



THE FUTURE OF MARKETING ANALYTICS: TRENDS AND EMERGING TECHNOLOGIES



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Original Article

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Abstract

The study gives a summary of marketing analytics, its importance in modern companies, and the changing environment influenced by technological progress. It stresses the need to keep abreast of trends and approaches to improve organisational results. The literature review explores important elements of marketing analytics such as artificial intelligence, machine learning, predictive analytics, personalization, consumer segmentation, and the growing significance of augmented reality and virtual reality. It delves into how these technologies and approaches are changing marketing strategies. The discussion section analyses the consequences of new trends and technology in marketing analytics. The text delves into the impact of AI, machine learning, omni-channel analytics, predictive analytics, real-time analytics, voice and visual search, content personalisation, and ethical issues on the evolution of marketing tactics. The conclusion emphasises the importance of marketing analytics in comprehending client behaviour and fostering corporate growth. It stresses the need to keep abreast of developing trends and technology to be competitive in the changing marketing environment. This study provides future suggestions derived from the examination of present trends in marketing analytics. The recommendation includes adopting new technologies, customizing consumer interactions, using predictive analytics, investing in talent development, balancing data privacy with personalization, utilizing social media, and tracking ROI.

Keywords: *Data-driven; Marketing Analytics; Predictive; Technology; Trends*

Introduction

Marketing analytics refers to the systematic approach of gathering, quantifying, scrutinising, and comprehending data for the purpose of informing marketing tactics and enhancing organisational results. In contemporary times, with the growing significance of digitalization and data-oriented approaches, marketing analytics has emerged as a crucial instrument for enterprises across various domains and magnitudes.

Recent technological advancements and the abundance of extensive data have driven notable changes in the field of marketing analytics. Contemporary marketers have at their disposal a diverse array of tools and methodologies, such as artificial intelligence, machine learning, predictive analytics, and forecasting, which can be utilised to acquire valuable insights into customer behaviour, preferences, and trends [1]. The forthcoming advancements in marketing analytics hold great potential, as novel technologies like augmented reality and virtual reality empower marketers to provide customised and captivating experiences on a large scale. In the present scenario, it is of paramount significance for

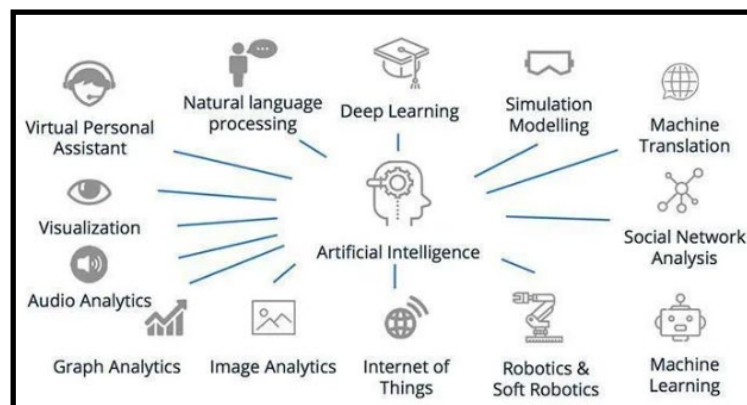
marketers to remain abreast of the most recent trends and optimal methodologies in marketing analytics, with the aim of propelling growth, enhancing customer contentment, and attaining a competitive advantage.

Literature Review

Artificial Intelligence and Machine Learning in Marketing Analytics

The development of artificial intelligence (AI) and machine learning (ML) has transformed the field of marketing analytics. The technologies facilitate the examination of extensive datasets by marketers, thereby enabling them to obtain valuable insights into consumer behaviour, inclinations, and patterns [2]. The following are essential elements pertaining to Artificial Intelligence (AI) and Machine Learning (ML) in the field of marketing analytics (see figure 1 below):

Figure 1: Essential Elements Pertaining to AI & ML in the Field of Marketing Analytics



Source: Gervasi et al. [3]

