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Invisible Influence How Algorithms Are Redefining Advertising in The Age of Personalization

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Abstract

The advertising landscape has undergone a fundamental transformation with the integration of algorithmic systems into content delivery and consumer targeting on various social media platforms. Social media platforms that were once channels for mere social interactions now operate as algorithmically curated ecosystems that now critically shape what the user sees, when they see it and how often will they engage with a particular type of content. On this account, Algorithmic advertising has become a strategic imperative for brands seeking to connect with audiences across diverse social media platforms. This research conducts a cross-platform analysis of algorithmic structures on Facebook, Instagram, LinkedIn, YouTube, and X (formerly Twitter), assessing their effect on content visibility, targeting precision, and advertising performance. Incorporating current literature and industry practices, the paper highlights distinct trends in personalization, user engagement metrics, ethical dimensions and algorithmic bias. In addition to determining these patterns, it also provides practical insights into how platform-specific strategies by brands can improve campaign effectiveness and audience resonance. It additionally expands discussions on optimizing algorithm design for emerging platforms by revealing structural deficiencies and design inconsistencies in existing algorithm frameworks. Practical guidance is offered for brands to adapt content formats and strategies in alignment with each platform's algorithmic logic. This research bridges academic theories with practical applications, enhancing both scholarly discussion and the preparedness of practitioners in the dynamic area of AI-driven brand communication.

1. Introduction

1.1. Background

Have you ever thought about why certain ads catch your eye in just a minute while others miss the mark? The reason lies in how advertising has evolved from the traditional, 'one-size-fits-all mass marketing' to 'highly personalized strategies' that aim to connect with individual consumers based on

their behaviors, preferences, and needs [1]. Before we get into algorithmic advertising, it is important to understand what an algorithm is. Cormen [2] in Introduction to Algorithms, defined an algorithm as: "...any well-defined computational procedure that takes some value, or set of values, as input and produces some value, or set of values, as output. An algorithm is thus a sequence of computational steps that transfigure input into output." In advertising, these computational procedures are used to analyze massive data sets and personalize content to match the interests, behaviors, and preferences of individual consumers. This is known as algorithmic advertising, a digitally enabled approach that uses machine learning and data analytics to deliver tailored advertisements through social media platforms, search engines, and websites [3]. Algorithms are employed on social media to stipulate and customize ads based on a user's browsing history, interests, demographic information, location, engagement patterns (like posts they interact with), and even their social connections which enriches relevance and engagement of the user with the brand [4]. According to Dahlen and Rosengren [5], "advertising is brand-initiated communication which intends on impacting people". It contributes to the success of brands as advertising is a primary means of communication between them and their consumers. Advertising enables companies to connect with their intended audience, guaranteeing that their marketing messages are delivered to the appropriate consumers at the ideal moment [6]. Traditional advertising concentrated on widespread marketing via newspapers, television, and radio, conveying a single message to a large audience without considering their individual interests. This often resulted in low engagement and wasted resources of the brand. This has led to redefining advertising as marketing has evolved from production and sales orientation to digital, data-driven approach. This revolution in advertising has leveraged data, visual storytelling, and user-generated content to enable brands to adapt to consumer behavior and build stronger and more authentic connections [7]. As of 2025, advertising has become smarter, with people spending more time on digital platforms, there's been a rapid shift toward algorithm-powered ads. Nearly 79% of all ad spending is now expected to be driven by algorithms, an unmistakable sign that Artificial Intelligence (AI) is taking centre stage in the world of marketing. Companies utilizing algorithms, report a 75% increase in customer engagement, showcasing the effectiveness of these advanced advertising techniques [8].

1.2. Problem Statement

The emergence of social media has transformed how consumers and brands interact and exchange information. Different social media networks apply their own types of algorithms that are helpful to them and their users. The goals of each social media network will vary, but in many ways, they are all trying to achieve the same thing: increase engagement; personalize the content each user is seeing; and recommend or stay as long as possible on their platform. This all becomes muddied where there is little insight, and a finite amount of transparency to how the algorithm(s) are working. As a result, concerns have arisen with the bias of the content, what some refer to as misinformation and/or disinformation, and echo chambers. It is likely that users do not consider who owns their data and what that means to the content being consumed or to the user themselves, let alone consider their autonomy or uninformed consent.

Scope: This research proposal seeks to engage in a full comparative analysis of the content algorithms of Facebook, Instagram, LinkedIn, YouTube, and Twitter. The analysis will look at how each platforms' algorithm limits the exposure of content, promotes user engagement and affects the dissemination of information. The following key considerations will be taken into account

- **Algorithms Object:** What is the primary aim each algorithm seeks to achieve? - user engagement, relevant content, time spent, etc.
- **Curation Mechanisms:** What factors were considered in the ranking and recommendation of content? That is, user behavior, engagement and content attributes.
- **Users Impact:** How do the algorithms impact practices of user satisfaction, exposure to diverse information and viewpoints?
- **Transparency and ethics:** What degree of transparency does each platform offer when

disclosing their algorithm and content curation process?

The target audience includes Academics and Researchers, Educators and Teachers, Digital Marketers and Content Creators.

1.3. Research Objectives

- To provide a comprehensive analysis that contributes to a broader understanding of algorithmic advertising across major social media platforms.
- To enhance algorithm design for emerging social media platforms.
- To provide practical insights for brands seeking to strategize advertising with respect to major social media algorithms.

1.4. Significance of the Study

The rising dominance of algorithms in influencing digital communication and behavior, makes it crucial to understand and explore their role across different platforms. This study highlights that every platform is algorithmically unique: Instagram drives trending content [9], LinkedIn supports career- focused content [10], and YouTube promotes in-depth videos and sustained engagement [11]. The findings of these differences offer practical advice and strategic directions for professionals trying to enhance their digital strategies and for scholars understanding the changing dynamics of tech-driven communication. It reveals that visibility and engagement are not random, but intentional programming [12].

2. Chapter 2: Literature Review

This section explores existing studies on algorithmic marketing, recognizes patterns and trends in algorithmic implementation, and examines their influence on marketing efficacy and customer engagement. The objective is to understand how algorithmic marketing has evolved as a progressive force, reshaping how brands engage with consumers across various virtual channels. The review includes studies conducted from 2016 to the present, as the year 2016 symbolizes the crucial evolution of algorithmic advertising, from early AI adoption in advertising platforms to the rise of personalized content delivery in 2025. The chapter is written thematically covering the core concepts of algorithmic advertising, such as its evolution, predictive targeting, content creation, ethical considerations, performance impact, and the future of algorithmic advertising. While reviewing the existing literature on algorithmic advertising replacing traditional advertising, it becomes evident

2.1. Evolution of Advertising into Algorithmic Domains

Artificial intelligence, algorithmic systems, and big data will continue to transform the advertising and marketing landscape [13]. The advertising system has always relied on stable relationships between media agencies, publishers, and advertisers. As this model has adapted to an interconnected and increasingly digital realm, the world has witnessed the rise of Google in 1998, Facebook in 2004, and other digital platforms that hold vast amounts of data to market and push highly targeted advertisements to users while acting as intermediaries [14]. Advertising has become algorithmically driven, because the decisions that were made by marketers are now made by machine learning models. With the rise in advertising that is programmatic, machines place ads in a few seconds involving no human efforts [15]. It is more data-driven than ever before, which raises critical issues of surveillance, data privacy, and commodification of personal data while also increasing efficiencies [16]. Advertising is being replaced by integrated marketing communications, which go beyond one-way instructions to include interactive and numerous interactions [17]. According to a number of studies, audiences are hesitant to trust AI-generated content because they believe it to be less genuine, which causes dissatisfaction [18]. One important finding was that individuals with higher levels of digital and AI literacy are better able to identify that the content was created by AI and, as a result, are more likely to accept it [19]. Should it not be expected? This may indicate a divide of tech-savviness amongst the audience. These changes reveal a revolving marketing environment as we see significant improvements in efficiency, automation, and personalization which are made possible by AI and algorithmic systems [20].

