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General Data Protection Regulation (GDPR) and its Impact on the Development of Artificial Intelligence (AI) in Marketing.

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Department of Marketing, Strategy and Operations

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ACKNOWLEDGMENTS

I would like to express my heartfelt gratitude to my professors for their invaluable guidance, to my family for their unwavering support, and to my friends for their endless patience. Thank you all.

Resumo

Muitas empresas em Portugal enfretam desafios relativamente à imprecisãodo RGPD. Além disso, a promulgação do GDPR tende a limitar a eficácia das atividades de marketing das empresas devido às limitações na recolha, utilização e armazenamento de dados pessoais dos indivíduos. Além disso, existe uma ausência de consentimento claro e inequívoco dos utilizadores antes da recolha e processamento dos seus dados pessoais para aplicações generativas de inteligência artificial (IA). Assim, esta dissertação investiga o impacto do GDPR no desenvolvimento da inteligência artificial em marketing. Para isso, este estudo responde a três questões de pesquisaO primeiro diz respeito às formas como o GDPR influenciou as empresas em relação ao marketing, o segundo diz respeito ao impacto do GDPR na eficiência da inteligência artificial, enquanto o terceiro diz respeito às medidas disponíveis para conter os desafios enfrentados pelo uso da IA no marketing. Para fornecer conclusões relevantes, foi realizada uma extensa revisão da literatura sobre todos os assuntos,juntamente com uma análise estatística de duas pesquisas online (questionário e entrevistas). Os resultados obtidos mostram que várias empresas em Portugal têm cumprido o RGPD. Revela também que o GDPR resultou na minimização de dados, o que reduz o risco de violação de dados e garante a conformidade, o direito de acesso e apagamento, e impõe restrições às atividades de marketing direto. Também foi descoberto que o GDPR limita a eficiência da IA, uma vez que a IA depende de uma grande quantidade de dados pessoais para criar experiências personalizadas e campanhas direcionadas. O estudo também concluiu que as empresas devem concentrar-se na melhoria da conformidade regulamentar, na adoção de melhores práticas, na gestão eficaz do consentimento, na minimização da utilização de dados, no aumento da transparência e no fornecimento de explicações claras sobre a utilização de dados. Os testes de hipóteses mostraram uma relação significativa entre o investimento em tecnologia de proteção de dados e a conformidade com o GDPR; mostraram que a confiança e a percepção do cliente medeiam a relação entre a implementação do GDPR e os resultados de marketing; enquanto as adaptações organizacionais ao GDPR aumentam os custos operacionais, o que afeta a eficiência da IA no marketing. Nesta base, o estudo recomenda que as empresas portuguesas garantam que quaisquer atividades de definição de perfis baseadas na IA sejam conduzidas com consentimento explícito e não conduzam a resultados discriminatórios ou injustos. O GDPR também enfatiza a justiça no processamento de dados, o que inclui evitar preconceitos nos algoritmos de IA.

Palavras-Chave**: GDPR, Inteligência Artificial, Atividades de Marketing,**

Classificação JEL:

M10 Business Administration: General

M31 Marketing

M38 Government Policy and Regulation.

ABSTRACT

A lot of businesses within and across Portugal are facing challenges regarding the vagueness of the GDPR. Moreover, the enactment of GDPR tend to limit the effectiveness of marketing activities by firms due to the limitations in the collection, usage and storage of individual's personal data. Thus, this dissertation investigates the impact of GDPR on the development of artificial intelligence in marketing. To do so, this study answers three research questions. The first one regards the ways in which GDPR have influenced companies regarding marketing, the second concerns the impact of GDPR on the efficiency of artificial intelligence, while the third is concerned with the measures available to curb the challenges facing the use of AI in marketing. To provide relevant conclusions, an extensive literature review regarding all subject was carried along with a statistical analysis of two online surveys (questionnaire and interviews). The obtained results show that various firms in Portugal have been compliant with the GDPR. It also reveals that GDPR have resulted in data minimization which reduces the risk of data breaches and ensuring compliance, and places restriction on direct marketing activities. It was also discovered that GDPR limits the efficiency of AI. On this basis, the study recommends that Portuguese firms must ensure that any AI-driven profiling activities are conducted with explicit consent and do not lead to discriminatory or unfair outcomes. GDPR also emphasizes fairness in data processing, which includes avoiding bias in AI algorithms.

Keywords: GDPR, Artificial Intelligence, Marketing activities

JEL Classification:

M10 Business Administration: General

M31 Marketing

M38 Government Policy and Regulation.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
DPO	Data Protection Officer
ECHR	European Convention on Human Rights
EU	European Union
GDPR	General Data Protection Regulation
ICCPR	International Covenant on Civil and Political Rights
IP	Internet Protocol
PCs	Personal Computers
RQ	Research Question
UK	United Kingdom

CHAPTER I: INTRODUCTION

1.1 Framework

The internet has changed drastically in the past few years. Consumers are now very aware of their privacy issues. Many consumers want to be in control of the data that they create and share. In view of this, European regulators started taking notice that the customers are being negatively affected due to the lack of proper regulation (Jiahong, 2016). Thus, the General Data Protection Regulation (GDPR) was enacted.

The EU General Data Protection Law (GDPR) came into effect in all EU Member States on 25th of May, 2018. The General Data Protection Regulation is a regulation in European Law on data protection, which is designed to harmonize data privacy laws across Europe as well as to protect and empower all EU citizens data privacy (Xavier, 1989). The biggest challenge to current regulations of data privacy comes with an extended scope of the GDPR. This is due to the fact that it applies to all companies processing the personal data of data subjects residing in the Union, regardless of the company's location and whether the processing takes place in the EU or not (David and Kush, 2013).

Artificial intelligence (AI) has become an essential part of daily life, significantly impacting various sectors, including marketing and advertising. Its adoption in these fields has increased in recent years, revealing numerous advantages (Kontact Consulting, 2023). AI facilitates automation of routine marketing tasks, enhances personalization for customers, and provides valuable insights into consumer behavior, making it a transformative force in marketing. Marketers need to assess whether AI is suitable for their businesses given its potential to reshape the marketing landscape.

However, challenges accompany the use of AI in marketing. Companies must prioritize ethical and transparent AI practices while addressing privacy concerns, particularly in light of the General Data Protection Regulation (GDPR). The effectiveness of AI is closely tied to data acquisition, which the GDPR restricts by regulating the collection, use, and storage of personal information. Consequently, this study aims to explore how GDPR influences AI development in marketing and seeks to find a balance between compliance with GDPR and the effective advancement of AI in the marketing sector.

1.2 Research Problem

The study has identified specific problems relating to the subject matter. Firstly, it is a known fact that a lot of businesses within and across Europe are facing challenges regarding the vagueness of the GDPR. Also, GDPR has been very difficult to interpret and it lacks harmonisation between Member States, thus, difficult to implement across various nations. This shows a lack of guidance and uncertainty regarding international data flows.

Moreover, the enactment of GDPR limits the effectiveness of marketing activities by firms due to the limitations in the collection, usage and storage of individual's personal data. Additionally, there is an absence of clear and unambiguous consent from users before collecting and processing their personal data for generative AI applications. This impedes the efficiency of AI in marketing.

Therefore, in view of above stated issues, this dissertation investigates the impact of GDPR on the development of artificial intelligence in marketing. The research will explore the impact of AI on the future of marketing and advertising, and how businesses can prepare for this new era of marketing. This will make a good research topic as it will help ascertain the views and position of authors on the benefits and challenges of using AI in these fields, considering the provisions of the GDPR and its privacy concerns. It also seeks to explore the ways in which GDPR has influenced marketing firms, and the measures available to curb the challenges facing the use of artificial intelligence in marketing.

1.3 Research Questions and Objectives of the Study

This dissertation intends to address three specific theoretical questions, using four research objectives. For the general scope of the study, the intention lies in positively contributing to these areas of research (Bartelo, 2022; Sartor & Lagola, 2019) Regarding the specific questions and research objectives, which will be further explained, they are:

1. In what ways have GDPR influenced companies regarding marketing in Portugal?
    - To find out the extent of implementation of the GDPR in marketing companies in Portugal
2. Can GDPR have an impact on the efficiency of artificial intelligence?
    - To discover the ways which the GDPR has affected the efficiency of artificial intelligence in marketing

3. What are the measures available to curb the challenges facing the use of artificial intelligence in marketing?
    - Discuss the challenges surrounding the use of AI for marketing considering the provision of GDPR and its privacy concerns
    - provide the measures available to curb the challenges facing the use of artificial intelligence in marketing

1.4 Significance of the Study

The study on the impact of GDPR on artificial intelligence in marketing holds significant relevance for several key stakeholders. This study will enrich the existing body of knowledge by providing insights into the intersection of GDPR and AI in marketing, a relatively new and rapidly evolving area. It will fill gaps in understanding how data protection regulations impact the adoption and efficiency of AI technologies in marketing.

The findings from this study will offer practical guidance to marketing companies, particularly in Portugal, on how to navigate the complexities of GDPR compliance while leveraging AI technologies. By examining the extent of GDPR implementation, companies can benchmark their practices and make informed decisions to enhance their marketing strategies without violating data protection laws.

The study's outcomes may provide valuable insights for policymakers and regulatory bodies. By understanding the challenges and effects of GDPR on AI in marketing, policymakers can make informed decisions when crafting or amending regulations, ensuring that they strike a balance between fostering innovation and protecting consumer privacy.

The study will identify and discuss the challenges that marketing companies face in using AI under GDPR constraints, such as privacy concerns and data handling issues. The suggested measures to curb these challenges will be instrumental for companies to overcome barriers and improve their AI-driven marketing efforts.

By investigating how GDPR affects AI in marketing, the study indirectly benefits consumers. Understanding the regulatory impact on AI use in marketing will ensure that companies are more aware of their obligations to protect consumer data, leading to more ethical and privacy-conscious marketing practices.

The study will also pave the way for future research by highlighting areas where further investigation is needed. Researchers can build on this study to explore new dimensions of the

relationship between GDPR, AI, and marketing, ensuring that the academic discourse keeps pace with technological advancements and regulatory changes.

1.5 Dissertation Structure

This dissertation is organized as follows: Chapter I: Introduction provides the framework for the study and outlines the research problem. Chapter II: Literature Review explores topics relevant to the research, including the Right to Privacy, data protection, the relationship between privacy rights and human rights, the General Data Protection Regulation (GDPR), its impact on privacy rights, and the role of artificial intelligence in marketing. This chapter offers a comprehensive review of the literature, illustrating the connections between these themes. Chapter III: Theoretical Approach outlines the study's objectives, research questions, and hypotheses derived from the literature review. Chapter IV: Methodology details the research model, conceptual frameworks for each survey, extended hypotheses, and the relationship between survey questions and their indicators. It also includes a description of the survey sample. Chapter V: Results Presentation and Discussion analyses the findings from the statistical analysis of online surveys and validates the previously formulated hypotheses. This chapter confirms the research questions and discusses how the various topics may interrelate and influence one another. Chapter VI: Conclusion summarizes the study, discusses limitations, and offers suggestions for future research.

CHAPTER II - LITERATURE REVIEW

Overview

This chapter reviews relevant literature relating to General Data Protection Regulations (GDPR) and its Impact on the Development of Artificial Intelligence in Marketing**.** It provides a discussion of relevant concepts such as the right to privacy, data protection, GDPR, privacy and data protection in the digital era, GDPR and effect on the right to privacy, Challenges of implementation, artificial intelligence and marketing.

2.1 The Right to Privacy

Privacy has been described as a complex concept, intertwined with challenging and conflicting dimensions, filled with various and undeniable implications, making it difficult to be useful as an idea (Westlund, 2018). Some of the rights encompassed by the right to privacy include the protection of personal information, moral and physical integrity, and personal image. The wide range of different circumstances covered under the right to privacy makes it ambiguous and extensive. Due to this ambiguity, it has been challenging to provide a precise definition of the right to privacy, as it differs from other fundamental human rights. Consequently, the need for a precise definition of privacy has been a topic of discussion for many legal scholars. Without a precise definition, the scope of the right to privacy remains uncertain.

The right to privacy is increasingly recognized as a fundamental security guarantee, evolving from a time when it was not considered a legal right. Historically, privacy was closely tied to other rights, and the public's demand for privacy was minimal (Diggleman & Cleis, 2014; Bruno et al., 2018). However, with advancements in individual freedoms and technology, along with rising state surveillance, privacy has become a pressing concern. This shift has prompted the need for new definitions of public and private spheres, as well as a reevaluation of privacy rights (Warren & Brandeis, 1980; Westlund, 2018).

The Universal Declaration on Human Rights was the first global document to include privacy protections, covering aspects such as home, family, reputation, and communication. Various interpretations of privacy have emerged, including "private life" and "secrecy," which further clarify its significance (Bruno et al., 2018).

Privacy is essential for safeguarding personal data and allows individuals to control their information. There are two main theories regarding privacy: one focuses on secrecy—protecting concealed information from public exposure—and the other on intimacy,

emphasizing control over personal relationships (Titiriga, 2020). When personal information is shared publicly, it can harm individual autonomy and freedom, especially when taken out of context (Rosen, 2000).

Additionally, privacy is crucial for individual expression and personal identity, known as personhood. It empowers individuals to make choices and protects them from state-imposed identities that may infringe upon their autonomy (Rubenfield, 1989). Ultimately, the right to privacy should safeguard individuals from both state and private intrusions, ensuring protection in public spaces.

2.1.1 Data Protection

Data protection entails the safeguarding of critical information against loss or compromise. As the volume of stored data increases at an astonishing rate, the significance of data protection becomes more pronounced. Additionally, the growing intolerance for personal inconvenience can complicate access to vital information. Therefore, a key element of any data protection strategy is the ability to quickly restore data following any incidents of loss or breach. Other crucial aspects include preventing data corruption and ensuring data security (Arcpoint, 2020).

Privacy is generally understood as a condition related to an individual's physical or mental environment. It pertains to the relationship between the individual and the community, including others and, typically, the state. Privacy is associated with the idea of individual autonomy, which implies that a person is an independent entity, distinct from the larger community. This autonomy grants individuals the right to exert a degree of control over their interactions with others (Blume, 2015).