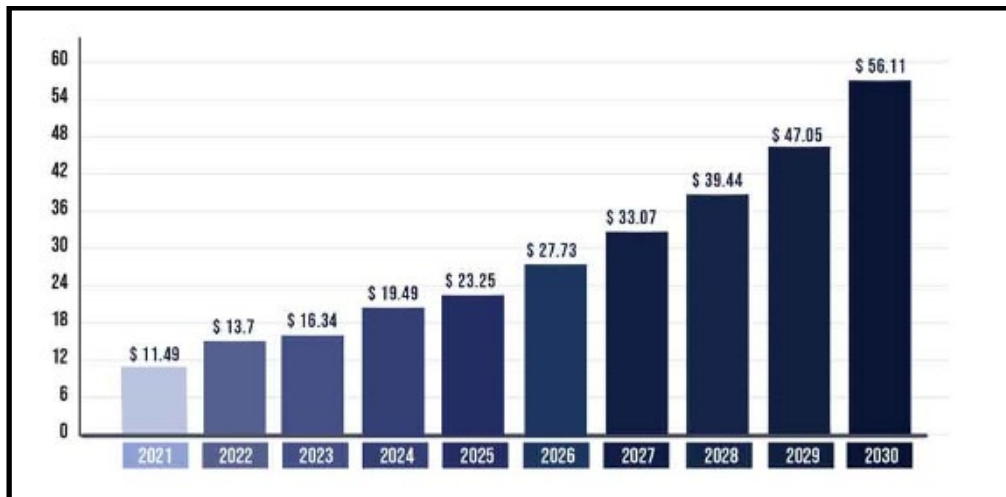
- **Automated customer segmentation:** AI and ML may be used to find trends in demographics, consumer preferences, and behaviour to build segments for individualised marketing efforts [4].
- **Real-time Personalization:** Machine learning (ML) may be used to analyse consumer behaviour and preferences in real-time to personalise marketing messages and increase customer engagement [5].
- **Predictive Analytics:** AI and ML algorithms may be used to foresee potential consumer behaviour, such as the propensity to buy a product or churn, allowing marketers to take preventative measures.
- **Chabot's and Customer support:** Using AI and machine learning, chatbots can provide a more individualised and interesting customer support experience, cutting down on wait times and boosting customer satisfaction.
- **Picture and Speech Recognition:** Marketing professionals may use AI-powered picture and speech recognition technology to analyse consumer sentiment, preferences, and feedback from social media and other sources.
- **Marketing Automation:** AI and ML can automate routine marketing activities like lead scoring, content development, and email campaigns, freeing up marketers to concentrate on more strategic responsibilities.

The fields of Artificial Intelligence (AI) and Machine Learning (ML) possess the capability to transform marketing analytics by facilitating marketers to acquire a more profound comprehension of customer behaviour and inclinations and provide customised experiences on a large scale.

Predictive Analytics and Forecasting in Marketing

Forecasting and predictive analytics are crucial elements of marketing analytics that enable marketers to make fact-based choices and foresee future trends. Predictive analytics and forecasting in marketing include the following important components (see figure 2 below):

Figure 2: Predictive Analytics Market Size, 2021-2030 (USD)



Source Appel et al. [6]

