more loyal to the brand. (Lemon & Verhoef, 2016).
- Optimized business efforts: common tasks like answering questions and handling support requests are automated by chatbots, freeing up human workers for strategic efforts; so they are available to perform other types of work (Wainwright & Brynjolfsson, 2018).
- Lead Generation and Qualification: chatbots are able to take data and classify possible customers as leads, improving sales. (Smith & Effah, 2020).
- Developing quality customer relationships: Communication with customers can be tailored based on their specific needs and preferences, creating a stronger relationship. (Kumar et al., 2020).
- Solving the brand-customer problem: chatbots are useful because they favor direct communication, increasingly decreasing the "distance" between companies and consumers. (Verhoef et al., 2020).
- Minimized errors and more consistent information: Chatbots provide additional information flow, eliminating the risk of human error. (Van der Pool et al., 2020).

Thanks to these innovations, chatbots are gaining more and more power. Since they know how to understand emotional sensations, know how to speak foreign languages and also know how to predict what customers prefer, they will redefine the way we interact with technology and navigate the ever-changing business landscape.

2.3.3. Predictive analytics: how to predict new trends and customer behavior

Predictive analytics is a game-changer for businesses, allowing them to peek into the future. By analyzing past data and using techniques like statistical modeling, data mining, and machine learning, it offers insights that can really boost strategic decisions. (IBM, 2023).

Thinking of it like diving into a massive ocean of data, filled with everything from customer records to research results. Predictive analytics acts like a smart guide, helping companies find patterns and predict trends in all that information. (Gartner, 2023).

❖ The Convergence of Big Data, Data Science, and Predictive Analytics

The richness of big data and data science is incredibly connected to predictive analytics. Organizations today are dealing with large amounts of information, often residing in isolated data silos throughout the enterprise (Manyika et al., 2017).

Data scientists, who can be thought of as the modern alchemists of our time, are using cutting-edge algorithms like deep learning and machine learning to make sense of the huge amounts of data we have today (James et al., 2013). These tools, such as logistic regression, linear regression, neural networks, and decision trees, help them uncover hidden patterns and make surprisingly accurate predictions about what might happen in the future. (Brownlee, 2023).

In addition, some models use the first prediction class and provide deeper insights into the feedback cycle. (Fawcett, 2006).

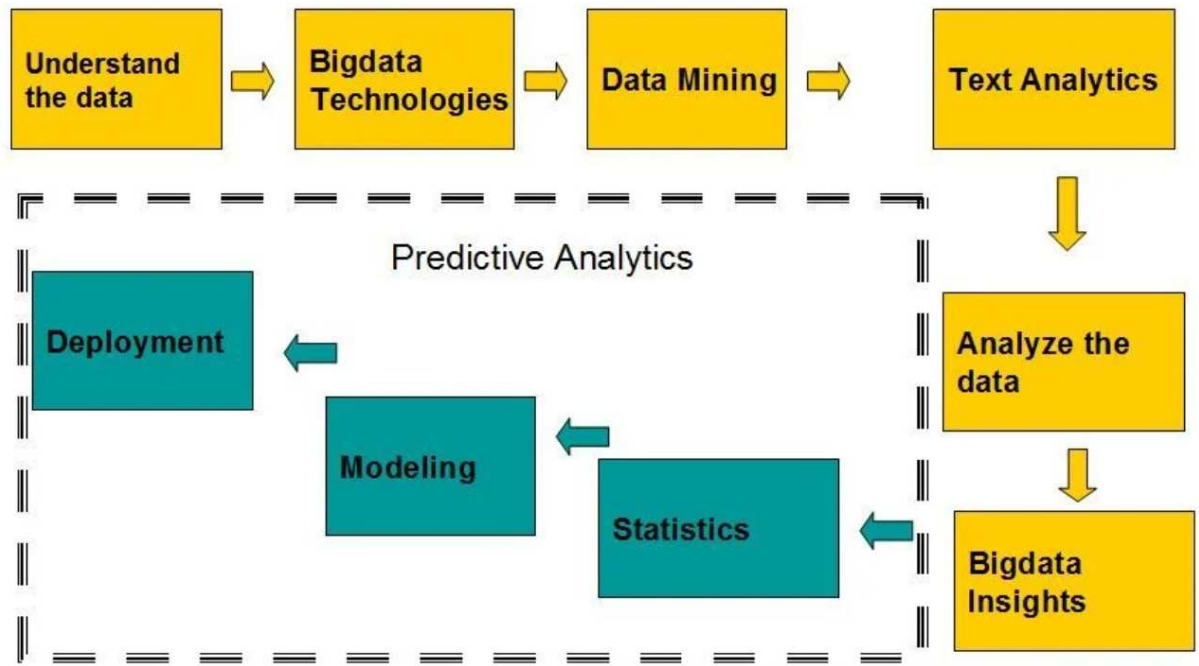


Figure 10: Big data and Predictive Analytics processing

Source: “BIG DATA ANALYTICS AND PREDICTIVE ANALYTICS”

❖ Transforming Data into Actionable Insights

Looking in detail, predictive analysis allows companies to go beyond simple objective data analysis but to make real predictions.

Thanks to the great usefulness of data, companies are able to prevent risks, exploit opportunities and enter an increasingly complex market. Below are some concrete examples of how companies use this type of analysis to gain a competitive advantage:

- Amazon utilizes predictive analytics to recommend products to customers based on their purchase history and browsing habits.
- Netflix leverages predictive analytics to automatically generate movie and TV show recommendations for each user.

- American Express uses this type of analysis to prevent credit card fraud from occurring
- Nike utilizes predictive analytics to develop new products and ideas based on customer data.

❖ Pros and cons of predictive analytics

The benefits of using predictive analytics to analyze customer behaviors are numerous:

- Advanced business decision making: Data-driven insights to inform more informed strategic business decisions
- Increased Efficiency: Automation of data analysis tasks frees up time and resources for other endeavors.
- Enhanced Customer Experience: Personalized customer interactions and enhanced customer service.
- Increase in sales and earnings: there is a constant increase in sales, greater customer loyalty and also a reduction in prices.

However, to follow the path to success with predictive analytics requires an acknowledgment of challenges. The accuracy and efficiency of such models varies depending on the quality of the data they are trained on. (James et al., 2013).

Furthermore, it's crucial to handle ethical considerations and data privacy concerns related to consumer information with care. This approach helps build trust. Additionally, some organizations might need to set up training programs to ensure their teams have the necessary skills to implement these solutions effectively.

2.3.4. SEO and SEM: search engine optimization and advertising campaigns

In the ever-evolving world of digital marketing, Search Engine Optimization (SEO) and Search Engine Marketing (SEM) are key to boosting your website's visibility and attracting organic traffic.

SEO focuses on increasing website traffic through unpaid, organic search results. It involves tweaking website to rank higher in search engine results without relying on paid ads. Meanwhile, SEM combines both free and paid strategies to draw visitors to the site. This includes using search advertising platforms like Google Ads to increase visibility through a blend of organic and paid channels, such as search advertising on platforms such as Google Ads (“SEO Vs. SEM: How The Two Work Together To Optimize Brand Visibility”).

By using a combination of strategies, SEO and SEM aim to increase a website’s ranking in search engine results pages (SERPs) for relevant keywords, ultimately driving visitors to target has come to the web (Paul Roetzer and Mike King, Marketing with AI, 2022).

SEO VS. SEM

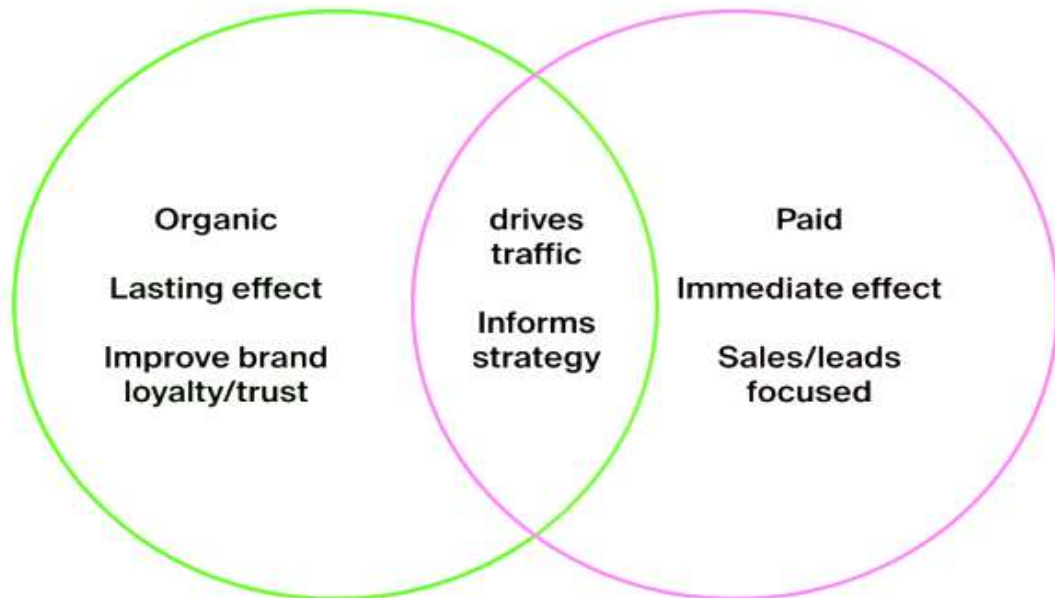


Figure 11: SEO vs SEM

Source: “SEO Vs. SEM: How The Two Work Together To Optimize Brand Visibility”

❖ The Role of AI in SEO Transformation

AI algorithms are completely changing the game for SEO by digging through huge amounts of data to find patterns and trends. This lets them evaluate the quality of current content, suggest improvements to make it more search engine-friendly, and spot new and trending keywords.

AI is also a game-changer for link building. It helps find high-quality backlink opportunities, analyze link profiles, and even automate the process of activating backlinks. Advanced algorithms like RankBrain and BERT (Bidirectional Encoder Representations

from Transformers) constantly keep an eye on changes in search engine algorithms, making sure SEO strategies stay up-to-date with the latest ranking factors and user behaviors.

❖ AI-Powered SEM: Enhancing Campaign Performance and ROI

Artificial Intelligence isn't just reshaping SEO—it's also revolutionizing Search Engine Marketing (SEM), which includes paid advertising on search engines. Platforms like Google Ads, Bing Ads, and others offer a range of ad options such as pay-per-click (PPC) and display ads. AI is empowering SEM professionals to fine-tune campaigns, improve targeting, and get the most out of their investments across these channels.

2.3.5. Social Media Marketing: Management and optimization of social media channels

Social media platforms are deeply ingrained in our daily lives, playing a ubiquitous role in today's digital world. Big names like Facebook, Instagram, Twitter, and YouTube have completely transformed how we connect and communicate globally, breaking down barriers and fostering connections worldwide.

The shift in communication has profoundly impacted businesses, creating a vibrant environment filled with both opportunities and challenges.