2.2. Personalization and Predictive Targeting

The application of various online learning algorithms, with regards to advertising and pricing, helps firms polish their advertising and pricing policy based on real-time consumer responses that enhance consumer engagement and profitability [21]. Previous studies have shown that by

implementing recommendation algorithm, i.e., the AI-driven systems that suggest content/products based on user behavior., the click-through rates (CTR) and conversion rates significantly increased i.e., the percentage of users who click on an ad after seeing it and complete a desired action, like purchasing or signing up have significantly increased, displaying an increase in user interaction and an improved advertising efficiency. The algorithm demonstrated scalability and adaptability among different consumer demographics and new media platforms. The results signify the importance of tailored content distribution in today's advertising environment [22]. The AI personalization effect is further liaised through consumer trust and belief that AI-personalized recommendations are helpful, relevant, and make their experience easier, which leads to increased consumer engagement where marketers focus on delivering content that has a genuine connection with the audience [23]. Even though personalization offers immense benefits, marketers must be careful and focus on maintaining customer trust and interest in the process of developing advertising and personalized pricing strategies. Use of personal data and sensitive information must be limited to avoid the breach of consumer privacy [24].

2.3. Algorithmic Creativity and Content Curation

Algorithms in digital advertising have significantly changed how content is created and shared on different digital platforms [25]. While AI plays a major role in scaling down ideas and enhancing delivery, it still cannot match the depth, emotion, creativity that a human brings into the picture. These characteristics are essential in storytelling and building authentic connections with the audience, something algorithms simply can't replicate or replace [25]. This has given rise to hybrid creative processes, where platforms like Netflix or Spotify apply algorithmic patterns to shape content, as human creators refine them with personal judgements [25], [26], [27]. This way AI augments instead of replacing human contribution. However, this algorithm-based customization has a side effect known as content homogenization, wherein platforms repeatedly recommend similar types of trending content, often reducing diversity and making much of the content feel predictable [28], [29]. As the algorithmic mechanisms are regularly advancing, digital creators had to enhance adaptive creativity, a skill used for problem solving, continuous content testing to explore and adapt quickly to the emerging digital trends [30]. For example, Instagram's transition to Reels in 2022 motivated creators to adapt short videos [30]. While Facebook's "meaningful interactions" update in 2018 drove businesses to reassess their content strategies [31]. These algorithmic adjustments lead to formulaic production cycles, such as using the same video lengths or thumbnails on YouTube to stay in favor with algorithms on the platform [30]. This raises important ethical questions: Are creators being authentic, or just following machine logic? Are users deciding themselves what they will watch, or are algorithms giving them what content to watch next?

2.4. Ethical Considerations and Algorithmic Bias

Self-expression on social media platforms such as X (formerly Twitter), Facebook, Instagram, LinkedIn and YouTube makes consumers feel empowered, but their activities being monitored to generate detailed profiles for targeted ads. A notable case is Facebook, where in 2018, the Cambridge Analytica scandal revealed how user data collected through activities such as likes and comments was used to build detailed political profiles without consent of users, which highlights significant privacy issues [32]. Consequently, algorithmic advertising gives way to significant ethical concerns that include privacy and fairness. The users on these platforms are afraid of the long-term impacts of their content performing poorly, therefore, they prefer following the algorithm, which in the end takes a toll on their mental health as not understanding how something works does not preclude us from experiencing its effects; instead, it leads to producing negative emotions and alters the online behavior of an individual [33]. Hilde counsels that users on social media platforms need to understand and enhance their knowledge about algorithmic persuasion tactics such as iterative feedback loops, tailored content recommendations and so forth, to be able to recognize them, as well as learn skills to protect themselves against such stratagems [34]. When talking about algorithmic bias, it occurs when an AI system produces unfair or inaccurate results

because it has learned from biased data. We call the data biased because it does not cover the undivided population, and hence it is inaccurate and incorrect. This might happen because large datasets that are used to train AI systems may be biased. Brands must ensure that their marketing is transparent and inclusive to build trust and foster loyalty among diverse customer groups. This can result in positive brand perception and long-term business development [35]. Ethical concerns can negatively affect the increment of consumer engagement as the consumers become uninspired to engage actively and associate with the brand.

2.5. Performance, Efficiency, and Business Impact

Businesses experiment to see what people like most to improve the effectiveness of their internet marketing. These days, clever systems are using A/B Testing, Multi-Armed Bandit algorithms, Machine Learning models instead of just displaying two adverts and watching to see which one performs well [36], [37]. These technologies can swiftly learn and figure out which ad should be displayed. Marketing campaigns conducted by Zomato using the AISAS model effectively acquired attention and built interest but were less efficient in encouraging customers to buy or spread positive word of mouth. Research involving 180 Zomato Gold users indicated that Zomato's marketing strategies based on the AISAS model effectively captured attention and interest, yet they faced challenges in driving actual purchases or shares [38]. This highlights the importance of creating more customized and efficient campaigns to improve customer interaction and suggestions. Traditional advertising has upgraded to modern advertising and is influencing people and attracting them to make purchases with its innovative designs based on customer consumption habits [39]. "Influencer marketing has become an essential component of digital marketing, and its effectiveness relies on careful planning and the execution of thoughtfully crafted campaign strategies." Strategizing success depends on trust, genuineness, and aligning the ideas of brand and influencer coherence [40]. The earlier research focuses on five prominent machine learning algorithms, which are logistic regression, decision tree, random forest, support vector machine, and neural networks. These algorithms assist businesses in identifying trends in customer behaviour. They are employed to enhance marketing strategies, including selecting appropriate target audiences and refining campaign content [41]. Online marketing is all about personalized experience and real-time engagement that requires core technology - AI, machine learning, data analysis, etc. Sustainable digital success requires data power and customer-centric marketing in the future [42].

2.6. Future of Algorithmic Advertising

Contemporary studies present a structured framework to better understand the changing effects of artificial intelligence on algorithmic advertising, especially through the lens of intelligence levels and task typologies. It does this by taking on both current research and practical marketing techniques [43]. While reviewing the existing literature on algorithmic advertising replacing traditional advertising, it becomes evident that a significant gap persists in referring to social media as a single entity. Social media is in fact, a collection of diverse platforms that together shape the broader concept of media. Although prior research has extensively explored the themes we have previously discussed, they often overlook the fact that every platform on social media has a unique and intriguing system of algorithms. A gap exists in comprehensively examining how different content formats, algorithm logic, and user motives affect personalization effects on these platforms. Understanding these differences is essential for brands to promote their business on the right platform for the best reach and profitability. By addressing this literature gap, this study aims to provide a comprehensive analysis that contributes to a broader understanding of algorithmic advertising across different social media platforms, ultimately bringing out the way for practical applications.

