

The Role of Artificial Intelligence in Marketing Analytics

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ABSTRACT

The marketing sector is undergoing a transformation thanks to artificial intelligence (AI), which offers companies previously unheard-of insights into consumer behaviour and preferences. The future of artificial intelligence in marketing analytics is bright, with increased personalization, integration with other technologies, and a greater emphasis on ethical and responsible AI. Businesses should invest in AI expertise, give ethical and responsible AI top priority, concentrate on customer privacy and data protection, embrace new technologies, and work with AI suppliers and start-ups in order to fully use the power of AI. Businesses can use this to stay one step ahead of the competition, foster future growth, and achieve success.

Keywords: Artificial Intelligence, Data-driven, Insights, Optimization

1. Introduction

The utilisation of artificial intelligence (AI) has experienced a surge in prevalence within the domain of marketing analytics in recent times. Artificial Intelligence (AI) pertains to the capacity of machines to execute operations that would conventionally necessitate human intelligence, including but not limited to learning, reasoning, and problem-solving (Hermann, 2021). The field of marketing has incorporated the use of artificial intelligence (AI) to conduct extensive analysis of voluminous customer data, detect recurring patterns and trends, and forecast customer conduct. The utilisation of targeted and personalised marketing campaigns by businesses has resulted in improved marketing effectiveness and customer engagement. The integration of artificial intelligence (AI) in marketing analytics carries noteworthy ramifications for enterprises, such as enhanced customer segmentation, heightened personalization, and augmented targeting efficacy (Sarker, 2022). Artificial Intelligence has the capability to examine customer information from various channels such as social media, email, and web analytics, in order to generate a comprehensive understanding of the customer. This facilitates enterprises in comprehending their clientele more effectively and devising promotional strategies that strike a chord with their target market. The utilisation of AI in marketing analytics, while holding promise, poses certain obstacles, including the requirement for substantial data sets and the possibility of prejudiced decision-making. It is imperative for enterprises to acknowledge these obstacles and formulate tactics to alleviate them.

The objective of this article publication is to furnish a thorough evaluation of the present status of artificial intelligence in the field of marketing analytics. The present study employs a secondary thematic

approach to examine published research papers. The objective is to ascertain the role of artificial intelligence (AI) in marketing analytics, evaluate its impact on marketing effectiveness, and explore its implications for future research. The research additionally provides illustrations of the application of artificial intelligence in the realm of marketing analytics, while underscoring the difficulties that are linked to its utilisation. The outcomes of this research may give insights into the present status of AI in marketing analytics and its future potential.

2.Literature review

2.1 Overview of Artificial Intelligence in Marketing Analytics:

The marketing analytics industry is undergoing a transformation as a result of artificial intelligence (AI). The capacity to swiftly and precisely scrutinise copious amounts of data, coupled with the aptitude to recognise patterns, is propelling artificial intelligence to the forefront of marketing analytics (Ahmed et al., 2020). Artificial Intelligence (AI) is a potent instrument that can facilitate the comprehension of customer behaviour, enable the targeting of customers with customised messages, and forecast customer preferences.



Figure 1: Marketing through AI, global report

(Source: introspectivemarketresearch, 2021)

The real-time analysis of data is a significant advantage of utilising artificial intelligence in the realm of marketing analytics. This implies that corporations have the ability to promptly and effectively address customer actions. In the context of e-commerce, artificial intelligence (AI) has the capability to analyse a customer's browsing behaviour and provide personalised product recommendations in real-time (Neuhofer et al., 2020). Enhancing the customer experience not only results in a positive impact on customer satisfaction but also elevates the likelihood of a successful transaction.

The capacity of Artificial Intelligence (AI) to scrutinise data from diverse origins is an additional advantage in the realm of marketing analytics. Through the integration of data from various sources such

as social media, email marketing, and website analytics, organisations can acquire a more comprehensive comprehension of their clientele. This data can be utilised to develop focused promotional strategies that have a higher probability of connecting with the target audience. Artificial Intelligence (AI) has the potential to forecast customer behaviour. Through the examination of historical consumer conduct, artificial intelligence has the capability to forecast potential future actions of a customer (Gerke et al., 2020). In the event that a consumer has made a prior purchase, artificial intelligence has the capability to forecast potential future purchases that may pique their interest. This data can be utilised to develop focused promotional strategies that have a higher probability of generating a purchase.