As the amount of data created and stored continues to escalate rapidly, the importance of data protection grows. The principles surrounding these issues derive from privacy discussions and are structured as requirements based on specific regulatory frameworks. In Ireland, the GDPR and the Data Protection Acts 1988-2018 serve to protect individuals' privacy. These regulations establish rights for individuals regarding the privacy of their personal data and impose responsibilities on entities that collect and process this information. Personal data encompasses any information that can identify an individual, either directly or when combined with other data that may be accessible to another person or organization. This includes all information related to identifiable living individuals, whether stored electronically or in physical files.

2.2. General Data Protection Regulation

2.2.1 Objectives of the General Data Protection Regulation

The EU General Data Protection Regulation (GDPR) became effective across all EU Member States on May 25, 2018. This regulation aims to harmonize data privacy laws throughout Europe while protecting and empowering the data privacy rights of all EU citizens (Xavier, 1989). A significant challenge to existing data privacy laws arises from the comprehensive nature of the GDPR, which applies to any business that processes the personal data of individuals living in the EU, regardless of the company's location or whether the processing takes place within the EU (David and Kush, 2013).

One of the primary goals of the GDPR is to empower individuals to control their personal data. The regulation features a specific section outlining the rights of data subjects, which includes the right to access their data, the right to rectify inaccuracies, the right to object to data processing, the right to have their data erased, the right to data portability, and the right not to be subjected to decisions based solely on automated processing (Krishnamurty, 2020).

This regulation was created to safeguard personal data while respecting other rights and freedoms, in line with the principle of proportionality (GDPR, 2016). With rapid technological advancements, globalization, and socioeconomic integration among European Union member states, the cross-border transfer of personal data has increased, presenting new challenges for data protection due to the volume of data collected and shared. This regulation aims to facilitate the free circulation of personal data while ensuring a high level of security (GDPR, 2016). To address these challenges, it was agreed that processes should be harmonized across Member States, which was not achieved under Directive 95/46/EC, as different local guidelines were observed. This comprehensive regulation provides legal certainty, transparency, and market confidence, ensuring equal rights and obligations for citizens and fostering effective collaboration with supervisory authorities (GDPR, 2016).

2.2.2 The Rights for the Data Subjects

Transparency and modalities

The article 12 'Transparent information, communication and modalities for the exercise of the rights of the data subject' defines that the communications provided shall be concise, transparent, intelligible, and easily accessed. The language shall be clear and plain, especially if the data subject is a child. The controller shall facilitate the processes available to ensure the

data subjects' rights, that englobes, per example, ways of request and obtain freely access, rectification, or erasure of personal data. This process shall be available to do electronically (GDPR, 2016).

Information and access to personal data

The articles 13 and 14 of GDPR aim to clarify the modalities of information and access to personal data. These articles make a clear difference depending on the source of the information, having the personal data being gathered from the data subject (article 13) or not (article 14). (GDPR, 2016).

Right to object and automated individual decision-making

According to the GDPR (2016), every individual has the right to oppose the processing of their personal data, at any time. However, this right has exceptions as outlined in Article 21(6), which stipulates that the individual's right to object does not apply if the processing is necessary for reasons of public interest. Additionally, Article 22 states that individuals have the right not to be subject to decisions based solely on automated processes, including profiling, unless: i) it is necessary for fulfilling a contract between the individual and the data controller; ii) it is authorized by the European Union or a Member State; or iii) it is based on the individual's explicit consent (GDPR, 2016).

2.2.3 Privacy and Data Protection in the Digital Era

The emergence of Web 2.0 and mobile devices has highlighted the complexities of managing personal data in a globally interconnected environment, surpassing the simplicity suggested by existing regulations. This complexity encompasses online social interactions and geo-location data, leading to digital industries that operate on the premise of offering convenience and cost savings in exchange for usable personal data (Alo, 2000).

The rise of cloud computing poses challenges regarding how to ensure compliance with legal regulations across various jurisdictions in a global IT context. Many businesses already find European data protection laws intricate, and the differences among EU member states can create significant hurdles without adequate legal guidance from the outset. Cloud service providers and their clients often experience cybersecurity breaches involving personal data, resulting in considerable competitive disadvantages. Data protection is essential for professional cloud providers as it is fundamental to their business operations. Therefore,

various initiatives are implemented to address these challenges, leading to the development of privacy approaches within the European Union (Beacham, 2018).

The EU's data protection framework consists of region-specific laws that enforce principles such as purpose limitation, transparency, data quality, proportionality, security, access, and correction. The Data Protection Directive restricts data transfers to third countries unless they meet EU standards, which evaluate jurisdictions for compliance with data protection requirements. However, the infrequent assessments of these standards hinder global data sharing and complicate data integration strategies. Since the Directive's adoption, only five countries outside the EU or European Economic Area have been deemed adequate for data transfers without additional safeguards (Avunduk, 2020).

2.2.4 New Regulation: Changes and Challenges

One of the major changes introduced by this regulation is that, unlike Directive 95/46/EC, it applies not only to companies established in the EU but also to companies located outside the EU that offer goods or services to EU citizens. The GDPR applies to all organizations that process personal data. As a result of these changes, some companies such as Instapaper, Klout, and Unroll.me have ceased their operations in Europe (Shastri, Wasserman, & Chidambaram, 2019). The GDPR has granted several rights to data subjects, including the right to be informed, the right to access, the right to rectification, the right to erasure, the right to restriction of processing, the right to data portability, the right to object, the right to automated individual decision making, and the right to withdraw consent (GDPR, 2016).

To be compliant with all the changes, companies faced many organizational changes that will be analysed during the development of this work.

Organizational Challenges to Comply with New Regulation

Companies were given a period to get ready for the implementation of the GDPR. Initially, they needed to identify the locations and purposes for which they use personal data and determine if they could handle it appropriately. Once this was ensured, organizations began to establish processes to comply with the regulation. The expectation was that they would implement robust governance measures, such as privacy impact assessments, to fulfil the necessary obligations and safeguard customer data (Beckett, 2018).

Companies were advised to enhance their document management processes, store all personal data entries, and develop their own codes of conduct. Moreover, implementing the GDPR presented a significant opportunity for cost reduction (e.g., in data storage), improvement in the quality of analytical insights, and enhanced client confidence (compliance indicates careful data handling), among other benefits (Beckett, 2018). The GDPR's introduction of the Data Protection Officer represents a shift for organizations. While not mandatory for all companies, this individual must be independent and possess a high level of knowledge and expertise (UTAIL / JurisAPP, 2019).

According to the report developed by UTAIL/ JurisApp (2019) 'Avaliação do Impacto Legislativo – Regulamento Geral de Proteção de Dados', the implementation of GDPR required an additional effort to the organizations, mostly with:

i. Costs associated with implementation (conducting assessments to gather requirements, maintaining records of data processing, reviewing privacy information and contracts, revising procedures to uphold data subjects' rights, implementing procedures to respond to data subjects' requests, managing consent processes, enhancing data security, developing a code of conduct and obtaining its certification, and preparing for internal audits)
ii. Education
iii. Introduction of the role Data Protection Officer
iv. Notification of data breaches

According to a report by the Multistakeholder Expert Group (EU) (2019), most organizations reported making significant investments to comply with the GDPR. Small and medium-sized enterprises (SMEs) in particular incurred significant costs to adjust to the new regulations, with many needing to engage external consultants to understand and implement the changes, indicating a lack of internal resources for compliance. The report also notes that the impact of the GDPR on future innovations remains uncertain, but the threat of heavy sanctions may have a negative effect on innovation (Multistakeholder Expert Group (EU), 2019).

In the healthcare sector, which has a strong ethical influence, efforts were made to implement pseudonymization (already in use in some projects), anonymization, and consent processes. This required an investment of resources to maintain public trust in the medical research community and the integrity of personal data (Carter, Laurie, & Dixon-Woods, 2015; Mark, Rumbold, & Chb, 2017).

An empirical study examining the impact of the GDPR on websites, comparing the 500 most visited websites in each of the 28 EU countries, found that it generally had a positive effect on transparency (+4.9% of websites implemented privacy policies and/or started informing their visitors about cookie practices). However, the study also found that privacy policies were updated in May 2018 in only 50% of websites, and that 60% of websites showed no changes during the GDPR's two-year grace period (2016-2017). Despite these figures, the study authors noted that practices appeared to be similar, with tracking levels remaining consistent and most websites using opt-out consent mechanisms. The main difference noted by web consumers in the EU was an increase in cookie consent notifications and the variety of features they offered (Degeling et al., 2019).

2.3 Artificial Intelligence and Marketing

2.3.1 Artificial Intelligence

Artificial intelligence (AI) involves the creation of computer systems capable of performing tasks that usually require human intelligence. These tasks include visual perception, speech recognition, decision-making, and language translation. AI systems can learn from experience, adapt to new information, and execute tasks with high accuracy (Kontact Consulting, 2023).

AI is categorized into two main types: narrow AI and general AI. Narrow AI, often referred to as weak AI, is designed for specific functions, such as playing chess or identifying patterns in data. In contrast, general AI represents a more sophisticated form of AI that can handle any cognitive task a human can perform.

AI has found applications across various sectors, including healthcare, finance, transportation, and entertainment. It is utilized to enhance efficiency, lower costs, and improve the overall user experience. However, AI also presents ethical and social challenges, such as privacy issues, job loss, and the risk of bias in decision-making algorithms. In recent years, AI has become a crucial element in our daily lives, particularly in industries like marketing and advertising, where its advantages are increasingly recognized (Kontact Consulting, 2023). AI automates routine marketing tasks, personalizes customer interactions, and offers valuable insights into consumer behavior, significantly transforming these fields.

2.3.2 Marketing

Marketing is defined as the process of promoting, selling, and distributing products or services to consumers or businesses. This involves understanding customer needs and desires, creating

offerings that fulfill those needs, and effectively communicating the value of these offerings to the target audience. Marketing encompasses various activities, including market research, product development, pricing, distribution, advertising, and sales. Its primary aim is to attract and retain customers by delivering value that aligns with their preferences (Skierra, 2022).

With the rise of the internet, online marketing has become increasingly influential. This refers to the utilization of the internet and digital technologies, such as computers, smartphones, and various digital media platforms, to promote products and services. Online marketing strategies encompass search engine optimization, pay-per-click advertising, social media marketing, content marketing, email marketing, affiliate marketing, and influencer marketing (Andrei, 2022).

Effective marketing requires a deep understanding of the target market, identification of competitors, and the development of strategies that differentiate the product or service within the marketplace. It also necessitates continuous monitoring and assessment to ensure that marketing initiatives yield the desired outcomes (Sakib, 2022). Therefore, marketing is vital for businesses to thrive in today's competitive landscape, as it aids in building brand awareness, generating leads, increasing sales, and fostering long-term customer relationships.

2.3.3 Adoption of Artificial Intelligence in Marketing

Artificial intelligence (AI) has revolutionized the field of marketing, offering new and innovative ways for businesses to reach and engage with their target audiences. AI technologies, such as machine learning and natural language processing, have enabled marketers to analyse vast amounts of data, automate repetitive tasks, and personalize marketing campaigns like never before (Zallone, 2023).

One of the key ways AI is utilized in marketing is through data analysis. AI algorithms can analyse consumer behaviour and preferences based on data collected from various sources, such as social media, websites, and mobile apps (Skierra, 2022). This data analysis allows marketers to gain valuable insights into their target audience, such as their interests, demographics, and purchasing behaviour. With this information, marketers can create more targeted and personalized marketing campaigns that are more likely to resonate with their audience (Robert, 2023).

Another way AI is utilized in marketing is through automation. AI-powered tools can automate repetitive tasks, such as email marketing, social media posting, and customer service

interactions. This automation not only saves time and resources but also allows marketers to focus on more strategic aspects of their campaigns, such as strategy development and creative content creation (Kumari, 2021).

AI is also used to personalize marketing campaigns. By analysing consumer data, AI algorithms can create personalized marketing messages and offers that are tailored to individual preferences and behaviour. This personalization can lead to higher engagement and conversion rates, as consumers are more likely to respond to messages that are relevant to their needs and interests (Nicole, 2023). For example, Companies like Amazon and Netflix have been using AI algorithms for years to provide personalized recommendations to their customers. These algorithms analyse past behaviour and preferences to suggest products or content that are likely to be of interest to each individual user.

One of the most exciting developments in AI marketing is the use of chatbots and virtual assistants. These AI-powered tools can interact with customers in real-time, providing them with personalized recommendations, answering their questions, and assisting them with their purchases (Avantika, 2023). Chatbots and virtual assistants can help businesses provide better customer service and improve the overall customer experience. AI is used by companies like Adidas to segment their customer base more effectively. By analysing customer data, AI algorithms can identify different segments based on factors such as behaviour, demographics, and preferences, allowing companies to tailor their marketing efforts to each segment. Many companies in Europe, such as Lidl and Vodafone, have implemented AI-powered chatbots to improve customer service. These chatbots can answer common customer queries, provide product recommendations, and even process orders, all without human intervention.

Conclusively, the utilization of artificial intelligence in marketing has transformed the way businesses reach and engage with their customers. AI technologies have enabled marketers to analyse data more effectively, automate tasks, personalize campaigns, and provide better customer service. As AI continues to evolve, it is likely that its role in marketing will only continue to grow, offering businesses new and exciting opportunities to connect with their audiences.

AI is also being used to create content for marketing purposes. For example, The Guardian has used AI to write articles on topics such as sports and finance, freeing up human journalists to focus on more in-depth reporting. AI is used by companies like Tesco to predict customer behaviour. By analysing past data, AI algorithms can forecast future trends and customer needs,

allowing companies to adjust their marketing strategies accordingly. AI is used by companies like Unilever to target their ads more effectively. By analysing data from social media and other sources, AI algorithms can identify individuals who are likely to be interested in a particular product or service, ensuring that ads are shown to the most relevant audience (Jo, 2020).

In the future, marketers might utilize AI to analyse consumer behaviours and patterns, predict future outcomes, and tailor advertising strategies accordingly. AI leverages data, statistical algorithms, and advanced technology to forecast upcoming trends. As AI systems process more data, they improve their results and deliver optimal solutions over time. AI-powered machine learning (ML) algorithms can sift through extensive historical consumer data to determine the most suitable advertisements for clients and at which stage of the purchasing process. By leveraging trends and data, AI enables marketers to optimize content deployment at the most opportune moment. ML involves using observations or data, such as direct experience or instruction, to identify patterns in data that facilitate better decision-making in the future. ML aims to enable computers to learn autonomously, without human intervention, so that systems can adapt their actions accordingly (Haleem et al., 2022).

