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The Role of Technology in Shaping Social Behavior: A Systematic Literature Review

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Abstract

The systematic literature review examines the role of emerging technologies, particularly AI, social media, and virtual reality, in shaping social behavior and identity. In recent years, technology has moved beyond being a mere tool and has become a fundamental agent that actively transforms human actions, relationships, and societal structures. The review synthesizes peer-reviewed articles from 2014 to 2023 that explore how technologies like AI algorithms, social media platforms, and virtual realities influence identity formation, community dynamics, and social norms. Through rigorous inclusion criteria, the study focuses on long-term behavioral changes and psychological mechanisms, emphasizing the co-evolution between technology and social behavior. The results highlight the pervasive influence of technology, with social media identified as a central factor in identity formation, driven by algorithms that personalize content and foster social validation. AI, particularly in recommendation systems, affects individual decisions and content consumption, while virtual reality technologies introduce new forms of social interaction. The review also discusses emerging social phenomena like digital polarization, echo chambers, and the feedback loops between social behavior and technological advancements. The review concludes that while technology has reshaped social behavior and identity, there is a need for further research on the reciprocal relationship between technology and society. The findings suggest that technological developments significantly affect collective behaviors, societal norms, and social stratification.

Keywords: Technology, Social Behavior, AI Algorithms, Social Media, Virtual Reality, Identity Formation, Community Dynamics, Digital Identity, Algorithmic Influence, Digital Polarization

1. Introduction

In the contemporary world, technology has transcended its traditional role as a mere tool and has become a formative agent in transforming human behaviour and social structures (Moll & Yigitbasioglu, 2019). What was once a linear, utilitarian relationship between technology and its users has evolved into a dynamic interaction where technology facilitates human action and actively shapes, constrains, and redefines how individuals perceive themselves, their relationships, and their place in the world. In the face of rapid digitization, social behaviour is increasingly mediated by technological frameworks—notably through platforms such as social media, artificial intelligence (AI), and virtual realities (Dwivedi et al., 2019).

This is not a change on the periphery but rather pervasive and systemic. Today, according to reports of Statista, 2023, social media platforms, including Facebook, Instagram, and Twitter, account for 60% of the information people consume and interact with within a day or at any given time globally (Venugeetha et al., 2022). This is indicative of a basic shift in the communication mechanism from person to person to those mediated digitally, where the private and public get blurred (Ivchenko et al., 2023). More specifically, social media platforms have reimagined community and identity constructs of traditional spaces, transforming geography and culture into less significant factors in constituting not only what one's identity is but also how one embodies a persona (Pohuda et al., 2023).

This dynamic was even more recently enriched as AI algorithms began to be integrated into everyday life. The most common way AI contributes to social behaviour shapes

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is through YouTube, Netflix, and Amazon recommendation systems (Stone et al., 2022). Not only are these systems passive, but they are also actively able to suggest, predict, and even influence the behaviour of users, taking away one's notion of free will in the digital space. Nearly 70% of YouTube's content is guided by recommendations, as per Google Trends, which means the hypothesis is validated that algorithmic curation influences what people watch, buy, and even think (Haenlein & Kaplan, 2019). Virtual reality (VR) technologies have made possible new dimensions of social formations, producing equally novel virtual environments in which people interact in immersive spaces, simulating the real or digital communities in their uniqueness. However, as these virtual worlds develop, they present traditional social dicta and notions, testifying to the probability of legitimate social interaction (Zhang & Lu, 2021).

Meanwhile, these technological innovations could not impact social identity. In today's world, individuals are consuming digital content and creating digital identities for themselves, which can be across many platforms, like LinkedIn profiles to Instagram feeds (Chen & Lin, 2019). These digital representations play a profound role in these two things: self-perception and how people relate to each other. For instance, a Best et al. (2016) study shows that online personas differ greatly from true identities. Much concerning this, individuals craft a version of themselves that fits into social desirability and digital validation (Best et al., 2016). Also, new psychological phenomena emerge, such as social comparison and online social anxiety; the desire for social validation through likes, shares and comments has redefined relational being visible and accepted.

The effect of this phenomenon spilt over to affect the socio-cultural fabric. In such an information overload world, people have become increasingly dependent on algorithms for their digital activities. Thus, social behaviour is no longer only written by humans while interacting with each other, and it is intimately mixed up with algorithmic structures that subtly nudge towards choices, preferences, and behaviour. A case in point is the recent rise of echo chambers and filter bubbles on social media platforms, where individuals receive most of their content based on what is meant to confirm their pre-existing beliefs. Rather than being incidental, this digital polarization is a product of the digital technology that produces it (Hoeve et al., 2014; Morrar et al., 2017).

Technological advances are evolving at unprecedented speed, as are people's use of them, and humans are still way behind in understanding the implications of these technologies for social behaviour (Maresch et al., 2016). Among emerging technologies, artificial intelligence (AI), augmented reality (AR) and virtual reality (VR) are particularly notable not only because of their scale but because of the sense that they could change the very essence of human interaction (Gal & Elkin-Koren, 2016). Facebook, Instagram, and TikTok get a huge advantage from being AI-driven, massively thanks to machine learning algorithms that can personalize the content so that everyone can see something different and interact differently with the content and others. Deloitte's 2023 Global Digital Media Trends Survey found that 67% of consumers indicate that algorithms heavily influence their media consumption, underlining the importance of technology in helping to decide for us (Napoli, 2014).

At the same time, virtual and augmented realities are creating new ways of linking people beyond physical bounds, although bringing new social phenomena like social spaces in the form of VRChat, where people can meet, interact and build relationships completely independent of their physical existence. These are not improvements; they constitute paradigm changes in the modalities of society, requiring the reconsideration of human agency, social structure, and everything related to it (Klinger & Svensson, 2018).