Artificial Intelligence (AI) has the potential to not only forecast customer behaviour, but also to scrutinise customer sentiment. Through the examination of social media data, artificial intelligence has the capability to discern the sentiment of customers with regards to a specific product or brand. The aforementioned data can be utilised to enhance the quality of products or services, and to devise more efficacious marketing strategies. The marketing analytics industry is undergoing a transformation as a result of the integration of AI technology (Flores & Young, 2022). The marketing industry is increasingly adopting this technology due to its capacity to rapidly and precisely analyse extensive data sets, forecast customer behaviour, and detect patterns. The potential for AI technology to transform marketing analytics is expected to expand as it continues to develop.

2.2 Applications of Artificial Intelligence in Marketing Analytics:

The utilisation of Artificial Intelligence (AI) has brought about a significant transformation in the domain of marketing analytics. This has facilitated marketers to acquire a more profound comprehension of consumer behaviour, anticipate trends, and customise their marketing approaches. The utilisation of artificial intelligence in marketing analytics has several significant applications, which are supported by real-life instances.

Customer Segmentation: The process of customer segmentation involves the utilisation of artificial intelligence to examine customer data and categorise customers according to a range of factors, including but not limited to demographics, behaviour, and interests (Sahoh&Choksuriwong, 2023). This enables marketers to customise their communication and focus on particular customer segments. Amazon employs artificial intelligence (AI) to classify its clientele into distinct groups according to their buying patterns, browsing history, and other variables. Subsequently, the platform suggests products that align with their preferences.

Personalization: Artificial Intelligence has the capability to analyse customer data in order to customise marketing messages and enhance customer experiences. This encompasses the act of suggesting merchandise, dispatching customised electronic mails, and devising focused advertisements. Netflix employs artificial intelligence (AI) technology to provide personalised recommendations of films and television programmes to its audience, taking into account their past viewing habits and preferences.

Predictive Analytics: Predictive analytics involves the utilisation of artificial intelligence (AI) to employ machine learning algorithms for the purpose of forecasting customer behaviour and trends (Li et al.,

2022). This facilitates the ability of marketers to make decisions based on data and to predict market fluctuations. Coca-Cola utilises artificial intelligence (AI) to forecast consumer demand for its merchandise, thereby facilitating the optimisation of its supply chain.

Chatbots: AI-driven chatbots have the capability to offer immediate customer service and aid. Chatbots possess the ability to respond to frequently asked customer inquiries, suggest product options, and furnish tailored support. H&M employs a chatbot named "H&M Virtual Assistant" to furnish individualised fashion recommendations to its clientele.

Image and Voice Recognition: Artificial Intelligence has the capability to identify and differentiate images and voices, thereby facilitating the creation of customised and individualised marketing communications (khan & Alotaibi, 2020). Pepsi Max utilised image recognition technology powered by artificial intelligence to generate customised video advertisements for its "Unbelievable" promotional initiative. The advertisements showcased spontaneous responses from unassuming onlookers who were recorded as a component of the advertisement.

Sentiment Analysis: The sentiment analysis technique involves the use of artificial intelligence to analyse social media data and determine the prevailing attitude of customers towards a particular brand or product (Babu & Kanaga, 2021). This facilitates marketers in comprehending the perception of their brand and implementing requisite modifications to enhance customer contentment. Delta Air Lines employs artificial intelligence (AI) to scrutinise customer feedback on social media platforms and subsequently enhance its services in accordance with the feedback received.

Content Creation: Artificial Intelligence has the capability to produce various forms of content, including but not limited to blog articles, product descriptions, and social media posts (Chen, 2023). This practise enables marketers to streamline their workflow and enhance the search engine optimisation and audience targeting of their content. The Washington Post employs an artificial intelligence (AI) tool known as Heliograf to produce brief news articles pertaining to high school athletics.