In upcoming years, marketers could employ AI to create personalized experiences for their customers and develop marketing analytics techniques to target potential customers. Every interaction a prospect or consumer has with a product or solution is logged and utilized to enhance the product or service in the future. This is an opportune time for marketers to begin experimenting with AI strategies to deliver highly personalized experiences for their customers (Wu et al., 2020). With AI set to continue expanding across all industries and sectors, marketers should invest time and resources into experimenting with strategies and ensuring their marketing organization is prepared for sustained success in the present and future.

CHAPTER III – THEORETICAL APPROACH

3.1 Objectives and Research Questions

After the literature review in this dissertation, several important questions emerge that warrant further exploration. Consequently, based on the available information, this research aims to address three research questions to fulfill four primary objectives. The first objective focuses on assessing the degree to which the GDPR is implemented in marketing firms in Portugal. The second objective examines the effectiveness of artificial intelligence (AI) in marketing. Lastly, the third objective investigates the challenges related to using AI for marketing in light of GDPR provisions and associated privacy concerns.

Concerning the first objective – *examine the extent of implementation of the GDPR in marketing companies in Portugal*, we see that the GDPR has been in effect since May 2018 and applies to all companies operating within the European Union (EU), including Portugal. In Portugal, marketing companies are required to comply fully with the GDPR when handling personal data. The GDPR sets out rules regarding the collection, processing and storage of personal data of individuals within the EU with the aim of protecting their privacy and giving them more control over their personal information (David and Kush, 2013). The extent of implementation of the GDPR in marketing companies in Portugal may vary depending on several factors such as size of the company, and the level of awareness and commitment to data protection regulations. The main focus of this dissertation regarding the extent of implementation of GDPR focuses on the level of awareness and commitment to the GDPR among marketing firms in Portugal.

Also, we try to understand how these marketing companies have been able to been able to implement the GDPR since 2018. This opens the path for the first research question:

RQ1: In what ways have GDPR influenced companies regarding marketing in Portugal?

Under the first objective, it is pertinent to find out the level of awareness, and commitment of these marketing companies towards the implementation of the GDPR in their marketing practices. Focusing on the mode of implementation, in line with the existing literature, the study will reveal the level of consent management (Aseri, 2020), transparency (Avunduk & Aytac, 2020), data minimization (Aseri 2020), data security (encryption, access controls, regular security audits, and employee training on data security best practices), data subject rights, data processing agreements, privacy by design and default (Krishnamurty, 2020), data breach, and

regular compliance reviews measures (Bruno, Jelena & Edo, 2018), that these marketing companies demonstrate through their commitment to protecting individuals' privacy rights and ensuring compliance with the GDPR in their marketing practices.

RQ 2: Can GDPR have an impact on the efficiency of artificial intelligence?

Moving over to the second and third objective - *discover the ways which the GDPR has affected the efficiency of artificial intelligence in marketing*, the study will evaluate the impacts of the GDPR on the efficiency of AI in marketing companies in Portugal, and the challenges posed. The literature review as discussed includes data collection and processing limitations (Haleem et al., 2022), consent requirement (Andrei, 2022), data portability and right to erasure (Avantika, 2023), algorithm transparency and accountability (Kumari, 2021), data security and privacy impact assessments (Mark et al, 2018; Sinteza 2018) as ways in which the efficiency of artificial intelligence can be impacted during marketing processes. These impacts which the GDPR introduces also serves as challenges and constraints for AI-driven marketing efforts, in compliance with its provisions. This is related to the third objective, and brings about the need to delve into the fourth objective and third research questions.

RQ 3: What are the measures available to curb the challenges facing the use of artificial intelligence in marketing?

This question covers objective 4, which focuses on *curbing the identified challenges associated with AI-driven marketing efforts by marketing companies in Portugal.* According to literature in other jurisdictions, data governance framework (Titiriga, 2020), and consent management platforms (Shastri et al., 2019) could aid curbing such challenges. However, it is unknown if these and other measures have been applied, or can be applied in Portuguese marketing firms.

Table 3.1: Elaboration of Research Questions, Objectives and Hypotheses

Research Questions	Objectives	Hypotheses	References
1. In what ways have GDPR influenced companies regarding marketing in Portugal?	**I.** Examining the extent of implementation of the GDPR in marketing companies in Portugal	*Extent of consent management*	Aseri (2020)
		Extent of data minimization	
		Extent of transparency	Avunduk and Aytac (2020)
		Extent of data security	Krishnamurty (2020)
		Extent of data breach notification	Bruno, Jelena and Edo (2018)
2. Can GDPR have an impact on Artificial Intelligence?	**II.** Discover the ways which the GDPR has affected the efficiency of artificial intelligence in marketing	*Influence of data collection and processing limitations on AI*	Haleem et al., (2022)
		Influence of consent requirements	Andrei (2022)
		Influence of right to erasure	Avantika (2023)
		Influence of Algorithmic transparency	Kumari (2021)
	III. Discuss the challenges surrounding the use of AI for marketing considering the provision of GDPR and its privacy concerns	*Influence of data protection and consent*	Aseri (2020) Nicole (2023)
		Influence of data minimization	Cannataci et al., (2016)
		Influence of cross-border data transfers	Mark et al., (2017)
		Influence of data security and privacy	Sinteza (2018)
3. What are the measures available to curb the challenges facing the use of AI in marketing in Portugal?	**IV.** Provide the measures available to curb the challenges facing the use of AI in marketing in Portugal	*Influence of data governance framework*	Titiriga (2020)
		Influence of consent management platforms	Shastri et al., (2019)
		Influence of cross-border data transfer safeguards	Wu et al., (2020)

Source: Author

CHAPTER IV: METHODOLOGY

4.1 Research Model

Aligned with the literature review of this dissertation, several hypotheses were formulated for each research question. To address these hypotheses, a quantitative methodology was employed, which involved conducting three distinct online surveys, one for each research question. The responses from these surveys were analyzed using Structural Equations Modeling (SEM), a technique that establishes relationships between dependent and independent variables through multiple regression analyses (Ullman and Bentler, 2012).

This approach effectively measures relationships while accounting for measurement errors by estimating and eliminating them. According to Tarka (2018), SEM is particularly advantageous as it utilizes diagrams to clearly illustrate the proposed relationships between variables, making it easier to understand. Another benefit of SEM is its ability to facilitate statistically significant comparisons between theories and models, which will be valuable for analyzing the three research questions in an integrated discussion.

Tarka (2018) highlights the relevance of SEM in analyses requiring background knowledge, as it supports the estimation processes of the model. SEM enables complex and multidimensional analyses of empirical data, incorporating both theoretical constructs and real-world aspects, including abstract concepts. Furthermore, Ullman and Bentler (2013) note that SEM serves as a confirmatory analysis rather than an exploratory one, which is crucial since the surveys in this dissertation aim to validate assertions derived from the literature review. This confirmation is a primary reason for utilizing SEM in the analysis.

4.2 Collection of Data

The method of data collection is a crucial aspect of any research, encompassing the sources or areas the study will explore. Failing to specify the method of data collection or the relevant sources can lead to uncertainty and lack of direction in research. Data collection methods are typically divided into two categories: primary and secondary sources, which will be outlined below.

Primary data refers to information collected directly from respondents, often referred to as "raw data." According to Akala (2020), data gathered specifically for research purposes is considered primary data. In this study, primary data was collected through structured online surveys (via Google Docs) to effectively meet the objectives of the research. Respondents from

diverse backgrounds and levels will provide their perspectives on the effectiveness of organizations' AI-driven marketing strategies, with attention to the impact of the GDPR and the challenges associated with using AI in marketing. Additionally, three business organizations will be examined to assess their awareness of the GDPR in marketing, the impact of the regulation on AI efficiency, and the measures they have implemented to address the challenges of AI in marketing.

Secondary data, on the other hand, will be sourced from books, articles, journals, peer-reviewed studies, magazines, and other relevant materials to support the research. It is also essential to rely on previous literature and theories by relevant authors to expand the scope of this study. These secondary sources will include related works by previous researchers who have investigated data security and protection, with a particular focus on GDPR, AI, and marketing practices in Portuguese companies.

4.3 Conceptual Models

4.3.1 Conceptual Model – 1st RQ

Hypotheses for the 1st Research Question – **To what extent has GDPR been implemented in marketing companies in Portugal?**

H1a – Larger companies with more resources are more likely to implement GDPR comprehensively

H1c – Presence of investment in data protection technology are positively associated with GDPR compliance

H1d – Strongly regulatory and legal enforcement encourages better GDPR implementation

H1e – Customer trust and perception mediate the relationship between GDPR implementation and marketing outcomes

H1f – Industry trends and competitive pressure moderate the relationship between company characteristics and GDPR implementation

This conceptual model provides a structured approach to understanding the extent of GDPR implementation in marketing companies in Portugal, considering various influencing factors and their interrelationships.

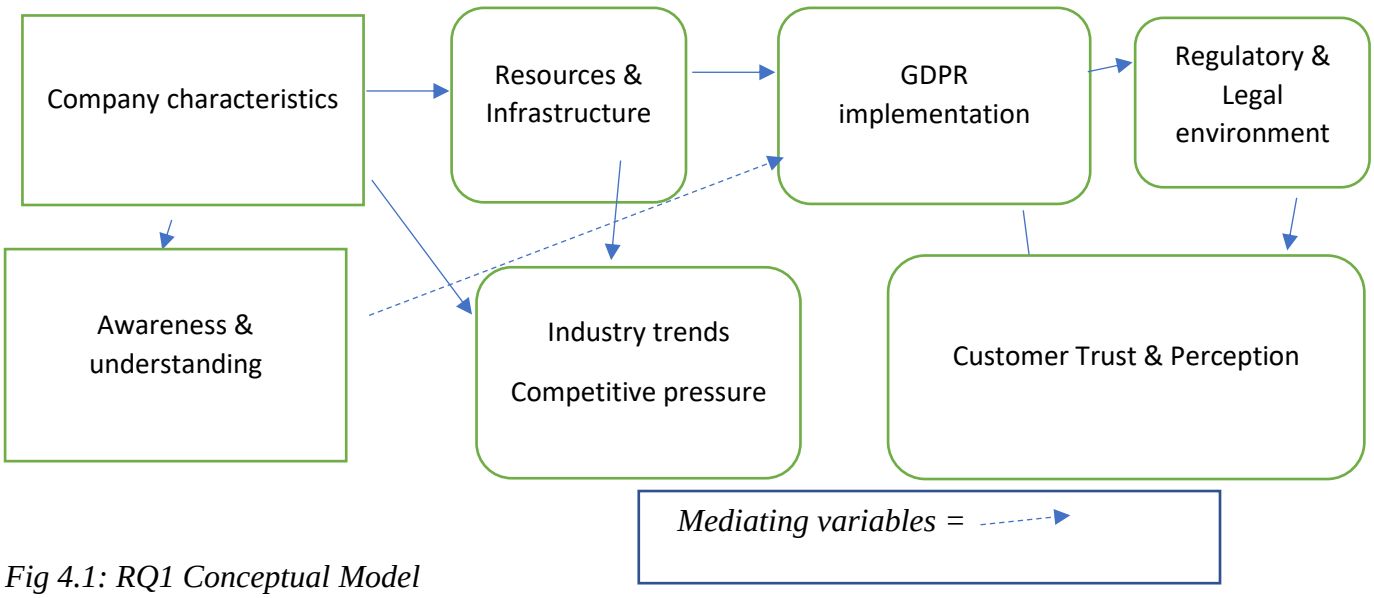

Fig 4.1: RQ1 Conceptual Model

Source: Author

Table 4.1: RQ1 Variables and indicators

To what extent has GDPR been implemented in marketing companies?	
Variables	**Indicator**
Awareness and understanding of GDPR	Knowledge of concept and provisions (David and Kush, 2013; Krishnamurty 2020)
Resources and Infrastructure	Investment in data protection technology (Carter et al., 2015; Mark et al., 2017)
Regulatory and legal environment	Enforcement of GDPR and data protection laws (Burri & Schlar 2016)
Customer trust and perception	Increased patronage and satisfaction among consumers (Mark et al., 2017)
Industry trends & competitive pressure	Improved data protection compared to other counterparts (Beacham, 2018)

Source: Author

4.3.2 Conceptual Model – 2nd Research Question

Hypotheses for the 2nd Research Question – **What are the ways in which the GDPR has affected the efficiency of artificial intelligence in marketing?**

H2a – GDPR compliance requirements negatively impact the efficiency of AI in marketing by limiting data availability and quality

H2b – Organizational adaptations to GDPR increase operational costs, which in turn affects the efficiency of AI in marketing

H2c – Technological advancements in privacy-preserving AI mitigate the negative impact of GDPR on AI efficiency

H2d – Market and consumer behaviour moderates the relationship between GDPR compliance and AI efficiency, where increased consumer trust can enhance AI effectiveness

H2e – Company characteristics and AI maturity level control the extent to which GDPR impacts AI efficiency