3. Chapter 3: Discussion

Social media has evolved rapidly as a core component where marketing strategies are executed. Social media has been growing by 11.9% every year and accounting for approximately 40% of total ad spend by brands [44]. This transforms how brands build visibility and connect with their target consumers. This detail is interpreted on account of a global survey conducted in 2024 that highlights this shift, with 86% of marketers making use of Facebook, 79% making use of Instagram, and 65% relying on LinkedIn [45]. Other platforms, notably YouTube, are making an impression, with 59% of marketers planning to increase their activity

on the platform [45]. These figures point down how social media platforms are no longer just optional channels for marketers but key drivers of engagement and growth. (Figure 1)

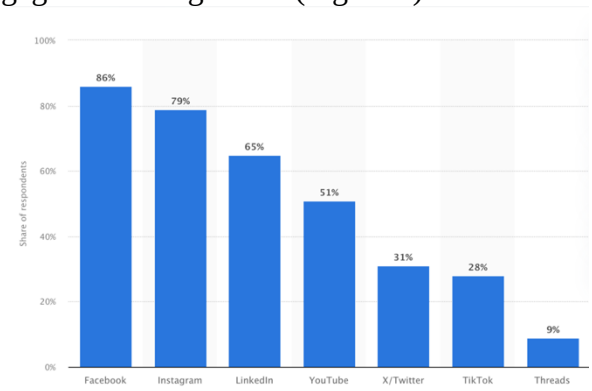

Figure 1 Most Used Marketing Platforms Worldwide [45]

Platform preferences seem to depend on whether a business is targeting consumers or other businesses. While business-to-business (B2B) brands give priority to LinkedIn because of its professional user base, business-to-consumer (B2C) brands optimize Facebook and Instagram because of the platforms' wide reach among regular users [46]. This divergence reflects the need for tailored strategies which are based on potential consumers' behaviour and the brand's marketing goals, which places a marketer under pressure to craft relevant messages, by using the right keywords and posting them on the most effective platforms [44]. To better understand these choices, a descriptive research approach was adopted in the study, which helped recognize deeper insights into how businesses can make decisions about which platform to use and what to include in their advertising content. The chapter discusses these insights by linking them to existing literature while also offering practical guidance for businesses. The analysis in the study focuses specifically on the top five platforms identified in the 2024 Global Survey published by Statista, a leading provider of market and consumer data. Based on responses from marketers worldwide, the survey ranked Facebook, Instagram, LinkedIn, YouTube, and X (formerly Twitter) among the most used marketing platforms (Figure 1). The study examines each of these platforms in terms of its strategic value, audience relevance and advertising potential. By narrowing the scope to these top five platforms, the discussion aims to provide a focused yet comprehensive understanding of how marketers can select the right channels, optimize the use of effective keywords to boost visibility and to maximize the brand's digital engagement in today's competitive landscape.

4. Facebook

Facebook was founded in 2004 by Mark Zuckerberg; it has grown from a simple networking site to one of the most powerful forces in digital media and global marketing. As of 2025, it functions as a key component of Meta Platforms Inc., operating not only as a social tool but as a revolutionary advertising ecosystem which leverages user data to personalize content and optimize brand reach [47].

4.1. Content on Facebook

Statista data fortify a pattern where video posts show the highest interaction rates, followed by image and link posts, with status updates performing the worst (Figure 2). This performance hierarchy is critical for brands planning their content calendars on Facebook.

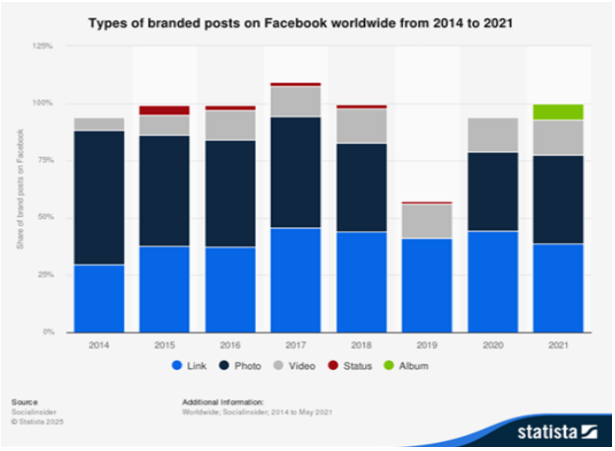

Figure 2 Average Post Interaction Rate by Format [48]

Further, researchers at the University of Bologna explored how platform algorithms not only respond to engagement but also use engagement as a signal to help construct "visibility circuits," which means high-performing post types are repeatedly boosted, thereby shaping content norms across the platform [49]. These structural feedback loops underline the necessity for marketers to strategically align their content types with algorithmic preferences.

4.2. Facebook Algorithm

At the heart of Facebook's user experience lies its News Feed algorithm, which is built to deliver content that captures user attention and

engagement. To decide on which material should be displayed at the top of a user's feed, this algorithm considers thousands of signals, including post type, user interaction history, regency, and expected relevancy [50]. Behind the scenes, with the help of machine learning, algorithms keep improving and changing as it learns from people using the platform. But these changes significantly affected brands, in terms of engagement and their content strategies. In the same context, one study argues that algorithm changes have significantly affected brand visibility, especially for organic content. This shift was observed when Facebook increasingly prioritized "meaningful interactions" in 2018 and other subsequent updates. Due to this, Marketers had to reshape their approach, instead of chasing likes, they had to focus on getting people to comment, react, and share. "The platform's shift to prioritize interactions between users and content has compelled brands to reimagine their engagement strategies" [51]. Building on this, some scholars explore how personalization isn't just a technical function but a societal force as it can also shape how people see the world. So by filtering what users see, algorithms might unintentionally create echo chambers or reduce the variety of content we're exposed to. This calls into question platforms' information management practices and the ethical part they play in influencing online discourse [49]. In order to adapt to these algorithmic shifts, few tricks offered by marketing platforms can be used such as getting early engagement, video content, and consistent posting as these are some of the key drivers for increasing organic reach [52].

5. Instagram

5.1. Introduction and User Demographics

It's fascinating to note that Instagram and Facebook are both owned by Meta Platforms Inc., while Instagram focuses on a user's personal identity, Facebook is more about the user maintaining social relationships on the platform. This distinction impacts how users use each of them [53]. Instagram has a wide reach, with almost 30% of global Instagram users aged between 25 and 34 years [54]. For many, it is more than just a way to stay connected, it's the platform where trends and conversations start, and brands build their presence. It is not just an application for social networking, but also a platform where people earn their livelihood [55]. Instagram promotes user engagement through its core content-sharing features such as Standard and Carousel posts, Stories and Reels [56]. These features contribute to Instagram's position as a versatile platform for creative expression and digital communication [57].

5.2. Inside Instagram's Algorithm

Understanding how Instagram's algorithm works is key to creating content that reaches the target audience of a brand effectively on the platform. When it is known what triggers the algorithm, it gets easier to enforce the algorithm to favor the brand's posts, it becomes easier to tailor content that resonates and gains visibility [58]. Contrary to popular belief that Reels perform better than photos, this is not how the algorithm on the platform works [59]. Instagram doesn't rely on a single algorithm [59]. The social media platform uses distinct algorithms designed specifically for different sections of the application such as the:

- Home Feed
- Reels Feed
- Stories Tray and
- Explore Page

Each of the above sections are designed for a unique purpose and are personalized to individual users based on how they engage or interact within that space [58]. For instance, Stories are primarily for sharing temporary updates with followers, in the Explore Page users discover new content and creators, and the same user can use their Reels Feed for some entertaining videos while Home Feed is a combination of reels, photos, and carousels posted by accounts in the user's following list, including posts by other accounts on Instagram that the users may be interested in, and sponsored posts tailored to the user [59]. Given that each section is utilized differently by users, the information is assessed differently by distinct algorithms depending on where it appears, Adam Mosseri the Head of Instagram verified this in a 2023 blog post on Instagram's official website [60]. There exist various forms of indications that Instagram uses to make "educated guesses" about how likely a user is to interact with a post, the indicators are referred to as "signals" by Instagram [61]. The algorithm prioritizes content that leads to meaningful engagement from other users such as spending time reading comments, liking, sharing or visiting a profile [60]. The success of the content posted entirely depends on aligning the brand's content

strategy with the algorithm's approach across different sections on the platform While reviewing the existing literature on algorithmic [59].