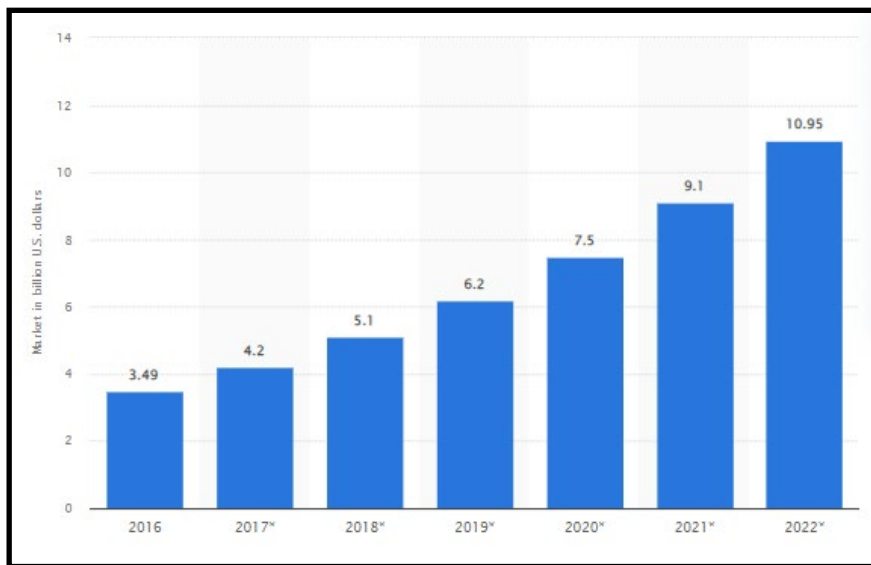
- Forecasting Sales:** Using patterns and historical data, predictive analytics may be used to project future sales. This may assist marketers in finding possible possibilities and successfully allocating resources [7]. Predictive analytics may be used to anticipate future sales based on historical data, industry trends, and other factors.
- Customer Lifetime Value:** Through examining consumer behaviour and projecting future purchasing trends, predictive analytics may be utilised to compute customer lifetime value (CLV). This may assist marketers in locating high-value clients and tailoring their marketing plans.
- Churn Prediction:** By examining past customer data and detecting trends that point to a high risk of churn, predictive analytics may be used to anticipate client attrition. This may assist marketers in taking preventative measures to retain clients. Predicting customer turnover may also be done with the use of predictive analytics, which enables proactive measures to be taken to keep customers who are in danger of leaving [8].
- Product Demand Forecasting:** Predictive analytics may be used to anticipate product demand, allowing marketers to optimise their inventory management and manufacturing operations.
- Forecasting the Performance of Advertising Campaigns:** Predictive analytics can assist marketers in forecasting the performance of ad campaigns and adjusting their strategies accordingly [9]. The use of predictive analytics can aid marketers in optimising pricing strategies through the prediction of the potential impact of price alterations on sales and revenue.
- Modelling the Marketing Mix:** Predictive analytics may be used to simulate how various marketing channels and strategies would affect sales and income. This may aid in the efficient use of marketing resources and expenditures.
- Market Segmentation:** Through grouping consumers based on their behaviour and preferences, marketers may utilise predictive analytics to personalise their communications and increase engagement.

Forecasting and predictive analytics may assist marketers in gaining knowledge about future trends and anticipating consumer behaviour. This may help marketers use resources more wisely and make data-driven choices, which will increase consumer happiness and return on investment.

Personalization and Customer Segmentation in Marketing Analytics

The incorporation of personalization and customer segmentation is a crucial aspect of contemporary marketing tactics that strive to provide individualised customer experiences. The utilisation of marketing analytics is of utmost importance in facilitating the customization and categorization of marketing strategies through the provision of valuable knowledge on consumer conduct and inclinations [10]. The present analysis aims to investigate the advantages and drawbacks associated with the implementation of personalization and customer segmentation in the field of marketing analytics (see figure 3 below):

Figure 3: Predictive Analytics Revenues/Market Size Worldwide, From 2016 to 2022



Source: Wang et al. [11]

Marketing analytics and personalization: The concept of personalization in marketing pertains to the utilisation of customer information to provide customised encounters, materials, and communications. Marketing analytics facilitates customization by offering valuable insights into the behavioural patterns, preferences, and demographic characteristics of customers [12]. Through the examination of customer data, marketers have the ability to generate customised and individualised campaigns that effectively connect with customers and enhance their level of involvement.

The benefits of personalization in marketing analytics:

- **Enhanced Customer Engagement:** Tailored promotional communications possess a higher probability of striking a chord with customers and stimulating their involvement. Marketers can enhance customer loyalty and augment customer lifetime value (CLV) by providing tailored experiences.
- **Increased Conversion Rates:** Through sending clients communications that are more relevant and focused, personalization may increase conversion rates. Through the examination of consumer behaviour and preferences, marketers have the ability to develop tailored marketing initiatives that yield higher rates of conversion.

- **Improved Customer Experience:** Personalised experiences can improve the customer experience by providing information and messages that are tailored to the customer's wants and tastes. The implementation of this strategy has the potential to enhance customer satisfaction and mitigate customer attrition.