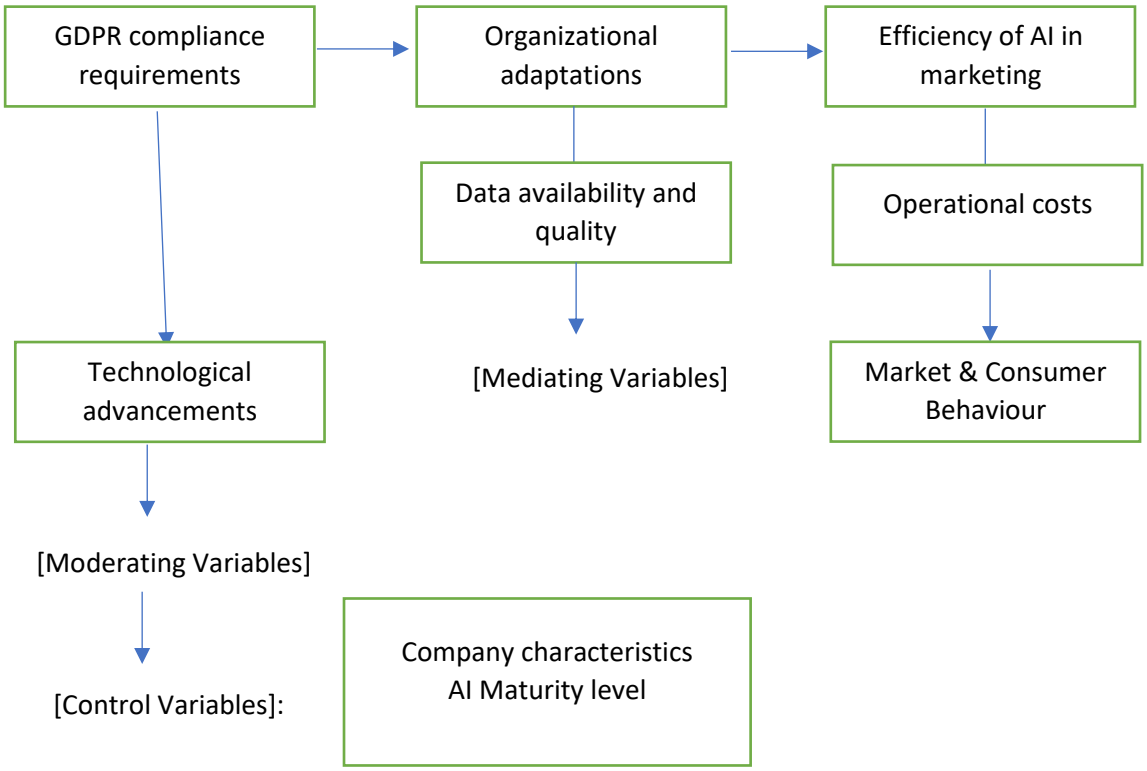

Fig 4.2: RQ2 Conceptual model

Source: Author

Table 4.2: RQ2 Variables and indicators

What are the ways in which the GDPR has affected the efficiency of artificial intelligence in marketing?	
Independent variable	**Indicator**
GDPR compliance requirements	Data minimization and anonymization; Explicit consent for data collection and processing; data subject rights (Beckett, 2018; Multi-stakeholder Expert Group, 2019)
Organizational adaptations	Changes in data collection practices; implementation of data protection policies; investments in compliance technologies and infrastructure (Carter et al., 2015, Mark et al., 2017)
Dependent variables	**Indicator**
Efficiency of AI in marketing	Accuracy and effectiveness of AI algorithms; speed and scalability of AI operations; innovation and development in AI marketing strategies; ROI on AI-driven marketing campaigns (Skierra, 2022; Robert 2023)

Mediating variables	**Indicators**
Data availability and quality	Changes in data quality due to anonymization and minimization; access to diverse data sources (Mark et al., 2017)
Operational costs	Increased costs of compliance; cost associated with data protection measures; resource allocation for ongoing GDPR compliance (Claudia, 2020)
Moderating variables	**Indicators**
Technological advancements	Developments in privacy-preserving AI technologies; adoption of federated learning and other GDPR-compliant AI techniques (Claudia, 2020)

Source: Author

4.3.3 Conceptual Model – 3rd Research Question

Hypotheses for the 3rd Research Question – **What are the challenges surrounding the use of AI for marketing considering the provision of GDPR and its privacy concerns?**

H3a – GDPR provisions create significant challenges for the use of AI in marketing by restricting data accessibility and increasing compliance costs

H3b – Privacy concerns heighten the challenges faced in AI-driven marketing by influencing consumer trust and data security requirements

H3c – Organizational responses mediate the relationship between GDPR provisions/privacy concerns and challenges by determining how companies adapt their practices

H3d – Technological adaptations help mitigate the challenges posed by GDPR and privacy concerns, enhancing AI's viability in marketing

H3e – The regulatory environment moderates the impact of GDPR provisions on AI marketing challenges by varying enforcement and guidance

H3f – Market dynamics influence the severity of challenges by shaping competitive pressures and consumer expectations

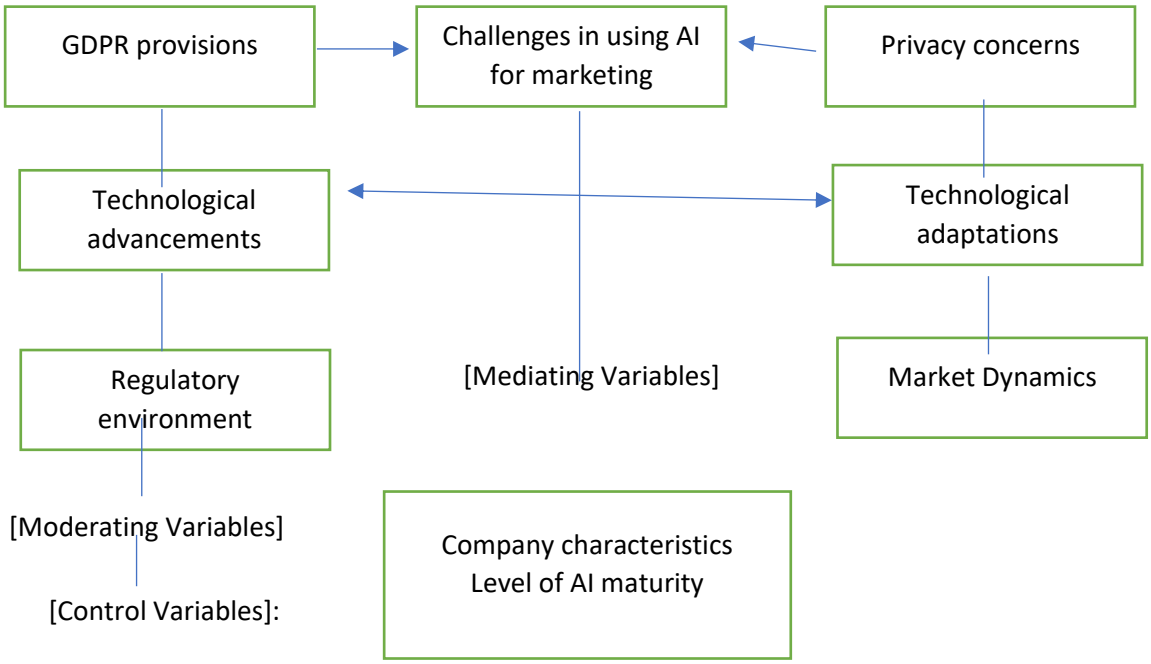

Fig 4.3: RQ3 Conceptual Model

Source: Author

Table 4.3: RQ3 Variables and indicators

What are the ways in which the GDPR has affected the efficiency of artificial intelligence in marketing?	
Independent variable	**Indicator**
GDPR Provisions	Data minimization; Explicit consent; data subject rights (Beckett, 2018; Multi-stakeholder Expert Group, 2019)
Privacy concerns	Consumer trust and perception of data use; concerns over data security and breaches, ethical considerations in data handling (Westlund, 2018)
Dependent variables	**Indicator**
Challenges in using AI for marketing	Data accessibility and quality; compliance costs; limitations on personalized marketing; innovation constraints due to regulatory restrictions (Shastri et al., 2019)
Mediating variables	**Indicators**
Data availability and quality	Changes in data quality due to anonymization and minimization; access to diverse data sources (Beckett, 2018)
Operational costs	Increased costs of compliance; cost associated with data protection measures; resource allocation for ongoing GDPR compliance (Shastri et al., 2019)
Moderating variables	**Indicators**
Technological advancements	Developments in privacy-preserving AI technologies; adoption of federated learning and other GDPR-compliant AI techniques (Claudia, 2020)

Source: Author

CHAPTER V: PRESENTATION AND DISCUSSION OF FINDINGS

Overview

This chapter presents the empirical findings and comprehensive analysis regarding the influence of the General Data Protection Regulation (GDPR) on the advancement of Artificial Intelligence (AI) in marketing. The findings are organized into two segments: qualitative and quantitative approaches.

The quantitative analysis utilizes descriptive methods, employing tables and graphs to illustrate the overall results from data gathered through online questionnaires. This approach provides a comprehensive view of individuals' opinions on GDPR implementation, AI usage, and their intersection within organizations. The results are systematically presented based on feedback from 100 respondents in Portugal who participated in the survey.

In contrast, the qualitative approach offers a deeper analysis based on interviews with three participants from different sectors: Fast-Moving Consumer Goods (FMCG), Artistic Management, and a Software Company. The researcher faced challenges in reaching out to participants via email due to scheduling conflicts and willingness to participate. Nevertheless, three individuals agreed to interviews, contributing valuable insights for the research.

The researcher analyzes the gathered information to address the research questions, focusing on key themes from the online interviews. The discussion is structured according to the conceptual framework, integrating insights from the three interviewees with the overall survey results to create a balanced examination of the research proposal.

5.1 Findings

Section 1: Statistical Data

The target sample for this online study consisted of 100 respondents. Overall, all 100 participants completed the survey, resulting in a response rate of 100%. This indicates that the respondents were genuinely interested in the research and willing to participate despite any prior commitments.

Part A: Demographic Data

Respondents' age distribution

The figure and table below indicate that approximately 37% of the respondents were aged 18 to 25, while 36% were between 26 and 30 years old. Additionally, 23% of the respondents fell within the 31 to 40 age range, and those aged 40 and above made up 5% of the total responses. This data reveals that the majority of respondents were aged 18 to 25, whereas the smallest group was those over 40.

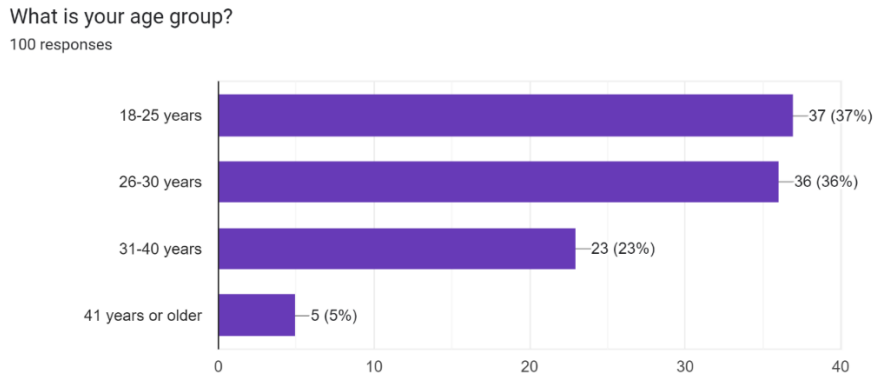

Fig 5.1: *Age range of respondents*

Source: Author

Country of residence

The residence of the respondents in the survey revealed a total of 73% of the respondents who reside within Portugal. The survey showed that 18% of the respondents resided within the EU but outside Portugal, while 9% of the respondents resided outside the EU. This shows that most of the respondents resided within Portugal, while the least of the respondents resided outside the EU.

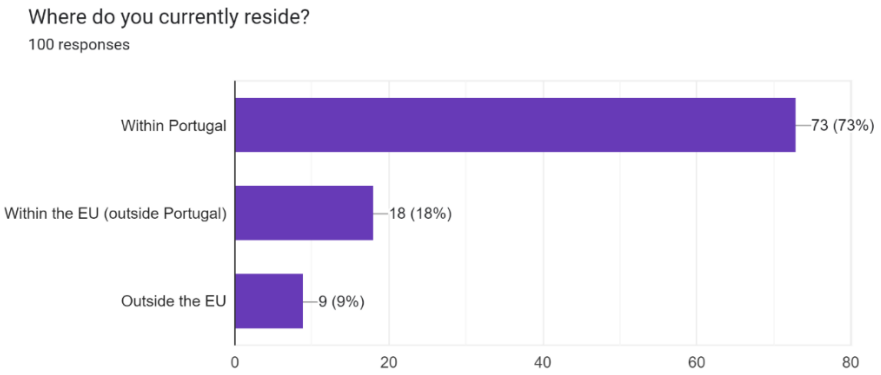

***Fig 5.2**: Country of Residence*

Source: Author

Familiarity with GDPR

The respondents in the survey revealed that 18% of the respondents are completely familiar with GDPR. The survey showed that 29% of the respondents were knowledgeable about GDPR. Also, the survey revealed that 25% are familiar with GDPR, 22% of the respondents were somewhat aware, while 6% were not aware of GDPR. This shows that most of the respondents were knowledgeable about GDPR, while the least of the respondents were not aware of GDPR.

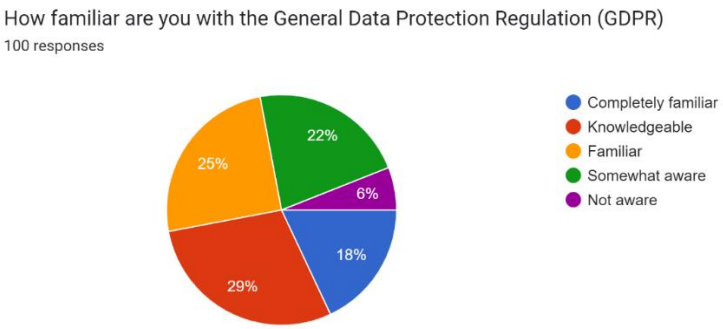

***Fig 5.3**: Familiarity with GDPR*

Source: Author

Familiarity with AI

The survey results indicated that 30% of respondents are fully knowledgeable about artificial intelligence, while 38% have a solid understanding of it. Additionally, 17% reported being somewhat familiar with AI, 12% expressed limited awareness, and 3% indicated they were unaware of it. This suggests that the majority of respondents possess knowledge about artificial intelligence, with the smallest group lacking awareness.

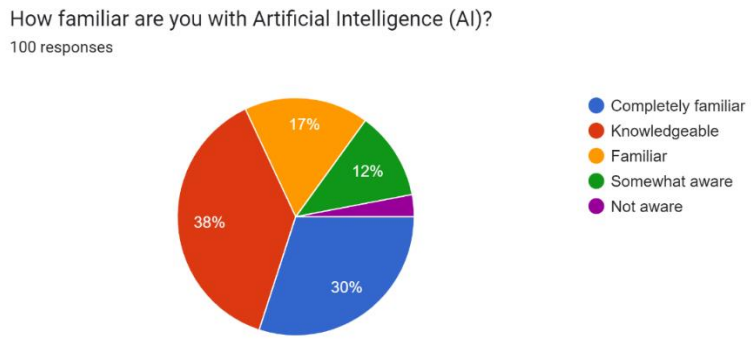

***Fig 5.4**: Familiarity with AI*

Source: Author

Concerns about data protection and privacy

The survey findings revealed that 77.6% of respondents are very concerned about their data protection and privacy, 20.4% are somewhat concerned, and only 2% expressed no concern. This indicates that a significant number of individuals are highly worried about their data security and privacy.