❖ Unveiling the Audience: The Power of AI

When navigating the digital realm of social media, it's crucial to have a strong grasp of target audience. Artificial intelligence (AI) has been the cornerstone that has facilitated this effort. Through AI tools, marketers gain valuable insights into the ever-changing preferences, trends, and interests of their audience. Cutting-edge AI platforms have revolutionized how we monitor social media, providing businesses with essential information on market sentiments, opinions, and emerging trends. Armed with this wealth of data, companies can continually refine and evolve their marketing strategies to stay ahead. (The State of Social Media Marketing in 2024: A Data-Driven Report)

❖ An Arsenal of AI-Powered Tools

AI-powered social media tools offer sophisticated capabilities for businesses:

- **Tracking and Detection:** In social media monitoring, these platforms excel at tracking conversations about brands or companies in real-time. This allows businesses to promptly engage with customers by addressing questions, comments, and concerns, thereby enhancing

customer interaction quality. (Sprout social, 2023:How to Use Social Media Listening to Improve Your marketing)

- Sentiment Analysis: AI-enabled sentiment analysis provides valuable insights by categorizing social media sentiment as positive, negative, or neutral. This helps companies gauge public perceptions of their products and services, enabling them to identify areas for improvement and capitalize on emerging opportunities (Chattermill - The Ultimate Guide to Sentiment Analysis)
- Trend and Topic Identification:: AI platforms excel in identifying emerging trends and topics from social media discussions. This capability enables companies to align their marketing strategies with current industry issues, meeting customer needs and expectations effectively (Helen Andrews, How to Use Social Media Trends to Inform Your Marketing Strategy, 2024)
- Competitive Intelligence is all about using AI platforms to peek into what competitors are up to on social media. It gives us a real edge by showing how competitors position themselves, their smart moves, and where they might be vulnerable. This helps us shape our own marketing strategy wisely.
- Influencer Identification: AI does an amazing job finding the perfect influencers in any industry or niche. Knowing this lets us team up strategically with influencers who can boost our brand's visibility and really connect with our target audience (Jasmine Williams, How to Find the Right Influencers for Your Brand,2024)

By leveraging the power of AI, companies can gain a deeper understanding of their target audience, catch trends early, fine-tune our marketing plans, and build genuine relationships with influencers. It's not just about numbers; it's about making real connections that drive our brand forward.

3. METHODOLOGY

3.1. The Approach

The path taken to develop the dissertation is based on the topic of the impact of artificial intelligence in digital marketing.

The desire to analyze this topic arose from my previous dissertation during my bachelor degree which was the risks and opportunities of big data in digital marketing; moreover, during my academic background I was able to undertrain an internship in Brazil regarding marketing.

Furthermore, as long as I was attending my master degree I had the possibility to take big data and digital marketing courses, which increased my interest for marketing.

The passion for this topic pushed me further, thus I had the possibility to attend and to achieve a master program in social media management.

My ambition is to deepen my knowledge in the marketing analysis and strategy, in order to be able to deliver the right message to the right stakeholder, and to gain a match between demand and offer.

However, the importance of AI in the economic field and beyond cannot be ignored today, therefore I wanted to create a questionnaire to submit to a sample of over 100 people to gather their opinions on this topic as to their uses in digital marketing. Furthermore, the same questions will be subject to the most well-known generative AI, which may also have a different perspective, and these two studies will eventually be compared.

3.2. Qualitative and Quantitative research

In order to conduct research effectively, there are various methods to collect the necessary data, to study and analyze the topic. Key methods include quantitative and qualitative methods, both of which are necessary and effective for a successful research effort. (Madisa, 2019)

The selection of the most appropriate method depends on the nature of the research being conducted, to ensure that errors due to the choice of an inappropriate method are minimized, as this choice greatly influences the results (Madisa, 2019).

Quantitative methods use measurable statistical facts to support research, often referred to as statistical data due to their ability to be quantified. This information provides a higher level of insight, as qualitative information can also be converted into statistical form, which is typically obtained through closed-ended questions that elicit short answers.(DeFranzo, 2011).

Qualitative data, in contrast, focus on extracting broad implications rather than quantifying data. Individual thoughts and ideas are examined in depth, making them difficult to measure accurately due to their psychological nature. (DeFranzo, 2011).

The following figure illustrates the main differences between these two methods of data analysis.

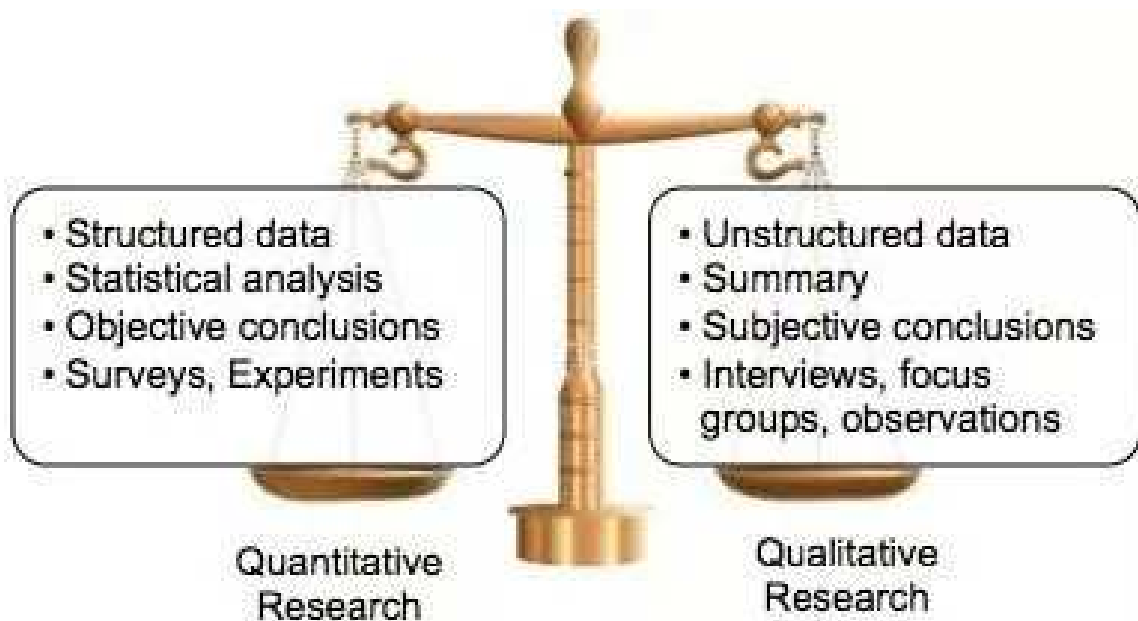


Figure 12: Quantitative vs. Qualitative Research:

Source: "Quantitative vs. Qualitative Research: What's the Difference?"

In this thesis, both types of research - quantitative and qualitative - will be considered. Concerning the questionnaire that has been submitted to a sample of individuals, most questions were designed to obtain statistical data, with the exception of a couple of questions allowing for more elaborate responses.

For this purpose, quantitative research uses numerical data in order to study statistical or experimental situations

Moreover, thanks to this method of standardized data collection, quantitative analysis also aims to minimize potential sources of distortion and increase reliability. (DeFranzo, 2011).

Furthermore, although quantitative research aims at accuracy in data measurement and analysis, it also attempts to generalize the results of a sample to yield findings related to the group it extends beyond the particular sample studied. (DeFranzo, 2011).

The main objective of quantitative analysis is to measure and identify the number of variables, relationships and patterns in the data. Among the distinctive features of this type of research is its objectivity, which focuses on perceived and measured probabilities rather than subjective experience. (Jain,2023)

In quantitative research, it is followed a structured and systematic approach to gather and analyze data. This involves using clear variables, measures, and research questions.

Another important aspect is using statistical data to describe and analyze the phenomena that is studied. It relies on techniques like statistical analysis, surveys, and experiments to do this. These methods help to reduce any biases in the results, making them more reliable (Jain, 2023).

Furthermore, quantitative studies often include large sample sizes. This ensures that the findings are statistically significant and can be applied more broadly to the general population.

The quantitative approach is based on deductive reasoning, as its aim is to test specific inferences drawn from existing knowledge and assumptions. Another aspect is generalizability; the aim, of course, is to extend the results of the sample to a larger population, seeking to reach findings that apply to different groups beyond the specific sample studied . (Jain,2023)

Some advantages of quantitative research have emerged, such as reliability, objectivity, and comparability of results, as well as the ability to process large volumes of data quickly and indeed, because of these advantages, are considered as it is one of the most important research methods.



Figure 13: Quantitative research characteristics

Source: “Quantitative Research: What It Is, Practices & Methods”

Considering that the thesis aims to submit open questions to Generative AI, it can be said that for this part a qualitative analysis will be carried out, although I am aware that cannot be an emotional touch from the respondent, since the questions will be submitted to machine learning. In fact, qualitative research proves beneficial in situations where a phenomenon lacks comprehensive understanding and when the analysis involves significant variations. (Edwards and Holland, 2013)

Three categories of interviews can be distinguished based on varying levels of flexibility, as depicted in the figure below:

- Structured Interview
- Semi-structured Interview
- Unstructured Interview



Figure 14: Types of Interviews

Source: “Types of Interviews. Ann-Murray Brown Monitoring, Evaluation and Facilitation”

The structured interview stands out as the most rigid among the trio. Its rigidity manifests in presenting the interviewee with a series of open-ended questions in a predetermined sequence. Consequently, although respondents have some leeway in their responses, all participants are directed through the same sequence and approach to provide pertinent insights on a topic. Thus, it can be viewed as a fusion of quantitative and qualitative methodologies. While questions are standardized - being posed identically to all candidates -

the information gleaned remains unstructured, as each interviewee responds based on their individual experiences and knowledge. (Corbetta, 1999)

In contrast, a semi-structured interview describes detailed questions that guide the conversation or key points that guide the interview from beginning to end, which is why it is considered structured but, unlike a structured interview mentioned earlier, there is no formal policy to follow this procedure. (Spina, 2018).

Unstructured interviews do not have a predefined structure; Instead, it's about the broader topic that's central to the discussion. As a result, each interview proceeds separately, as there is no specific set or detailed questions to ask. In this process, the interviewer establishes an overarching topic, allowing the interviewee to freely discuss their thoughts, opinions, and knowledge. (Spina, 2018).

While the questions asking generative AI are open, however, it cannot be considered either a semi-structured interview or even an unstructured interview, mainly for two reasons: first, even though we don't know the answers yet, still they are expected to be quite precise and faithful to the questions asked. The second reason lies in the fact that there is no interaction with a human being, where emotion often plays an important role in responding, because who is being interviewed is actually an artificial intelligence.

Therefore, considering the type of interview conducted and above all considering who the questions are addressed to, we are much more faithful to a structured interview, as the same questions will be asked and in the same order to all the generative AI.

3.3. Data Credibility

Given the progress made so far, it can be said that the research question is valid for the purposes of conducting a study for a thesis. In this regard, in order to provide a comprehensive response and feedback, it is required to gather significant knowledge through the reference to the theoretical framework. Furthermore, it is as well necessary even gathering pertinent data via suitable interviews. Regarding this type of study, the method used to conduct the interviews is structured.

The decision was made to opt for this interview format due to the need, as previously mentioned, to utilize a standardized questionnaire to gather responses from a sample group; indeed, in this format, there is no individual acting as the interviewer. Regarding the questions posed to the AI, they will follow a consistent sequence.

It is also important that this approach is used to respect the reliability and validity of the data. In fact, on the one hand, probabilistic sampling is used to generate information, and on the other hand there will be a sort of interpretation from the open answers given by AI.

Regarding the latter, such as the data provided by the AI, the next chapter will go into the validation of the information in the analysis phase. Of course, given how unusual this situation is to "ask" AI questions, there will be a deeper understanding of the potential benefits when reprocessing the answers

Right from the start, the ultimate goal of the issue was to give a complete vision of the influence of AI on the field of digital marketing. Therefore, defining what the purposes are is important to answer the research question correctly.

This became important as it simplified how to effectively structure the question; therefore, this ensured that the research data was credible. The next chapters will focus on the analysis conducted in the research and its effectiveness.

4. ANALYSIS

The chapter dedicated to the analysis represents one of the crucial chapters of the thesis as it aims to collect, analyze and process the results obtained in order to provide an exhaustive answer to the research question.