Advancements in technology have become a medium of democracy through which people shape their identities and communities (McGarty et al., 2014). Although much has been expressed about how technology affects social behaviour, this process is studied in a one-way mode of interaction. AI algorithms and social media are technologies that shape individuals' behaviour and generate new forms of social structures, as they also play roles in creating new forms of societal outcomes; however, the loops of feedback between digital platforms and societal outcomes are poorly understood. This study will address the missing gap by critically analyzing how emerging technologies affect social behaviour and generate new social orders (Bartlett, 2018).

While most existing research arbitrarily examines the impact of technology on social behaviour, not much of the two-way feedback dynamics and, thereby, the mutual relations between humans and digital technologies have been identified. Moreover, how social media algorithms

and virtual platforms generate new social norms and identity makeup has not been elaborately studied. This study looks into how changing technologies are changing social behaviours and identity, taking a broader and multidimensional approach.

By providing new insights into the influence of digital technologies on social behaviour and identity, this study fills an important gap in both social science and technology studies. The findings will inform policy on AI algorithm development, design of social media platforms, and digital literacy programs by looking at how AI algorithms, social media, and virtual reality intersect with social behavioural dynamics. In addition, it will provide a theory of the nonlinear relationship between technology and social behaviour.

This study critically evaluates how emerging technologies change social behaviour and identity. This will examine how algorithmic curation and the dynamics of social media impact individual identity and community formation, as well as the feedback loops amongst complex technical systems and the social behaviours they supposedly map. It will also have new forms of social stratification and polarization employing virtual and augmented realities. In addition, the research will propose a co-evolution framework based on integrating findings from AI-driven platforms and social media to understand how technology removes social norms and behaviours.

1.1. Research Questions

1. How do AI algorithms and social media platforms shape individual identity in digital spaces?
2. In what ways do algorithmic systems influence the formation of online communities and social behaviours?
3. What are the feedback loops between social behaviour and technological advancement?
4. How do emerging technologies contribute to new forms of social stratification and polarization?
5. How do these technological changes affect collective behaviours and societal norms?

2. Methodology

2.1. Research Design

The study adopted a systematic literature review design, rigorously synthesizing the existing body of research on the intersection of technology and social behaviour. Given the complexity of the relationship between technological advancements and their impact on human behaviour, this review focused specifically on peer-reviewed articles that provide empirical evidence and theoretical analysis of how technological innovations—such as AI algorithms, social media dynamics, and virtual reality—influence individual identity, community formation, and social norms.

2.2.Inclusion and Exclusion Criteria

The inclusion criteria focused on studies published in the last ten years (2014 to 2023) to ensure that the outcomes are pertinent and recent. This means that the focus of these studies must be on technology in interaction with social behaviour, for which demographic differences, psychological mechanisms and social consequences of these technologies must be explicitly investigated. Longitudinal and comparative studies tend to provide the most useful information regarding long-term changes in social behaviour and will be given priority; these studies examine changes in social behaviour over long periods and compare these changes across multiple cases.

The exclusion criteria mean studies which deal with only technological aspects without behaviour and/or omit long-term behavioural changes due to technological involvement are excluded. This allows for research only that truly delves into the subtle and co-evolutionary interaction between social behaviour and technology to be included.

Table 1 Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Timeframe	Studies published between 2014 and 2023	Studies published before 2014
Peer-Reviewed Articles	Only peer-reviewed articles from high-quality journals	Non-peer-reviewed articles or those lacking academic rigour

Focus	Studies that examine the intersection of technology (AI, social media, VR/AR) and social behaviour	Studies focusing solely on technology without addressing social behaviour
Psychological Mechanisms	Research that explores psychological mechanisms like behavioural changes and identity formation	Studies that do not analyze psychological mechanisms or behavior formation
Demographics	Studies considering demographic variables like age, gender, and socio-economic status	Studies that do not consider demographic factors
Behavioural Change	Studies investigating long-term behavioural changes (preferably longitudinal studies)	Studies focusing only on short-term effects
Technological Focus	Studies that link technology to its impact on social behaviour, identity, and norms	Studies focusing only on technological aspects without social implications

2.3. Literature Search Strategy

A comprehensive literature search strategy identified the most pertinent studies. The search used a broad range of terms to ensure coverage of all relevant aspects of the field. Search terms will include: “technology and social behaviour,” “impact of technology on social norms,” “algorithmic influence on behaviour,” “demographic differences in technology use,” and “long-term effects of social media,” among others. These keywords were specifically designed to capture studies exploring technology’s multi-faceted impacts on behavioural outcomes, identity formation, and community structures in both online and offline environments.

The primary databases used for this review included Google Scholar, Scopus, PubMed, PsycINFO, and IEEE Xplore, ensuring a comprehensive collection of articles across disciplines such as psychology, sociology, technology, and media studies. These databases were selected based on their robust coverage of peer-reviewed research and their ability to provide studies relevant to the multidisciplinary nature of the review.

Table 2 Search Strategy

Search Strategy Element	**Details**
Search Terms	- "Technology and social behaviour" - “Algorithmic influence on behaviour” - “Demographic differences in technology use” - “Long-term effects of social media” - Other related terms to explore technology’s impact on behaviour, identity, and community structures.
Primary Databases	- Google Scholar - Scopus - PubMed - PsycINFO - IEEE Xplore

Reason for Database Selection	These databases are selected for their comprehensive collection of peer-reviewed studies and multidisciplinary coverage (psychology, sociology, technology, media studies).
Keywords for Expanded Search	- Technology and community structure - Online and offline behavioural outcomes - Influence of AI on behaviour - Social media impact on identity

2.4. The Screening and Selection Process

A three-phase process was followed to screen and select studies to be included in the systematic literature review to ensure the inclusion of only the most relevant studies. Initial screening was the first phase, consisting of passing the titles and abstracts of the studies to determine which studies match the thematic gaps identified in the problem statement. During this phase, studies that do not fall in the technological domain, unrelated to social behaviour, or where technology has no clear link to its effect on social behaviour were excluded.