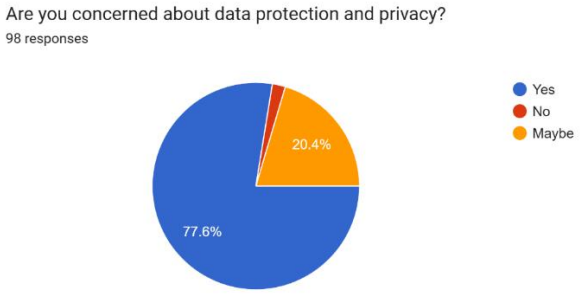

***Fig 5.5**: Concern about Data Protection and Privacy*

Source: Author

Views on the GDPR

As illustrated below, 50.5% of respondents believe that the GDPR is very effective, 28.3% consider it good, 18.2% find it fair, while 3% feel it is unnecessary. This demonstrates that the respondents generally view the GDPR as a strong regulation that safeguards the data protection and privacy of citizens in Portugal.

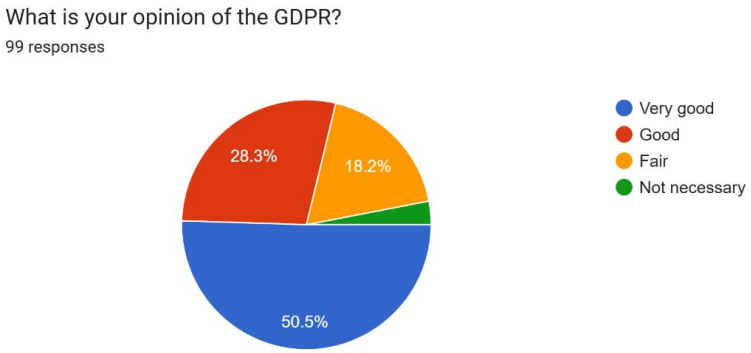

***Fig 5.6**: Opinion regarding the GDPR*

Source: Author

Businesses compliance with GDPR

9.1% of the respondents "strongly agreed" that businesses in Portugal are fully compliant with GDPR, 37.4% of the respondents also "agreed" with the assertion while 43.4% were "neutral" about the assertion. However, 7.1% of the respondents "disagreed" with the assertion and 3% "strongly disagreed", noting that businesses in Portugal are not fully compliant with the GDPR. Therefore, this survey shows that there is a neutral stand as regards business compliance GDPR.

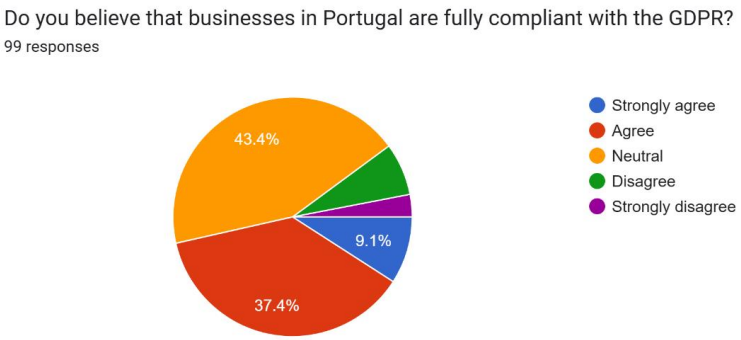

***Fig 5.7**: Business compliance with GDPR*

Source: Author

Concerns with the use of AI

The responses gotten from this survey revealed that 53% of the respondents had concerns that the use of AI by firms during marketing activities could infringe on their privacy rights while 42% of the respondents had no concern. However, 5% of the respondents were unsure if the use of AI could infringe on their privacy rights. This shows that most of the respondents were concerned about AI infringing on their privacy rights when used by firms during marketing activities.

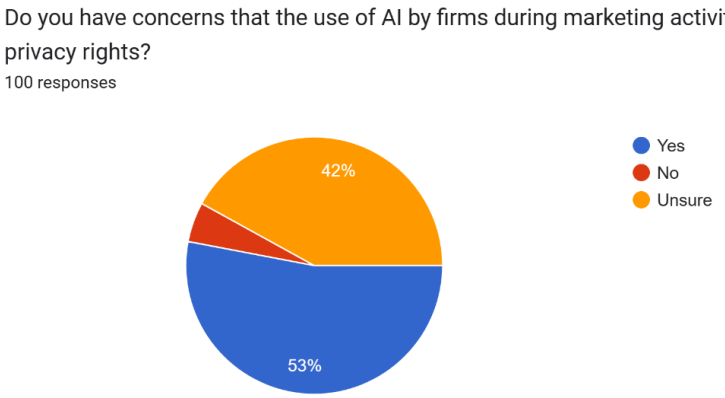

***Fig 5.8**: Concerns with the use of AI*

Source: Author

Provision of consent to organizations

35% of respondents said they never provide their approval, whilst 51% of respondents said they typically give organisations or websites permission to access their personal information. But 14% of the participants were unclear about whether they agree to websites or organisations. This demonstrates that the majority of respondents usually consent to websites or organisations evaluating their data. This can be the case because access to the transactions within the company requires them to submit these data.

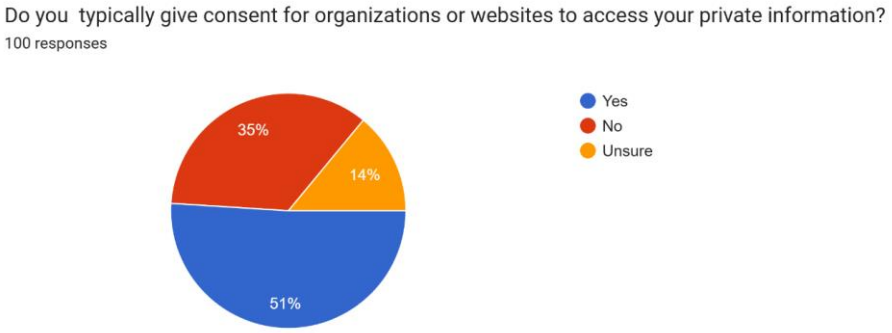

***Fig 5.9**: Provision of consent to organizations*

Source: Author

Filed a complaint against an organization regarding invasion of data privacy

87.8% of the respondents indicated that they have never filed a complaint against an organization regarding their use of AI in marketing and potential invasion of their data privacy, while 11.2% were unsure if they have filed a complaint or not. However, 1% of the respondents noted that they have previously filed a complaint.

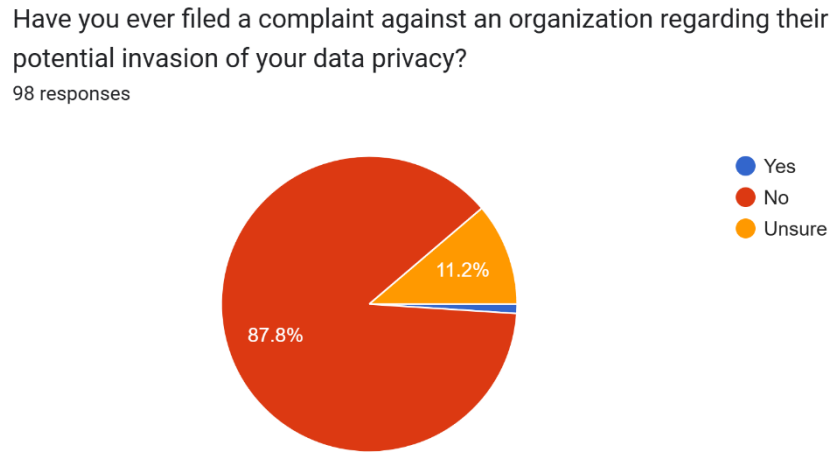

***Fig 5.10**: filed a complaint against an organization*

Source: Author

Willingness to provide more data to trusted organization's AI

According to the poll results, 37% of respondents "agreed" and 11% of respondents "strongly agreed" that they would be prepared to provide an organization's AI additional data if their confidence was established. 34% of those surveyed took a neutral stance. Nonetheless, 11%

and 7% disagreed and strongly disagreed, respectively, suggesting that even if trust is established, people won't be ready to provide an organization's AI further data. In spite of these opinions, the majority of respondents said they would provide more data to AI in reputable organisations.

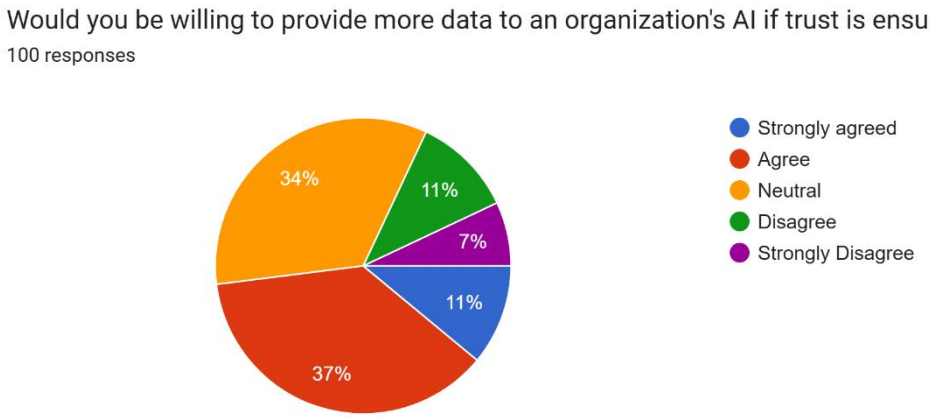

***Fig 5.11**: Willingness to provide more data to trusted organization's AI*

Source: Author

Type of data provided to organizations

According to the survey results, 93 respondents said they share their online identities; 46 respondents said they typically share financial and religious information; 44 respondents share healthcare information; 49 respondents share their identification number; and 5 respondents share other information not covered by the survey. According to the results, Portuguese residents most frequently disclose their online identities to commercial organisations.

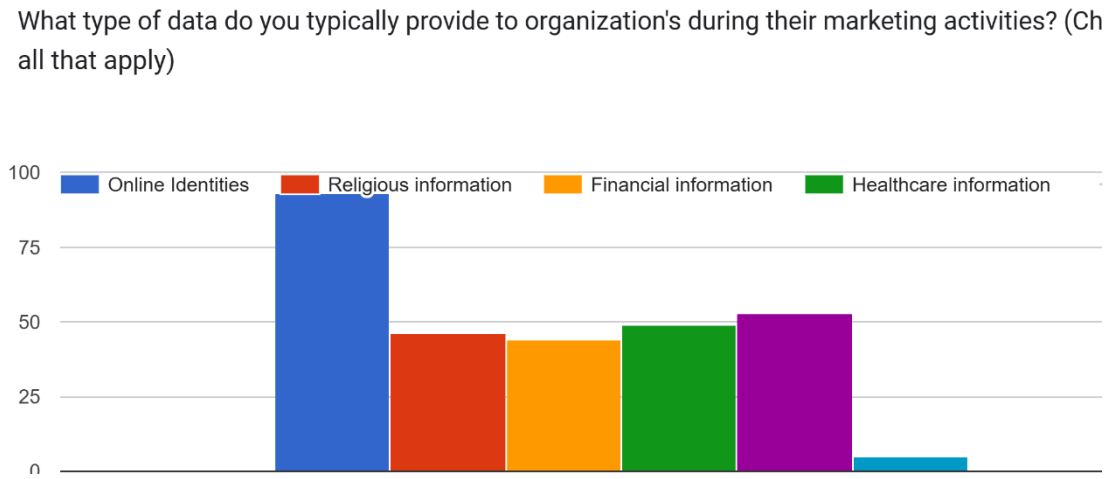

***Fig 5.12**: Type of data provided to organisations*

Source: Author

Type of consent provided to organizations

According to the study results, 50% of participants provide their explicit agreement before granting AI access to their data, 20% give their implicit approval, and 30% give their partial consent. This suggests that the majority of responders give their express consent. Customers provide their direct approval when they are requested to do so verbally, in writing, or via an internet checkbox so that these commercial companies can gather their data.

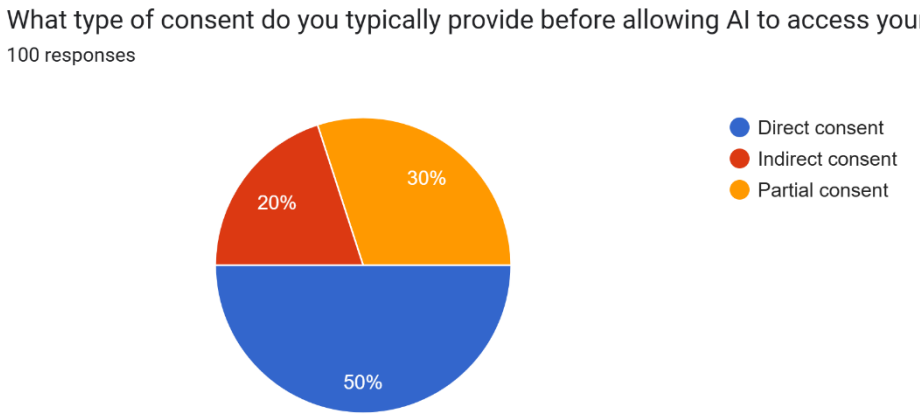

***Fig 5.13**: Type of consent provided to organisations*

Source: Author

Data collected by organization's AI is strictly used for the intended purpose

As the survey results showed, 8.1% of participants said they thought the organization's AI only used the data for the intended purpose. 59.6% of respondents were dubious, while 32.3% of respondents stated that they strictly think their data would be used for the intended purpose. Therefore, it may be concluded that the majority of people in Portugal are unsure if their personal information is being used for purposes other than those for which it was originally intended.