4.1. Findings

4.1.1. The data collected through survey

The data analyzed in this chapter were collected through a questionnaire administered to 105 people. In order to obtain as many results as possible, there was no specific selection criteria for the sample; rather, it was decided to include all participants regardless of a specific academic background or industry.

The only imposed filter pertains to age, as the questions were directed only to individuals over 20 years old, assuming that this age group would encompass at least high school graduates. The reason behind the age criterion was to choose individuals over 20 who are more likely to have at least some basic knowledge of the marketing sector, either from school or work experience. This ensures that the respondents have the necessary context and familiarity with marketing concepts to provide informed and relevant answers.

Age	
● 20 - 25	3,8%
● 26 - 35	84,8%
● 36 - 45	8,6%
● over 45	2,9%

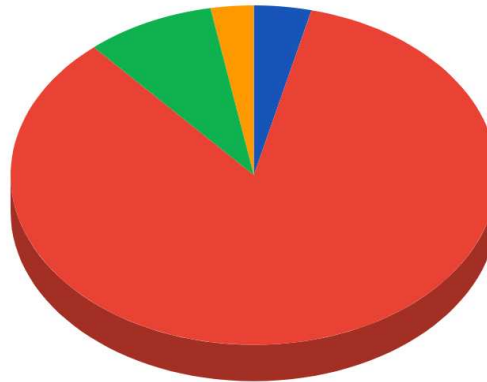


Chart 1: The age of the respondents

As it can be deduced from the above pie chart, out of the 105 responses obtained, it can be affirmed that the majority of responses were provided by individuals aged between 26 and 35, totaling 89 responses, representing 84.8% of the respondents. The second group, although significantly lower in comparison to the first, consisted of individuals aged between 36 and 45, accounting for 8.6% of the total. The third group, respondents aged 20 to 25, and the fourth group, those over 45 years old, had fewer respondents, with percentages of 3.8% and 2.9% respectively.

It was considered interesting to collect another criterion for analyzing the responses, namely the level of education of the individual. From this study, it shows that most of the respondents hold at least a bachelor's degree. This finding is not particularly surprising, as the questionnaire faithfully reflects the age of the participants. Specifically, 68.6% reported having a Master's degree and 20% reported having a Bachelor's degree. Of the remainder, 7.6% reported having a high school diploma, and 3.8% ultimately earned a Ph.D.

Academic Background

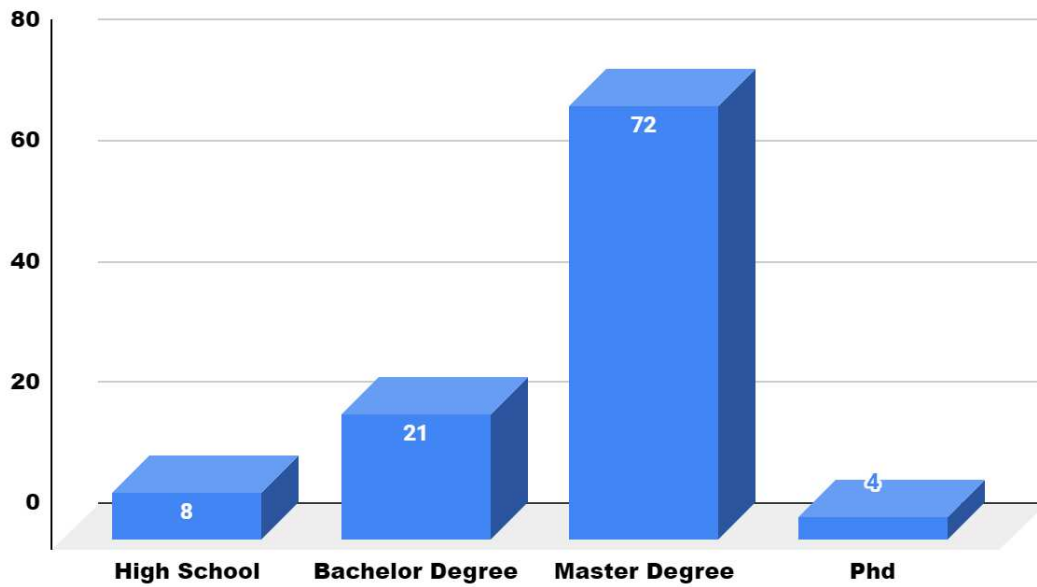


Chart 2: The academic background of the respondents

In conclusion, it was necessary to professionally involve those who conducted the research.

As shown in the following bar chart (Chart 3), the Finance sector stands out as the most prominent, with 42% of individuals working in this industry. The second position, significantly behind the first, is shared by the Healthcare and Retail sectors, each at 10%. Marketing ranks third, with 9% of individuals employed in this field.

It is worth mentioning also the industries represented by Technology (8%) and Manufacturing (7%) which stand just below the third place, unlike the other sectors which are significantly less represented.

Work Industry

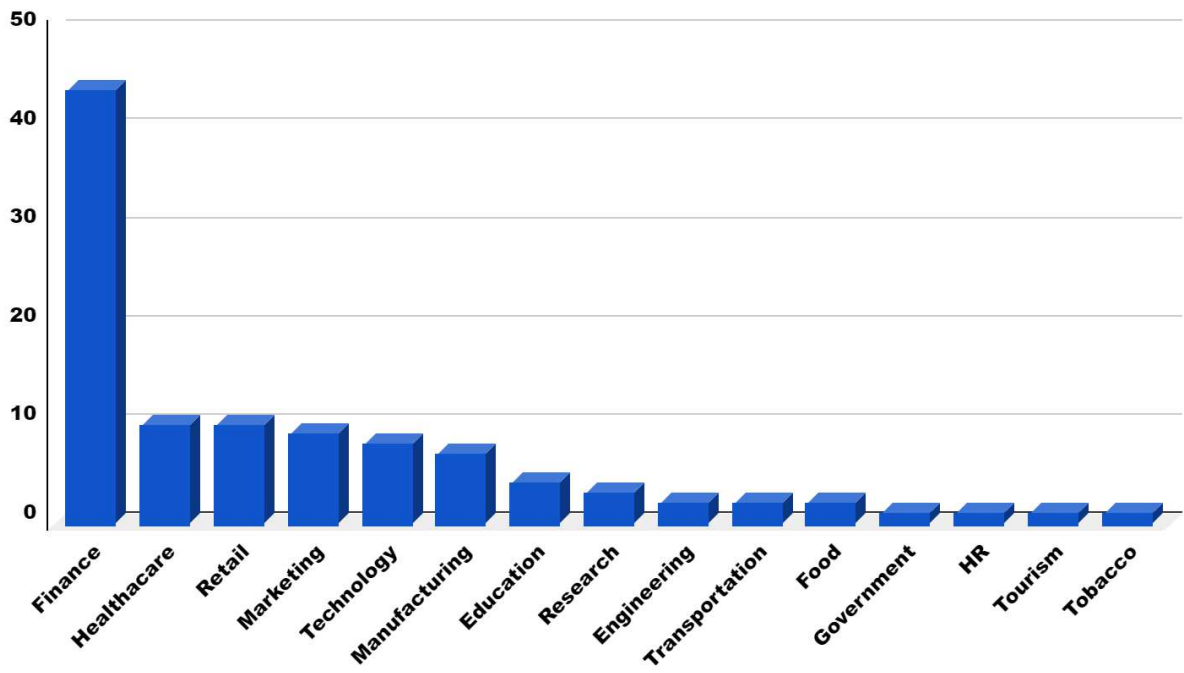


Chart 3: The work industry of the respondents

4.1.2. The data collected from Generative AI

The data to be analyzed was first assessed by identifying the most popular generative AI at the time, followed by whether it would be feasible to ask questions to obtain feedback.

Therefore, the only generative AI that can satisfy the requirement of feedback is the following.

- ❖ Chatgpt
- ❖ GPT-4
- ❖ Gemini
- ❖ Cohere

These paragraphs present an in-depth study of the data and its outcomes, and how it is possible to draw perspectives from generative AI.

By comparing and contrasting these concepts, the goal is to provide a multi-dimensional understanding of human emotions on how AI is changing the marketing industry and understanding if people actually perceive the associated risks and threats.

Meanwhile, by posing the same questions to four different virtual assistants we want to exploit the capabilities of AI in providing valuable feedback as the answers of the respondents in this case, as stated in the previous chapters, are brand new based on the data fed into their algorithms.

Consequently, this approach also serves as a means for us to figure out whether these four entities match in their responses or if there is any significant disparity among them.

4.2. People's perspective

Although it is acknowledged that the survey was predominantly structured with closed-ended questions that did not anticipate elaborated responses, the initial question posed to individuals ("*What do you think when you hear the term AI?*") aimed to immediately elicit an initial perception of AI.

As evidenced by the word cloud below, words such as "*Future,*" "*Innovation,*" "*Artificial,*" "*Intelligence,*" "*Evolution,*" "*Technology,*" and so forth stand out prominently. From the replies, it is clear that respondents commonly associate AI with notions of future advancements, innovation, technological progress, and recognise the evolving nature of this field. Usually, these terms evoke the realms of robotics and the digital world, which are often conceived as something lying ahead in the future, something that, with the work and dedication of the present, we aim to achieve in the future.



Figure 15: The world cloud

The questionnaire includes 7 closed-ended questions, as previously outlined, where respondents rate their opinion on a scale from 1, meaning to strongly disagree, to 5, signifying to strongly agree.

Regarding the impact of AI in digital marketing, it emerged through the questionnaire that individuals strongly believe AI can improve targeting accuracy in marketing. In fact, on a scale of values from 1 to 5, 44.8% of respondents voted 4 and 38.1% voted 5.

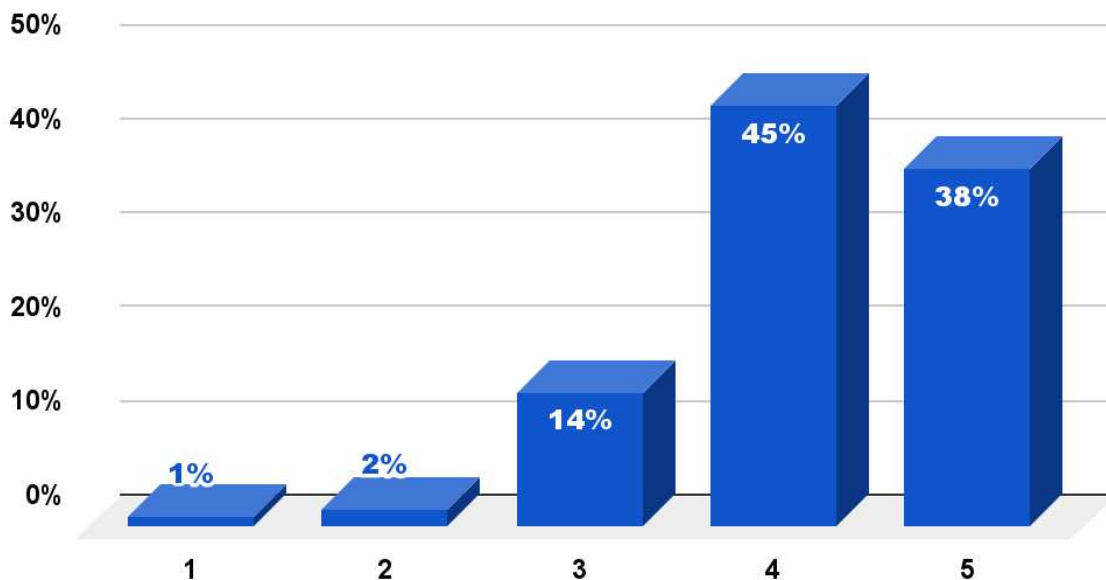


Chart 4: Do you believe AI can improve targeting accuracy in marketing?