Secondly, studies that passed the initial screening were further assessed in the full text review phase. The studies were checked for methodological quality, population focus, and findings against the inclusion criteria during this phase. Any studies that provided a clear empirical focus on the effects of technology on individual and collective behaviour were retained for further consideration.

In the final selection phase, the studies were ultimately thoroughly assessed to determine how coherent they were with the central themes of the review. The selection of the studies was according to relevance to understanding how technological influences, e.g., artificial intelligence, algorithms on social media, and virtual or augmented reality technologies, affect social behaviours, community structures, and individual identities. Particular priority was given to studies that provide new insights into long-term behavioural change to ensure the review constitutes a review of the most relevant and impactful findings.

2.5. Data Extraction and Synthesis

Once the studies were selected, key data was extracted for rigorous and nuanced research analysis. There were a few key categories in the data extraction process. Firstly, the study population was considered, that is, the characteristics of the study sample (demographic variables of age, gender, socio-economic background, geography). This allowed the generalizability of the findings to broader populations to be assessed. Secondly, the Technological Context was described in detail, including the types of technologies covered, e.g. Social media platforms, virtual reality, and AI algorithms and how these technologies are framed and used in the study.

The study also analyzed the behavioural outcomes of technology use, namely its role in forming identity, socialization patterns, and creating new social norms. The result is that these behavioural changes were categorized into groups to understand what common trends exist or what significant variances are from study to study. Thirdly, the mechanism of influence was extensively studied to determine how the technology evokes a particular type of behaviour. Specifically, this entails algorithmic curation, user engagement dynamics and the impacts of continuous connectivity. By categorizing the data, a framework was created that allowed the data to be better understood to develop a coherent framework that helped understand how technology influences social behaviour and identity.

Further, Python 3.0 for computational analysis was used to ensure methodological rigour and reproducibility. Python's libraries, including Pandas for structured data manipulation, Matplotlib and Seaborn for advanced visualization (e.g., frequency distributions, heatmaps), and Natural Language Toolkit (NLTK) for text processing (e.g., generating word clouds), enabled systematic parsing and synthesis of the 15 studies. Scripted workflows automated the extraction of key variables—such as technological contexts, behavioural outcomes, and demographic factors—while temporal trend analysis was executed via date-time libraries to map evolving research foci. This approach minimized human bias in categorizing qualitative themes and quantitative trends, ensuring consistency.

3. Results

3.1. Frequency Analysis

Figure 1 shows the frequency of different technologies mentioned in the 15 studies on how social behaviour will be influenced. The most prevalent technology appearing in 5 studies is Social Media, which has been shown to impact social interactions and form part of identity and behaviour. Artificial Intelligence (AI), Virtual

Reality (VR) / Augmented Reality (AR), and Algorithms / Algorithmic Control occur in 3 studies, pointing to their substantial impact in most areas of research they appear. However, they also appear balanced in all except 3 of those 3 studies: Logical Reasoning, Perceptual Representation, and Attention. The least discussed technology is Gig Economy / Platform Technology, with only one mention, revealing that even if the area is immensely important, it gets less attention than more popular technologies like social media and AI. The distribution of subjects consists of areas that align with an emerging interest in technologies that interact directly with individuals' daily lives, like social media and AI, while less explored places, such as the gig economy, are still relatively new or niche.

