Personalized but compromised?
Geo-Targeted Algorithms and User Autonomy in MENA Digital Advertising

*By Hassan Marrie**

This paper explores the breadth of intricate dynamics of algorithmic personalization and user autonomy in digital advertising, with a depth into the geo-targeted algorithms within the MENA region. As digital media increasingly rely on data-driven strategies to influence consumer behavior, understanding how these algorithms shape user experiences becomes paramount. By employing a qualitative exploratory study, this paper investigates the implications of personalized advertising on user choice and autonomy. Through multiple intensive interviews with MENA region end-users, we assess how geo-targeted algorithms curate advertising content, often leading to experiences that users perceive as both personalized and compromised. The findings may reveal that while users appreciate the relevance of personalized advertisements, they simultaneously express concerns about their autonomy and the extent of their informed choice. This study relies on media system dependency theory to illustrate how reliance on digital platforms shapes the user expectations and behaviors. The insights from the analysis may underscore the need to critically evaluate how geo-targeted advertising not only influences user decisions but also impacts the perceptions of advertising in the digital landscape. Ultimately, this research may provide broader knowledge in media studies by highlighting the ethical implications of algorithmic personalization in digital advertising. As advertisers navigate the challenges posed by data-driven marketing, the study may advocate for greater transparency and user empowerment in the advertising ecosystem. By examining the complex relationship between algorithmic personalization and user autonomy, this paper may contribute to understanding of the importance of fostering an informed and autonomous user base in the MENA region and beyond.

Introduction

In an era increasingly defined by data-driven decision-making, digital advertising has evolved into a highly personalized and pervasive within the new media ecosystem. Central to this transformation is the deployment of algorithmic personalization, where user-generated data, such as browsing behaviour, location, and platform engagement, is monitored to tailor advertising content in real time (Ullah et al., 2016). As artificial intelligence (AI) becomes more embedded in media infrastructures, digital users are exposed to content that not only reflects their preferences but also inevitably shapes them, often without their full awareness (Ali et al., 2019).

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A particular asset of personalisation is geo-targeted advertising, which uses location-based data to deliver content believed to be most relevant to a user's current or usual location setting. While this technique offers strategic benefits to marketers, it raises critical concerns about user autonomy, defined here as the individual's capacity to make informed and independent decisions. The intersection of these variables, algorithmic personalization, geo-location data, and user autonomy: presents both technological media innovation and ethical questions.

This study investigates how digital users in the Middle East and North Africa (MENA) region perceive and experience personalised, geo-targeted advertising. Although existing literature has explored algorithmic influence in various contexts (Hocutt, 2024; Zuboff, 2019), dynamics within the MENA region remain underexplored. Grounded in Media System Dependency theory (Ball-Rokeach and DeFleur, 1976; Kim, 2020), this research aims to critically examine how platform-driven personalisation may both serve and subvert user interests in the digital world.

Literature Review

The rise of data-driven advertising strategies has transformed the way users experience digital media. Machine learning is being utilized more, with a goal to enhance marketing and branding tactics, and promote consumer-brand relationships (Chen, 2023). By improving accuracy and enabling real-time decision-making, algorithms are completely changing the marketing landscape (Maddodi and Upadhyaya, 2023). One of the central mechanisms in this transformation is algorithmic personalisation, which refers to the use of algorithms that analyze user data to deliver tailored content, such as advertisements, that align with individual interests, behaviors, and demographic profiles (Ullah et al., 2016). A core subcategory of this practice is the use of geo-targeted algorithms, which customize content based on a user's current, real-time or inferred location (Ali et al., 2019). These technologies aim to enhance advertising relevance and efficiency but also introduce complex ethical and autonomy-related questions.

In digital media, user-generated data, defined as information voluntarily or involuntarily produced by users through their online engagements, serves as the key insights for such personalisations (Mansell, 2015). Through the integration of artificial intelligence (AI) in media, these systems adapt advertising strategies, often without clear user consent or comprehension (Ali et al., 2019). While AI-driven personalisation enables advertisers to maximize campaign performance, scholars have increasingly questioned how this intervention affects user autonomy (Marrie, 2023), which in this context refers to an individual's ability to make informed, unmanipulated decisions about content consumption (Hookway and Perryman, 2023).