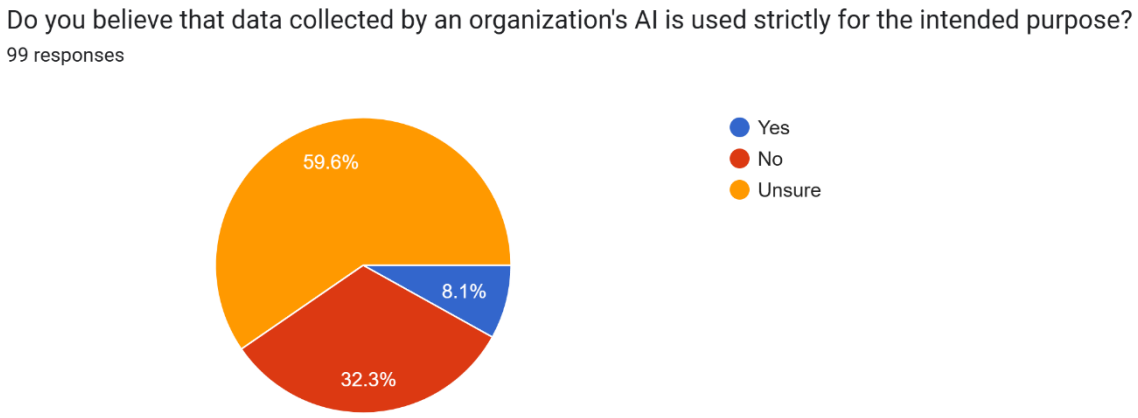

***Fig 5.14**: Data is strictly used for intended purpose*

Source: Author

Reading and understanding terms and conditions before agreeing to them

30.6% of respondents indicated that they read and comprehend terms and conditions prior to agreement, 41.8% stated that they do not read and understand them, while 27.6% were uncertain. This indicates that the majority of respondents typically do not read or comprehend terms and conditions prior to consenting to them.

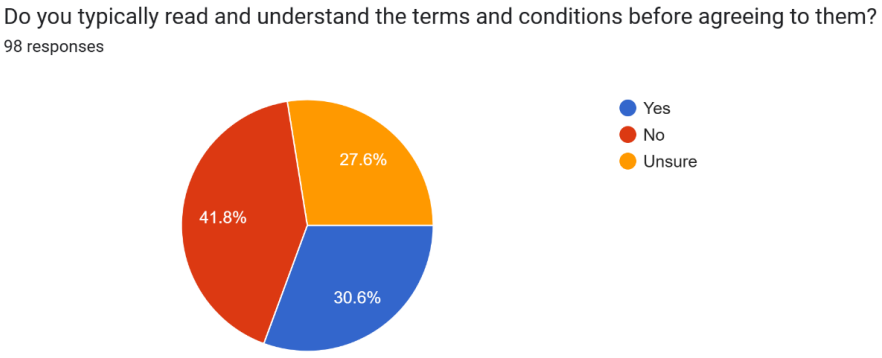

***Fig 5.15**: Reading and understanding terms and conditions before agreeing to them*

Source: Author

Preference for the use of AI for marketing purpose by organizations

The study results indicated that 7.1% of respondents highly favoured the use of AI by organisations for marketing, 36.4% agreed, 53.5% remained neutral, while 2% and 1% expressed disagreement and extreme disagreement, respectively. The majority of respondents

maintained a neutral position regarding the use of AI for organisational marketing goals.

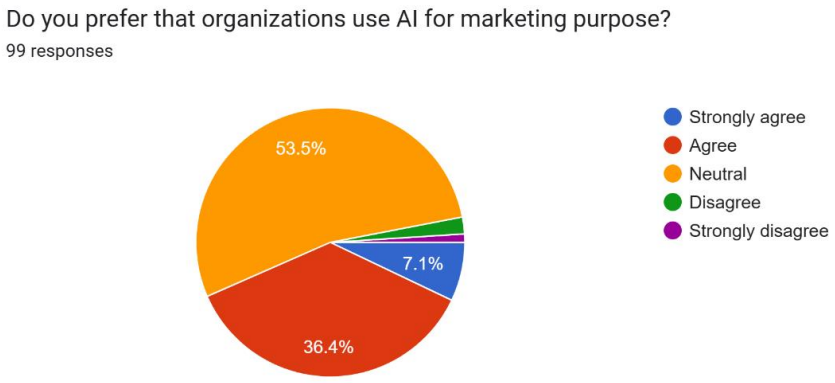

***Fig 5.16**: Use of AI for marketing purpose by organisations*

Source: Author

Effect of GDPR in the protection of data

It was revealed that most of the respondents (48%) noted that they were unsure if they have noticed changes in how AI or organisations handle or protect their data since the implementation of the GDPR. However, 40% of the respondents noted that they have observed changes, while others (12%) noted that they have not seen any changes. This implies that majority of the respondents are unsure about the effect of implementation of GDPR on the handling or protection of their data.

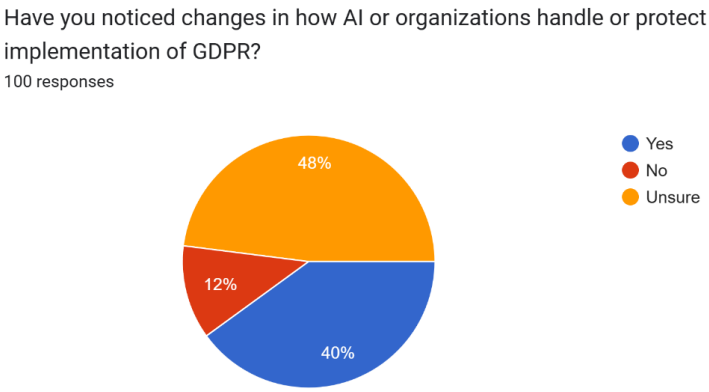

***Fig 5.17**: Effect of GDPR in the protection of data*

Source: Author

Adequate compliance with GDPR by organizations

From the results, 18% of the respondents noted that they believe that organizations maintain adequate compliance with the GDPR when using AI in marketing. However, 22% of the respondents indicated that they do not believe organizations maintain adequate compliance while 60% of the respondents were unsure. This shows that most of the respondents were uncertain if organizations maintained adequate GDPR compliance when using AI in marketing.

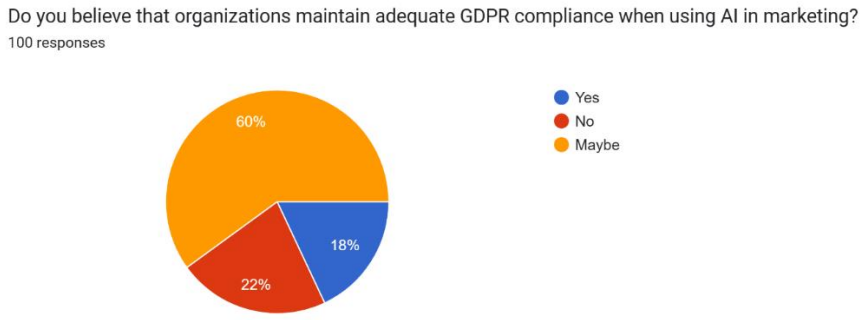

***Fig 5.18**: Adequate compliance with the GDPR by organizations*

Source: Author

5.2 Quantitative Results

The following hypotheses are tested as deduced in line with the research questions

H1: Presence of investment in data protection technology are positively associated with GDPR compliance

H2: Customer trust and perception mediate the relationship between GDPR implementation and marketing outcomes

H3: GDPR compliance requirements negatively affect the efficiency of AI in marketing by limiting data availability and quality

H4: Organizational adaptations to GDPR increase operational costs, which in turn affects the efficiency of AI in marketing

The moderating effect were analysed using the following hypotheses tested under the bootstrap section

H5: Industry trends and competitive pressure moderate the relationship between company characteristics and GDPR implementation

H6: Technological advancements in privacy-preserving AI mitigate the negative impact of GDPR on AI efficiency

H7: GDPR provisions create significant challenges for the use of AI in marketing by restricting data accessibility and increasing compliance costs

Table 5.1: Structural Model Assessment

PATH	Path coefficient	Standard Dev	*t* statistics	*p* values
Implementation of GDPR/ Presence of investment in data privacy -> Customer trust	0.234	0.043	6.237	0.000
GDPR --> Limiting data availability and quality of AI	0.265	0.004	3.476	0.000
GDPR → increasing compliance costs of utilizing AI in marketing	0.358	0.043	8.774	0.000

Source: Author

Table 5.2: Bootstrap results for Indirect Effects

Indirect Effect	Estimates	Standard Dev	*t* statistics	*p* values
Competitive pressure → GDPR → customer trust (1F)	0.145	0.032	5.806	0.000
Technological advancements → GDPR → AI efficiency (2C)	0.010	0.027	2.552	0.007
GDPR → utilization of AI → restricting data accessibility & increasing compliance costs (3A)	0.157	0.052	4.140	0.000

Source: Author

The results from table 1 show that the Awareness of GDPR has a significant positive effect on customer trust ($\beta = 0.235$, $p<0.001$) and the Limiting data availability and quality of AI ($\beta = 0.265$, $p<0.001$), thus supporting hypotheses H1 and H2 respectively. The results also show that implementation of GDPR has a significant positive effect on increasing compliance costs of utilizing AI in marketing ($\beta=0.358$, $p<0.001$), thus supporting hypotheses H3.

Thus, it can be noted that the hypothesis that investment in data protection technology is positively associated with GDPR compliance (H1) aligns with existing literature that underscores the importance of technological infrastructure in achieving regulatory compliance.

Previous findings have shown that organizations that invest in advanced data protection technologies, such as encryption, anonymization, and secure data storage, are more likely to meet GDPR requirements. These technologies enable organizations to protect personal data, reduce the risk of data breaches, and ensure that they adhere to GDPR's stringent data protection standards (Goddard, 2017; Voigt & Von dem Bussche, 2017).

It was also noted that awareness of GDPR has a positive effect on customer trust (H2). This is in line with the findings of Blind, Niebel & Rammer (2023) who discovered that firms that update their data protection strategy in line with the provisions of the GDPR tend to possess improved consumer trust and improved product innovation.

The acceptance of the third hypothesis (H3) which provides that, GDPR compliance requirements negatively affects the efficiency of AI in marketing by limiting data availability and quality, is consistent with the previous findings of Elliot (2018) and Wachter & Mittlestadt (2019) which points to the challenges GDPR poses for AI applications in marketing. GDPR's strict data protection requirements, such as data minimization and the need for explicit consent, have been found to limit the availability of data that AI systems rely on for effective functioning. The reduced data quality and quantity hinder AI's ability to perform predictive analytics and personalized marketing, ultimately affecting its efficiency.

The fourth hypothesis (H4), Organizational adaptations to GDPR increase operational costs, which in turn affects the efficiency of AI in marketing, is supported by existing literature that discusses the financial and operational burdens of GDPR compliance. Studies indicate that the need for organizations to adapt their processes, systems, and data management practices to meet GDPR requirements leads to increased operational costs. These costs can include investments in new technology, staff training, and legal consultations, which can divert resources away from other business functions, including AI-driven marketing initiatives (De Hert et al., 2018; DLA Piper, 2019). As a result, the efficiency of AI in marketing may be compromised due to the allocation of resources to ensure compliance.

To test the mediation hypotheses, a bootstrapping procedure was employed using SmartPLS 3 (Hair et al., 2017). The results of the mediation effects are presented in Table 2, where we can observe the indirect effects of the variables. Specifically, competitive pressure positively influences the implementation of GDPR, which in turn enhances customer trust ($\beta=0.145$, $p<0.001$). Additionally, technological advancements do not lessen the impact of GDPR on AI efficiency ($\beta=0.010$, $p>0.001$). Furthermore, the implementation of GDPR affects the use of

AI in marketing by potentially limiting data accessibility and increasing compliance costs (β=0.157, $p<0.001$).

Thus, in view of the tested “mediation hypotheses” it can be noted that industry trends and competitive pressure moderate the relationship between company characteristics and GDPR implementation (H5). The acceptance of this hypothesis aligns with studies that suggest competitive pressure and industry trends influence how companies implement GDPR. Literature has shown that organizations in highly competitive industries are more likely to adopt robust data protection measures due to the pressure to maintain consumer trust and avoid reputational damage. For instance, research by Reuschke et al. (2020) suggests that companies in industries heavily reliant on consumer data, such as technology and marketing, tend to prioritize GDPR compliance to maintain competitiveness. Additionally, Bradford et al. (2020) found that competitive pressure from peers, especially in data-intensive sectors, drives companies to implement GDPR at higher standards than required by law, aligning with the moderating effect of these factors.

Findings from the analysis rejected hypotheses 6, which states that technological advancement in privacy-preserving AI mitigate the negative impact of GDPR on AI efficiency. The rejection of this hypothesis contrasts with existing literature, which suggests that technological advancements like privacy-preserving AI (e.g., federated learning, differential privacy, and homomorphic encryption) can help mitigate GDPR's restrictions on data use. Rieke et al. (2018) argue that privacy-preserving AI methods allow organizations to maintain AI performance by processing data in a decentralized manner without compromising data privacy. Similarly, Shokri and Shmatikov (2015) emphasize that privacy-preserving technologies can maintain AI's operational capacity while complying with GDPR. The rejection of this hypothesis in this study suggests that despite these advancements, they may not yet be widely adopted or fully effective in alleviating the impact of GDPR on AI efficiency in practice.

The acceptance of the hypothesis seven (H7) which provides, GDPR provisions create significant challenges for the use of AI in marketing by restricting data accessibility and increasing compliance costs, is consistent with existing literature, which indicates that GDPR's restrictions on data collection, processing, and storage create significant hurdles for AI-driven marketing. Studies highlight that GDPR's requirements for explicit consent and the right to erasure severely limit the data available for training AI models, reducing their effectiveness in personalizing marketing content. Research by Wachter and Mittelstadt (2019) further discusses

how compliance with GDPR increases operational costs, especially for small and medium enterprises, which need to implement data management systems that meet regulatory standards. The increased compliance burden often diverts resources from marketing innovation to regulatory adherence, thereby stifling AI efficiency in marketing applications.