5.3. Is Instagram Right for Your Organization?

All organizations need a platform where they can provide entertaining, instructive and persuasive information about their product or services in a way that is minimally invasive and enhances audience recall and liking [62]. The social media platform Instagram does exactly that as users on the platform do not just scroll endlessly, they provide intimate hints about what they like, dislike and desire, it has evolved from a mere photo-sharing platform into a multifaceted marketing and business tool that brands across sectors now strategically leverage to reach and engage with their target audiences as it offers insight into customer preferences and behaviors [63]. The platform includes advertising formats such as Stories, Photo Ads, Carousel Ads, and Collection Ads, which it offers to businesses gives them the ability to visually communicate the brands' value propositions while promoting to specific demographic and psychographic segments through advanced targeting options available [64].

Indian food delivery brand Zomato effectively uses humor and culturally relevant memes to engage audiences, this demonstrates that Zomato has an acute understanding of its audience's media consumption patterns and preferences which helped the company take hold of audience's attention in India [65]. Instagram serves as a rich source of consumer insights where brands can monitor trends, assess competitors' strategies, and respond to unfiltered customer feedback in real time that helps build brand loyalty.

5.4. Suggestions for Marketers

The different feed algorithms on Instagram emphasise distinct characteristics [60] in order to effectively leverage the algorithmic structure for marketing. It is essential to tailor content creation on the platform to its dynamic engagement mechanisms. Buffer's 2024 analysis of 4 million posts confirms that carousel posts on Instagram outperform single-image and video posts due to its mechanism of redisplaying un-swiped content [66]. For brands seeking to grow their follower base, it is vital to implement strategies for the Reels and Explore page. Reels, which are designed with a purpose to recommend content to new users. Using formats like polls and stickers on Stories help foster deeper engagement with existing followers on a deeper level Marketers should engage genuinely with their audience by responding to comments and DMs, post during peak hours using Instagram Insights, and focus on including keywords over hashtags in their captions [67].

6. LinkedIn

6.1. What's LinkedIn? Purpose, Users & Content Formats

LinkedIn serves as a networking platform designed for professionals facilitating its users to connect with peers, share insights, and grow their careers [68]. While platforms like Instagram or Facebook concentrate on entertainment, and highlights personal life, LinkedIn focuses on work- related networking and business openings [69]. LinkedIn's audience consists of job seekers, individuals focused on career growth including senior executives, HR specialists, and students who are aspiring professionals [70]. LinkedIn supports diverse content formats such as short video clips to long posts, articles and live streams [70] users tend to engage more with content related to professional growth and expertise than standard promotions [71]. For instance, posts like embedded videos or natural-looking promotions often see more likes, comments, and clicks, which tends to induce advanced engagement [72].

6.2. Personalized Algorithm of LinkedIn

LinkedIn's algorithm curates customized content based on its user's job role, skill set and industry [69]. This means, users generally encounter posts and announcements that reflect their industry and career aspirations rather than irrelevant content [10]. The algorithm prioritizes posts from close connections, companies the users follow, and content that encourages professional conversations [70]. Marketers can reach niche groups with high accuracy, improving the success rate of their advertising [69]. This differs from platforms like Facebook, where personalization is frequently grounded on users' social actions and entertainment preferences [69], [10], [76].

6.3. Types of Organizations Using LinkedIn and Their Target Audience

LinkedIn is effective for brands that aim to reach decision makers and B2B marketers [68].

Frequent users of LinkedIn are:

- Companies offering Business-to-business (B2B) services, like software providers or consulting agencies, turn to LinkedIn to promote their services to relevant businesses [69].
- Recruiters rely on LinkedIn to identify, assess and connect with potential talent [68].
- Universities and online training platforms utilize LinkedIn to reach and engage with career focused professionals aiming to enhance their skills [74].
- Professionals in service sectors such as lawyers, financial advisors, marketing consultants often use LinkedIn to show their credentials and attract clients [70].
- Through LinkedIn's advanced targeting, marketers can reach out to specific groups effectively and customize ads based on professional attributes such as job roles, industry, geographic locations and skill sets [10]. For example, L&T Technology Services used LinkedIn's targeting tools to reach selected job roles across North America and Europe, resulting in a $35 million sales opportunity [73]. Where Facebook focuses on broad audience interests, LinkedIn enables precise targeting of niche professional segments [69].
- 3.3.4. Creating Personalized Content for Advertising on LinkedIn
- Personalized advertisements on LinkedIn perform more effectively and result in higher engagement as they speak directly to the user's professional needs and motivation [75].
- Characteristics of successful LinkedIn ads include:
- A professional tone that emphasizes job-related or business benefits [69].
- Directing promotional content towards specific job functions and industry sectors [70].
- Advertisements formatted as native content blends naturally into user's feed, making them feel like less obvious promotions and reducing disruption of user experience [72].
- Complex data can be effectively communicated with the help of visual elements like infographics or brief videos with clarity and engagement [71].
- When Upgrow adopted native advertising on LinkedIn it experienced a 200% increase in meeting bookings [72]. upGrad's consistent content strategy targeting professional learners reduced customer acquisition costs – the average expense a company acquires to get a new customer- by 20% [74].

7. YouTube

7.1. YouTube as a Marketing Strategy Platform

YouTube is the most prominent site for video sharing, where marketers have extended their reach to thousands of customers. Factors that can be considered include short-form and long-form content, live streaming, and community posts. Frederick and Johnson studied over 1.6 million video clips and said that the videos with an 8–9-minute runtime in HD and with the correct descriptions can rank well in search. The research suggests that YouTube Favours content that is both engaging and educational.

7.2. YouTube's Algorithm Makes Recommendations Based on Engagement

User interaction on the platform is an important data source for the algorithm, which includes videos watched, searches launched, and occasions a user interacted with a video. By emphasizing videos that produce high levels of viewer satisfaction and interaction, YouTube's Algorithm serves up content that matches users' viewing patterns and preferences.

7.3. Using YouTube Audience Segmentation as a Tool for Accurate Marketing

Various organizations of diverse industries use YouTube to target and interact with audiences. Through the YouTube algorithm, companies can direct their content according to demographic, interest, and behavioral variables. A study conducted by Play Creative Design [78] surfaced that businesses tend to segment their audience on age, location, and watch history for better and more precise marketing approaches. Audience segmentation, allows generation of specific content resulting in better consumer conversion opportunities.

7.4. YouTube Advertising Customization and AI: The Coca-Cola Case

Undoubtedly, customized content is the very

essence of YouTube advertising. Various marketers sort through audience preferences and data available on the audience to manufacture content that meets the needs and interests of the audience. The 2023 case study from Coca-Cola Middle East [79] provides an example of this strategy with one main video jointly produced, whereas AI technologies then created 32 different versions adapted for specific regional segments and cultural contexts. These strategies allowed Coca-Cola to effectively connect with a broad range of Middle Eastern audiences, presenting ideas that seemed pertinent. Optimizing keywords helps in generating YouTube video visibility. Meaningful keywords are incorporated into the titles, descriptions, and tags of videos, this helps the algorithm to try understanding the context around content and mapping it to the user search queries. Neil Patel [80] emphasized that huge keywords-rich descriptions and transcripts are keys to better SEO and audiences' larger reaches. Also, search terms have gained importance lately through the use of tools like Ahrefs.

8. X (formerly Twitter)

X was formerly known as Twitter; it is a social networking platform. It is mostly used by users from the age of 18 to 34 it is popularly used in countries such as the United States, followed by Japan and then India. It is a platform where users can share messages, short videos, and images on their page. It allows users to connect with each other and share their opinion regarding the trending news.

8.1. 3.5.1 X Algorithm

The X algorithm evaluates your interests and identifies the domains, influencing what shows up on your feed. The algorithm employed by X is a sophisticated AI system that examines your language, location, the content that you like and comments you've made. After examining your activity, X shows you content based on its timing It's relevancy hashtag, Keywords. Diversity and engagement tweets that get a lot of likes or retweets are shown at the top while others follow through it [81].

