USAGE OF ARTIFICIAL INTELLIGENCE ON SOCIAL MEDIA IN EUROPE

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Abstract: Artificial Intelligence (AI) is becoming more common in our daily life. One of the biggest segments of AI is used in business. Technologies are changing at a rapid pace and in unpredictable ways. The research was done by systematic literature of the most recent (2020-2022) academic articles from the database Scopus covering the usage of AI on social media. Dividing the find articles based on chosen criteria into categories such as social media platforms used for research and general AI usage on social media. The results show that the implementation of AI will become more and more inevitable for its variety of use on social media, like chatbots, detecting harmful behaviour, data analysis and strategy making.

Keywords: Artificial intelligence, social media, online marketing

1 Introduction

Digital media has revolutionized societies and changed forever how we do business [1]. The rise of digital media and specifically social media changed marketing [2]. From a single platform that was focused on sharing content with friends, today we can find more than 100 social media platforms all over the world. With the rise of online media platforms, intensified competition has forced platforms to develop their content and even cooperate with rival platforms [3]. The development of social media in recent years was influenced by artificial intelligence (AI). AI is one of the most important developments in the 20th century in technology [4]. By evolving technology, we can evolve another segment of the world. Interest in this technology will increase as the competitive advantages of the use of Artificial Intelligence by economic entities are realized [5]. The world of business has undergone many changes. The introduction of AI in this sector started a revolution in business as we know it. From that point onward many more sectors in business started to use AI to complete mandatory tasks to help employees with their daily jobs. From basic automatizing, data collecting, emailing, analyzing data and many more AI has much more potential in the future. For example, the research from Guru et al. [6] shows the usage of AI in online marketing. In his paper he said, AI facilitates business entities in gathering customer data at the time of searching for products. Brain modelling, time series prediction, image recognition and other techniques are used by AI to offer more relevant data to business entities regarding customer behaviour and purchase intention [6].

We can find usage by insurance companies, the research states that Recent technological and digital developments have opened new avenues for customer data utilization in insurance services [5].

2 Literature research

Technology facilitated the shift from the analogue to the digital era, starting the comprehensive digital transformation while integrating computer software and technological applications with all business processes (Ljepava, 2022). Marketing is no different from this statement. Marketing today can be done on social media (Scott et al., 2020). Social media marketing requires specific skills and competencies and has given rise to new job descriptions (Peeroo, 2023). That was one of the reasons to develop AI for social media, doing the repetitive task, analyzing date in a much shorter time and making a prediction based on the data provided by social media. Artificial intelligence (AI) has been gaining significant attention in various fields to reduce costs, increase revenue, and improve customer satisfaction (Johnoson et al., 2022). Social media used by companies are mostly used for marketing (Horák and Dlouhý, 2021). For example, Tesla. The entire promotion of the brand and its various products is done through various online social media platforms like Facebook, Twitter, Instagram and YouTube. In fact, 70% of the company's sales are done online [7]. The pandemic of the COVID-19 helped companies to realize of the potential of marketing on social media since it had many sectors struggling [8]. In the COVID-19 pandemic, many developed and developing economies accounted for a negative change in unemployment, health, education, and other social issues [9].

This shows that the usage of social media as a promotion platform can work with the right strategy. To maximize engagement and return on investment, manufacturers, retailers and brands must ensure a close fit between the product type and category of influencer promoting a product within their social media posts [10]. Many platforms provide multiple advertising options to use. Many of the platforms (Instagram, Facebook, TikTok etc.) can be programmed into small shops, so customers do even have to leave the platform and visit the shop. With this quick and compelling way to capture shoppers' attention towards fashion products, the purchase decision may differ between e-shoppers and conventional shoppers [11]. Since they can stay on the same platform the probability of making the purchase is higher, thanks to the continuous communication from brands and influencers [12].

Consumers make purchasing decisions every day, taking into account their needs, preferences and beliefs which may change due to various determinants; some depending on the consumers themselves and others on the organizations acting in the market [13]. The influences are mostly hired by the company to simply show their product to their fanbase, and let social media do its tricks [14]. As influencers are also brands, research is needed to aid influencers with their own brand management strategies [15]. Sometimes even the emotion can help. Extracting sentiment from news text, social media and blogs has recently gained increasing interest in economics and finance [16].