Even in the subsequent question, namely whether "*AI can personalize customer experience more effectively,*" people's perception strongly aligned with AI having an impact on this matter; indeed, 38.1% voted 4, while 34.3% indicated they strongly agreed.

As can be seen from the graph, 23% abstained from responding. This is perhaps because, despite knowing the pros of AI, they worry about it being too involved, putting data privacy at risk, for example.

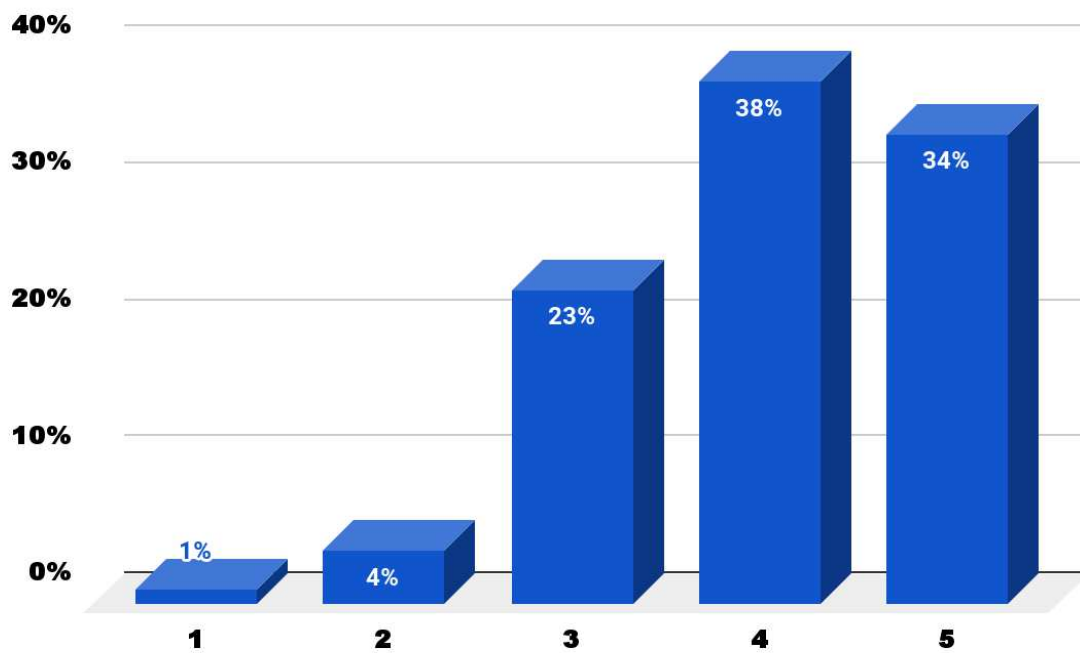


Chart 5: Do you think AI can personalize customer experience more effectively?

As for the question of whether respondents thought *"AI can automate repetitive processes in marketing,"* the response was again strongly supported, with 52.4% voting 5, while 32.4% voted 4.

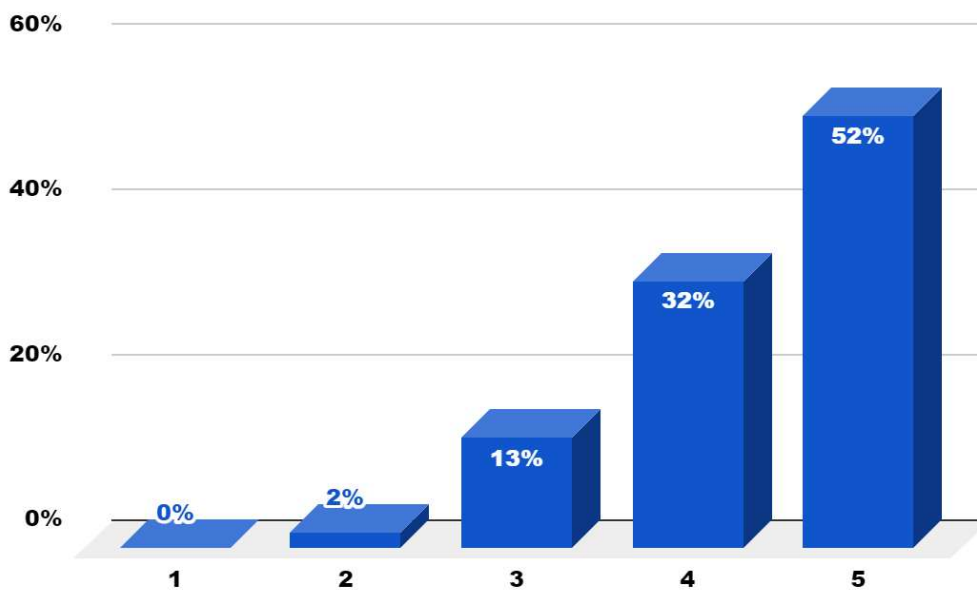


Chart 6: Do you think AI can automate repetitive processes in marketing?

Regarding people's perspectives on whether AI can effectively and promptly identify market trends and business opportunities, once again, individuals expressed their views clearly. A significant 41.3% voted 4, signifying strong agreement, while 28.8% opted for a 5, indicating even stronger affirmation. Interestingly, 22% expressed mixed feelings on the matter.

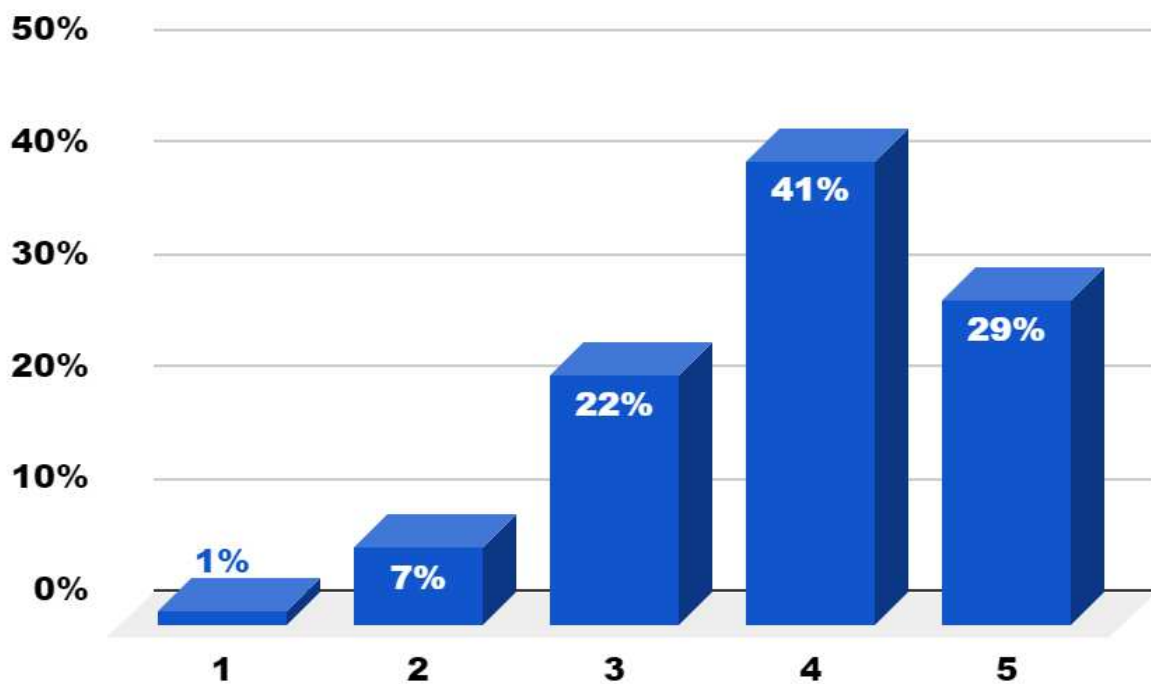


Chart 7: Can AI identify market trends and business opportunities in a timely and effective manner?

The next question was about data protection and privacy, so consideration was duly given to asking respondents for their views on this topic. Indeed, when it was asked about the possibility of customer data being used in AI could pose a privacy and security risk, it can be inferred that 31.4% were unable to indicate whether they agreed or disagreed, a neutral response that had not been so impactful in any of the responses so far. Meanwhile, 24.8% indicated 4, and a significant 31.4% affirmed they strongly agreed.

This feeling may be due to the fact that when personal or sensitive information is included in the presentation, one inadvertently puts one's privacy or that of others at risk for generative AI

Therefore, perhaps it can be emphasized that it is important to have a critical approach when applying AI to our lives in general, not just in digital marketing, because any significant privacy that will be shared in the future can deteriorate, because of this data availability for AI.

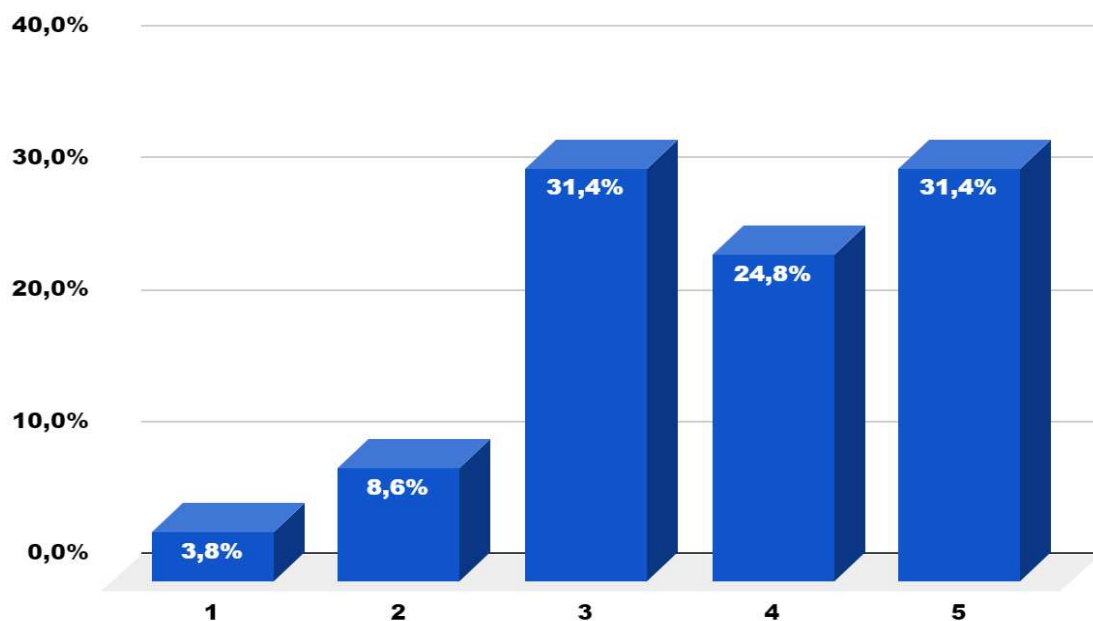


Chart 8: Do you think that the use of customer data in AI could pose privacy and security risks?

The question addressed whether the individual believed that AI could introduce discrimination or bias in business models. Interestingly, the majority of the respondents, 34.3% of them, were neutral on this issue, neither explicitly agreeing nor disagreeing.

This high percentage can be attributed to the fact that many respondents lack in-depth knowledge of the challenges surrounding AI and its business implications, thus preferring to abstain.

However, 37.9% of those interviewed understand the possible discrimination associated with biases and discrimination by AI algorithms.