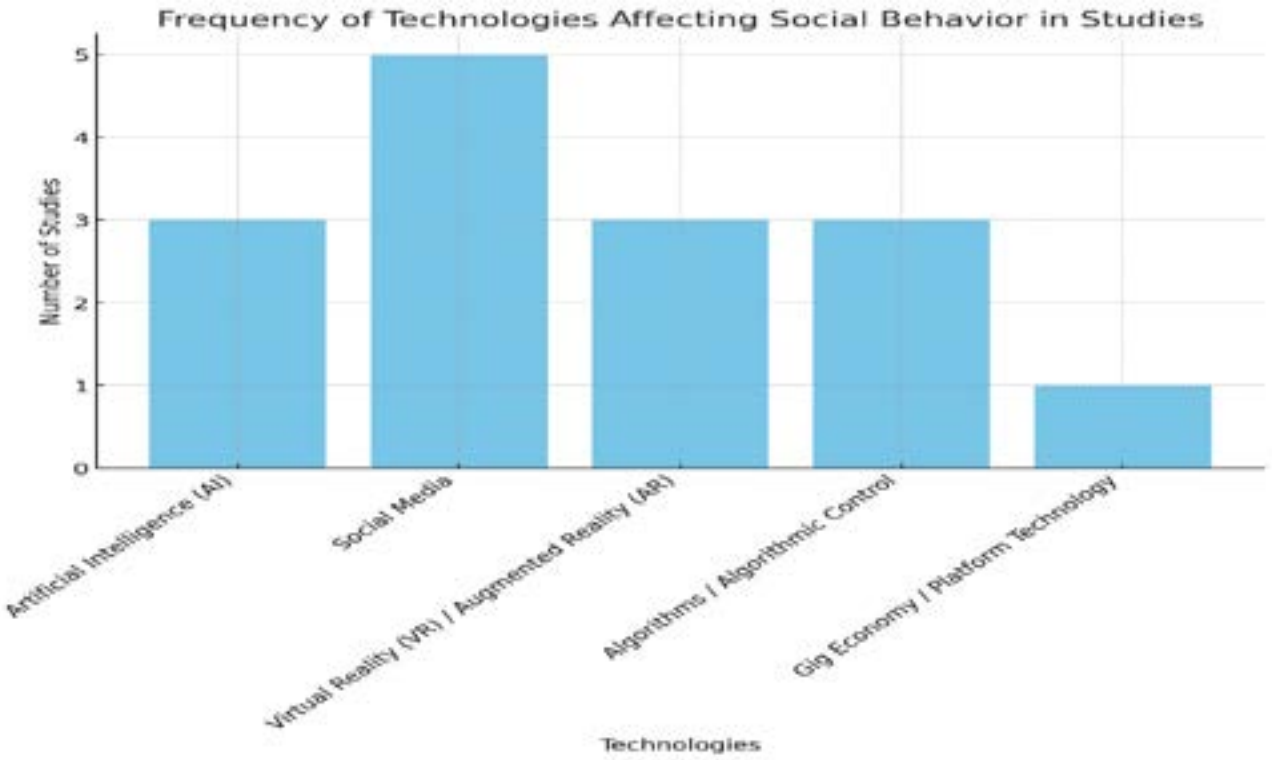

Figure 1 Frequency of Technologies Affecting Social Behavior in Studies

3.2. Proportions of Key Topics

Figure 2 shows key topics distributed between the 15 studies to indicate which topics they are focused on in the field of study on the impact of technology on social behaviour. Social Media Impact has the largest proportion of articles, reflecting the importance placed upon how and what effects platforms such as Facebook, Twitter, and others have on users' behaviour, identity and engagement with social issues. AI Systems and Human Interaction and Behavioral Change / Identity are close behind, suggesting a strong methodological interest in learning how AI systems affect human cognition, behaviour, identity construction, and a broader societal focus regarding these technologies. Fairness / Ethics comprises a substantial portion of the survey, as interest surrounds ethics regarding AI and other technology-driven systems. Though privacy and security, social issues and propaganda, and virtual reality are smaller in proportion, they, along with all the different topics, are important for understanding how technology is affecting individuals and communities from a perspective that includes digital security and immersive environments. This distribution argues that there is an increasing emphasis on merging technological systems, human interaction, and ethical aspects concerning their use within today's society.

3.3. Word Cloud

The central themes from the 15 studies related to the intersection of technology and social behaviour are reflected in Figure 3. The main phrases are AI, Social Media, Behavior, and Identity, which focus on how artificial intelligence and social media affect individual behaviour, acts during social contacts, and identity formation. Algorithm, VR, and Privacy are Keywords indicating all the growing algorithmic control, immersive virtual environment, and privacy ethics in the digital age. The studies emphasize the need to consider ethics and fairness as important considerations, and therefore, they allude to the moral black walls in technological advancement. In general, the word cloud encompasses disparate yet convergent domains of technology on human behaviour, community dynamics, and ethics in today's society.