Studies conducted in different political and cultural contexts than the MENA region, suggest that personalised advertising revealed an uncertainty in response by users. On one hand, individuals often value the increased relevance of advertisements (Kim et al., 2025). On the other hand, they express unease over the lack of transparency in how personal data is collected, harvested and deployed (Ullah et al.,

2016). As Hocutt (2024) observes, this duality creates a paradox of personalisation: users feel both recognised and surveilled. Such ambiguity may be intensified when personalisation is driven by blurry algorithms that hinder user understanding and agency.

To unpack these issues, media researchers often turn to media system dependency theory, which argues that the more people rely on media systems to fulfill personal and social goals, such as understanding, orientation, or entertainment. The more influence media have, the more it shapes their attitudes and behaviours (Ball-Rokeach and DeFleur, 1976). In algorithmically mediated environments, this dependency extends to the digital platforms that determine what content users see and engage with. As platforms filter ads based on location and behavior, users may find themselves locked into feedback loops that reinforce prior behaviors while limiting exposure to alternatives (Hookway and Perryman, 2023).

However, the empirical literature remains disproportionately focused on North American users and platforms, revealing a significant geographical gap in current research. For instance, despite rapid digitisation and social media adoption in the Middle East and North Africa (MENA), there is a dearth of studies examining how geo-targeted algorithmic personalization is perceived or experienced by users in this region (Hocutt, 2024; Theseus, 2013). Cultural sensitivities, regulatory frameworks, and digital literacy levels in MENA countries could all shape how users navigate and interpret personalised digital content (Younis, 2024). Understanding these regional dynamics through a theoretical framework is essential for producing a globally relevant body of knowledge.

From a theoretical framework perspective, Media System Dependency (MSD) theory is particularly relevant to the present study. MSD argues that users depend on media to fulfill three types of personal and social goals: understanding, orientation, and play (Ball-Rokeach et al., 1984), which could be utilized to investigate how geo-targeted algorithmic advertising affects user autonomy in the MENA regio MSD was first articulated by Ball-Rokeach and DeFleur (1976), provides a multidimensional perspective on how individuals' reliance on media systems influences their perceptions, emotions, and behaviors. At its core, MSD presents media as a powerful tool not inherently, but through the relational dependencies formed with individuals and other social systems, especially during periods of uncertainty or societal changes (Kim, 2020).

In the context of digital advertising, orientation goals, such as decision-making about purchases or behaviors, are especially vulnerable to media influence when algorithmic systems dominate the flow and visibility of information. Thus, user autonomy may be compromised when individuals unawarely rely on transparent algorithmic structures to guide their choices.

Critically, MSD theory has evolved to accommodate digital environments. As Kim (2020) explains, the theory's ecological and multilevel approach allows for the examination of how macro-level structures (e.g., platforms, algorithms) shape micro-level user experiences. However, one critique of MSD is its underemphasis on user agency in highly interactive, participatory media spaces. While the theory rightly highlights structural imbalances, it may overlook how digitally literate users resist, reinterpret, or control their media content and consumption (Livingstone, 2011).