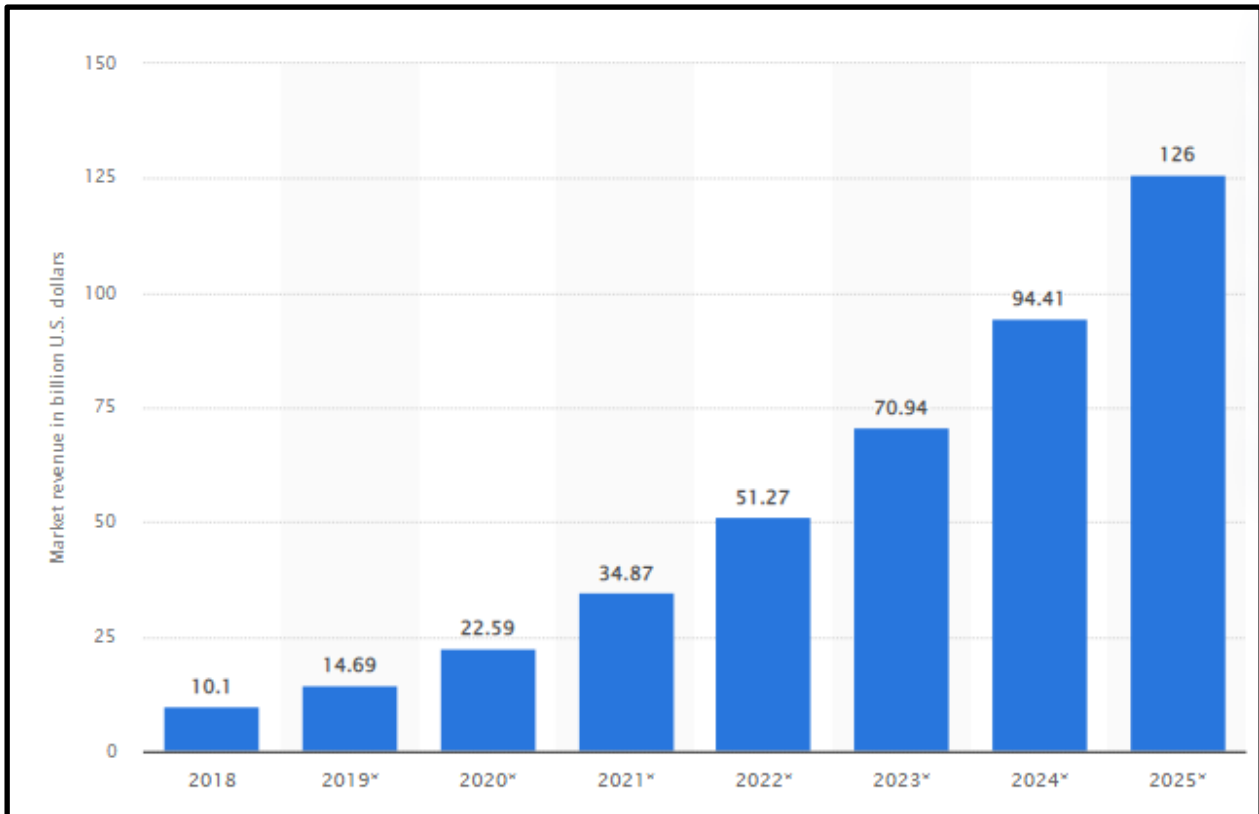
Artificial Intelligence (AI) has emerged as a crucial component of marketing analytics, furnishing marketers with valuable insights, enhanced targeting capabilities, and customised experiences for their clientele. The field of marketing analytics is anticipated to witness further innovative applications with the continued evolution of AI technology.

2.3 Impact of Artificial Intelligence on Marketing Effectiveness:

The way marketers operate is changing as a result of artificial intelligence (AI), from consumer segmentation and predictive analytics to customization and content production. According to Chen et al. (2022), AI has the potential to increase marketing effectiveness, it also has certain drawbacks.

Automating repetitive operations allows for time savings and increased effectiveness, which is one of the main benefits of AI in marketing (khan & Alotaibi, 2020). For instance, using AI to automatically segment clients based on their behaviour and interests enables marketers to target particular customer segments with a message that is relevant to them. As a result, marketing initiatives are more successful since the messages are more relevant and customised.