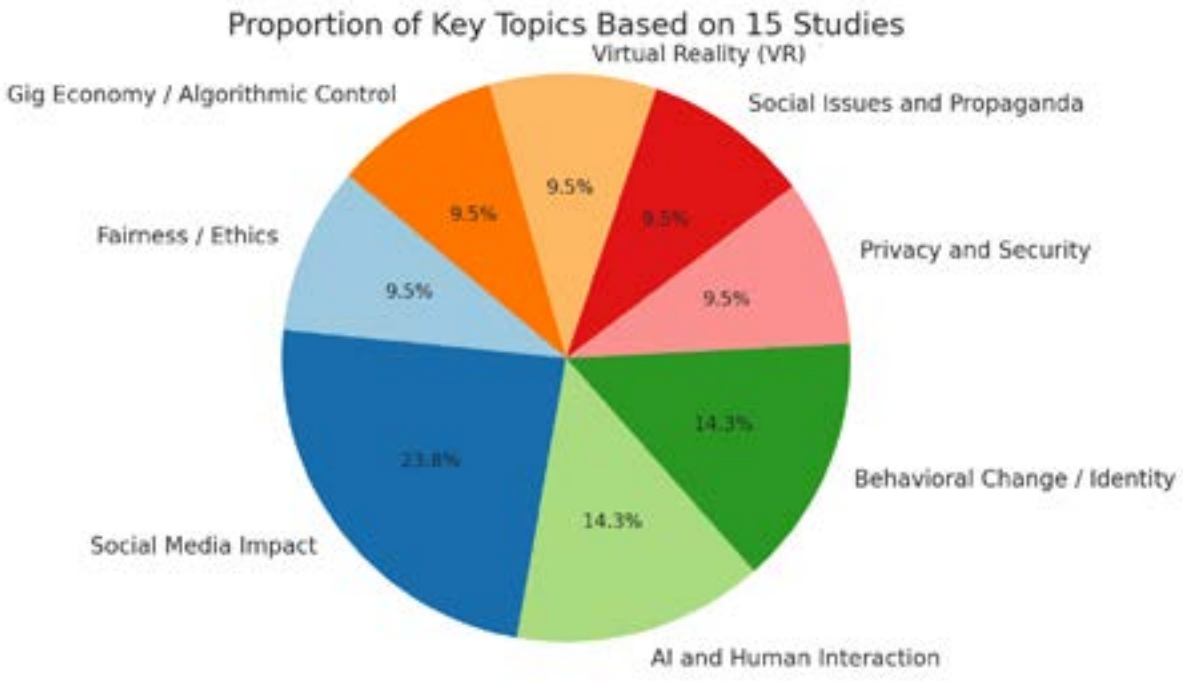

Figure 2 Proportion of Key Topics

Figure 3 Word Cloud of Key Topics

3.4. Trend Analysis

The trends of analyzed studies, distributing and changing over time, are shown by the trend analysis heatmap, which illustrates the evolution and distribution of the key topics represented in 15 studies. The focus has always been on Social Media Impact, AI and Human Interaction, and Behavioral Change / Identity: the importance in recent years (2023 and 2024) has greatly increased, indicating a need to address how technology, identity, and behaviour intersect. Privacy and security are occasionally interested in 2020, 2022 and 2024 when there's shown interest in digital privacy in an increasingly connected world. Virtual Reality (VR) was at the forefront of this new wave in 2024, implying that it was more included in the research. Occasionally, in 2023, it seems particularly keen to discuss the role of technology in constructing political and social narratives in Social Issues and Propaganda. The last one is Gig Economy / Algorithmic Control, which is mainly discussed in 2021 and 2024 and suggests a rise in the discussions of algorithmic governance in the digital work environment. The heatmap presents the dynamic study and the interactions of technology with social behaviour overall.

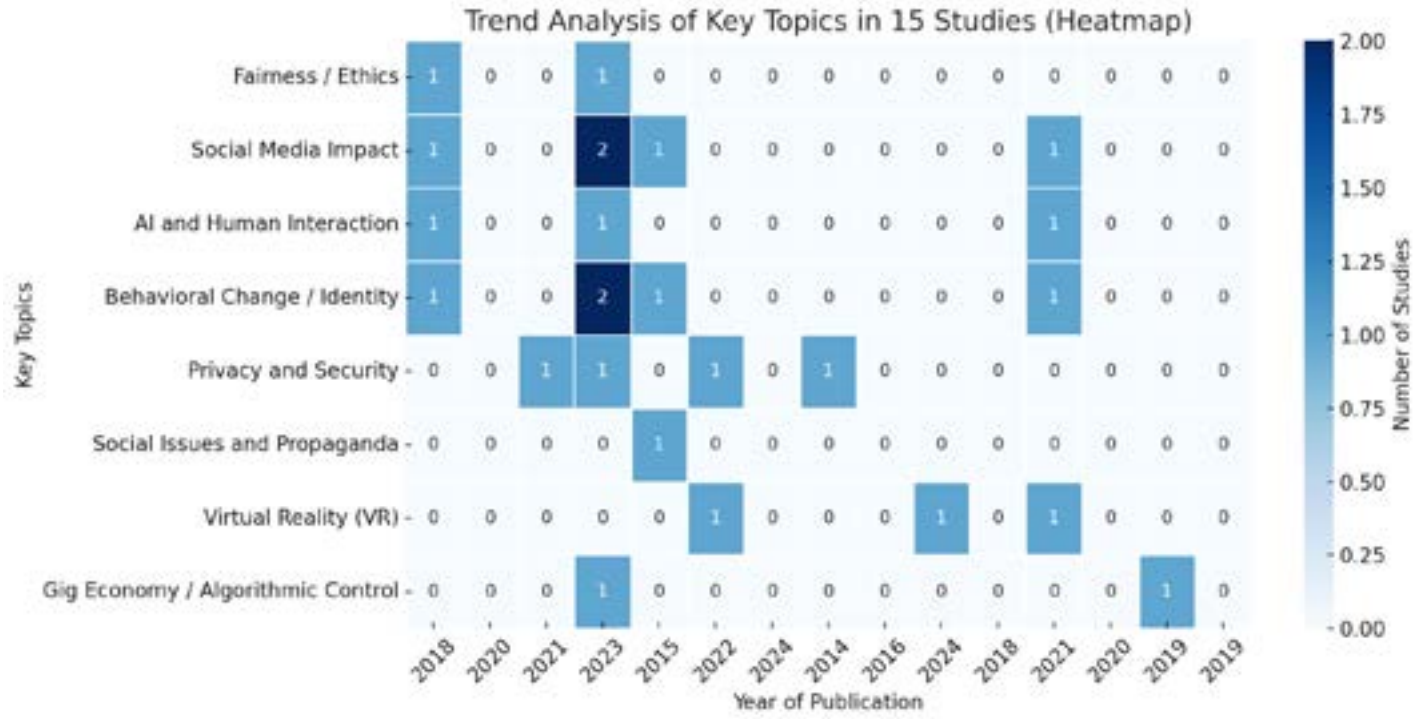

Figure 4 Trend Analysis of Key Topics

3.5. PRISMA Model

This flowchart follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, illustrating identifying and selecting studies for review. Initially, 511 records were identified from databases (430) and registers (81). After removing duplicates and ineligible records, 371 records were screened. Of these, 221 reports were sought for retrieval, but 71 were not retrieved. After assessing eligibility, 150 reports were considered, but 150 were excluded for various reasons, leaving 15 studies included in the final review.