5.3 Discussion of Findings

To analyse the findings of this research, it is essential to elaborate on the presentation of the aforementioned statistics, which provide a comprehensive overview of this study. This will reinforce the exploratory analysis that aligns with the objectives of the research, considering the significant themes identified from interviews conducted with four participants (three representatives of firms in Portugal) to arrive at a valid conclusion for this study. The connection among the conceptual framework, literature review, and study objectives will be demonstrated to illustrate the requisite outcome and their significant correlation with previously stated findings for potential future advancements, if necessary.

Findings 1: To what extent do Firms in Portugal implement data protection and privacy in marketing activities as provided by the GDPR

The study shows the importance of the General Data Protection Regulation (GDPR) in safeguarding privacy and regulating data use. Both firms showed a strong understanding of and commitment to GDPR principles, ensuring regulatory compliance and fostering trust. In this vein, the study found that awareness of GDPR has a significant positive effect on consumer trust. This finding could be based on the premise that when a company is knowledgeable about GDPR, it implements stringent data protection measures, which ensures that consumers' personal information is secure. This reassures customers that their data is safe from breaches and misuse. It was also observed that such customer trust and perception mediate the relationship between GDPR implementation and marketing outcomes. Effective GDPR implementation reassures customers that their personal data is handled securely and transparently. This trust leads to a more positive perception of the company, making customers more likely to engage with marketing efforts and respond favourably to campaigns. The study aligns with the views of Swire and Kennedy-Mayo (2017) on GDPR's robust data protection measures, indicating its effective implementation and recognition in Portugal across different sectors.

Findings 2: To set out the impacts of GDPR on the use of Artificial Intelligence

The findings from the analysis indicate that the General Data Protection Regulation (GDPR) significantly influences how artificial intelligence (AI) is used in marketing. The participants' experiences align with broader trends observed in the literature regarding the impact of GDPR on AI deployment.

Participant 1's cautious approach to AI utilization, focusing mainly on routine tasks and customer interactions, is reflective of broader concerns around GDPR compliance. The regulation imposes strict rules on data processing, requiring companies to ensure transparency, consent, and the minimization of data collection. These requirements often lead companies to limit their AI applications to avoid potential violations. Existing findings support this cautious approach, noting that organizations are particularly wary of the GDPR's hefty fines and the complexity of ensuring compliance in AI systems (Tikkinen-Piri, Rohunen, & Markkula, 2018).

Participant 2's emphasis on AI complementing rather than replacing human expertise highlights a critical aspect of GDPR compliance. GDPR mandates that data subjects have the right to human intervention in automated decision-making processes, ensuring that AI does not fully dictate outcomes without human oversight. This requirement has led companies to integrate AI in a way that enhances human decision-making rather than fully automating processes, as noted by Wachter and Mittelstadt (2019).

Participant 3's experience with using AI for targeted marketing and automation, while facing challenges with data privacy, underscores a key tension in the AI-marketing landscape. The GDPR's restrictions on data use for profiling and personalized marketing require companies to navigate complex compliance requirements while trying to maintain the effectiveness of AI-driven personalization strategies. Research by Skierra (2022) highlights the difficulty of balancing GDPR compliance with the need for personalized marketing, as AI systems rely heavily on large datasets that are now subject to strict regulation under GDPR.

From the quantitative results, the hypotheses tested reveals that GDPR compliance requirements negatively impact the efficiency of AI in marketing by limiting data availability and quality. GDPR restricts the amount of personal data that can be collected without explicit consent. This limits the volume of data available for AI algorithms, reducing their ability to generate accurate insights and predictions. The hypothesis testing also reveals that organizations adaptations to GDPR increase operational costs, which in turn affects the

efficiency of AI in marketing. This is based on the premise that implementing GDPR requires significant investment in new infrastructure for data protection, including secure shortage, encryption, and data management systems. These costs divert resources from AI development and marketing initiatives. This is in consonance with the findings of Taddeo &Floridi (2018) as he discovered that the ethical and operational challenges posed by regulations like GDPR and AI, including issues related to data accessibility, compliance costs, and the balance between technological advancements and regulatory movements.

In the same vein, the hypotheses tested shows that implementation of GDPR on the use of AI in marketing restricts data accessibility and increase compliance costs. This could be due to the fact that the implementation of GDPR on the use of AI in marketing restricts data accessibility by requiring explicit customer consent for data collection and imposing strict data minimization principles, which limit the volume and diversity of data available for AI analysis. Additionally, GDPR compliance increases operational costs due to the need for advanced data protection infrastructure, legal and consultancy fees, employee training, and ongoing data management and monitoring efforts. These factors collectively reduce the efficiency and potential of AI-driven marketing strategies.

Thus, firms integrate AI while ensuring GDPR compliance, encountering challenges in data collection, consent management, and privacy. The study confirms GDPR's impact on AI efficiency, requiring careful planning and oversight to maintain data protection and transparency.

Findings 3: To find out the measures available to curb the challenges facing the use of AI in marketing in Portugal

The findings from the study on AI-related marketing challenges in Portugal resonate with the broader challenges faced globally in integrating AI into marketing while ensuring compliance with data protection regulations like GDPR. The analysis highlighted significant organizational challenges, such as inadequate funding, low prioritization of data protection, difficulties in obtaining customer consent, and issues related to the right to erasure. These challenges are well-documented in the literature, which emphasizes that compliance with GDPR can be resource-intensive and requires a significant commitment from organizations (Voigt & Von dem Bussche, 2017). Previous literature have also revealed that the complexity of GDPR regulations often leads to organizational strain, particularly in balancing innovation with

compliance, as AI-driven marketing requires vast amounts of data that must be processed within the confines of GDPR (Tikkinen-Piri, Rohunen, & Markkula, 2018).

The findings also point to individual concerns, including uncertainty about how their data is used, consent given under pressure, unclear data retention periods, and complex data protection policies. Literature supports these concerns, noting that users often feel overwhelmed by the complexity of privacy policies and the lack of transparency in data handling practices (Milne & Bahl, 2010). The GDPR's emphasis on clear, informed consent and the right to be forgotten (the right to erasure) seeks to address these concerns, but implementation remains challenging (Regan, 1995).

As regards the measures to curb AI-related marketing challenges, Participant 2's recommendation to have DPOs oversee data protection strategies is a critical measure to ensure GDPR compliance. DPOs play a vital role in managing data protection impact assessments (DPIAs) and ensuring that AI systems are designed and implemented in a manner that complies with GDPR. This is in line with the findings of Goddard (2017) who revealed the importance of DPOs in navigating the complexities of GDPR, as they serve as the bridge between regulatory requirements and practical implementation within organizations.

The suggestion to use consent management platforms to streamline and automate the user consent process is supported by the literature as an effective way to manage consent under GDPR. These platforms help organizations maintain transparency and ensure that users are fully informed about how their data will be used, thereby enhancing trust and compliance (Voigt & Von dem Bussche, 2017). Automating consent processes also helps address the challenge of obtaining consent in a manner that is both user-friendly and compliant with GDPR.

Participant 3’s emphasis on clear and user-friendly consent mechanisms is crucial in addressing the issue of consent given under pressure. Previous findings have highlighted that simplifying consent processes and making them more transparent can significantly improve user understanding and engagement, reducing the likelihood of consent being perceived as coercive (Wachter & Mittelstadt, 2019). By providing clear information about data collection and its purposes, organizations can empower customers to make informed choices, thereby aligning with GDPR requirements.

With regards to identified challenges, the hypotheses testing further reveals that the existence of competitive pressure impacts the implementation of GDPR which improves customer trust. This is in consonance with the findings of Bradford et al., (2020) who found that competitive

pressure from peers, especially in data-intensive sectors, drives companies to implement GDPR at higher standards than required by law, aligning with the moderating effect on consumer trust. This is based on the fact that companies under competitive pressure strive to differentiate themselves. Thus, implementing GDPR effectively becomes a way to stand out as a trustworthy and responsible brand, attracting customers who prioritize data privacy.

To address these challenges, firms should focus on improving regulatory compliance, adopting best practices, managing consent effectively, minimizing data usage, enhancing transparency, and providing clear explanations of data use. Despite efforts like appointing DPOs and using consent management platforms, significant challenges remain, necessitating further action to improve GDPR compliance and data protection practices.

CHAPTER VI: CONCLUSION

6.1 Final Considerations

There were two research questions for this work. For the first one, *In what ways have General Data Protection Regulation (GDPR) influenced companies regarding marketing in Portugal?*, the presented study attempted to find out the extent of implementation of the GDPR in marketing companies in Portugal. After an extensive literature review, the concepts of GDPR, concepts of marketing and the impacts of GDPR on marketing firms were duly examined. Surveys were also carried out to evaluate the ways in which the GDPR has influenced marketing among Portuguese firms. The study revealed that various firms in Portugal have been compliant with the GDPR. The study also reveals that GDPR have resulted in data minimization which reduces the risk of data breaches and ensuring compliance; increased right of access and erasure; and it places restrictions on direct marketing activities, especially when using personal data such as email addresses or phone numbers.

Various hypotheses in line with this research question were formulated, and the hypotheses test tried to verify if there is a significant relationship between investment in data protection technology and GDPR compliance. What is shown by the analysis of the survey's (*Impact of GDPR on marketing activities)* responses is that these relations exist, and therefore that the presence of investment in data protection technology is positively associated with GDPR compliance. Customer trust and perception were also taken into consideration, to find out if these factors mediate the relationship between GDPR and marketing outcomes. From the analysis of the survey and hypotheses testing, it shows that customer trust and perception mediate the relationship between GDPR implementation and marketing outcomes.

Regarding the second research question, (*Can GDPR have an impact on artificial intelligence?*), an attempt was made to find out how GDPR affects artificial intelligence in marketing firms in Portugal. The research question in line with the second objective was to *discover the ways which the GDPR has affected the efficiency of artificial intelligence in marketing.* In this vein, it was observed that the GDPR has affected the efficiency of artificial intelligence in many ways. It was shown that GDPR limits AI capabilities because of the challenges with data handling and campaign evaluation. AI in marketing often relies on vast amounts of personal data to create personalized experiences, predictive models, and targeted campaigns. Under GDPR, firms must obtain explicit and informed consent from individuals before processing their data using AI. This means individuals must be clearly informed about

how their data will be used, and they must actively agree to this usage. GDPR requires that firms provide transparency about how AI algorithms make decisions, especially when these decisions impact individuals' rights. For marketing, this means firms must explain how AI-driven decisions, such as personalized recommendations or targeted ads, are made. Thus, hypotheses were formulated that attempted to find significant effect on GDPR compliance requirements on efficiency in marketing by limiting data availability and quality. The hypotheses were supported by the analysis of the online survey which showed that GDPR compliance requirements negatively affects the efficiency of AI in marketing by limiting data availability and quality. The hypotheses test also revealed that organizational adaptations to GDPR increase operational costs, which in turn affects the efficiency of AI in marketing.

Still on the second research question, the third objective discusses the challenges surrounding the use of AI for marketing considering the provision of GDPR and its privacy concerns. The survey found that firms integrate AI while ensuring GDPR compliance, but these results in challenges in data collection, consent management, and privacy. organizational challenges in GDPR compliance for AI in marketing, including inadequate funding, low prioritization, difficulties in obtaining customer consent, and issues with the right to erasure. Individual concerns include uncertainty about data usage, consent given under pressure, unclear data retention periods, and complex data protection policies. The statistical analysis of the model shows that GDPR provisions create significant challenges for the use of AI in marketing by restricting data accessibility and increasing compliance costs.

Regarding the third research question, *what are the measures available to curb the challenges facing the use of AI in marketing in Portugal?* The fourth objective seeks to provide the *measures available to curb the challenges facing the use of AI in marketing in Portugal.* The survey reveals that firms should focus on improving regulatory compliance, adopting best practices, managing consent effectively, minimizing data usage, enhancing transparency, and providing clear explanations of data use. Despite efforts like appointing DPOs and using consent management platforms, significant challenges remain, necessitating further action to improve GDPR compliance and data protection practices.

Having demonstrated the positive correlations among all the specified variables and their corresponding study topics, it is crucial to consider the implications of these results when evaluated together. An integrated discussion of results was conducted to demonstrate the interdependence of each notion on the others. Through a literature research and individual

examination of each model, conclusions were drawn regarding the relationship between GDPR and the application of artificial intelligence in marketing.

The GDPR serves as the overarching legal framework that Portuguese firms must adhere to when using AI in marketing. It mandates how personal data is collected, processed, and used, which directly impacts AI-driven marketing strategies. Portuguese firms must ensure that their AI systems comply with GDPR's requirements for data protection, consent, transparency, and security.

Also, GDPR and the use of AI in marketing brings about transparency and explainability. One of GDPR's key requirements is that firms must be transparent about how they process personal data, including when using AI. Portuguese firms using AI in marketing must provide clear explanations to consumers about how their data is being used by AI systems, especially in automated decision-making processes. This transparency builds trust with customers and ensures compliance with GDPR. The GDPR places strict limitations on profiling and automated decision-making, which are common uses of AI in marketing. Portuguese firms must ensure that any AI-driven profiling activities are conducted with explicit consent and do not lead to discriminatory or unfair outcomes. GDPR also emphasizes fairness in data processing, which includes avoiding bias in AI algorithms. Portuguese firms must ensure that their AI systems do not produce biased or discriminatory outcomes, particularly in marketing, where AI might target or exclude certain demographic groups.

To summarise, this dissertation intended to show the impact of GDPR on the development artificial intelligence in marketing activities in firms in Portugal. It evaluates the nexus between GDPR, artificial intelligence and marketing activities. Thus, the nexus between GDPR and the use of AI in marketing in Portuguese firms is defined by the need to balance innovation with regulatory compliance. GDPR serves as both a guideline and a boundary, ensuring that AI is used in a way that respects individuals' data rights while allowing firms to leverage AI for effective and personalized marketing.

6.2 Limitations

This study was conducted utilising literature and a quantitative examination of survey responses. Consequently, several limits were identified. A primary constraint of the study titled "General Data Protection Regulations (GDPR) and its Impact on the Development of Artificial Intelligence in Marketing across Firms in Portugal" is its concentration on a singular national environment. The study focusses on Portugal, and its conclusions may not be entirely

applicable to other EU nations or areas where the implementation and enforcement of GDPR differ. Divergences in local legislative interpretations, business climates, and cultural perspectives on data protection may result in varying effects of GDPR on AI development in marketing across different EU countries.