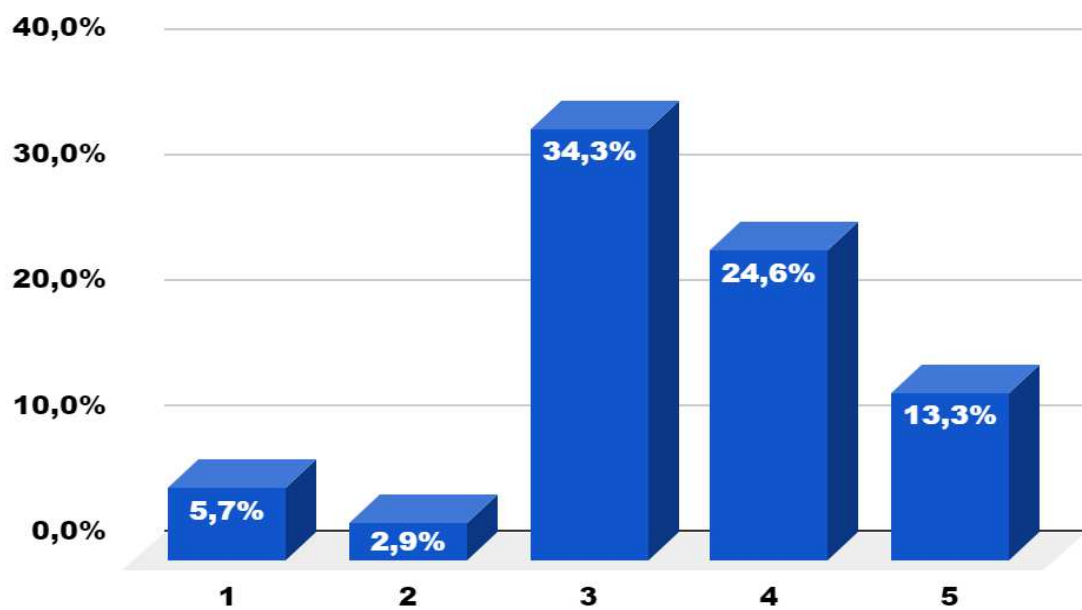


Chart 9: Do you believe AI can result in discrimination or bias in marketing models?

The last closed question the questionnaire aims to capture people's perception regarding whether AI could be a threat to employment in the marketing sector. From the responses received, it was observed that a large proportion of the respondents (representing 29.5%) preferred not to comment on this issue.

There could have been a variety of reasons for this hesitation, one of which could have been the composition of the sample group. As Chart 3 earlier shows, a large proportion of the respondents work in Finance.

Given their circumstances, some people may not be fully tuned into the potential effects of AI on marketing employment, and thus might opt not to share personal opinions.

This finding really underscores how important it is to take into account the backgrounds and expertise of the people participating in the survey when interpreting their responses.

However, despite the absence of about 30%, the perception is rather negative, as the remaining 36.2% voted 4, while 17.1% emphasized strongly agreeing.

It's evident that respondents are quite concerned about how AI could impact job roles in the marketing industry.

It's curious to see if these worries about AI's influence on job roles extend to other sectors, especially in terms of improving efficiency, enhancing decision-making, and fostering new opportunities for innovation.

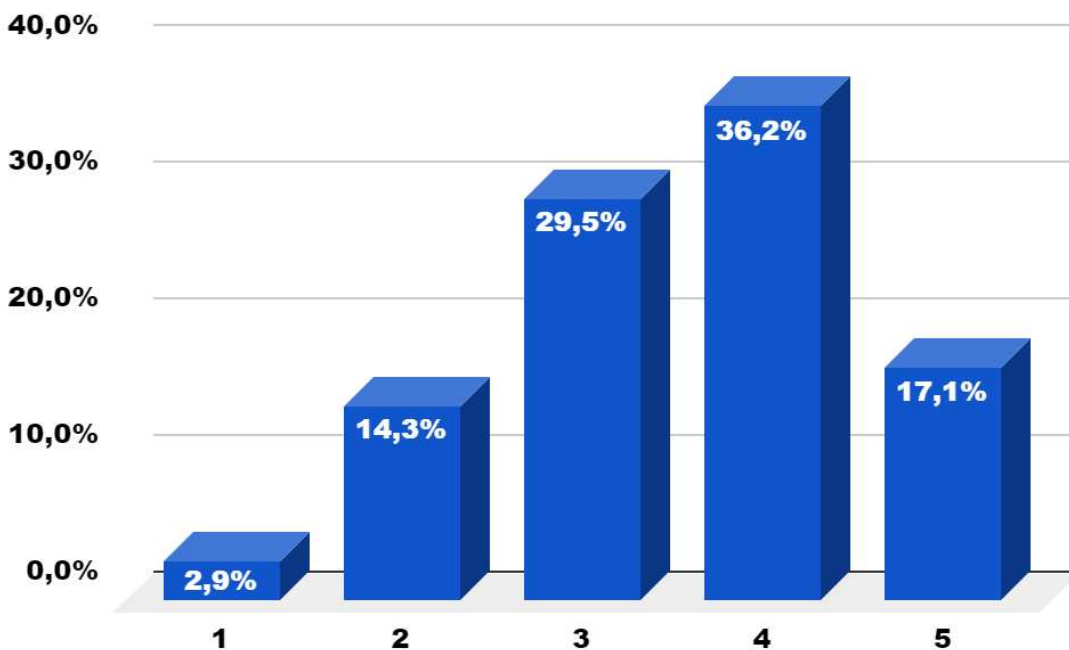


Chart 10: Do you think AI could threaten employment in the marketing sector?

The questionnaire ended with an open-ended question where individuals could freely write what they thought. The question posed was as follows:

“Do you see any limitations in the use of AI in marketing, especially for specific sectors or markets? If yes, which ones?”

To this question, among the 105 participants, 44.8% stated that they indeed perceive that the use of AI may have some limitations in marketing. 11.4% stated that they do not see any limitations in this regard, while 5.7% stated that they do not know if there can be any limitations regarding it. As for the remaining, namely 38.1%, no information was provided, as can be seen from the pie chart below.

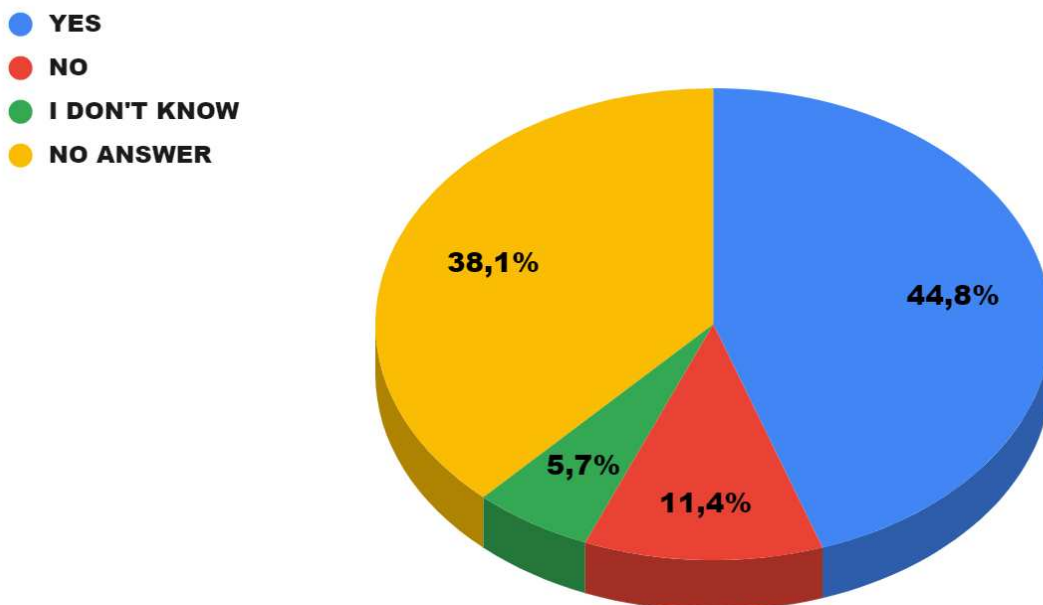


Chart 11: Do you see any limitations in the use of AI in marketing, especially for specific sectors or markets?

Considering the responses of those who stated to see limitations in the use of AI in marketing (thus referring to 44.8% of respondents), to the second question, namely *“If yes,*

which ones?", the responses that received the most feedback are indicated in the following graph (Chart 12).

In particular, it should be noted that 27.7% identified lack of human contact as a major limitation. Legal issues emerge as another major concern, identified by 12.8% of respondents.

In addition, approximately 10.6% of participants pointed out specific challenges related to the Healthcare and Fashion sectors. Moreover, concerns about Privacy Violation and Customer Care were noted by 6.4% of respondents.

These findings highlight significant hurdles in incorporating AI into marketing practices and underscore the importance of addressing these issues ethically to ensure responsible AI use in the marketing field.

The main reasons for the relationship between Artificial Intelligence and Ethics can be attributed to at least three factors: transparency, fairness, and accountability

Transparency is all about ensuring we truly understand how Artificial Intelligence makes its decisions. Fairness means we stay impartial when evaluating the criteria guiding these decisions. And accountability involves recognizing and carefully considering the potential legal consequences that might arise from using AI, both directly and indirectly (ESG360, 2024)

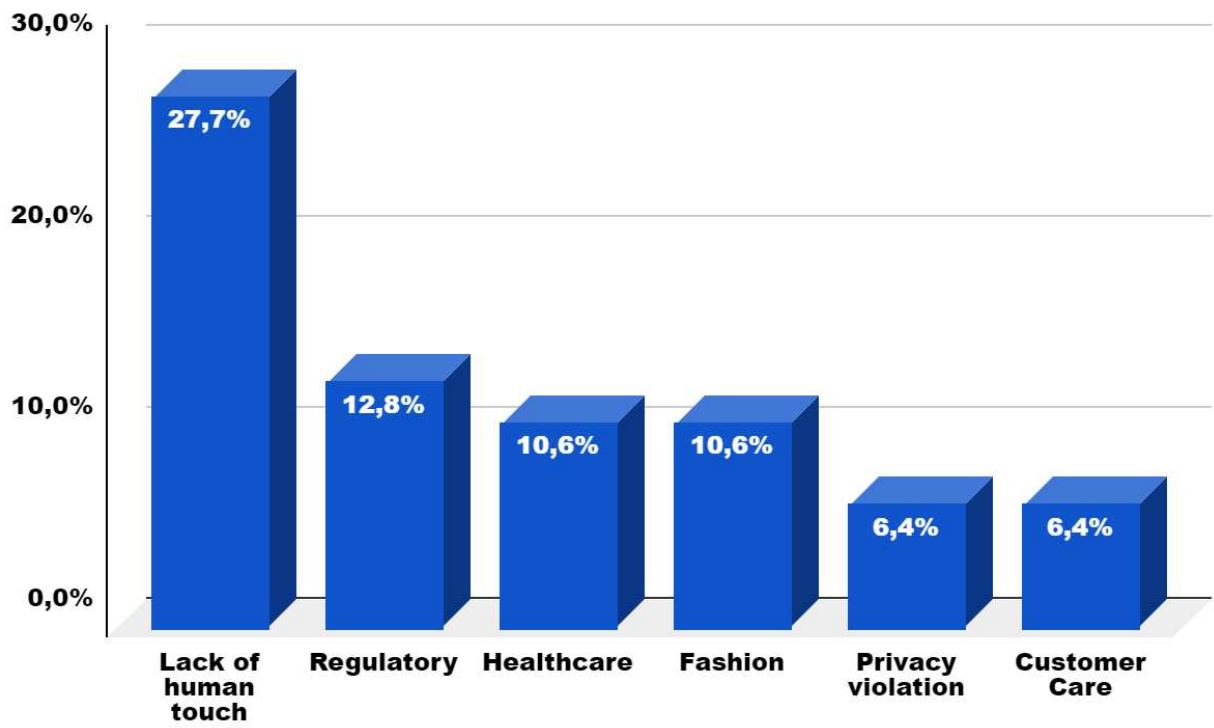


Chart 12: Sectors where people see limitations.