Image 1. Illustration of MSD in relevance to geo-algorithms
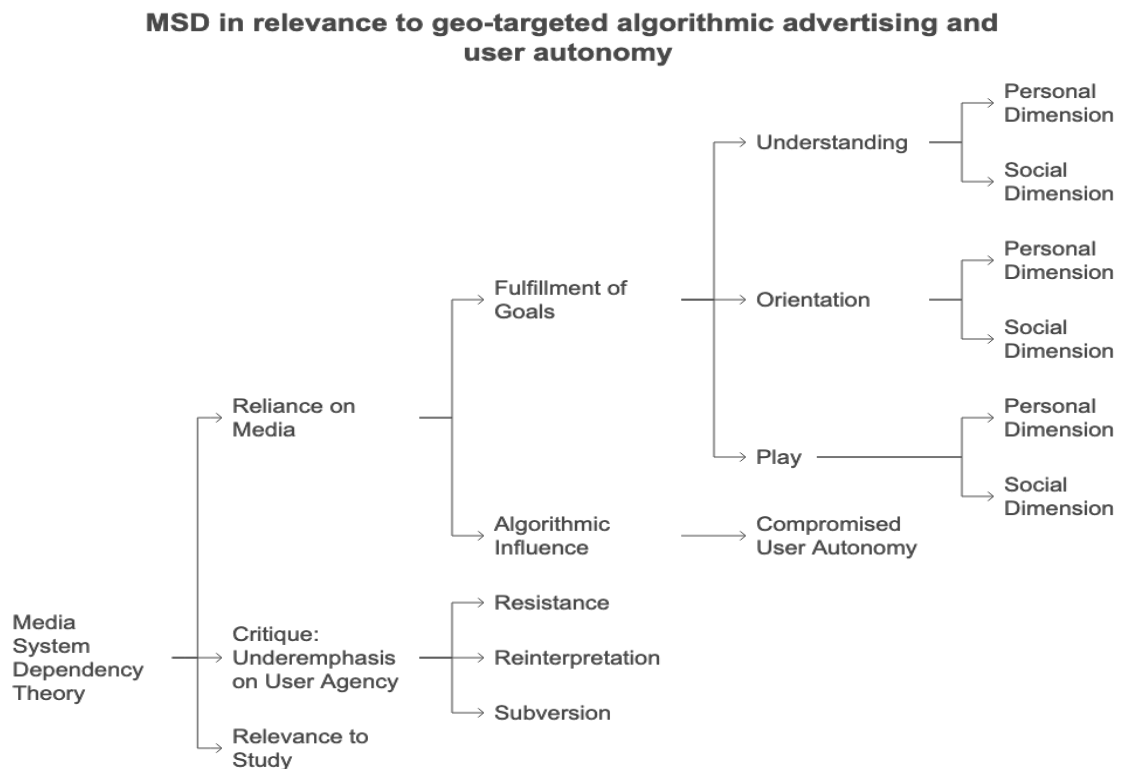
Despite these limitations, MSD remains a robust lens for this study. It facilitates a critical interrogation of how algorithmically personalized media environments not only fulfill user needs but also powerful forms of influence, particularly in data-driven, commercially saturated contexts like digital advertising in the MENA region.

This paper aims to address this knowledge gap and also foregrounds and puts into perspective the ethical implications of exporting personalisation models that may not align with local norms. As Hocutt (2024) argues, future work must advocate for greater algorithmic transparency and user empowerment, particularly in emerging markets where regulatory oversight may lag behind technological advancement.
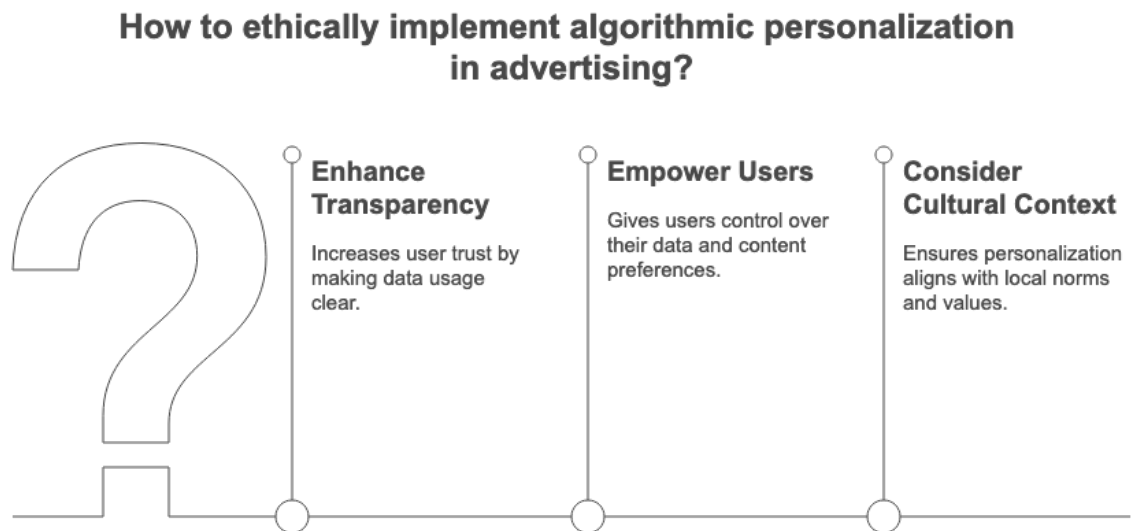
Aim

The aim of this study aims to explore the interplay between algorithmic personalisation and user autonomy in digital advertising, with a specific focus on geo-targeted advertising practices within the MENA region.