Marketing analytics personalization restrictions:

- **Privacy Issues:** The gathering and analysis of consumer data is necessary for personalization, which may cause customers to express privacy issues. It is imperative for marketers to maintain transparency regarding their data collection practices and adhere to pertinent regulations and guidelines.
- **Data Accuracy:** Personalization needs reliable and accurate client information. Inaccurate personalization and reduced effectiveness of marketing campaigns can result from poor data quality.
- **Over-Personalization:** Messages that are too targeted or intrusive can negatively impact the consumer experience when over-personalized. The task of marketers involves striking a balance between the customization of marketing efforts and the imperative of safeguarding privacy and demonstrating deference towards the customer's inclinations.
- **Marketing analytics customer segmentation:** The practice of categorising customers into distinct groups based on their behaviour, demographics, and preferences is commonly known as customer segmentation. The utilisation of marketing analytics facilitates the process of customer segmentation by offering valuable insights into customer information and patterns of behaviour. Through the process of customer segmentation, marketers can devise focused marketing strategies and provide customised experiences to distinct customer segments.

The advantages of customer segmentation in the realm of marketing analytics

- **Targeted Marketing:** Customer segmentation helps marketers design targeted marketing initiatives that connect with certain groups of customers. Through the examination of customer data, marketers have the ability to recognise prevalent trends and establish groups that exhibit a higher probability of reacting to particular messages and campaigns.
- **Improved ROI:** Through optimising marketing resources and budgets, customer segmentation may lead to increased ROI. Marketers can enhance the efficacy of their campaigns and minimise inefficiencies by focusing on particular customer segments.
- **Customization:** Customer segmentation allows customization by offering information and messaging suited to certain groups of customers. Through the examination of customer behaviour and preferences, marketers possess the ability to devise custom campaigns that effectively resonate with distinct customer segments.

The present study aims to explore the constraints associated with customer segmentation in the context of marketing analytics. The process of customer segmentation may lead to oversimplification of customer behaviour and preferences as it involves grouping customers into broad categories. It is imperative for marketers to exercise caution in avoiding the oversimplification of customer behaviour and to duly consider the intricacies of individual customer preferences. The process of customer segmentation necessitates the utilisation of precise and reliable customer data to ensure data quality. Inaccurate segmentation and reduced effectiveness of marketing campaigns can be attributed to poor data quality.

The practice of customer segmentation yields restricted perspectives regarding customer conduct and inclinations. To attain a more comprehensive understanding of customer behaviour, marketers must complement customer segmentation with additional data sources. The incorporation of personalization and customer segmentation into contemporary marketing strategies is crucial for marketers to provide customers with tailored experiences and focused campaigns. The utilisation of marketing analytics is of utmost importance in facilitating the customization and division of target markets by offering valuable knowledge on consumer conduct and inclinations.

Augmented Reality (AR) and Virtual Reality (VR) in Marketing Analytics

Augmented reality (AR) and virtual reality (VR) are emerging technologies that are being increasingly used in marketing analytics [13]. These technologies allow marketers to create immersive experiences for customers, enabling them to interact with products and services in new and engaging ways. In this analysis, we will examine the benefits and limitations of AR and VR in marketing analytics.

Benefits of AR and VR in Marketing Analytics:

- **Enhanced Customer Engagement:** AR and VR can create immersive and interactive experiences that engage customers and keep them interested in the brand [14]. Through providing unique and memorable experiences, AR and VR can improve customer satisfaction and loyalty.
- **Improved Product Visualisation:** AR and VR can be used to create 3D models and visualisations of products, enabling customers to visualise and interact with them in a virtual environment. This can improve the customer experience and reduce the need for physical product demonstrations.
- **Personalization:** AR and VR can be used to create personalised experiences that are tailored to the customer's preferences and behaviour. Marketers are able to develop personalised augmented and virtual reality (AR and VR) experiences that connect with certain client groups by studying customer data [15].
- **Increased Sales:** AR and VR can be used to create immersive and interactive product demonstrations that can increase sales by providing customers with a more engaging and memorable experience [16]. Marketers have the ability to raise conversion rates and revenue by developing more appealing ways for customers to interact with their products.

Limitations of AR and VR in Marketing Analytics:

- **High Development Costs:** AR and VR development can be expensive and time-consuming, requiring specialized skills and technologies. This can limit the adoption of AR and VR by small and medium-sized businesses.
- **Limited Reach:** AR and VR require specialized hardware and software, limiting their reach to customers who have access to these technologies. This can limit the effectiveness of AR and VR campaigns and reduce the ROI.
- **Technical Limitations:** AR and VR are still evolving technologies, and there are limitations to what can be achieved with current hardware and software. This can limit the effectiveness of AR and VR campaigns and reduce customer satisfaction.