8.2. Personalised Content for Advertising on X

On X, personalized advertising involves tailoring content to consumers' interests, behaviours, and explicit engagement with content. Advertisers can utilize the interest graph of the platform and identify user preferences inferred through a user's tweets, who they follow, and how they engage with others on the platform. In a survey of users, 59% of them were more likely to recall in-feed ads that were contextually close to the information they were proximal to, and 54% were comfortable engaging with brands shown next to their own content [82]. This data indicates that it is imperative to provide contextually relevant and personalized content to improve advertising effectiveness on these platforms.

9. Comparative Analysis of Algorithmic Differentiators Across Major Social Media Platforms

Table 1 Comparative Analysis of Algorithmic Differentiators Across Social Media Platforms

Factor	Facebook	Instagram	LinkedIn	YouTube	X (Twitter)
Content Format Priority	Prioritizes native videos, especially short-form, followed by image posts, link shares, and text-only updates.	Reels, Carousel Posts, and Stories are prioritized for engagement.	Favors text-based posts, carousels, and professional articles on visual entertainment content.	Prioritizes long-form videos over Shorts in terms of retention and monetization.	Texts, threads, images and videos are prioritized.
Core Engagement Signals	Reactions, comments, and shares are weighted heavily. Meaningful interactions get priority.	Likes, shares, saves, comments, DMs, and profile visits. Speed of engagement, time of posting, and prior interactions between users is considered as well.	Prioritizes meaningful comments and shares, reactions as indicators of professional discussion.	Watch time, Click-Through Rate (CTR), Comments are stronger than likes or impressions alone.	Replies (~27× weight) > Retweets (~2×) > Likes.
Feed Type	Combines Social and interest graphs.	Multi-algorithm system, separate	Based on a professional	Combines subscriptions (social	Real-time + interest-based suggestions.

	Personalization is driven by behavior, interests, and engagement patterns.	algorithms for Home Feed, Reels, Stories, and Explore Page. Each tailored for user interaction patterns.	network (social graph), not general interest or trend graphs.	graph) with interest-based suggestions (interest graph).	
Discovery Mechanism	Relies on both algorithmic surfacing in the feed and group-based discovery.	Explore, Reels, keywords in captions/bios, DMs.	Content spreads through network amplification and topic-based surfacing, no explore tab.	Suggested videos (side and post-watch) and topic-based surfacing (e.g., home feed, Search).	Trending topics, hashtags, and suggested users/content based on behaviour and engagement.
Content Lifespan	Posts remain relevant for 1–2 days, but reach can extend with ongoing engagement.	Stories (24 hours), Reels and Posts (longer lifecycle if engagement is high), carousel redisplay increases longevity. Content remains visible as long as it receives interaction.	Posts stay relevant for 2–3 days, longer with consistent engagement.	Very long content can remain discoverable and evergreen for months or years.	The lifespan of a tweet is typically short, around 18 minutes.
Virality Triggers	Triggered by rapid early engagement. Emotional or controversial content tends to spike virality.	Shares via DMs, trending sounds, original content, interactive formats like polls/stickers, high save/share rates.	Driven by engagement from industry leaders or professional communities.	Home recommendations, Trending tabs also influenced by retention + engagement loops.	Hashtag virality, retweets, quote tweets, and reply to chains. Also influenced by subscription boosts.
Monetization Link	Strongly tied to monetization. Boosted posts and ad spend, impact reach.	Includes shoppable posts, business tools, in-app checkout, ad formats and influencer collaborations.	Organic content can perform well because of low monetization bias.	One of the strongest contents that retains users and performs well with ads gets prioritized.	Premium users gain algorithmic advantage in visibility and reach. Ad revenue share was recently introduced for creators.
Localization	Feeds are localized based on user location, language, and regional trends.	Location tagging boosts discoverability; regional trends show regional algorithmic sensitivity.	Feeds are localized by country or region to reflect regional interest and targeting.	Weak localization global platform with minimal location targeting unless explicitly tagged.	Some localization through geo-tagging and country-level trends.
Algorithm Transparency	Limited transparency. Meta has released general guidance, but specific ranking signals remain proprietary and frequently shift.	Regular updates by Instagram's Head (Adam Mosseri's blog), acknowledges multiple algorithms but specifics are often opaque.	Feeds are localized by country or region to reflect regional interest and targeting.	Moderate YouTube Studio provides creators with detailed analytics like CTR, retention, traffic sources, but the ranking model is not fully public.	Increasing parts of the algorithm were open sourced on GitHub in 2023.
Bias Toward Verified/High-Reach	Verified pages and high-reach accounts enjoy distribution	High-reach accounts often perform better due to stronger engagement history;	Slightly favors Top Voices and professionals with	Medium- Established channels may get slightly better visibility, but high-	High- Verified users receive higher ranking in feeds and

Accounts	advantages.	influencer content often prioritized via partnerships and interactions.	higher credibility.	quality new content can still break out.	replies.
Content Health/Safety Design	Moderation is strict on misinformation, hate speech, and spam, misleading content is downranked.	No explicit details in the script, but the platform deprioritizes content with third-party watermarks and likely filters inappropriate content to maintain platform standards.	Strictly professional; spam and unprofessional content are downranked.	Strict content flagging, kid-safe modes, AI moderation (especially post-2020).	Relies on community moderation + moderation filters. Still criticized for issues in handling misinformation /toxic content.

10. Chapter 4: Suggestions

The study aims to enhance algorithm design for emerging social media platforms and provide practical insights for brand advertising aligning with platform algorithms. These recommendations are grounded in previous studies and analysis from the discussion chapter.

10.1. Algorithm Design for Emerging Social Media Platforms

1. Intentional Content Prioritization from Day One: Emerging platforms should choose dominant content types in early stages and optimize their feed accordingly, prioritizing informative, inclusive, or community-oriented content rather than reactive engagement spikes. As algorithms of present social media platforms prioritise sensational, emotionally charged content to boost engagement that sometimes leads to fanning, misinformation, hate speech and polarization.

10.2. Protecting Vulnerable Users with Built-in Safeguards

For the safety of susceptible users, age protective content filters and optional restrictions must be integrated to protect them from harmful loops. These protections must be embedded directly into the platform algorithm, not bolted on as reactive features. In addition, platforms must comply with government regulations on digital safety and content moderation to ensure legal accountability and user protection.

10.3. Embedding Fairness and Diversity in the Recommendation Engine

Fairness and diversity must be directly embedded in algorithmic structure, such that the echo chambers are avoided, which refers to an environment where users are primarily exposed to information that reinforces their existing beliefs, thus by mixing known interest with novel content echo chambers can be minimized. Equal visibility for smaller or newer creators with quality content should also be prioritized, countering “legacy reach bias”, where algorithm favours already established creators over new creators.

10.4. Transparency and User control as Differentiators

Trust hinges on explainability. The platform must maintain transparency in terms of algorithm behaviors, giving a user-friendly explanation of the algorithm, and letting users choose the recommendation logic. Balancing the social graph (trust through connections) and interest graph (discovery through curiosity) will be essential to fostering both growth and retention.

10.5. Brand Advertising Strategies Aligned with Platform Algorithms

10.5.1. Brand Awareness

To enhance brand awareness, use platforms with high discovery algorithms and short-form viral potential. Platforms like Instagram and YouTube provide reels and shorts respectively, they are built to push content to non-followers, by use of eye-catching visuals and trending sounds, it is best for top of funnel branding. Brands should focus on impressions reach and video views here

10.5.2. Engagement

For this, brands should choose platforms where the algorithm rewards conversations, shares, or time-on-content. Facebook groups, LinkedIn ads, Twitter are the major platforms that boost engagement. The brands should craft content that invites reactions or deeper conversations.

10.5.3. Conversions

Use platforms with deep targeting, intent signals, or longer content formats to drive actions. Long form

videos on YouTube are Perfect for demos, testimonials, or explainer videos that zap users to convert. Meta Ads (Facebook/Instagram) helps in Advanced targeting, retargeting, and shopping integrations on the platforms making them ideal for driving signups, purchases, and app installs.