By exploring how location-based algorithms shape users' advertising experiences and decision-making processes, this study seeks to understand the extent to which personalised advertising enhances or undermines user autonomy. It

employs the Media System Dependency (MSD) theory as a conceptual framework to explore how users' reliance on digital platforms mediates their perceptions, choices, and vulnerabilities within algorithm-driven digital media.

Image 2. Illustration of the Research Aim

How to ethically implement algorithmic personalization in advertising?

Enhance Transparency

Increases user trust by making data usage clear.

Empower Users

Gives users control over their data and content preferences.

Consider Cultural Context

Ensures personalization aligns with local norms and values.

Objectives

1-To define and contextualize algorithmic personalization and geo-targeted advertising within digital media studies.

This objective entails synthesizing literature on artificial intelligence (AI), user-generated data, and algorithmic design in advertising systems (Ullah et al., 2016; Ali et al., 2019). It establishes a conceptual foundation to understand how digital platforms utilise behaviour, engagement and locational data to curate, filter or boost content.

2-To investigate how end-users in the MENA region experience and perceive personalized advertising.

The study will explore the dual nature of these experiences, how users find geo-targeted ads relevant yet potentially intrusive, through qualitative data from in-depth interviews. This responds to the gap in existing research, which has largely overlooked the cultural and technological differences of the MENA region (Hocutt, 2024).

3-To evaluate the extent to which personalised advertising influences user autonomy and informed choice.

Drawing on media system dependency theory (Ball-Rokeach and DeFleur, 1976; Kim, 2020), this objective examines how users' reliance on digital platforms

for understanding, orientation, entertainment and decision-making shapes their trust/control or vulnerability to algorithmic influence.

4-To assess the ethical implications of geo-targeted advertising within the broader context of media dependency and user empowerment.

The study aims to identify potential risks related to privacy, content-intervention, manipulation, and consent, advocating for transparent algorithmic practices and policy recommendations that support ethical advertising standards.

5-To contribute to the development of regionally sensitive, user-centered frameworks for evaluating algorithmic media systems.

By addressing the under-researched MENA context, the study aims to generate insights that are both theoretically grounded and locally relevant, thus enriching global discussions on digital advertising ethics and digital media users' rights.

Methodology

This study adopts a qualitative exploratory approach to investigate how digital users across the MENA region perceive algorithmic personalisation in geo-targeted advertising and its influence on their autonomy. Given the study's aim to uncover the various user experiences and perceptions, qualitative methods are appropriate for capturing the depth and complexity of individual interpretations within diverse sociocultural contexts (Silverman, 2021). MSD theory further supports a qualitative design, as the theory emphasizes user–media relationships that are embedded in social, cognitive, and affective processes (Kim, 2020).

Research Design

The research employed semi-structured interviews to explore participants' digital habits, media consumption behaviors, and interactions with location-based advertising content. Semi-structured interviews provided the flexibility to dive into the individual experiences, while maintaining consistency across key thematic areas, including digital platform use, engagement with branded content, perceptions of personalisation, and sense of user control over online media content (Kvale and Brinkmann, 2015).

Sampling and Participants

A total of ten participants were purposively selected to represent a cross-section of users in the MENA region. The sample included three users from Egypt (two from Cairo and one from Alexandria), three from the United Arab Emirates (Abu Dahbi & Dubai), two from Morocco (Rabat), and two from Oman (Muscat). While participants' locations were diverse, other demographics and criteria such as age group (30-40), Professional occupation, screen time of four hours or more per day, and high Media Literacy rates were constant. Furthermore, participants were chosen

based on their active engagement with specific digital media platforms such as Meta products, Youtube and TikTok. This standardisation of the platforms is based on the frequency and accessibility within the MENA region. However, the diverse geographic and cultural elements enabled the study to explore potential regional differences (Fahmy, 2024), nevertheless, in perceptions of geo-algorithmic advertising and user autonomy.

Data Collection

Each interview lasted between 45 and 60 minutes and was conducted either in English or Arabic, depending on participant preference. Interviews were held remotely.

Interview questions were developed to explore four key domains: (1) general digital media use and platform preferences; (2) awareness and perceptions of algorithms and personalised advertising; (3) reactions to location-specific content and trends (4) the perceived impact of algorithmic personalisation on brand trust and consumer autonomy. All interviews were recorded with informed consent and transcribed. Arabic transcripts were translated into English by bilingual researchers to maintain data integrity and allow cross-case thematic analysis.