- **Data Privacy Concerns:** AR and VR require the collection and analysis of customer data, raising privacy concerns among customers. Marketers must be transparent about their data collection practices and ensure that they comply with relevant regulations and guidelines.

AR and VR are emerging technologies that are being increasingly used in marketing analytics to create immersive and interactive experiences for customers. While AR and VR offer many benefits, there are also limitations that must be considered, such as high development costs, limited reach, technical limitations, and data privacy concerns. Marketers must carefully evaluate the benefits and limitations of AR and VR and determine whether these technologies are appropriate for their marketing objectives and target audience.

Discussion

In the current era characterized by the prevalence of data, marketing analytics has become an essential instrument for firms aiming to comprehensively comprehend, strategically target, and successfully engage their consumers. Since contemplating the future, it is evident that marketing analytics has immense potential for transformational impact since a multitude of developing trends and techniques are positioned to significantly alter the marketing environment. This discourse aims to explore the noteworthy advancements and their prospective ramifications for marketers.

Artificial Intelligence (AI) and Machine Learning: The domains of AI and machine learning are poised to assume a prominent position in the realm of marketing analytics. These technological advancements facilitate the processing of large volumes of data by organizations, enabling the identification of trends and the generation of predictive suggestions [17]. AI-driven insights can allow marketers to provide messages that are more relevant and timelier to their clients, ranging from customized content suggestions to predictive lead scoring. Furthermore, the integration of AI-powered chatbots and virtual assistants is expected to augment consumer interactions, thereby enhancing user experiences. The comprehension of the client journey has always had significance, yet it is now undergoing evolution. Contemporary customers engage with companies via several touchpoints, including both the digital and physical realms. The use of sophisticated analytics technologies has enabled firms to generate complete customer journey maps, therefore offering valuable insights into the distinct phases of the customer's journey [18]. This capability allows marketers to develop customized tactics and communication for every interaction point, thereby enhancing conversion rates and augmenting total consumer happiness. The convergence of online and physical marketing is increasingly eroding, necessitating the use of omni-channel analytics as a critical tool. Customers have a certain level of expectation for a smooth and uninterrupted experience, regardless of whether they are physically present in a store, exploring a website, or interacting on various social media platforms [19]. Omni-channel analytics is a data integration approach that enables firms to get a comprehensive understanding of consumer behaviour by aggregating information from several channels. The use of a data-driven strategy empowers organizations to effectively convey a consistent message and provide seamless experiences across many touchpoints, thereby cultivating consumer loyalty [20].

The field of predictive analytics has a longstanding history, although its significance remains more prominent. Through the examination of past data and the identification of patterns, enterprises are able to make well-informed judgements on forthcoming marketing plans. Predictive analytics enables marketers to anticipate sales patterns and estimate customer turnover, equipping them with the ability to proactively manage their resources effectively. The increasing reliance on data-driven marketing analytics has given rise to heightened apprehensions around data privacy and ethical considerations. In light of the implementation of legislation such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA), companies are confronted with the task of effectively manoeuvring through a multifaceted realm of compliance. It is essential for marketers to give utmost importance to the aspects of data security, transparency, and consent management. Ethical data procedures not only foster customer trust but also serve as a safeguard for organizations against potential legal consequences. Real-time analytics play a crucial role in enabling prompt, data-informed decision-making within the rapidly evolving digital landscape. Marketers are now able to use dashboards that provide real-time analytics about the efficacy of their campaigns, website traffic, and client behaviour. The use of real-time data facilitates the implementation of agile marketing strategies, allowing organizations to effectively respond to dynamic situations and exploit emerging possibilities. The increasing prevalence of voice search and visual search may be attributed to

advancements in technology such as smart speakers and image recognition software. In order to effectively respond to these emerging search approaches, marketers need to modify and adjust their strategies accordingly. This encompasses the process of enhancing material to cater to voice search functionality and developing aesthetically captivating and easily discoverable content. Content personalization has garnered significant attention in recent years and continues to be a prominent and influential trend within the field of marketing analytics. By using data-driven insights, marketers have the ability to provide customized content that is specifically matched to the unique interests and behaviours of each individual. The use of personalization strategies not only enhances user engagement but also amplifies conversion rates and fosters client loyalty. The future of marketing analytics presents intriguing and ever-evolving terrain. With the continuous advancement of AI and machine learning, marketers can expect access to unparalleled insights and capabilities. Nevertheless, it is crucial to acknowledge that the acquisition of significant authority necessitates the assumption of substantial obligations, hence necessitating the prioritization of ethical concerns in these advancements. The use of real-time data, an omni-channel strategy, and tailored content can enable organizations to maintain competitiveness and provide excellent customer experiences. Marketers may effectively traverse the dynamic marketing analytics environment by being well-informed and embracing the rising trends.