10.5.4. Lead Generation

Brands should use platforms that allow native lead forms and pre-qualified professional audiences for lead generation. LinkedIn is Best for B2B, brands can use Lead Gen Forms in Sponsored Content to capture without clicks. Whereas Facebook Lead Forms are great for fast-fill contact collection and to optimize mobile conversion.

10.5.5. Community Building

Brands should target platforms that enable interaction and group dynamics beyond just following. Facebook Groups has top organic space for building communities around interests or brands, and X (Twitter) is a real-time interaction, replies, and community-driven 'Space' that makes it dynamic for conversation-based communities.

Chapter 5: Conclusion

This research focused on analysing how content flow and promotional strategies are affected by different algorithmic systems across various platforms. Its focus was on simplifying the mechanics of platform-specific algorithms, suggesting ways to improve future algorithm designs, and providing real-world insights for marketers. A major insight was the clear understanding that algorithmic behavior varies and is diverse over each digital platform such as Youtube's lengthy videos, LinkedIn's career focused approach, Instagram's trending reels or X's live streams. Algorithms not only influence users' feeds but also help marketers to tailor their messaging to meet specific objectives like awareness, awareness, or sales. This variation in algorithmic design means that generalized marketing strategies are no longer effective; Advertisers shall now develop personalized campaigns to exhibit how each platform's algorithm functions and captivates users. The importance of these insights extends beyond marketing strategies. Upcoming platforms should rebuild their algorithmic structures with focus on transparency, diversity, and user control. At the same time, brands must also stay adaptive to the shifting digital ecosystem, where these platforms constantly transform and each operates with its distinct features like algorithmic prioritization and behavioural patterns which impacts content reach and interactions. To maintain a transparent and balanced view, it is important to acknowledge the limitations of this study as well. This research was limited to open-source information without access to internal algorithmic structures. The frequent updates and dynamic nature of social media algorithms may lead to this study's relevance decreasing over time without real-time adaptation. Lastly, the insights were drawn primarily from English-speaking content and platforms, highlighting a gap in understanding algorithmic behavior in regional, cultural and linguistic variations leaving a space for future studies to enhance scope. A promising direction for future study may include testing advertising methods across various platforms to observe algorithm-driven differences and gain deeper insights. Another practical advancement could be leveraging real-time dashboards using APIs and open-source tools that capture algorithmic shifts, performance patterns and support faster decision-making. As algorithms are shaping nearly every digital engagement, understanding how these systems affect content is important for both users and marketers to stay relevant and aware. Although efficiency remains a key objective, the upcoming platforms must extend to integrating ethics, transparency, and fairness into their algorithmic foundations. In a landscape where Instagram boosts trends, YouTube influences engagement through long-form journeys, and X fuels instant interactions; the standout factor will be intent. Platforms and brands must now collaborate, ensuring their pursuit of user interaction and performance does not come at the cost of accountability. In this age of invisible influence, where algorithms quietly shape our decisions, the future belongs to those who customize thoughtfully and act with integrity.

References

[1]. American Marketing Association, "The ultimate guide to advertising 2025 | Types, strategies & tips," AMA, Apr. 22, 2025. [Online]. Available: https:// www.ama. org/marketing- news/the -ultimate -guide-to-advertising- types-strategies-and-best-practices-for-2025/

[2]. [2] T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, Introduction to

Algorithms, 4th ed. Cambridge, MA, USA: MIT Press, 2022.

[3]. D. Susser and V. Grimaldi, "Measuring automated influence: Between empirical evidence and ethical values," in Proc. 2021 AAAI/ACM Conf. AI, Ethics, Soc., pp. 242–253, 2021.doi: 10.1145/ 3461702. 3462532. [Online]. Available: https:/ /doi.org/ 10.1145/ 34617023462532

[4]. D. Nadkarni, "Social media algorithms: How they work and their impact on content distribution," Medium, May 12, 2024.[Online]. Available: https:// medium.com/@devaangnadkarni01/social-media-algorithms-how-they-work-and-their-impact-on-content-distribution-a737 25c2a239

[5]. M. Dahlen and S. Rosengren, "If Advertising Won't Die, What Will It Be? Toward a Working Definition of Advertising," J. Advert., vol. 45, no. 3, pp. 334– 345,Jul. 2016.doi: 10.1080/00913367.2016. 1172387. [Online]. Available: https://doi.org/10.1080/00913367.2016.117 2387

[6]. Ö. U. Yurttaş and Y. Özkocak, Creative Advertising, 1st ed. Istanbul, Turkey: DER, Dec. 2019. ISBN: 978-975-353-592-2. [Online]. Available: https://www.researchgate.net/publication/3 66499323_Creative_Advertising

[7]. A. Apriansyah, M. Gunarto, and S. Helmi, "The influence of algorithm-based advertising on social media on millennial consumer behavior," Asian J. Manag. Anal., vol. 4, no. 1, pp. 291–300, 2025. doi: 10.55927/ajma.v4i1.13394. [Online]. Available: https://doi.org/10.55927/ajma.v4i1.13394

[8]. 2025 Digital Media Trends: Social platforms are becoming a dominant force in media and entertainment, Deloitte Insights, Mar. 25, 2025. Accessed: May. 21, 2025. [Online]. Available: https:// www2. deloitte.com/us/en/insights/industry/technology/ digital-media-trends-consumption-habits-survey/2025.html

[9]. K. Cotter, "Playing the visibility game: How digital influencers and algorithms negotiate influence on Instagram," New Media & Society, vol. 21, no. 4, pp. 895–913, 2019. [Online].

[10]. Business Bigwig, "How LinkedIn Algorithm Works in 2023–2024," 2023. [Online]. Available: https:// www.adigitalagency.io/blog/understanding-social-media-algorithms-how-they-shape-content-and-engagement-in-2024

[11]. The Verge, "The tiny tweak that could change YouTube forever," The Verge, 2024. [Online]. Available: https://www.theverge.com/2024/11/13/242 95509/youtube-endless-scroll-tiktok-algorithm

[12]. AICONTENTFY, "Impact of social media algorithm changes on content distribution," 2024. [Online]. Available: https:// aicontentfy.com/en/blog/impact-of-social-media-algorithm-changes-on-content-distribution

[13]. V. Kumar, A. Dixit, R. G. Javalgi, and M. Dass, "Digital transformation and AI adoption in marketing and sales: Opportunities and challenges," Ind. Mark. Manag., vol. 95, pp. 48–60, 2021. doi: 10.1016/j.indmarman.2021.03.008. [Online]. Available: https:// doi.org/ 10.1016/j.indmarman.2021.03.008

[14]. S. Zuboff, The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power — Book — Faculty & Research, Harvard Business School.[Online]. Available: https://www.hbs.edu/faculty/Pages/item.aspx?num=56791

[15]. J. Wang, W. Zhang, and S. Yuan, "Display advertising with real-time bidding (RTB) and behavioural targeting," arXiv, Oct. 7, 2016.

[16]. M. Andrejevic, "Surveillance in the digital enclosure," The Communication Review, vol. 10, no. 4, pp. 295–317, 2007. doi: 10.1080/10714420701715365

[17]. G. E. Belch and M. A. Belch, Advertising and Promotion: An Integrated Marketing Communications Perspective, 12th ed. New York, NY, USA: McGraw-Hill Education, 2021. ISBN: 978-1260259315.