The development of chatbots changed communication with fans on social media and potential customers. Chatbots could be virtual individuals who can successfully make conversation with any human being utilizing intuitive literary abilities [17]. AI-powered social bots can sense, think and act on social media platforms in ways similar to humans [18]. The research done by Kaiser et al. [19] focused on the determine which photos posted online play an important role in social media communication and how can that be used to predict users endorsement to brands. The analysis shows that uploading brand photos (i.e., photos containing a brand name or logo) is related to brand love, brand loyalty, and word-of-mouth (WOM) endorsement of the brand in question [19].

The tools that AI provides can be used for the early detection of harmful bots, which can cost severe image damage to companies, public figures etc. The challenge is that social bots can perform many harmful actions, such as providing wrong information to people, escalating arguments, perpetrating scams and exploiting the stock market [18]. AI can be particularly beneficial in enhancing decision-making processes for complex and ill-structured problems that lack transparency and have unclear goals [20]. This harmful behaviour can cause many effects on the people that see this message. It can cause panic, emotional damage to the person etc. Machine behaviors embed the worst of human prejudice and biases; techniques trying to exploit human weaknesses to skew elections or prompt self-harming behaviors [21].

3 Data and methodologies

A systematic literature review of the most recent papers and journal articles published in Scopus databases from 2020 to 2023 was performed. Following the keywords for this topic and considering the research questions.

Criteria 1: Articles must be related to keywords AI in social media

Criteria 2: Articles must be published between 2020-2023

Criteria 3: Articles must be in the category Business, management and accounting or Economics, econometrics and Finance

Criteria 4: Articles must be published in Europe

The research was done in 5 steps. First, I filled in the keywords "AI in social media" which gave us 1 1338 documents. Then I limited the results to years of publication from 2020-2023, which shorted the result to 967 documents. After choosing the category of the documents there were 119 documents left. Excluding all the articles published outside of Europe gave the result of 49 documents. The initial search was then followed by preliminary screening, where the irrelevant and loosely related articles were removed, by studying their abstracts. For the last step, the full studies were reviewed. The results include the 25 most relevant studies, as shown in the results section for specific social media or nonspecific studies, which can be seen in Table1.

Table 1: AI application

Category	Area	Articles
Instagram	Influencer marketing; social media, product placement	Rutter et al. (2021); Sands et al. (2022); Yeo et al. (2022)
Facebook	Brand love; Machine learning; Monitoring	Keiser et al. (2020)
Twitter	Social Bots; Spread of Disinformation; Big data analytics; Human error; Maritime accidents	Dominguez-Péry et al. (2021); Hajli et al. (2022)
Nonspecific	Consumer behavior; strategy; research; future development; digital technology; performance marketing; world of mouth	Bailey et al. (2022); Bartosik-Purgat, Filimon (2022); Bienvenido, Barinaga & Mora-Fernandez (2021); Capatina et al. (2020); Ceci, Prencipe & Spagnoletti (2020); D'Cruz et al. (2022); Elkhwesky et al. (2022); Ghouri et al. (2022); Jacobides, Brusoni & Candelon (2021); Jonson et al. (2022); Kunz Walsh (2020); Mahr, Huh (2022); Mardse et al. (2020); Mariani, Perez-Vega & Wirtz (2022); Mrad et al. (2022); Maynard et al. (2022); Pelau et al. (2021); Salminen et al. (2022); Williams, Ferdinand & Bustard (2020

Source: Author.