Furthermore, the analysis may be constrained by the accessibility and calibre of data from Portuguese companies. Small and medium-sized firms (SMEs) may particularly lack extensive data about their AI and GDPR procedures, potentially resulting in gaps or biases in the study's conclusions. The rapidly advancing nature of AI technology and the recent enactment of GDPR may lead to insufficient long-term data to comprehensively evaluate the continuing effects.

6.3 Suggestions for Further Studies

Considering the aforementioned constraints, more research recommendations are necessary. Initially, as previously noted, the unique and contemporary technologies examined in this study necessitate further time to comprehensively grasp the extensive consequences of artificial intelligence in marketing operations.

Future study may broaden its focus to encompass a comparative investigation of the impact of GDPR on AI development in marketing across all EU nations, rather than only Portugal. This would offer a more thorough comprehension of the regulatory effects across various business contexts and legal interpretations inside the EU.

Further studies could explore the impact of GDPR on AI in marketing within specific sectors in Portugal, such as retail, finance, or tourism. Different industries may experience the impact of GDPR differently due to varying levels of data reliance and AI adoption, offering more detailed insights into sector-specific challenges and opportunities.

Future research could also investigate how GDPR compliance affects the innovation capabilities and competitiveness of Portuguese firms in the global market. This could include an analysis of whether strict data protection regulations hinder or encourage innovation in AI technologies used for marketing. Further studies could also examine how GDPR influences consumer perception and trust in AI-driven marketing practices in Portugal.

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ANNEXES

Annex A

BUSINESS
SCHOOL

Questionnaire

My name is Jennifer Ogobegwu, and I am currently in the final stages of completing my Master's in Business Administration at ISCTE Business School. As part of the culmination of my academic journey, I am conducting research for my dissertation. I would greatly appreciate your participation in the following survey.

The aim of this master's thesis is to investigate the impact of the General Data Protection Regulation (GDPR) on the development of Artificial Intelligence in marketing.

The present questionnaire designed to explore your insights and perspectives on the intersection of General Data Protection Regulations (GDPR) and Artificial Intelligence (AI) in the context of marketing. The goal is to assess the connection between these regulatory measures and the development of AI in marketing. There are no correct or incorrect answers, so please answer all questions sincerely based on your experience of the subject matter.

The questionnaire is anonymous and all the data will be used only for research and statistical reasons assuring a total confidentiality of collected information. This Questionnaire is divided into 2 parts and takes only 10minutes to complete. All the instructions of how to fill and answer the questions are written in the beginning of each part of the questionnaire. In case you have doubt, do not hesitate to contact me for additional information via this email: jenniferogbegwu@gmail.com.

Thank you for your collaboration!

In light of this, I humbly request your assistance in answering the questions below, which requires you to simply tick (√) the appropriate boxes.

PART I : PERSONAL DATA

1. Age Distribution: 18 – 25 years ( ) 26 – 30 years ( ) 31 – 40 years ( )
2. Educational level: Bachelor Degree ( ) Master's Degree ( )
   Doctorate Degree ( )
3. Occupational Status: Student ( ) Entrepreneur ( ) Private worker ( ) Civil service ( ) Others ( )
4. Residence: Within Portugal ( ) Within EU ( ) Across the EU ( )

PART II

1. To what extent are you familiar with the General Data Protection Regulation (GDPR)? Completely familiar ( ) Knowledged ( ) Familiar ( )
   Somewhat aware ( ) Not aware ( )
2. To what extent are you familiar with Artificial intelligence (AI)?
   Completely familiar ( ) Knowledged ( ) Familiar ( )
   Somewhat aware ( ) Not aware ( )
3. Are you concerned with data protection and privacy? Yes ( ) No ( ) Maybe ( )
4. What are your views as regards the GDPR? Very good ( ) Good ( ) Fair ( )
   Not necessary ( )
5. Do you think business organizations across Portugal are totally compliant with the GDPR? Strongly agree ( ) Agree ( ) Neutral ( ) Disagree ( )
   Strongly Disagree ( )
6. Do you have concerns that the adoption of Artificial Intelligence by firms during marketing activities could impede on your privacy rights? Yes ( ) No ( )
   Unsure ( )
7. I usually provide my consent and approval to organizations or websites in order to access my private information? Strongly agree ( ) Agree ( ) Neutral ( )
   Disagree ( ) Strongly Disagree ( )
8. Have you ever had complaints against some organizations regarding their use of AI during marketing and how it invades or could invade your data privacy?
   Yes ( ) No ( ) Unsure ( )
9. Will you give up a lot of data to organization's AI, if trust is ensured?
   Strongly agree ( ) Agree ( ) Neutral ( ) Disagree ( )
   Strongly Disagree ( )

10. What kind of personal data do you provide to organizations during their marketing activities?
    Online identities ( ) religious information ( ) financial information ( ) healthcare information ( ) Identification number ( ) Others ( )
11. What type of consent do you provide before you allow AI access your data? Direct consent ( ) Indirect consent partial consent ( )
12. Can you ensure that data collected by organization's AI is strictly used for the intended purpose by the organization? Yes ( ) No ( ) Unsure ( )
13. Do you read terms and conditions before signing? Yes ( ) No ( ) Unsure ( )
14. Do you prefer the use of Artificial Intelligence for marketing by organizations?
    Strongly agree ( ) Agree ( ) Neutral ( ) Disagree ( )
    Strongly Disagree ( )
15. Do you observe changes in the manner in which AI or organizations generally, handle or protect your data since the implementation of the GDPR? Yes ( ) No ( ) Unsure ( )
16. Can you assert that adequate compliance with the GDPR has been maintained by organization during the use of AI in marketing? Yes ( ) No ( ) Maybe ( )

Annex B

BUSINESS
SCHOOL

INTERVIEW QUESTIONS

1. **For statistical matters, in which country do you work?**
2. **To what sector of activity does the company where you work belong to?**
3. **For how long have you been in the marketing department?**
4. **What kind of functions do you perform?**
5. **What extent is your organization familiar with the GDPR?**
6. **Do your organization adopt the use of AI for marketing?**

IF YES,

I. **What is your policy regarding the "right to data protection and privacy"?** (RQ 1: What is the extent of implementation of the GDPR in marketing companies in Portugal?)

II. **How do you request for the confidential data of your customers?** (RQ 1: What is the extent of implementation of the GDPR in marketing companies in Portugal?)

III. **Do you think this organization is effectively implementing the GDPR in line with the rights of citizens to data protection and privacy?** (RQ 1: What is the extent of implementation of the GDPR in marketing companies in Portugal?)

IV. **Has there been any scenario where a customer has complained about the infringement of the right to data protection and privacy by this commercial organization?** (RQ 1: What is the extent of implementation of the GDPR in marketing companies in Portugal?)

V. **How would you describe your organization's use of AI considering the GDPR and its limitations?** (RQ 2: What are the ways in which GDPR has affected the efficiency of AI in marketing?)

VI. **What are the success factors achieved in utilizing Artificial Intelligence in marketing, with adequate GDPR implementation?** (RQ 2: What are the ways in which GDPR has affected the efficiency of AI in marketing?)

VII. **Do your organization face challenges in ensuring the effectiveness of AI, coupled with the aims of and implementation of the GDPR, during marketing activities? If yes, please explain.** (RQ 3: What are the challenges surrounding the use of AI for marketing considering the provisions of GDPR and its privacy concerns?)

VIII. **If No, what are the main reasons for the absence of challenges in utilization of AI during marketing coupled with GDPR implementation?** (RQ 3: What are the challenges surrounding the use of AI for marketing considering the provisions of GDPR and its privacy concerns?)

IX. **What are the measures or coping strategies available for curtailing the identified challenges and its effects on your organization?** (RQ 4: What are the available measures to curb identified challenges facing the use of artificial intelligence in marketing?)

IF NO,

i. **What are the main reasons that led your firm to not adopt Artificial Intelligence yet?** (RQ 3: What are the challenges surrounding the use of AI for marketing considering the provisions of GDPR and its privacy concerns?)

ii. **Do you know if progresses are being made towards the application of GDPR to Artificial Intelligence in marketing?** (RQ 2: What are the ways in which GDPR has affected the efficiency of AI in marketing?)

iii. **Considering the fact that your firm do not utilize AI in marketing, which do you think would be the pros and cons of implementing AI systems in Marketing?** (RQ 2 & 3: What are the ways in which GDPR has affected the efficiency of AI in marketing? What are the challenges surrounding the use of AI for marketing considering the provisions of GDPR and its privacy concerns?

7. **Do consider the adoption of AI in marketing as reliable as the marketing performed by a marketing officer?** (RQ 3: What are the challenges surrounding the use of AI for marketing considering the provisions of GDPR and its privacy concerns?)
8. **In your opinion, What are the most relevant features of AI systems in marketing?** (RQ 2: What are the ways in which GDPR has affected the efficiency of AI in marketing?)
9. **In Marketing, do you think AI can have the most relevant impact, despite the enactment of the GDPR?** (RQ 2: What are the ways in which GDPR has affected the efficiency of AI in marketing?)

RESPONSES

1. Portugal
2. Artistic management; Marketing and Branding; Music
3. 4
4. Yes

4.1. Principally (purpose of the privacy, compliance, data and privacy security and retention, transparency, accountability, customer right, what personal information we collect – directly and from Cookie - how to use the information, how we disclose personal information, compliant, contact, etc.)

4.2. One of the clauses (about confidentiality) in the contract between company and client:

1 – The 2nd Party (company) undertakes, during the term of this Agreement and after its termination, to maintain confidentiality on all dossiers, documents, data and information obtained as a result of the execution of this Agreement, and which refer to the 1st Party (clients), namely on its organisation, activity or business, and any other data of a commercial and/or technical nature, in particular, it may not extract copies, disseminate them or communicate them to third parties.

2 – The duty of confidentiality covers the reproduction of information on any computer medium or other means of data recording.

Another clause in the contract between company and client mentions that the client agrees to provide all the necessary data (including confidential data) for the work process.

4.3. Yes

4.4. No

4.5. We use AI in compliance with GDPR, data privacy, transparency, and individual rights.

4.6. 1) Personalization (targeted marketing campaigns based on customer preferences and behaviour)

2) Efficiency (auto marketing, e.g. auto email mkt)

3) Decision making based on data (AI gives good insight based on big data)

4.7. Especially in ads mkt – AI: helps to deliver targeted ads based on user preferences and behaviours VS. GDPR: requires to obtain customer's consent for data processing and ensuring their rights. Challenge between providing personalized experiences vs. respecting users' privacy preferences.

4.8. X

4.9. Implementing clear and user-friendly consent mechanisms – to tell customer about data collection and what is the purpose. So they can make decision if they want to share the data or not.

5. Yes

6. 1) data collection 2) auto mkt (able to do some repetitive and mechanical tasks), so reducing labor cost.

7. Absolutely

General Data Protection Regulations (GDPR) and its Impact on the Development of Artificial Intelligence (AI) in Marketing.

My name is Jennifer Ogobegwu, and I am currently in the final stages of completing my Master's in Business Administration at ISCTE Business School. As part of the culmination of my academic journey, I am conducting research for my dissertation. I would greatly appreciate your participation in the following survey.

The aim of this master's thesis is to investigate the impact of the General Data Protection Regulation (GDPR) on the development of Artificial Intelligence in marketing.

The present questionnaire designed to explore your insights and perspectives on the intersection of General Data Protection Regulations (GDPR) and Artificial Intelligence (AI) in the context of marketing. The goal is to assess the connection between these regulatory measures and the development of AI in marketing. There are no correct or incorrect answers, so please answer all questions sincerely based on your experience of the subject matter.

The questionnaire is anonymous and all the data will be used only for research and statistical reasons assuring a total confidentiality of collected information.

Thank you for your collaboration.

INTERVIEW QUESTIONS FOR COMPANY/ORGANIZATION.

1. **For statistical matters, in which country do you work?** Portugal
2. **To what sector of activity does the company where you work belong to?** FMCG
3. **On a scale of 1-10, how familiar is your organisation with the GDPR?** 8
4. **Do your organization adopt the use of AI for marketing?** yes

IF YES,

I. **What is your policy regarding the "right to data protection and privacy"?** Follow GDPR

II. **How do you request for the confidential data of your customers?** Consent form

III. **Do you think this organization is effectively implementing the GDPR in line with the rights of citizens to data protection and privacy?** yes

IV. **Has there been any scenario where a customer has complained about the infringement of the right to data protection and privacy by this commercial organization?** no

V. **How would you describe your organization's use of AI considering the GDPR and its limitations** we follow GDPR

VI. **What are the success factors achieved in utilizing Artificial Intelligence in marketing, with adequate GDPR implementation** Personalization, content creation and improved customer experience

VII. **Do your organization face challenges in ensuring the effectiveness of AI, coupled with the aims of and implementation of the GDPR, during marketing activities? If yes, please explain.**

VIII. **If No, what are the main reasons for the absence of challenges in utilization of AI during marketing coupled with GDPR implementation?** We have still very few AI in our processes

IX. **What are the measures or coping strategies available for curtailing the identified challenges and its effects on your organization?** IF NO,

i. **What are the main reasons that led your firm to not adopt Artificial Intelligence yet?** Digital marketing and e-commerce is still a non-core channel for the company

ii. **Do you know if progresses are being made towards the application of GDPR to Artificial Intelligence in marketing** I dont know.

iii. **Considering the fact that your firm do not utilize AI in marketing, which do you think would be the pros and cons of implementing AI systems in Marketing?**

big data treatment, identifying and predicting consumer behaviour paterns, content creation

5. **Do consider the adoption of AI in marketing as reliable as the marketing performed by a marketing officer?**
6. **In your opinion, What are the most relevant features of AI systems in marketing**
7. **In Marketing, do you think AI can have the most relevant impact, despite the enactment of the GDPR?**

5. Depends on the tasks. For routine analytical tasks, yes.
For brainstorming about a certain subject, for chatboting with end

consumer, yes. For evaluation of a campaign, for creating something new, understanding trends and creating out of insights, no.

6. Currently I see a huge potential in automating processes. This will give huge potential to companies to implement campaigns, predict and react to changes.

7. Yes. It will have a huge impact. Starting on pure digital businesses, activities like analytics, content creation (scripts, pictures, videos...), customer experience will be greatly affected.