[18]. X. Jiang, Z. Wu, and F. Yu, "Constructing consumer trust through artificial intelligence generated content," Academic J. Bus. Manag., vol. 6, no. 8, pp. 263–272, 2024.
[19]. M. Lin, R. Chang, and J. Kim, "AI literacy in higher education: Effects on students' acceptance of AI-generated content, well-being, and performance," Smart Learn. Environ., vol. 12, no. 1, art. no. 26, 2025.
[20]. L. Floridi and J. Cowls, "A unified framework of five principles for AI in society," Harv. Data Sci. Rev., vol. 1, no. 1, Summer 2019. doi: 10.1162/ 99608f92. 8cd550d1.
[21]. M. Mussi, Online Learning Methods for Pricing and Advertising, Ph.D. thesis, Politecnico di Milano, Italy, June 27, 2024
[22]. [22]Y. Zhang and S. Fu, "Commercial new media advertising recommendation algorithm based on data analysis," Procedia Comput. Sci., vol. 247, pp. –, 2024, doi: 10.1016/j.procs.2024.10.064.
[23]. S. Muralidharan, "Impact of AI on personalized targeting in social media advertising," J. Inform. Educ. Res., vol. 4, no. 2, pp. 621–634, 2024.
[24]. S. C. Boerman, S. Kruikemeier, and N. Bol, "When is personalized advertising crossing personal boundaries? How type of information, data sharing, and personalized pricing influence consumer perceptions of personalized advertising," Comput. Hum. Behav. Rep., vol. 4, art. no. 100144, Aug. 2021, doi: 10.1016/j.chbr.2021.100144.
[25]. X. Amatriain and J. Basilico, "Netflix Recommendations: Beyond the 5 Stars (Part 1)," Netflix Tech Blog, 2012. [Online]. Available: https://netflixtechblog.com/netflix-recommendations-beyond-the-5-stars-part-1-55838468f429
[26]. M. Hogan, "Up Next: How Playlists Are Curating the Future of Music," Pitchfork, 2015. [Online]. Available: https://pitchfork.com/features/article/9686-up-next-how-playlists-are-curating-the-future-of-music
[27]. S. Ong, "The Playlist Power Broker Who Makes or Breaks New Artists," The Wall Street Journal, 2024. [Online]. Available: https://www.wsj.com/arts-culture/music/spotify-playlist-sulinna-ong-algorithm-7835e0ac
[28]. K. Cotter, "Playing the visibility game: How digital influencers and algorithms negotiate influence on Instagram," New Media & Society, vol. 21, no. 4, pp. 895–913, 2019. [Online]. Available: https:// doi.org/ 10.1177/1461444818815684
[29]. D. Holtz et al., "The Engagement-Diversity Connection: Evidence from a Field Experiment on Spotify," arXiv preprint, arXiv:2003.08203, 2020. [Online]. Available: https://arxiv.org/abs/2003.08203
[30]. B. Koh and F. Cui, "An exploration of the relation between the visual attributes of thumbnails and the view-through of videos: The case of branded video content," Decis. Support Syst., vol. 160, art. no. 113820, Sep. 2022, doi:10.1016/j.dss.2022.113820
[31]. R. Erskine, "Facebook Engagement Sharply Drops 50% Over Last 18 Months," Forbes, 2018. [Online]. Available: https:// www.forbes.com/sites/ryanerskine/2018/08 /13/study-facebook-engagement-sharply-drops-50-over-last-18-months/
[32]. H. Kanakia, G. Shenoy, and J. Shah, "Cambridge Analytica – A case study," Indian J. Sci. Technol., vol. 12, no. 29, pp. 1–5, 2019, doi: 10.17485 /ijst/2019 /v12i29/ 146977.
[33]. Y. Register, L. Qin, A. Baughan, and E. S. Spiro, "Attached to 'The Algorithm': Making Sense of Algorithmic Precarity on Instagram," in Proc. CHI Conf. Hum. Factors Comput. Syst. (CHI '23), 2023, p. 563, doi: 10.1145/3544548.3581257.
[34]. H. A. M. Voorveld, C. S. Meppelink, and S. C. Boerman, "Consumers' persuasion knowledge of algorithms in social media advertising: Identifying consumer groups based on awareness, appropriateness, and coping ability," Int. J. Advert., vol. 43, no. 6, pp. 960–986, 2024. doi: 10. 1080/02650487. 2023.2264045.
[35]. V. Kumar and D. Ramachandran, "Developing firms' growth approaches as a multidimensional decision to enhance key stakeholders' wellbeing," Int. J. Res. Mark.,

vol. 38, no. 2, pp. 395–414, Jun. 2021, doi: 10.1016/j.ijresmar.2020.09.004.

[36]. R. Kohavi, A. Deng, R. Longbotham, T. Walker, and Y. Xu, "Trustworthy Online Controlled Experiments: Five Puzzling Outcomes Explained," Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2009.

[37]. S. L. Scott, "A modern Bayesian look at the multi-armed bandit," Appl. Stoch. Models Bus. Ind., vol. 26, no. 6, pp. 639–658, Nov. 2010. doi: 10.1002/asmb.874.

[38]. P. U. Ruswandi, H. Hartoyo, and M. Najib, "Attention, Interest, Search, Action, and Share (AISAS) analysis of promotion effectiveness of Zomato," Binus Bus. Rev., vol. 12, no. 2, pp. 177–188, Jul. 2021, doi: 10.21512/bbr.v12i2.6676.

[39]. P. Kotler and K. L. Keller, Marketing Management, 15th ed. Harlow, U.K.: Pearson Education, 2016.

[40]. M. De Veirman, V. Cauberghe, and L. Hudders, "Marketing through Instagram Influencers: The Impact of Number of Followers and Product Divergence on Brand Attitude," International Journal of Advertising, vol. 36, no. 5, pp. 798–828, 2017.

[41]. N. Kotu and P. Deshpande, Data Science: Concepts and Practice, 2nd ed., Morgan Kaufmann, 2019.

[42]. D. Chaffey and F. Ellis-Chadwick, Digital Marketing: Strategy, Implementation and Practice, 7th ed., Pearson, 2019.

[43]. T. Davenport, A. Guha, D. Grewal, and T. Bressgott, "How artificial intelligence will change the future of marketing," J. Acad. Mark. Sci., vol. 48, no. 1, pp. 24–42, Jan. 2020, doi: 10.1007/ s11747- 019-00696-0.

[44]. Statista, "Social media advertising revenue worldwide from 2022 to 2028," Statista Digital Market Outlook, 2025. [Online]. Available: https://www.statista.com/outlook/amo/advertising/social-media-advertising/worldwide

[45]. Statista, "Leading social media platforms used by marketers worldwide in 2024," Statista, 2025. [Online]. Available: https://www.statista.com/statistics/259379/social-media-platforms-used-by-marketers-worldwide/

[46]. Statista, "Most important social media platforms for B2B and B2C marketers worldwide in 2024," Statista Digital Market Outlook, 2025. [Online]. Available: https://www.statista.com/statistics/259404/most-important-social-media-platforms-for-b2b-and-b2c-marketers-worldwide/

[47]. T. Bucher, If…Then: Algorithmic Power and Politics, Oxford Studies in Digital Politics. New York, NY, USA: Oxford University Press, 2018. doi:10.1093/ oso/ 9780190493028.001.0001

[48]. Statista, "Average Facebook brand post interaction rate by format 2024," Statista, 2024. [Online]. Available: https://www.statista.com/statistics/296628/facebook-brand-post-interaction/

[49]. U. Reviglio, Personalization in Social Media: Challenges and Opportunities for Democratic Societies, Ph.D. thesis, Alma Mater Studiorum – Univ. Bologna, Bologna, Italy, 2020. Available: https://amsdottorato.unibo.it/id/eprint/9529/1/Reviglio_Urbano_Tesi.pdf

[50]. S. Shah, "Inside the Facebook algorithm in 2025: All the updates you need to know," Buffer, 2025. [Online]. Available: https://buffer.com/resources/facebook-algorithm/

[51]. K. Nieminen and J. Inkeroinen, The Effects of the Facebook Algorithm Change on Social Media Advertising, Bachelor's thesis, Haaga-Helia Univ. of Applied Sciences, Finland, 2019. [Online]. Available: https:// www.theseus.fi/bitstream/handle/10024/262827/Nieminen%20Kaari%2C%20Inkeroinen%20Juuso.pdf?sequence=2.