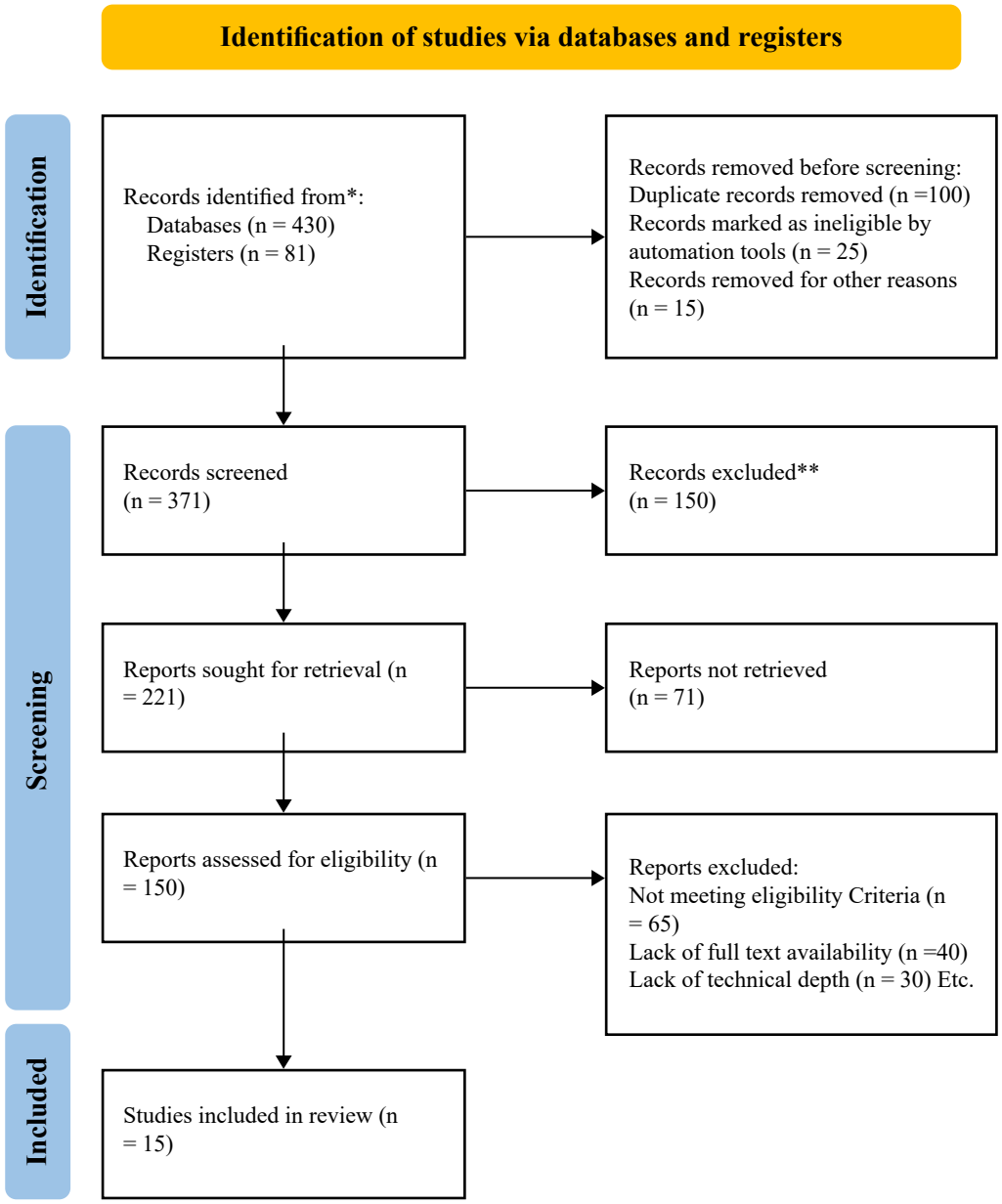

Figure 5 PRISMA Flow Chart

Study Author(s) & Year	Title	Methodology	Main Findings
(Binns, 2018)	Fairness in Machine Learning: Lessons from Political Philosophy	The study draws on moral and political philosophy to analyze fairness in machine learning, examining various definitions of fairness and discrimination.	The paper argues that fairness in machine learning can be operationalized in various ways, reflecting debates in political philosophy, such as egalitarianism vs. minimizing harms to the least advantaged.

(Sundar, 2020)	Rise of Machine Agency: A Framework for Studying the Psychology of Human–AI Interaction (HAII)	The paper applies the dual-process framework of the Theory of Interactive Media Effects (TIME) to study human–AI interaction, specifically focusing on user perceptions and experiences.	The study proposes a framework to understand human–AI interaction (HAII), emphasizing the symbolic and enabling effects of AI-driven media on user perceptions and experiences.
(Mieczkowski et al., 2021)	AI-Mediated Communication: Language Use and Interpersonal Effects in a Referential Communication Task	A between-subjects experimental design was used to examine how AI-generated language (Google's smart replies) influences language production, interpersonal perception, and task performance.	AI-generated language, such as suggested text responses, affects language use and interpersonal dynamics, with a positivity bias and potential negative effects on social attraction and impression formation. The study has implications for designing AI systems in human-to-human communication.
(Wohn et al., 2023)	The Impact of Online Network Diversity on Familiarity and Engagement with Social Issues News on Facebook	The study investigates the relationship between the ethnic and religious diversity of users' Facebook networks and their engagement with social issues news.	Greater ethnic and religious diversity in Facebook networks is linked to higher familiarity and willingness to engage with social issues news, such as Black Lives Matter and Muslim immigration. This underscores the role of network diversity in influencing engagement with contemporary social issues.
(Diakopoulos, 2015)	Algorithmic Accountability: Journalistic investigation of computational power structures	The paper investigates the role of algorithmic accountability reporting in journalism, focusing on reverse engineering methods used to expose algorithmic power.	Algorithmic accountability reporting helps elucidate the power structures, biases, and influences of algorithms in society. The paper suggests that transparency policies and investigative journalism can hold algorithms accountable, though challenges exist in implementing these methods.
(Cingel et al., 2022)	Social Media and Self-Esteem	The paper reviews recent empirical studies on the relationship between social media use and self-esteem, focusing on person-specific effects and moderating variables.	The relationship between social media use and self-esteem is complex, with small but significant effects for some individuals, where susceptibility and the type of use are key factors. The paper suggests that future research should consider individual differences in the social media–self–esteem relationship.