4.3. Generative AI perspective

The objective of this paper is to check the insights obtainable from generative AI regarding the perception of the influence of AI on the field of digital marketing.

To this end, the same questions were posed to the 4 Generative AI (Chatgpt, Gtp-4, Gemini and Cohere), which can answer in text. Unlike the survey, where only the first and last questions were open-ended, in this case all questions were structured to elicit “free responses.”

To the first question: “*What do you think when you hear the term AI?*” the most immediately recognizable words, besides “AI,” are: “*Intelligence,*” “*System,*” “*Human,*” “*Learning,*” “*Language,*” and “*Potential.*” These are terms closely associated with the world of robotics and advanced technology, precisely what generative AI encapsulates.

The word cloud reflects how AI “manifests” itself as a system that leverages elements of intelligence, technology, and human-machine interaction. In fact, all four, in response to the first question, agreed to point out that for them AI is basically “*a field of computer science dedicated to creating systems that can perform tasks that typically require human intelligence.*”

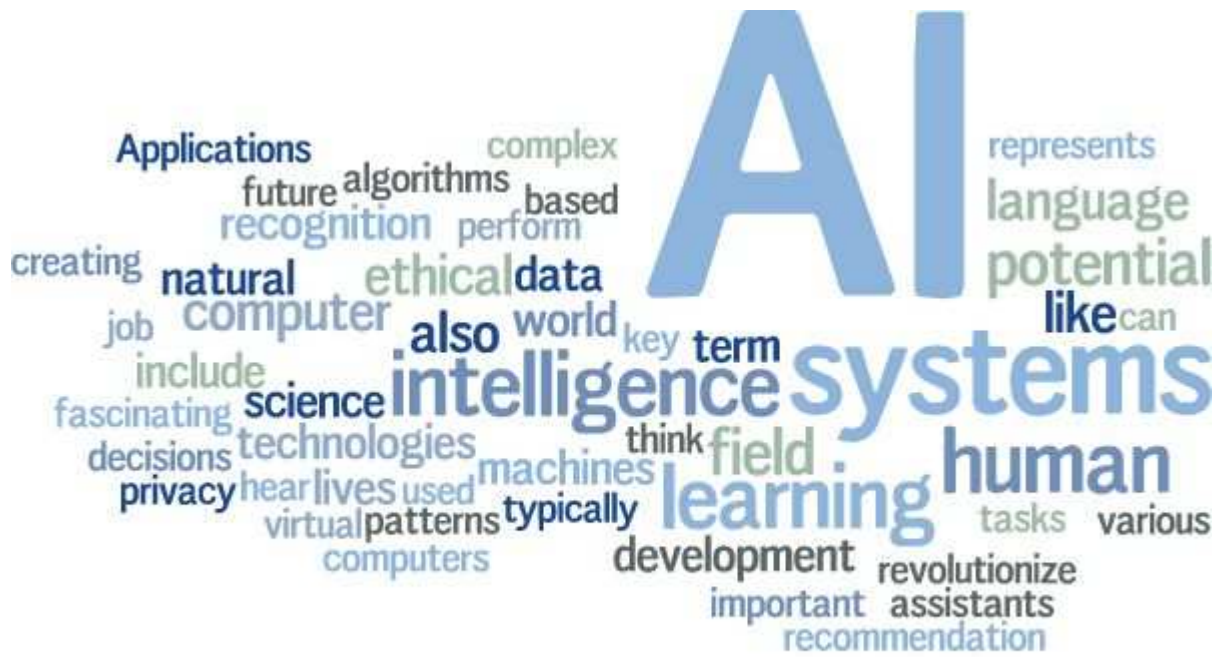


Figure 16: The world cloud 2

From this initial response, although a rather linear and almost academic feedback was expected, interestingly, what stands out is the personal reworking that has been conveyed. In fact, both ChatGPT and GPT-4 (which is just its upgraded version), as well as Gemini and Cohere, have begun to formulate a response by setting up a discourse as if they were providing a personal opinion, thus conveying a more welcoming dialogue.

In the table below, some excerpts from the provided responses will be presented, where one can perceive the intention to convey a personal touch to the given answer.

ChatGPT	<i>“When I hear the term "AI," I think of ...”</i>
GPT-4	<i>“When I hear the term "AI", several key concepts and dimensions come to mind”</i>
Gemini	<i>“AI to me represents [...] I am excited to see what the future holds for AI!”</i>
Cohere	<i>“When I hear the term "AI," or artificial intelligence, I think of [...] the term "AI" evokes a sense of excitement and curiosity for me [...]"</i>

Table 1: Personal response

Moreover, focusing for a moment on the responses provided by ChatGPT and GPT-4, it is noteworthy that in the former case, a complete albeit concise and clear response is provided, whereas concerning the upgraded version, there is a stronger perception that it has much more material and sources to draw upon to provide feedback to the questions posed.

It's essential to have detailed and thorough response that considers every aspect of the topic, right up to the conclusions. So, while ChatGPT might give a concise paragraph, GPT-4 would delve into a more extensive discussion, possibly extending to several pages.

GPT-4 is the latest version developed and released by OpenAI. One key difference lies in the model size: ChatGPT has 175 billion parameters, whereas GPT-4 has 10 trillion parameters. As a direct consequence, this improvement also affects efficiency since GPT-4 offer more sophisticated responses. Indeed, better understanding of resource requests reduces the likelihood of unnecessary and incorrect responses. As a result, the GPT-4 is more reliable in the information it provides. (Osatech, 2024)

This is followed by the second question *"Do you believe AI can improve targeting accuracy in marketing?"* launched and as expected the feedback is positive and affirmative; therefore, all four agree that AI can definitely have an impact on this. Excerpts from the responses are presented below.

<p>ChatGPT</p>	<p><i>"Absolutely! [...] By analyzing large datasets of customer behavior, preferences, and demographics, AI algorithms can identify patterns and trends that humans might miss. This allows marketers to better understand their audience and tailor their messages accordingly. AI-powered tools can segment audiences more effectively, personalize marketing campaigns, and optimize various aspects of the marketing process, such as ad placement, timing, and content. [...]"</i></p>
<p>GPT-4</p>	<p><i>"[...] AI has the potential to revolutionize marketing by significantly improving targeting accuracy. Through advanced data analysis, personalization, predictive analytics, and automation, AI enables more efficient and effective marketing strategies. However, it is essential to</i></p>

	<i>address the associated challenges, particularly regarding data privacy, bias, and the integration of AI technologies, to fully realize its benefits”</i>
Gemini	<i>“[...] AI can be used to personalize marketing messages and recommendations for each individual customer. This can significantly improve engagement and conversion rates. For instance, imagine an e-commerce platform using AI to analyze a customer's browsing history and purchase data. [...]”</i>
Cohere	<i>“ [...] In summary, AI has the potential to revolutionize targeting accuracy in marketing by leveraging data analysis, predictive analytics, personalization, and real-time optimization. Marketers can deliver more relevant, timely, and effective messages to their target audiences, improving campaign performance and enhancing the overall customer experience. ”</i>

Table 2: The impact of AI in targeting accuracy in digital marketing

Another very particular aspect that emerged from the answers was that both Cohere and GPT-4 allowed a more accurate study than ChatGPT or Gemini, which nonetheless provided rather detailed information.

The third question aimed to understand whether they believed that the use of AI could be able to personalize the customer experience more effectively. Once again, the answer was affirmative for all four, as can be inferred from some excerpts taken from their responses (Table 3). They highlighted the ability of AI to use detailed customer data to create highly customized experiences based on individual preferences and behaviors. This functionality allows hyper-personalization by customers, starting from product feedback to relationships with customer service, improving loyalty and satisfaction.

ChatGPT	<i>“Absolutely, AI has tremendous potential to personalize customer experiences more effectively than traditional methods. By leveraging vast amounts of customer data, AI algorithms can create highly tailored experiences that cater to the individual preferences, behaviors, and needs of each customer. [...]”</i>
GPT-4	<i>“Yes, AI can personalize customer experience more effectively than traditional methods. Here's a structured explanation of how AI achieves this and the benefits it offers:</i>

	<p><i>Data Collection and Analysis [...] Advanced Personalization Techniques [...] Customer Segmentation and Targeting [...] Enhanced Customer Interactions [...] Predictive Analytics and Proactive Engagement [...] Churn Prevention [...] Improving Customer Satisfaction and Loyalty [...]</i></p> <p><i>AI is highly effective in personalizing customer experiences by leveraging advanced data analysis, real-time processing, and predictive analytics. It enables more precise targeting, dynamic content customization, and proactive engagement, which can significantly enhance customer satisfaction and loyalty. However, it is essential to address challenges related to privacy, security, and bias to ensure that AI-driven personalization is both effective and ethical.”</i></p>
<p>Gemini</p>	<p><i>“I believe AI has the potential to be a game-changer in personalizing the customer experience. Here's why: [...]</i></p> <p><i>Hyper-personalization: AI can tailor the entire customer journey, from product recommendations and marketing messages to content and customer service interactions. This creates a sense of one-on-one attention that fosters loyalty and satisfaction.</i></p> <p><i>Real-time Adaptation: AI can constantly learn and adapt based on customer interactions. This allows businesses to refine their personalization strategies in real-time, ensuring the experience remains relevant and engaging. [...]</i>”</p>
<p>Cohere</p>	<p><i>“Yes, artificial intelligence (AI) has the potential to revolutionize the personalization of customer experiences and make them significantly more effective. Here's how AI can enhance personalization in various industries and interactions:</i></p> <p><i>Retail and E-commerce: [...] Banking and Finance: [...] Healthcare: [...] Travel and Hospitality: [...] Media and Entertainment: [...] Education: [...]</i></p> <p><i>In summary, AI has the potential to transform the way industries interact with customers, offering personalized experiences that cater to their unique needs, preferences, and behaviors. By leveraging data analysis, machine learning, and context awareness, AI-driven personalization can create more effective, engaging, and satisfying customer experiences across a wide range of sectors.”</i></p>

Table 3: The impact of AI in personalizing the customer experience more effectively

Moreover, Coher and GPT-4 reported data pertaining to the issue. Cohere, above all, developed the response in the best possible way, taking various areas into account.