[52]. A. Sonnenberg, "How the Facebook algorithm works — And how to beat it (+ Checklist)," HawkSEM Blog, Mar. 31, 2025. [Online]. Available: https://hawksem.com/blog/facebook-algorithm/

[53]. P. Sheldon and K. Bryant, "Instagram: Motives for its use and relationship to narcissism and contextual age," Computers in Human Behavior, vol. 58, pp. 89–97,

2016. https:// doi.org/ 10.1016/ j.chb. 2015.12.059

[54]. Statista, "Distribution of Instagram users worldwide as of January 2024, by age group," 2025. [Online]. Available: https:// www.statista.com/statistics/325587/instagram-global-age-group/

[55]. C. Yang, "Research in the Instagram Context: Approaches and methods," The Journal of Social Sciences Research, vol. 71, pp. 15–21, 2021. https:// doi.org/ 10.32861/jssr.71.15.21

[56]. Meltwater, "Complete guide to Instagram Reels (Updated 2025)," Meltwater Blog, 2025. [Online]. Available: https:/ /www. meltwater.com/en/blog/instagram-reels/

[57]. MarketingMind, "Instagram Professional Account – Key Benefits and Set-Up," MarketingMind website, 2025. [Online]. Available: https:// www. Ashokcharan .com/Marketing-Analytics/~ig-instagram-professional-account. php# gsc. tab=0

[58]. E. Yu, "How does the Instagram algorithm work in 2024?" Meltwater, Jun. 26, 2024. [Online]. Available: https:// www. meltwater.com/en/blog/instagram-algorithm- 2023

[59]. Buffer, "How the Instagram Algorithm Works: Your 2025 Guide," [Online]. Available: https:// buffer. com/ resources/ instagram-algorithms/

[60]. A. Mosseri, "Shedding more light on how Instagram works," Instagram Official Blog, June 8, 2021. [Online]. Available: https://about.instagram.com/blog/announcements/shedding-more-light-on-how-instagram-works

[61]. Buffer, "Instagram Marketing: How to Form Your Strategy in 2025," Buffer Blog, Aug. 21, 2024. [Online]. Available: https:// buffer.com/resources/instagram-marketing/

[62]. B. Koç, The Role of User Interactions in Social Media on Recommendation Algorithms: Evaluation of TikTok's Personalization Practices From User's Perspective, Ph.D. thesis, July 2023, Turkey. [Online]. Available: https://www.researchgate.net/publication/375775130_The_Role_of_User_Interactions_in_Social_Media_on_Recommendation_Algorithms_Evaluation_of_TikTok's_Personalization_Practices_From_User's_Perspective

[63]. D. K. Tsao, "Getting to know you: Social media personalization as a means of enhancing brand loyalty and perceived quality," J. Retail. Consum. Serv., vol. 47, pp. 57–65, Mar. 2019, doi: 10.1016/j .jretconser.2018.10.007

[64]. Instagram Business Blog," 2018. [Online]. Available: https:/ /business .instagram. com/blog/

[65]. A. Challa and N. Anute, "The effectiveness of Instagram content marketing on brand building of a company," J. Sales Serv. Mark. Res., vol. 2, no. 2, pp. 1–7, 2021. doi: 10.46610/jssmr.2021.v02i02.001

[66]. P. Agnew, "Do Instagram carousels get more engagement? (Yes, but it's complex)," Buffer News, May 25, 2022. [Online]. Available: https://buffer.com/resources/do-instagram-carousels-get-more-engagement/

[67]. "Instagram Official Blog," 2024. [Online]. Available: https:// about .instagram. com/blog

[68]. J. Kietzmann, K. Hermkens, I. P. McCarthy, and B. S. Silvestre, "Social media? Get serious! Understanding the functional building blocks of social media," Business Horizons, vol. 54, no. 3, pp. 241–251, May–Jun. 2011. [Online]. Available: https:// doi.org/10.1016/j.bushor.2011.01.005

[69]. K. Kapoor, K. Tamilmani, N. Rana, P. Patil, and Y. Dwivedi, "Advancing social media research: Past, present and future," Information Systems Frontiers, vol. 20, no. 3, pp. 531–558, Jul. 2018. [Online]. Available: https://doi.org/10.1007/s10796-017-9810-y

[70]. LinkedIn Marketing Labs, "How the LinkedIn algorithm works and how to make it work for you," 2024. [Online]. Available: https://www.linkedin.com/business/marketing/blog/linkedin-ads/how-the-linkedin-algorithm-works

[71]. L. Li, J. Wang, and Y. Zhang, "User engagement and response to social media ads: An empirical study," Journal of Digital Marketing, vol. 10, no. 1, pp. 22–35, 2022. [Online]. Available: https://ijcams.com/wp-content/uploads/2024/07/new-paper-1_formatted_IJCAMS.pdf

[72]. R. Meehan, "LinkedIn Ads Case Study: +200% Meetings with Native Ads," Upgrow Blog, Dec. 1, 2022. [Online]. Available: https:// www. upgrow. io/blog/linkedin-case-study-native-ads

[73]. LearnVern, "L&T Technology Services Case Study," 2023. [Online]. Available: https://www.learnvern.com/blog/lt-technology-services-success-story

[74]. Social Samosa, "Case Study: How upGrad's LinkedIn marketing strategy resulted in 20% deduction on CPL," Social Samosa, Aug. 14, 2020. [Online]. Available: https://www.socialsamosa.com/2020/08/case-study-upgrad-linkedin-campaign

[75]. LinkedIn Ads, "What makes high-performing LinkedIn Ads?," LinkedIn, 2024. [Online]. Available: https://business.linkedin.com/marketing-solutions/blog/linkedin-ads/2024/what-makes-high-performing-linkedin-ads

[76]. upGrad, "15 Actionable LinkedIn Marketing Strategies to Enhance Your Brand and Engagement in 2025," upGrad Blog, 2025. [Online]. Available: https://www.upgrad.com/blog/actionable-linkedin-marketing-strategies/

[77]. Shen, "The research of the factors that influence the popularity of YouTube videos," Theoretical & Natural Science, vol. 51, no. 1, pp. 187–193, Nov. 2024, doi:10.54254/2753-8818/51/2024CH0200

[78]. J. Zhang, "YouTube's Evolution, Marketing Strategies, and Impact on Digital Media Landscape: A Comprehensive Analysis," Highlights in Bus. Econ. Manage., vol. 23, pp. 657–662, Dec. 2023, doi: 10.54097 /wb8db151.

[79]. Search Engine Land, "AI-enhanced YouTube marketing: Insights from 3 case studies," Search Engine Land, May 30, 2024. [Online]. Available: https:// searchengineland.com/ai- youtube-marketing-insights-case-studies-436536

[80]. A. Vhatkar and N. Mali, "A study of factors affecting YouTube SEO in 2020," VICHAYAN – Int. J. Multidisciplinary Res., vol. 1, no. 1, pp. 1–12, Jul. 2021. [Online]. Available: https:// www. researchgate.net/publication/369369660_A _Study_of_Factors_Affecting_YouTube_SEO_in_2020

[81]. SocialBee, "Understanding How the X (Twitter) Algorithm Works in 2025," SocialBee Blog, published Jan. 2025. [Online]. Available: https:// socialbee .com/blog/twitter-algorithm/

[82]. S. Johnson, "Personalized advertising strategies and customer engagement in Liberia," IOSR J. Bus. Manag., vol. 26, no. 12, Ser. VI, pp. 9–18, Dec. 2024.