4 Results

Category 1 Instagram: The usage of AI on Instagram was focused on 4 studies, the most valuable inside was provided by Sands et al. [22] which focuses on AI influencer marketing done by humans and by AI. The conclusion of their works is that AI in this current stage of development cannot fully replace human influencers. The study by Yeo et. al [11] researched the side of making purchases through Instagram, this one of the newest functions of this platform compared to the traditional ones. They found that adding perceived quality, perceived electronic word of mouth (eWOM) and emotional value, perceived quality, can positively influence purchase decisions for fashion apparel. The last article from my finding that focused on usage of AI on Instagram was from Rutter et al. [10] researched influencers, product placement and network engagement by analyzing the relationship between the between influencers, network engagement, their efficiency and product placement. Influencers achieved higher network engagement efficiencies than celebrities; however, celebrity reach was important for engagement overall [10]

Category 2 Facebook: Since the platform is not on its rising level and more and more people are focusing on other social media platforms that generate more marketing potential, the only study I was able to find about usage of AI on this specific platform was done by Keiser et al. [19] they focused on AI finding the usage of brand in social media posts. The findings show that from almost 44 500 photos researched the AI was able find 17% of brand items. The findings also reveal that a greater intention to post brand-related photos about a brand is associated with higher levels of brand love, brand loyalty, and WOM endorsement of that brand [19].

Category 3 Twitter: Twitter and its functions especially social bots and their spreading of fake news and disinformation, AI powered social bots can sense, think and act on social media platforms in ways similar to humans [18]. The tools that AI provides can be used for early detection of harmful bots, that can cost severe image damage to companies, public figures etc. The usage of AI can stop the spread and contact the social media platform to inform of this harmful behavior. The speed of spreading tweets across the world can be helpful or harmful, the study of DĆruz et al. [23] focused on emergency response. ComACom will improve decision-making to minimize human errors in maritime accidents. Social implications: The emergency response will be improved by including the voices of the wider community [23].

Category 4 Nonspecific: In this study total of 19 studies can be found. Basic functions Ghouri et al. [24] as routine decision-making in interaction with customers. This routine provides the opportunity to establish strong relationships with customers [24]. Usage of AI in data science and AI in the research field of interactive and immersive storytelling, including virtual and augmented realities [25]. The impact of law on spreading fake news on social media by Marsden et al. [21]. Artificial intelligence (AI) research and regulation seek to balance the benefits of innovation against any potential harms and disruption [26].

Influencer marketing by Peeroo [27].They stated that the need for information and news validation is related to the sceptical opinion regarding media information, but in different ways for the determined clusters [27]. The impact of Covid-19 on using social media and doing data processing by AI by [28]. Future development by Mahr and Huh [29], Johnson, et al. [20], Ceci, Prencipe & Spagnoletti [30], Kunz and Walsh [1]. The growth of aWOM is theorized as a result of new developments in AI natural language processing tools along with autonomous distribution systems in the form of software robots and virtual assistants [31]. Also by Capatina et al. [32]. Customer behavior by et al. [13]. Strategy done by AI from Salminen et al. (2022), stated that Artificial intelligence, particularly machine learning, carries a high potential to automatically detect customers' pain points, which is a particular concern the customer expresses that the company can address [33] then by Mariani, Perez-Vega & Wirtz [34].

5 Conclusion

The study provided a systematic literature of most recent (2020-2022) academic articles from Scopus covering the usage of AI on social media, focusing on the usage of specific platforms such as Instagram, Facebook and Twitter and the general topics including the prescribed keywords. The most reviewed platform is Instagram, then Twitter and lastly Facebook. There was no finding on any other platform as Tik Tok, which is one of the most popular these days. The findings indicate that AI is predominantly used to determine the best way to sell product, communicate with customers, and make strategy for social media. Depending on what kind of relationships service providers form with the emerging technologies, they may develop new service communication strategies and new interaction possibilities with customers [29]. The research shows that the implementation of AI will become more and more inevitable since it can easily do repetitive tasks or search a lot of data in a fraction of the time compared to the regular worker.

The trend of evolving AI and its features becoming more and more accessible to small companies, proving that AI will keep evolving and become the basic software for marketing companies and influencers. The relationship between influencers and AI can be positive too. The AI can help predict consumers behavior and detect harmful chatbots, that can harm the image of a company or an individual.

However, AI is far from being independent, so in future years it will still need a human, who can detect emotions, and creativity and relate to customers on a different level than a robot.

The limitation of this study is based on the study design and search terms. Therefore, for future research, I will extend the search keywords and the field of publication. Considering the evolving AI there will be more studies to cover in the future years.

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