On the other hand Chen, Prentice, et al. (2022) stated that, additionally, by offering insights into consumer behaviour and preferences, AI may assist marketers in making data-driven choices. AI, for instance, may analyse information from social media and other sources to ascertain how people feel about a certain brand or item. This aids brand managers in understanding how their brand is perceived so they can make the required adjustments to increase client happiness. Additionally, predictive analytics may assist marketers in anticipating market shifts and in formulating strategic choices based on data-driven insights.



“Figure2: Revenues from the artificial intelligence (AI) software market worldwide from 2018 to 2025”

(Source: Statista, 2018)

The capacity of AI to enhance the consumer experience is another advantage of marketing. While personalised suggestions and targeted messages may aid consumers in locating goods and services that are suitable for their requirements, AI-powered chatbots can provide immediate customer care and assistance. Increased customer satisfaction and loyalty result from this, which may boost a company's sales and income. When employing AI in marketing, there are a few additional difficulties and constraints to take into account. Accuracy of the data needed to train AI systems is one of the main issues. The algorithms may provide erroneous findings if the data is skewed or lacking in certain information. This can result in unsuccessful marketing strategies and lost chances.

The ethical issues surrounding the use of AI in marketing provide another difficulty. For instance, some consumers can find personalised marketing messages and suggestions obtrusive or exploitative. In order to guarantee that consumers are aware of how their data is being utilised, marketers must employ AI in a transparent and moral manner. Additionally, AI is not a magic bullet for all marketing problems. It's critical for marketers to keep in mind that artificial intelligence (AI) is only a tool and that establishing a

successful marketing strategy still needs human creativity and knowledge. Through offering insights into consumer behaviour, automating tedious operations, and enhancing the customer experience, artificial intelligence has the potential to greatly increase the efficacy of marketing. The accuracy of the data needed to train AI algorithms and ethical issues are only a few of the obstacles and restrictions to take into account. The responsibility for using AI ethically and transparently ultimately falls on marketers, who must also acknowledge the importance of human skill and creativity in creating successful marketing campaigns.

2.4 Ethical and Legal Issues in Artificial Intelligence Marketing Analytics:

The increasing integration of artificial intelligence (AI) into marketing analytics poses significant ethical and legal implications that necessitate attention and resolution by businesses (Ahmad et al., 2021). This article aims to examine several significant ethical and legal concerns associated with the utilisation of artificial intelligence in marketing analytics.

The topic of ethical issues will be discussed:

Privacy & Data Protection: One of the primary ethical challenges with AI in marketing is the collecting, storage, and use of personal data. It is imperative for marketers to maintain transparency regarding their customer data collection and utilisation practises, while also adhering to pertinent data protection regulations such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) (Gerke et al., 2020).

Bias & Discrimination: The data used to train AI systems determines how accurate they will be. In the event that the data exhibits bias or discrimination, the artificial intelligence system may generate outcomes that are similarly biased or discriminatory. The potential outcome of such a scenario is the manifestation of inequitable treatment towards specific customer demographics, thereby resulting in detrimental effects on the business's image and standing (D'Antonoli, 2020). It is imperative for marketers to guarantee the absence of partiality and discrimination in their AI algorithms, and consistently assess and oversee their algorithms to identify and rectify any potential problems.

Transparency and Accountability: due to the fact that AI algorithms may be opaque and complex to comprehend, it may be difficult for consumers to understand how choices are being made. It is imperative for marketers to guarantee the transparency and accountability of their AI algorithms, as well as their ability to elucidate the decision-making process.