Conclusion

Marketing analytics has emerged as a crucial instrument for marketers to gain a deeper comprehension of customer behaviour, preferences, and trends. In light of the rapid advancements in technology, it is imperative for marketers to remain abreast of emerging technologies such as artificial intelligence, machine learning, augmented reality, and virtual reality in order to proficiently leverage marketing analytics and facilitate business expansion. In order to develop focused marketing strategies and interact with consumers, marketers need to prioritise social media, predictive analytics, and personalization. Marketers must strike a balance between data privacy and personalization to ensure that customer data is used in an ethical and transparent manner. In essence, the surveillance of the return on investment (ROI) of marketing campaigns is essential in rationalising the expenditure on marketing analytics and consistently enhancing marketing tactics. Through the adoption of these contemporary trends and nascent technologies, marketing professionals can strategically position themselves for triumph in the forthcoming era of marketing analytics.

Future recommendations

These suggestions are grounded in an examination of the development of marketing analytics:

Embrace Emerging Technologies: Marketers should stay up-to-date with emerging technologies such as AI, machine learning, AR, and VR to keep up with changing consumer behaviour and preferences.

- **Personalise the Customer Experience:** Personalization is becoming increasingly important for customers, and marketers should focus on creating personalised experiences that resonate with specific segments of customers.
- **Use Predictive Analytics:** Predictive analytics can help marketers anticipate customer behaviour and preferences, enabling them to create targeted marketing campaigns and improve customer satisfaction.
- **Invest in Talent and Training:** To effectively use marketing analytics, marketers need to invest in talent and training to develop the necessary skills and knowledge to analyse and interpret data.
- **Balance Data Privacy and Personalization:** Marketers need to strike a balance between data privacy and personalization to ensure that customer data is collected and used ethically and transparently.
- **Leverage Social Media:** Social media is a powerful platform for marketing analytics, and marketers should leverage social media to gather customer data, monitor customer feedback, and engage with customers.

- **Monitor ROI:** To justify the investment in marketing analytics, marketers need to monitor the ROI of their campaigns and continually evaluate and refine their strategies.

Marketers can use marketing analytics to their advantage in the future by being open-minded about new technologies, tailoring the customer experience, employing predictive analytics, putting money into talent and training, striking a balance between data privacy and personalization, making use of social media, and keeping an eye on return on investment. The effective utilisation of marketing analytics can facilitate business growth and the achievement of marketing objectives in the future. This can be achieved through the adoption of emerging technologies, personalised customer experiences, predictive analytics, talent and training investments, data privacy and personalization balance, social media leverage, and ROI monitoring by marketers.

Conflict of Interest

The authors declare that they have no conflict of interests.

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References

1. Storbacka K, Moser T. The changing role of marketing: transformed propositions, processes and partnerships. *AMS review*. 2020 Dec;10:299-310. <https://doi.org/10.1007/s13162-020-00179-4>
2. Huang MH, Rust RT. A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*. 2021 Jan;49:30-50. <https://doi.org/10.1007/s11747-020-00749-9>
3. Gervasi O, Murgante B, Taniar D, Apduhan BO, Braga AC, Garau C, Stratigea A, editors. *Computational Science and Its Applications–ICCSA 2023: 23rd International Conference, Athens, Greece, July 3–6, 2023, Proceedings, Part II*. Springer Nature; 2023 Jun 29. <https://doi.org/10.1007/978-3-031-36808-0>
4. Sarker IH. Data science and analytics: an overview from data-driven smart computing, decision-making and applications perspective. *SN Computer Science*. 2021 Sep;2(5):377. <https://doi.org/10.1007/s42979-021-00765-8>
5. Mustak M, Salminen J, Plé L, Wirtz J. Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda. *Journal of Business Research*. 2021 Jan 1;124:389-404. <https://doi.org/10.1016/j.jbusres.2020.10.044>
6. Morchid A, El Alami R, Raezah AA, Sabbar Y. Applications of internet of things (IoT) and sensors technology to increase food security and agricultural Sustainability: Benefits and challenges. *Ain Shams Engineering Journal*. 2023 Sep 30:102509. <https://doi.org/10.1016/j.asej.2023.102509>
7. Appel G, Grewal L, Hadi R, Stephen AT. The future of social media in marketing. *Journal of the Academy of Marketing science*. 2020 Jan;48(1):79-95. <https://doi.org/10.1007/s11747-019-00695-1>
8. Faruk M, Rahman M, Hasan S. How digital marketing evolved over time: A bibliometric analysis on scopus database. *Heliyon*. 2021 Dec 1;7(12). <https://doi.org/10.1016/j.heliyon.2021.e08603>