(Dinu et al., 2024)	Pay or Leave? The Role of Social Media Fatigue and Willingness to Pay to Avoid Fake News in Social Networks Use	The study uses mediation models to examine the impact of fake news on social media fatigue, discontinuous behaviour, and the willingness to pay to avoid fake news.	Fake news positively impacts social media fatigue but does not directly affect discontinuous social media use. Social media fatigue increases the willingness to pay for quality content, although paying to avoid fake news is not a solution, as users prefer to avoid social media to manage fatigue.
(Marwick & Boyd, 2014)	Networked Privacy: How Teenagers Negotiate Context in Social Media	The paper discusses how teenagers' practices on social media, especially Facebook, have altered traditional notions of privacy due to the networked nature of platforms.	Teens adapt their understanding of privacy to account for social media's networked and public nature, leading to a shift in privacy expectations and practices that go beyond individual control and embrace the context collapse of shared information.
(Duguay, 2016)	'He has a way gayer Facebook than I do': Investigating Sexual Identity Disclosure and Context Collapse on a Social Networking Site.	Interviews and Facebook walkthroughs with 27 LGBTQ young people in the United Kingdom to investigate context collapse in the process of sexual identity disclosure.	Context collapse is experienced when LGBTQ individuals intentionally redefine their sexual identity across audiences or manage unintentional disclosures. Participants often used tailored performances and audience separation to manage disclosure, offering insight into the stigma and identity management in online environments.
(Rueda & Lara, 2020)	Virtual Reality and Empathy Enhancement: Ethical Aspects	The paper discusses the potential for VR to enhance empathy and explores its ethical considerations, including virtual embodiment and the potential moral concerns in VR-enhanced empathy.	The authors argue that VR could enhance empathy, but they caution against using it uncritically as an "empathy machine." They suggest fostering empathy through avatar-based embodiment and advocate for a reason-guided approach to empathy that considers moral guidance in VR applications.
(Jacucci et al., 2024)	Haptics in Social Interaction with Agents and Avatars in Virtual Reality: A Systematic Review	The study systematically reviews the last decade of research on haptics and VR technologies for investigating social touch behaviour,	The review highlights the importance of haptic feedback and mediated social touch in virtual spaces, suggesting future research should focus on in-the-wild studies, understanding human touch perception, and

		focusing on human avatars and non-human virtual agents.	developing tools for advanced virtual reality technologies to broaden social interaction.
(Benkler, 2018)	Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics	The book analyzes millions of stories and social media posts to track the rise of disinformation and its impact on the U.S. political media landscape.	The book reveals a highly polarized and asymmetric media ecosystem, highlighting how disinformation, promoted by conservative factions, influenced the 2016 U.S. presidential election. It argues that the crisis in media and democracy stems from structural media weaknesses rather than technological causes.
(Asimovic et al., 2021)	Testing the Effects of Facebook Usage in an Ethnically Polarized Setting	The study used a randomized controlled trial in Bosnia and Herzegovina to explore the effects of Facebook usage on interethnic attitudes during genocide remembrance in July 2019.	Deactivation of Facebook profiles led to lower regard for ethnic outgroups and improvements in subjective well-being. These effects were found to be conditional on ethnic heterogeneity in respondents' residences, showing similarities with results from the United States context.
(Wood et al., 2019)	Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy	The study analyzes remote gig work in Southeast Asia and Sub-Saharan Africa, using semi-structured interviews and a cross-regional survey to assess the impact of algorithmic control on job quality.	The study finds that algorithmic control provides workers autonomy, flexibility, and task variety, but it also leads to low pay, social isolation, overwork, and exhaustion despite the workers' increased autonomy in managing their tasks.
(Einberg, 2019)	Technology, Values, and the Shaping of Social Reality	The paper explores the co-evolution of technology and social reality, focusing on how technology influences social arrangements, individual behaviour, and ecosystems.	Technology is seen as a dominant force that shapes reality, with its multi-faceted impacts influencing culture, social relations, and collective development. The paper emphasizes that technology both shapes and is shaped by social, political, and cultural forces.

4. Discussion

4.1. Technological Influence on Social Behavior

The studies reviewed show that emerging technology, especially AI, social media, and VR, profoundly and extensively affect social behaviour. The primary finding derived from this review is that interactivity exists between individuals and technological systems in both directions. Marwick and Boyd (2014) discussed that social media has influenced identity and behaviour. While a similar discussion is made in these current studies, it goes beyond the previous by drawing attention to the feedback loops between users and platforms. Social media platforms, particularly through Facebook and Instagram, play a role in constructing and presenting a person's identity. However, the users' algorithm and platform features continuously engage with and improve these platforms. The dynamic ecosystem between technology and behaviour is one in which social interaction is not mediated by technology but guided and structured by technology (Marwick & Boyd, 2014).

In addition, the AI algorithm's impact on social behaviour is significant. Previous research on this matter, e.g. Yusof & Ariffin (2023), had already shown that online personas deviate from real-life identities; however, the studies in this review have evolved from passive consumers to creative makers of identities in digital worlds. AI-driven recommendation systems—notably on platforms like YouTube and Netflix—are prime examples of this shift. Therefore, with the help of AI algorithms, they predict and influence what the users see, what they should see and be moved by, and whether they want to engage with the content (Yusof & Ariffin, 2023). The user behaviour in this is affected, and the cognitive process is subtly changing, suggesting that social behaviour is becoming increasingly impacted by machine learning systems and their decision-making processes. As Edgar (2017) points out, social media can alter self-esteem, but the review supports that algorithmic influence magnifies this effect in reinforcing particular identity constructs (Edgar, 2017).