By analyzing answers from the following questions, such as *"Do you think AI can automate repetitive processes in marketing?"* again, the responses are obviously quite positive, as for all of them, AI has had a visible impact on this issue, as can be inferred from some of the responses below::

ChatGPT	<i>"Absolutely, AI is exceptionally adept at automating repetitive processes in marketing. Many marketing tasks involve repetitive actions that can be time-consuming and prone to human error. AI can streamline these processes, allowing marketers to focus on more strategic and creative aspects of their work. [...]"</i>
GPT-4	<p><i>"Yes, AI can significantly automate repetitive processes in marketing, leading to increased efficiency, reduced costs, and improved accuracy. Here's a structured analysis of how AI achieves this and the benefits it offers:[...]"</i></p> <p><i>AI can effectively automate a wide range of repetitive processes in marketing, from data management and campaign creation to customer interaction and performance tracking. This leads to increased efficiency, cost savings, and improved accuracy. However, successful implementation requires addressing integration challenges, ensuring data quality, and maintaining human oversight to align AI-driven actions with strategic goals."</i></p>
Gemini	<i>"Absolutely, AI is a champion at automating repetitive processes in marketing.[...] Overall, AI is a powerful tool for automating repetitive tasks in marketing, allowing marketers to focus on more strategic initiatives and achieve greater efficiency and effectiveness."</i>
Cohere	<p><i>"Yes, artificial intelligence (AI) has the potential to significantly automate repetitive and time-consuming processes in marketing, increasing efficiency and allowing marketers to focus on more strategic tasks. [...]"</i></p> <p><i>In summary, AI has the potential to revolutionize marketing by automating repetitive processes, enhancing data analysis, personalizing customer interactions, and optimizing campaign performance. Marketers can leverage AI to work more efficiently, make data-driven decisions, and deliver more effective marketing experiences."</i></p>

Table 4: The impact of AI in automating repetitive processes in marketing

The fifth question was as follows: *"In your opinion, can AI identify market trends and business opportunities in a timely and effective manner?"* All agreed that *"AI can be highly*

effective in identifying market trends and business opportunities in a timely manner." As always, the responses given by Cohere and GPT-4 stand out for their thoroughness, although all four responses are comprehensive.

ChatGPT	<i>"AI algorithms are capable of processing vast amounts of data from various sources, including social media, news articles, consumer behavior, and economic indicators. [...]"</i>
GPT-4	<i>"Yes, AI can identify market trends and business opportunities in a timely and effective manner. [...] AI is highly effective in identifying market trends and business opportunities due to its ability to process large datasets, recognize patterns, and make real-time predictions. By leveraging advanced analytical techniques, AI provides businesses with timely and actionable insights that can drive strategic decision-making. [...]"</i>
Gemini	<i>"AI has strong potential to identify market trends and business opportunities in a timely and effective manner, but it's important to understand both its strengths and limitations: [...]"</i>
Cohere	<i>"Yes, artificial intelligence (AI) has the potential to identify market trends and business opportunities in a timely and effective manner, providing significant advantages to organizations across various industries. [...] AI has the potential to revolutionize how organizations identify market trends and business opportunities by providing faster, more accurate, and data-driven insights. By leveraging advanced analytics, pattern recognition, and predictive capabilities, businesses can make more informed decisions, adapt to changing market conditions, and seize opportunities ahead of their competition."</i>

Table 5: The impact of AI in identifying market trends and business opportunities in a timely and effective manner

Regarding the sixth question, in this case, a very delicate and equally important topic is addressed, namely the relationship between AI and data security and privacy. In fact, respondents were asked to answer the question *"Do you think that the use of customer data in AI could pose privacy and security risks?"* and all four agree that if not handled properly, privacy and security risks arise; although responses to Cohere and GPT-4 were, as always, more detailed.

It deserves particular attention as it is the perspective of responses testifying that the use of customer data in artificial intelligence (AI) systems does raise significant privacy and security concerns. These risks arise for a variety of reasons, including the potential for data breaches due to extensive data storage, abuse of aggregated data beyond intended use, and the sharing of data with third parties whose intentions are hard to know.

<p>ChatGPT</p>	<p><i>“Yes, the use of customer data in AI does pose significant privacy and security risks. When AI algorithms are trained on large datasets of customer information, there’s always a concern about the potential misuse or unauthorized access to that data.</i></p> <p><i>Some of the key privacy and security risks associated with the use of customer data in AI include: Data Breaches: [...] Data Misuse: [...] Algorithmic Bias [...] Lack of Transparency: [...] Regulatory Compliance: [...]”</i></p>
<p>GPT-4</p>	<p><i>“The use of customer data in AI poses substantial privacy and security risks. Addressing these risks requires a combination of robust technical measures, regulatory compliance, transparency, and ethical considerations. By implementing these strategies, organizations can harness the benefits of AI while safeguarding customer data and maintaining trust.”</i></p>
<p>Gemini</p>	<p><i>“Absolutely, using customer data in AI can pose significant privacy and security risks. Here’s a breakdown of the concerns:</i></p> <p><i>Privacy Risks: Data Collection and Use: [...] Data Inference [...] Algorithmic Bias [...]</i></p> <p><i>Security Risks: Data Breaches [...] Data Security Vulnerabilities [...] Model Poisoning: [...]</i></p> <p><i>By prioritizing privacy and security, businesses can leverage AI’s power while maintaining customer trust.”</i></p>
<p>Cohere</p>	<p><i>“[...] The use of customer data in AI systems raises ethical questions, such as the balance between innovation and privacy, the potential for surveillance capitalism, and the impact on human autonomy and decision-making.</i></p> <p><i>Mitigating these risks requires a comprehensive approach to data governance, security, and ethical AI development. Organizations should implement robust data protection measures, obtain informed consent, provide transparency, and offer individuals control over their data. Additionally, regular security assessments, data anonymization techniques, and ethical guidelines can help address these privacy and security concerns.</i></p>

	<p><i>In summary, while the use of customer data in AI offers significant benefits, it also introduces privacy and security risks that must be carefully managed to protect customers' rights, ensure data security, and maintain trust in AI-driven systems and services.”</i></p>
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Table 6: AI can pose privacy and security risks

The next question posed was *"Do you believe AI can result in discrimination or bias in marketing models?"* All four individuals concurred on the significance of this concern, as underscored by their responses detailed in Table 7.

AI algorithms trained on skewed datasets can lead to unjust treatment or prejudice against specific customer demographics (age, gender, ethnicity, etc.) . In order to reduce risk on top of these types, companies must adhere to strict data governance, transparency, obtaining informed consent, implementing strong security protocols, and adhere to ethical standards in AI development. It is important for companies to prove that their statistical models do not intentionally cause bias or prejudice in order to comply with relevant regulations such as the European GDPR (General Data Protection Regulation) or the CCPA (California Consumer Privacy Act).

ChatGPT	<p><i>“Yes, AI can indeed result in discrimination or bias in marketing models if not carefully designed and monitored. Bias in AI models can arise from various sources, including biased training data, flawed algorithms, or unintended correlations in the data. [...] To mitigate bias in AI marketing models, it's essential to take proactive steps [...]”</i></p>
GPT-4	<p><i>“[...] AI can indeed result in discrimination or bias in marketing models due to biased training data, feature selection, and algorithmic choices. The implications of such bias include legal risks, damage to brand reputation, and ethical concerns. However, these risks can be mitigated through regular audits, bias mitigation techniques, transparent practices, diverse data, and human oversight. By addressing these challenges, organizations can leverage AI in a fair and equitable manner.”</i></p>
Gemini	<p><i>“AI definitely can introduce discrimination or bias in marketing models.</i></p>

	<i>[...]Here are some steps to mitigate bias in AI marketing: Diverse Training Data: [...] Algorithmic Fairness Audits:[...] Human oversight [...]"</i>
Cohere	<i>"[...] In summary, while AI has the potential to revolutionize marketing, it is crucial to recognize and address the risks of discrimination and bias. By adopting ethical practices, diverse data, fairness metrics, and human oversight, organizations can harness the power of AI while mitigating the potential for bias and discrimination in marketing models."</i>

Table 7: AI can result in discrimination or bias in marketing models

The penultimate question aims to gather information regarding the perception of whether AI could threaten employment in the marketing sector. In this case, both ChatGPT and Cohere emphasized this is a fairly serious issue to address, and even though the four of them do not exclude that it could be a threat, they tend to be positive and even a bit “politically correct.” While affirming that AI can transform and reshape job roles thanks to tasks automatization, they deny widespread job loss. In their perspective, professionals should view AI as a tool that enhances efficiency and opens up new opportunities, the importance of having the skills to effectively integrate AI. The future of marketing will require a combination of human creativity and AI’s analytical capabilities.

ChatGPT	<i>"The impact of AI on employment in the marketing sector is complex and multifaceted. [...] while AI may lead to changes in the nature of work and job roles within the marketing sector, it is unlikely to result in widespread job loss. [...]"</i>
GPT-4	<i>"Yes, AI has the potential to threaten employment in the marketing sector by automating various tasks traditionally performed by humans. However, it also presents opportunities for new roles and increased efficiency [...]"</i>
Gemini	<i>"AI will certainly impact employment in the marketing sector, but it's more likely to reshape jobs than eliminate them entirely. [...] The key for marketing professionals is to embrace AI as a valuable tool and develop the skills to work effectively alongside it. The future of marketing will likely be a collaborative effort between human creativity and AI's analytical power."</i>

Cohere	<i>“The potential impact of artificial intelligence (AI) on employment in the marketing sector is a complex topic that has sparked debates and concerns. While AI has the capability to automate certain tasks and streamline processes, it's important to consider a nuanced perspective that acknowledges both the challenges and opportunities it brings to the marketing industry.[...]”</i>
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Table 8: AI could threaten employment in the marketing sector.

Regarding the last question, that according to generative AI, there may be restrictions regarding the use of AI in digital marketing or specific areas. All four, with slightly different responses covering different topics, nevertheless agreed that the boundaries are indeed clear.

For example, regarding ChatGPT, it indicated that the limitations were due to multiple factors such as: data quality and availability, regulatory compliance, complexity and interpretability, cultural and language differences, human-centric aspects.

Even its updated version, GPT-4, it acknowledges these limitations, but it's still delivering more detailed insights, as it usually does. In particular, it is indicated: *“While AI offers significant potential for enhancing marketing efforts across various sectors, it also faces several limitations. These include technological constraints, ethical and privacy concerns, regulatory compliance challenges, sector-specific issues, and implementation hurdles. Addressing these limitations requires a nuanced approach that considers the unique needs and constraints of each sector, alongside robust ethical and regulatory frameworks.”*

Regarding Gemini, the areas where AI can struggle, according to it, are:

- *“Nuances and Creativity: AI can analyze data and identify trends, but it struggles with the human touch of creativity and understanding emotional nuances. This can be a particular challenge for sectors like luxury goods marketing, where brand storytelling and emotional connection are crucial.*

- *B2B Marketing: B2B marketing often involves complex decision-making processes with multiple stakeholders. AI can struggle to model these intricate dynamics and tailor messaging for each decision-maker.*
- *Highly Regulated Industries: Industries with heavy regulations, like finance or healthcare, may find it difficult to implement AI due to compliance concerns around data privacy and security.”*

Finally, Cohere, like GPT-4, is used to providing particularly detailed information. In addition to what has already been suggested by the previous generative AI, it has pointed out that further limitations may be encountered in the following areas:

- *“Bias and Ethical Concerns: AI models can inadvertently introduce bias if the training data reflects societal biases or stereotypes. This is particularly important in sectors where fairness and equality are crucial, such as hiring, lending, or insurance. Bias in AI can lead to discriminatory outcomes and legal consequences. Ensuring ethical AI development and addressing bias is an ongoing challenge.*
- *Explainability and Transparency: AI models, particularly deep learning models, are often referred to as "black boxes" due to their complex and opaque decision-making processes. In sectors where transparency and explainability are essential, such as healthcare or critical infrastructure, the lack of interpretability can hinder trust and adoption. Developing interpretable AI models is an active area of research.*
- *Adverse Selection and Gaming the System: In certain sectors, such as insurance or fraud detection, AI models may face challenges due to adverse selection or gaming the system. Individuals or entities may intentionally provide misleading information or*

manipulate inputs to achieve desired outcomes, undermining the effectiveness of AI models.