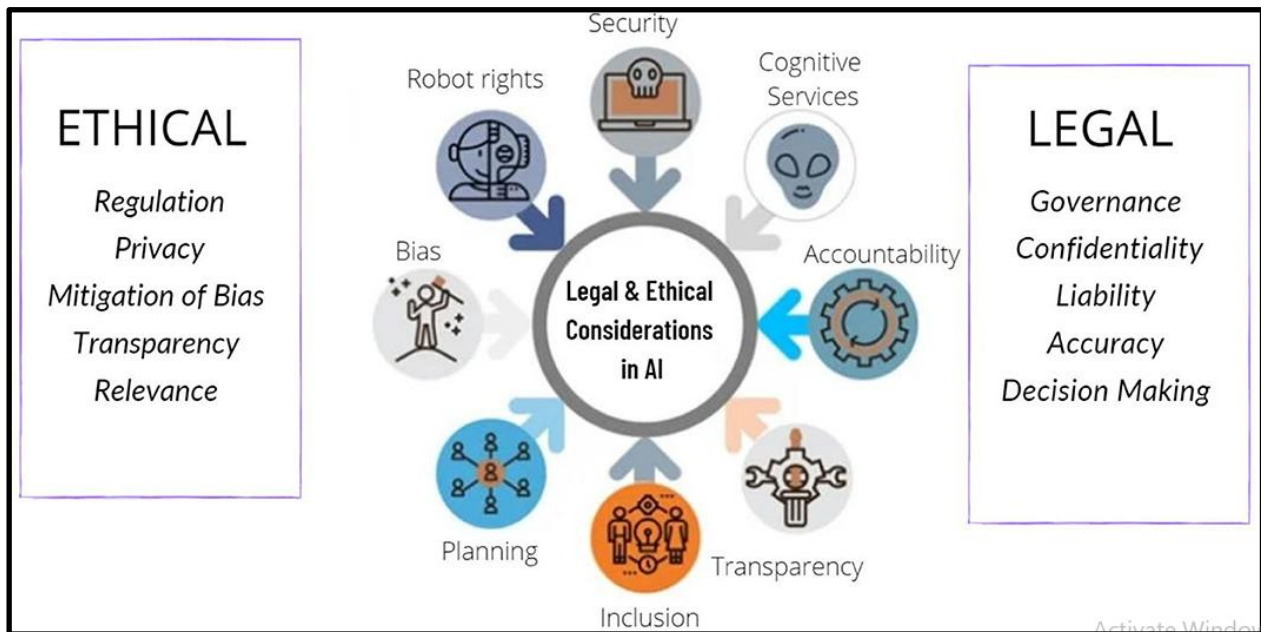


Figure 3: Various ethical and legal conundrums involved with the usage of artificial intelligence
(Source: Naik et al., 2022)

Legal Matters:

Intellectual property: AI may be used to generate original creations such as content and artwork. This gives rise to inquiries regarding ownership and copyright (Flores & Young, 2022). It is imperative for enterprises to guarantee that they possess the requisite permissions to employ and disseminate any intellectual property generated by artificial intelligence algorithms.

Liability: As AI is more fully incorporated into marketing, there may be concerns about who is responsible for any mistakes or damage brought on by AI algorithms. It is imperative for marketers to procure adequate liability insurance and possess comprehensive knowledge of the legal obligations pertaining to the utilisation of AI in the domain of marketing (Babu & Kanaga, 2021).

Consumer Protection: Marketers must make sure they are abiding by consumer protection laws like the Federal Trade Commission Act (FTC) and the Consumer Protection Act (CPA) (Federal Trade Commission, 2016). The aforementioned regulations serve to prohibit the dissemination of advertising that is either false or misleading, while also mandating that businesses disclose any material information to their respective customers.

The implementation of artificial intelligence in marketing analytics poses a variety of ethical and legal implications that necessitate attention and resolution by enterprises (Neuhofer et al., 2020). The aforementioned factors encompass privacy and data safeguarding, partiality and prejudice, lucidity and answerability, intellectual ownership, legal responsibility, and safeguarding of consumer interests (Farhud&Zokaei, 2021). Given the ongoing evolution of AI technology, it is imperative that businesses remain apprised of these developments and adopt measures to ensure that their utilisation of AI in marketing adheres to ethical and legal standards.

2.5 Future of Artificial Intelligence in Marketing Analytics:

The potential of artificial intelligence (AI) in the field of marketing analytics is highly promising and generates a sense of excitement for the future. Artificial Intelligence (AI) possesses the capability to revolutionise the field of marketing by offering enterprises unparalleled access to customer behaviour and preferences. This essay aims to examine several significant trends and advancements that are influencing the trajectory of artificial intelligence in the field of marketing analytics.