4.2. Identity Formation in Digital Spaces

The studies reviewed reveal the growing importance of digital identity construction in shaping individual self-perception. The desire for social validation, driven by algorithms prioritizing "likes," shares, and comments, has exacerbated the formation of idealized online personas. Duguay (2016) previously explored the challenges of managing identity in a networked environment. However, the current findings add to this by indicating that the process of identity formation has become more complex in the era of AI and algorithm-driven content. These platforms facilitate identity curation and create new pressures on individuals to meet social desirability standards, leading to phenomena such as social comparison and online anxiety (Duguay, 2016). The study by Cingel et al. (2022) aligns with this notion, suggesting that self-esteem is influenced by how individuals are represented on social media. However, the studies reviewed suggest that the divergence between online and offline identities is not merely a reflection of self-expression but a byproduct of algorithmic design that structures social interactions and identities (Cingel et al., 2022).

This view contrasts with older research, such as Hancock (2017), which argued that technological change operates symbiotically with social behaviour, suggesting a more fluid interaction between the two. While this review acknowledges the co-evolutionary aspect, it presents the claim that digital identities are becoming more rigidly shaped by technological systems rather than being freely constructed by individuals (Hancock, 2017). The insights from studies like Coccia (2018) on social comparison indicate that users' identities are increasingly defined by digital validation, leading to a change in self-perception and a structural change in how identities are formed in a digital society. Vulnerability to algorithmic curation and its inherent biases. This shift is important as it reflects (Coccia, 2018).

4.3. Social Stratification and Polarization

This review finds that digital technologies, especially social media and AI, increasingly aggravate social stratification and polarisation matters. Wohn et al. (2023) make the same point that digital platforms have largely contributed to the fragmentation of public discourse by intensifying existing social divisions. These findings agree with this review, but this study suggests that the underlying mechanisms are not simply about delivering biased information. Polarization is the filter of information by AI algorithms, and the creation of echo chambers intensifies polarization by amplifying pre-existing beliefs and attitudes (Wohn et al., 2023). Although Diakopoulos (2015) considers algorithmic accountability from a journalist's perspective, this review highlights that algorithms are also significantly crucial in generating

users' exposure to social issues and engagement with content aligned with their already formed beliefs. Thus, these algorithms impact society's behaviour and forge further societal divides (Diakopoulos, 2015).

This aligns with Islam et al. (2020) study about the effect of fake news and social media fatigue. The review argues that these technological mechanisms influence how users use this content and think of the social world. When more people live in the digital environment, their groups become more polarized, and they divide so that they increasingly put themselves on the same side of ideological lines (Islam et al., 2020). In the work of Talwar et al. (2019), this effect is also shown, as the algorithmic control can modify subjective well-being and ethnic attitudes in polarized settings. Thus, this review strengthens the central importance of algorithms in determining people's behaviour and the social environment more generally (Talwar et al., 2019).

4.4. Feedback Loops between Social Behavior and Technology

This review also represents one of the key contributions by highlighting feedback loops between technology and social behaviour. Because of this dynamic relationship, the technologies co-evolve with the user, meaning that not only do the technologies shape the user's behaviour, but the reverse is also true, where the users interact with the technology's influence. Study such as Mieczkowski et al. (2021) show these systems are interactive; the technologies of AI and VR are not a thing but a thing that changes according to user behaviours and according to what society demands in terms of services or products. For instance, how users interact with virtual environments and the simulated avatars shapes VR's role in enhancing empathy. A reciprocal relationship delimits time and space between technology and physical form that characterizes a move away from passive technology consumption and toward an active form of co-creation of social spaces seldom captured in the analysis of previous studies (Mieczkowski et al., 2021).

The findings by Jacucci et al. (2024) on haptics and social interaction in VR also address the feedback loop concept. Previous studies on how technologies shape behaviour are introduced in conjunction with research about the mutual shaping of behaviour and technology. In that sense, VR systems evolve, and new forms of social interaction become possible as the users interact with them and create new paths forward that shape the future development of the technology. The feedback loop of users' behaviour affects individual behaviour and collective dynamics because users' behaviour in these digital spaces increasingly makes a difference to the technological environment (Jacucci et al., 2024).

5. Conclusion

This systematic literature review critically examined the constant interaction of technology and social behaviour by examining the numerous roles that social media, artificial intelligence (AI), and virtual reality (VR) play in shaping people's identities, community structure and societal norms. Based on the synthesis of 15 peer-reviewed studies, it is demonstrated with compelling evidence that technology has advanced beyond the traditional role as a tool and has become an active force, a forcing agent that contributes to shaping social behaviours. This review illustrates this relationship, both dynamically and reciprocally, where technology does not only affect individual and collective behaviours through its effect on individual's and groups' interactions with it but also shapes in a continuous and recursive process.

It highlights the important role of algorithmic curation in shaping behaviours and the perception of self and others through social media and AI-based platforms. The use of his AI algorithms to personalize content has strengthened the power of technology in social behaviour, creating new ways of identity construction and dependence on digital validation. Additionally, VR technologies have spurred a new dimension of social interaction and engagement where old rules of social dynamics between the virtual and real world are lacking.

This review highlights a decisive takeaway: social stratification and polarization are increasing due to the filtering and personalization mechanisms built into social media platforms. These technological features aid in entrenching pre-existing beliefs and attitudes, and how exacerbate the polarization of societal divides. Moreover, the review shows that there are feedback loops between technology and behaviour and a co-evolutionary process where technology changes based on the behaviour of users (and vice versa).

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