9. Jiang Y, Stylos N. Triggers of consumers' enhanced digital engagement and the role of digital technologies in transforming the retail ecosystem during COVID-19 pandemic. *Technological Forecasting and Social Change*. 2021 Nov 1;172:121029. <https://doi.org/10.1016/j.techfore.2021.121029>
10. Gomez A, Loar R, Kramer AE. The impact of market segmentation and social marketing on uptake of preventive programmes: The example of voluntary medical male circumcision. A literature review. *Gates Open Research*. 2018;2. <https://doi.org/10.12688/gatesopenres.12888.1>
11. Wang CN, Dang TT, Nguyen NA, Le TT. Supporting better decision-making: A combined grey model and data envelopment analysis for efficiency evaluation in e-commerce marketplaces. *Sustainability*. 2020 Dec 11;12(24):10385. <https://doi.org/10.3390/su122410385>
12. Raghupathi W, Raghupathi V. Big data analytics in healthcare: promise and potential. *Health information science and systems*. 2014 Dec;2:1-0. <https://doi.org/10.1186/2047-2501-2-3>
13. Yoo J. The effects of augmented reality on consumer responses in mobile shopping: The moderating role of task complexity. *Heliyon*. 2023 Mar 1;9(3). <https://doi.org/10.1016/j.heliyon.2023.e13775>
14. Rane N. Metaverse marketing strategies: enhancing customer experience and analysing consumer behaviour through leading-edge Metaverse technologies, platforms, and models. Available at SSRN. 2023 Nov 3. <https://dx.doi.org/10.2139/ssrn.4624199>
15. Boyd DE, Koles B. Virtual reality and its impact on B2B marketing: A value-in-use perspective. *Journal of Business Research*. 2019 Jul 1;100:590-8. <https://doi.org/10.1016/j.jbusres.2018.06.007>
16. Cipresso P, Giglioli IA, Raya MA, Riva G. The past, present, and future of virtual and augmented reality research: a network and cluster analysis of the literature. *Frontiers in psychology*. 2018;2086. <https://doi.org/10.3389/fpsyg.2018.02086>
17. Lee J, Kim JJ. A study on market segmentation according to wellness tourism motivation and differences in behavior between the groups—focusing on satisfaction, behavioral intention, and flow. *International Journal of Environmental Research and Public Health*. 2023 Jan 6;20(2):1063. <https://doi.org/10.3390/ijerph20021063>
18. Gasmi A, Benlamri R. Augmented reality, virtual reality and new age technologies demand escalates amid COVID-19. In *Novel AI and Data Science Advancements for Sustainability in the Era of COVID-19* 2022 Jan 1 (pp. 89-111). Academic Press. <https://doi.org/10.1016/b978-0-323-90054-6.00005-2>
19. Du Z, Liu J, Wang T. Augmented reality marketing: A systematic literature review and an agenda for future inquiry. *Frontiers in psychology*. 2022 Jun 16;13:925963. <https://doi.org/10.3389/fpsyg.2022.925963>
20. Bloem S, Stalpers J, Groenland EA, van Montfort K, van Raaij WF, de Rooij K. Segmentation of health-care consumers: psychological determinants of subjective health and other person-related variables. *BMC health services research*. 2020 Dec;20:1-2. <https://doi.org/10.1186/s12913-020-05560-4>