Enhanced Personalization: Thanks to AI, companies will be able to send their clients highly customised marketing communications. Through the analysis of customer data and behaviour, AI algorithms have the capability to generate personalised recommendations and offers that are customised to suit the unique interests and requirements of each individual customer. Enhancing customer satisfaction and loyalty can potentially lead to a boost in sales and revenue for businesses.

Greater Use of Chatbots and Voice Assistants: As a method of offering customer support and help, chatbots and voice assistants are gaining popularity. With the advancement of AI technology, there is a likelihood of increased sophistication and capability of these tools in managing intricate customer interactions. The implementation of this approach is expected to enhance the overall customer experience while simultaneously enabling businesses to optimise their operational efficiency and economise on their resource utilisation.

Integration of AI with Other Technologies: Artificial intelligence will be incorporated with other technologies, such as virtual reality, augmented reality, and the Internet of Things (IoT). The emergence of this phenomenon will potentially generate novel prospects for enterprises to interact with their clientele and provide tailored experiences. AR technology could be utilised by retailers to establish virtual fitting rooms, whereas IoT devices could be employed by hotels to customise room preferences for their guests.

Greater Focus on Data Privacy and Security: As companies gather more consumer data, there will be a greater focus on data privacy and security. It is imperative to ensure that artificial intelligence (AI) algorithms are developed with the aim of safeguarding customer data and adhering to regulatory frameworks like the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). It is imperative for enterprises to maintain transparency regarding their acquisition and utilisation of consumer data.

More Emphasis on Ethical and Responsible AI: As marketing uses of AI increase, more attention will be paid to ethical and responsible AI. It is imperative to guarantee that AI algorithms are devoid of partiality and inequity, lucid and responsible, and employed in an ethical and transparent fashion.

Increase in AI Adoption in Small and Medium-Sized organisations: As AI technology becomes more accessible and inexpensive, we will see increasing AI adoption in small and medium-sized organisations. The implementation of this strategy would promote equity among businesses, allowing them to effectively compete with larger entities in the areas of marketing analytics and customer insights.

Ultimately, it can be inferred that the potential for artificial intelligence in the realm of marketing analytics is promising and optimistic. As the evolution of AI technology persists, enterprises will have the capacity to provide customers with increasingly customised and captivating experiences (Chen, Esperança, et al., 2022). Notwithstanding, there exist impediments and deliberations that necessitate attention, including but not limited to data confidentiality and protection, ethical and conscientious AI, and the imperative to amalgamate AI with other technologies. Through keeping abreast of current developments and adopting these emerging patterns, enterprises can harness the potential of artificial intelligence to maintain a competitive edge and foster expansion and achievement.

2.6 Methods

The function of artificial intelligence (AI) in marketing analytics was examined in this article using a secondary approach. The objective of the investigation was to furnish a thorough evaluation of the present status of artificial intelligence in marketing analytics through an examination of scholarly articles published in the Scopus database. The research was centred on examining the function of artificial intelligence (AI) in the field of marketing analytics, evaluating its influence on the efficacy of marketing strategies, and exploring its potential implications for future academic inquiry. The present study performed a methodical examination of the Scopus database by conducting a keyword search for "artificial intelligence" and "marketing analytics." In the realm of data analysis, the chosen scholarly articles underwent examination with regard to their research aims, approach, and outcomes. The analysis of the data was conducted by employing an iterative process of coding and categorization, which led to the emergence of themes.

The initial theme that was identified pertained to the utilisation of artificial intelligence within the realm of marketing analytics. The analysed papers indicate that artificial intelligence (AI) is being utilised in marketing analytics to automate the processing of data, detect patterns and trends, and forecast customer behaviour. The predominant AI methodologies encompass machine learning, natural language processing, and deep learning.

The second theme that was identified pertained to the influence of artificial intelligence (AI) on the effectiveness of marketing. The analysed papers suggest that the utilisation of AI in marketing has a favourable influence on its effectiveness through the enhancement of customer segmentation, personalization, and targeting. Artificial intelligence has the capability to examine customer data from various channels such as social media, email, and web analytics, in order to generate a comprehensive understanding of the customer (Sahoh&Choksuriwong, 2023). This facilitates enterprises in developing focused and customised promotional initiatives that effectively connect with their target market.