- *User Trust and Acceptance: AI-driven marketing initiatives may face resistance or skepticism from consumers concerned about privacy, data security, or the perceived invasiveness of personalized marketing. Building user trust and acceptance of AI-powered marketing practices is crucial for their success.”*

4.4. Theoretical contribution: a comparison of the two perspectives

Nowadays, a good marketing campaign makes a company successful, well known and attractive, but a bad one can drag it to failure. It is crucial for businesses to better understand their customers' preferences, their traits, and services they need and in a highly competitive market they should look at every engagement with the customer as a new opportunity for selling. From the above analysis it is evident that both humans and virtual assistants, subjected to this question, recognize the enhancement of the Marketing sector thanks to the contribution of Artificial Intelligence.

In fact, 83% of survey participants agree that AI can improve customer targeting, 72% believe that customer personalisation can be conducted more effectively through algorithms, and 70% believe AI is an effective way to greatly identify market trends and business opportunities. In similar scenarios, all the genAI agree that through advanced data analysis, personalization, predictive analytics, and real-time optimization it is possible to improve customer targeting, uncover patterns and trends from large datasets, and offer more personalized services based on customer segmentation and AI's ability to enhance customer understanding.

However, there is a slight decrease in the percentage of respondents recognizing the improvement in targeting compared to the effectiveness in customer personalization. Some articles suggest that sometimes personalization can provoke the opposite effect by becoming excessive in marketing strategies which may bring to two main issues: customer intrusion and data overreach. The article "The Perils of Over-personalization" by Tata Consultancy Services (TCS) points out that overly personalized communication can be seen as intrusive and unwelcome to customers, potentially driving them away. Second, the risk of data overreach arises when companies incessantly request customer feedback, which can overwhelm and

irritate customers. Anyway, the article goes against extreme personalization, and emphasizes the need for balance between offering relevant experiences and respecting customer privacy, which is a good challenge for all the companies.

Also when it comes to risk and threats people seem to be conscious that this great technology comes with big responsibility. Over 56% of respondents express concern regarding privacy issues and security risks, yet fewer than 40% recognize the potential for discrimination within marketing models. Interestingly, when presented with questions regarding privacy, discrimination, and security risks related to consumer data, the four virtual assistants unanimously acknowledged the prominent threat, highlighting various scenarios in which individuals may fall victim to them.

Indeed, AI systems use a variety of techniques to collect data, exposing individuals to significant privacy risks as these techniques often operate invisibly to individuals, leading to breaches that are hard to detect or control. Web scraping, biometric data usage, IoT devices, and social media monitoring are some of the approaches that can result in unauthorized surveillance, identity theft, and a loss of anonymity, emphasizing the importance of transparent and secure data collection practices as AI becomes more integrated into daily life. ("AI and Privacy: Safeguarding Data in the Age of Artificial Intelligence")

According to the article “Responsible AI at Google Research: Perception Fairness”, balancing fairness metrics with other product metrics poses challenges, requiring a focus on democratizing fairness analysis tooling and advancing novel fairness analytics approaches which include developing benchmarks, curating test datasets, and collaborating with product teams to inform launch strategy. The article leaves an open ending suggesting that addressing true representation metrics and minimizing biased behaviors through AI safety and ethics considerations are ongoing challenges. By leveraging advancements in explainability

methods, causal inference, and UX research, the aim for the future is to develop technology that is inclusive and built for everybody. (Ricco and Utsav, 2023)

As AI is continuing to advance and gain more “territory” in different aspects of the society, it is essential for companies, policymakers and individuals to work together to think about strong privacy standards and to implement protections. Promoting transparency and ethical data practices will allow us to benefit from AI while safeguarding personal privacy and maintaining trust in technological progress.

This survey aims not only to understand the perception of security risk, privacy or bias, but also to grasp the feeling about the possibility of automating some repetitive jobs in the field of marketing potentially by replacing certain human roles with more powerful, faster, and cost-effective AI algorithms.

Although the majority of the individuals recognized this scenario as possible, it is interesting to see that 84% of them agreed that AI can automate repetitive processes in marketing, but only 53% think that process automation could lead to employment threat. As mentioned in the previous chapter, this result might bring to different assumptions and conclusions. Some of them being:

- People believe that marketing roles require more creative thinking and include less repetitive work. Thus, AI may automate repetitive tasks, but not eliminate entire jobs. In this way employees would have more time to focus on more creative or strategic aspects of their work.
- They see new technologies as complementary in their daily activities: they see AI as a way to increase their productivity and improve the efficiency of the business. AI is most effective when it comes to data analysis or following rules and logic, but

generally struggles with tasks that require empathy, creativity, or social skills. In these areas, humans are expected to maintain an advantage and collaborate with AI.

- Certain jobs are more susceptible to AI automation than others, and individuals in various sectors and roles have differing views on the immediate threat AI poses to their livelihoods. This variance can create a sense of security for those in less vulnerable professions, so it may be due to the representative sample.

Generative AI may also have its merit when it comes to reassuring people about the future of their work. Indeed, the answers gathered from all of the genAI used in this study suggest that rather than eliminating jobs, “AI is likely to augment human capabilities, enhancing decision-making and allowing for more personalized marketing.” AI's prosperity will push businesses to innovate and adapt to stay competitive, creating opportunities for marketers who can effectively leverage AI.

However, they do not exclude that AI can perform common tasks such as data analysis, reporting and optimizing campaigns, which may displace some roles, but they emphasize that it also requires other roles and skills, such as data scientists, data engineers, professionals who can interpret AI-driven insights to develop actionable marketing strategies or cybersecurity experts.

Anyway, the field of marketing is a perfect example to make a deep reflection on the job replacement: all the marketing strategies aim to attract more customers, to make the products more attractive and to increase sales. If people start losing their jobs, they will have less purchasing power, and will start to spend less and to cut expenses. Since the customers are not robots, but human beings, it is in companies' interest to distribute wealth and to stimulate the economy, otherwise they will not be able to produce value.

In conclusion, based on the analysis conducted so far, it can be affirmed that all necessary elements are in place to provide an adequate response to the research question of this thesis, namely: *"What will be the impact of AI in digital marketing in the long term?"*

The most evident impacts in digital marketing that have emerged - both from the theoretical contributions and from both perspectives, those of individuals surveyed and those of generative AI responses - particularly pertain to AI's ability to:

- improve customer targeting,
- conduct customer personalization more effectively through algorithms,
- identify market trends and business opportunities more efficiently.

The research findings can not only shed light on the benefits of AI in digital marketing, but also capture its potential risks and drawbacks. Specifically, the study revealed that the key issues associated with drawbacks are:

- privacy issues and security risks,
- process automation could lead to employment threats.

5. CONCLUSION

5.1. Limitation of the study

Although the research question received an answer following the analysis conducted and the theoretical contribution, aided by the objectives set to provide adequate feedback, it cannot be denied that this dissertation presents limitations.

The most evident limitation lies in the fact that the survey gathered only 105 responses; therefore, it cannot faithfully represent a population sample, especially because the age group that contributed the most responses was represented by the 26-35 age range. This data is due to the survey being advertised through social media, such as Instagram, for a limited period of time.

Time, indeed, represents the second limitation. In about two weeks, 105 responses were obtained; however, if the survey had been advertised for a longer period and on different social media platforms, the turnout would have been higher, and therefore, the percentage of representation of other age groups would have been higher as well.

The imbalanced occupational distribution, overrepresented by individuals working in Finance rather than Marketing, poses a significant challenge to gaining a comprehensive insight into this topic since research focuses on the implications of AI in marketing. Hence, the skewed distribution limits perspectives and experiences for this analysis.

Another limitation is that this study involved a comparative study between the human feedbacks and feelings with the output of four different generative AI. When it comes to AI's responses, one serious limitation is that generative AI lacks true creativity. It succeeds in reproducing or remixing existing models with the data it was trained on, but struggles to

generate original ideas or hypotheses That also explains why all of them are aligned on giving the same answers even though they might be formulated in a different way.

Depending entirely on training data, genAI is vulnerable when data is biased: biased data can produce biased output. It also has difficulty adapting to new information or situations outside its training and results can be unpredictable, sometimes inaccurate, or useless, requiring quality control. Although generative AI can produce many products, ensuring consistent quality is a challenge.

Training on prior data is one of the major shortcomings of generative AI. The answer we obtained are connected to its trained data, leading to the results discussed in the previous chapter. Consequently, if there are significant changes in the training data set, the answers may differ.

5.2. Personal consideration

Overall, it can be concluded that the question that this thesis aimed to explore can be addressed; however, some considerations are important to highlight.

Considering the limitations of this study, several personal reflections come to mind highlighting areas for improvement and future research directions

First, the sample size is poor, and the skewed age range reflects the impact of advertising the study through platforms such as Instagram over the short two-week period. A broader and more diverse pattern of survey distribution is important for future research. Using different social media channels and extending the data collection period would likely result in a more representative sample.

The overrepresentation of people working in Finance rather than Marketing, poses another distinct limitation. As the aim of the study is to explore the implications of AI in marketing, the large number of financial professionals limits the study and reduces the relevance of the findings to the target industry. Future research should choose to allocate respondents to a balance of relevant tasks that can be achieved by targeting specific professional interactions and forums related to AI in marketing..

Finally, although this study provides valuable insights, addressing these limitations with rigorous and inclusive research methods will improve the integrity and applicability of future findings. Increasing the diversity of survey respondents and ensuring a balance of employee representation are important steps to ensure comprehensive and reliable survey results.

5.3. Way forwards

The world of artificial intelligence is known to be an ever-evolving and changing field that offers new insights and challenges every time.

As extensively mentioned before, the purpose of this thesis has been to identify the impact that AI may have on digital marketing considering both its strengths and potential risks. However, this topic offers a wide range of studies that can be further explored.

Indeed, even the study carried out with this dissertation can be further deepened; in fact, regarding the sampling, it is possible to expand the number of people contributing to have a more reliable sample.

Addressing the disparity in the professions, by engaging participants from a broader range of sectors, could facilitate the exploration of the perceptions of people involved in marketing roles, but also enhance the comparison between the insights of individuals directly immersed in the marketing field and those employed in other sectors.

Another very interesting area of research could be examining the impact of AI on consumer behaviour; In this regard, it would be really interesting to explore how AI can influence consumer behavior and purchase decisions in the context of digital marketing.

To continue in the customer theme, another focus of the thesis will be exploring how the techniques provided by artificial intelligence can be used to further personalize the customer experience at in various ways, whether it be through the website when accessing company websites, through various social channels, and finally via app if company has one.

Further case studies could focus on optimizing advertising campaigns; In fact, in this case, it would be really interesting to explore how AI is used and applied to enhance digital marketing campaigns to achieve greater results.

This study deals with an important and sensitive issue such as ethics. In this regard, it can be really useful to examine the ethical implications of using AI in digital marketing and the responsibilities associated with it. Indeed, targeted research in this regard can provide important insights into privacy and data transparency.

Furthermore, also of particular interest is research into the potential role of AI in content strategies; of course, in this regard, one can examine how AI is integrated into all manufacturing and distribution strategies in digital marketing such as content automation

It is known that in digital marketing it is important to define the right value for the product/service offered; For this reason, another interesting point could have been highlighted by how AI can be integrated and used to improve audience targeting accuracy in digital marketing

Another interesting point could be addressed to employment; indeed, as already indicated in this thesis, AI can be seen as a threat to employment, so it will be interesting to see whether AI indeed represents major challenges or opportunities for those working in the sector.

It will be particularly pertinent to see how this efficient tool can affect the automation of marketing systems and processes, and understand how it can bring additional benefits in this regard.

Finally, as a future topic development, it can be linked to successful case studies where this tool has been used in digital marketing, which is very important in our lives, in order to understand which strategies were used and what results they brought.

As one might imagine, then, this thesis offers a dynamic component of a growing and influential body of studies today, covering topics that can add value to those who strongly believe that AI has a significant impact on digital marketing and beyond that.

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