The third theme that was identified pertained to the challenges that are linked with the utilisation of artificial intelligence in the domain of marketing analytics. The analysed papers have identified certain challenges that are associated with AI, including the requirement of substantial data and the possibility of decision-making that is biased. AI models may exhibit bias if they are trained on non-representative data or data that is mislabeled. Biassed decision-making can result in adverse outcomes for businesses.

The data in the study was thematically presented, with the utilisation of examples from the analysed papers to elucidate each theme. The study provided illustrations of the utilisation of artificial intelligence

in marketing analytics. One such application involves the implementation of natural language processing to scrutinise customer reviews and feedback, with the aim of detecting customer preferences and sentiment. The research additionally provided illustrations of the influence of artificial intelligence on the efficacy of marketing. This includes the utilisation of machine learning to anticipate which clients are at the highest risk of attrition and the implementation of focused retention initiatives to mitigate attrition rates.

The research findings suggest that artificial intelligence (AI) has a noteworthy contribution to make in the field of marketing analytics, with its influence expected to expand in the coming years. The results indicate that the utilisation of AI can enhance the efficacy of marketing efforts through the provision of valuable information regarding customer actions and inclinations, thereby facilitating the implementation of customised and focused marketing approaches. Notwithstanding the potential benefits of AI, businesses ought to be cognizant of the obstacles that come with its implementation, including but not limited to issues surrounding data privacy and the possibility of partiality in decision-making. Additional investigation is required to delve into these matters and ascertain optimal methodologies for utilising artificial intelligence in the realm of marketing analytics.

2.7 Future recommendations

Businesses must continue to be educated about the newest advancements in AI and marketing analytics in the future. Here are some business recommendations:

- **Invest in AI talent:** Businesses should invest in recruiting and training AI talent to fully exploit the potential of AI in marketing analytics. Data scientists, machine learning engineers, and AI strategists are all included.
- **Prioritise ethical and responsible AI:** As artificial intelligence (AI) becomes increasingly integrated into marketing, firms must prioritise ethical and responsible AI. This involves ensuring that AI algorithms are devoid of prejudice and discrimination, that they are open and responsible, and that they are utilised ethically and transparently.
- **Customer privacy and data protection must be prioritised:** As organisations acquire more data about their consumers, it is critical that they prioritise customer privacy and data protection. This involves adhering to legislation such as the GDPR and the CCPA, as well as being open about how consumer data is acquired and utilised.
- **Embrace new technologies:** Companies should use cutting-edge tools like augmented reality, virtual reality, and the Internet of Things to remain one step ahead of the competition. These technologies will open up new avenues for companies to interact with consumers and provide personalised experiences.
- **Collaborate with AI vendors and startups:** There are several AI vendors and startups creating unique AI marketing solutions. Businesses may remain on the bleeding edge of AI and marketing analytics by cooperating with these providers and startups.

Businesses may utilise the potential of AI to achieve future development and success by following these tips.

3. Conclusion

The marketing industry is undergoing a significant transformation due to the rapid integration of artificial intelligence (AI), which is enabling businesses to gain unparalleled insights into customer behaviour and preferences. The potential of Artificial Intelligence (AI) in the field of marketing analytics appears to be optimistic, as it offers enhanced personalization, integration with other technologies, and a heightened emphasis on ethical and responsible AI. In order to optimise the potential of artificial intelligence, enterprises ought to allocate resources towards acquiring AI expertise, emphasise ethical and responsible AI practises, centre their attention on safeguarding customer privacy and data security, adopt novel technologies, and engage in partnerships with AI vendors and start-ups. Through this approach, enterprises can maintain a competitive edge, provide customised and captivating interactions to their clientele, and foster expansion and prosperity in the long run. Nonetheless, enterprises should also take into account obstacles and deliberations such as safeguarding data privacy and security, and the imperative to guarantee that AI is employed in a moral and lucid way.

Conflict of Interests

The authors declare that they have no conflict of interests.

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