Analysis & Results

This study employed thematic analysis (Braun and Clarke, 2006) to interpret qualitative data gathered through ten semi-structured interviews with digital media users across the MENA region. Thematic analysis was chosen for its flexibility in identifying recurring patterns while maintaining the contextual richness of user experiences. Initial coding was conducted inductively and iteratively, with themes emerging around users' perceptions of digital advertising, geo-personalization, and autonomy in decision-making. These themes were then organized in alignment with the study's theoretical framing and objectives.

Theme 1: Geo-Personalisation and Location-Sensitive Feeds

Codes: algorithmic customization, location-driven trends, shifting newsfeeds, For You Page (FYP), Explore, Facebook Marketplace, TikTok Shop, External links.

Users consistently described changes in their digital experiences based on geographic location. These changes impacted both content relevance and perceived autonomy. "*When I changed my location, my newsfeeds were altered.*" (Moroccan user)

"*My TikTok For You Page (FYP) seemed very different when I travelled, although my interests and following are the same.*" (Egyptian user, Cairo)

The variability in platform behavior, even with constant user inputs, suggests a strong system-level media dependency, where users' informational goals are subtly redirected based on algorithmic assumptions (Kim, 2020).

Theme 2: Trends, Brands, and Cultural Framing

Codes: Trend propagation, Influencer dynamics, National identity, Emotional targeting, Peer pressure, Sense of belonging, Community influence.

Participants indicated that their exposure to trending content and brands shifted based on regional cultural or commercial priorities.

One Emirati user admitted: "*I consider myself not easily influenced. However, I bought Dubai Chocolate because my Instagram page was boosted by this trend.*"

Here, MSD's goal-orientation framework is evident, as the user's desire for social affiliation (social play) and regional identity becomes entwined with consumption choices.

Theme 3: Deceptive Curation and Ethical Ambiguities

Codes: Misleading branding, Data manipulation, Currency change, Language adaptation, Style format, Price misrepresentation

A recurrent concern was deception through personalised content. This includes assumptions of brand origin and price transparency.

"*I was once targeted on an Instagram page… the price was quite affordable, I assumed it's a local brand. However, after purchase, the email showed the page was an overseas predator and asked me to pay extra for tariffs.*" (Egyptian user, Giza)

This illustrates how algorithmic opacity and commercialisation can manipulate an informed choice, central to user autonomy and ethical advertising standards. This finding heightens the urge to understand the interchanging relation between algorithms and fintech (Amer, 2024).

Participants consistently expressed concerns over the lack of transparency in personalised advertising, particularly in relation to region-specific pricing. One of the most revealing patterns in the interviews was the perceived algorithmic manipulation of prices based on users' geolocation, a practice that challenges the fairness and ethics of algorithm-driven marketing.

"*I always compare hotel and flight prices from different locations. I am sure I pay differently, usually way more than my family and friends, although we stay at the same hotel for the same amount of days.*" (Egyptian user, Cairo)

This participant's experience reflects a broader skepticism regarding the equity of algorithmic systems. It reinforces the notion that personalisation, while seemingly neutral, can create discriminatory pricing structures that undermine user trust and informed choice, a key concern in digital consumer autonomy.

From an MSD theory perspective, the user is attempting to regain control over orientation goals, such as planning travel, by cross-checking platforms, which illustrates an active yet forced dependency due to blurry or opaque media behavior (Ball-Rokeach and DeFleur, 1976; Kim, 2020). This finding aligns with Ullah et al.'s (2016) work on privacy and algorithmic surveillance, and it expands the discourse by providing region-specific evidence from the MENA context, where differential pricing is not only a technical outcome but a socially perceived injustice.

**Theme 4**: Digital Advertising and Contextual Influence on Decisions
Codes: Ethical filtering, Location-triggered memory, Boycott brands, Community and Solidarity.

Users also noted how their socio-political context influenced how ads were presented and interpreted.

One user from Cairo remarked: "*I only boycott brands complicit with war and support local ones when I am back in Cairo. My social media ads remind me of the war crisis in the Middle East based on where my location is.*"

This demonstrates that algorithmic advertising does not operate in a vacuum, it engages with emotional and ideological dimensions, sometimes reinforcing existing beliefs, and at other times exploiting them.

Image 3. Illustration of the Unbalanced Relation between Customisation & Ethical Considerations
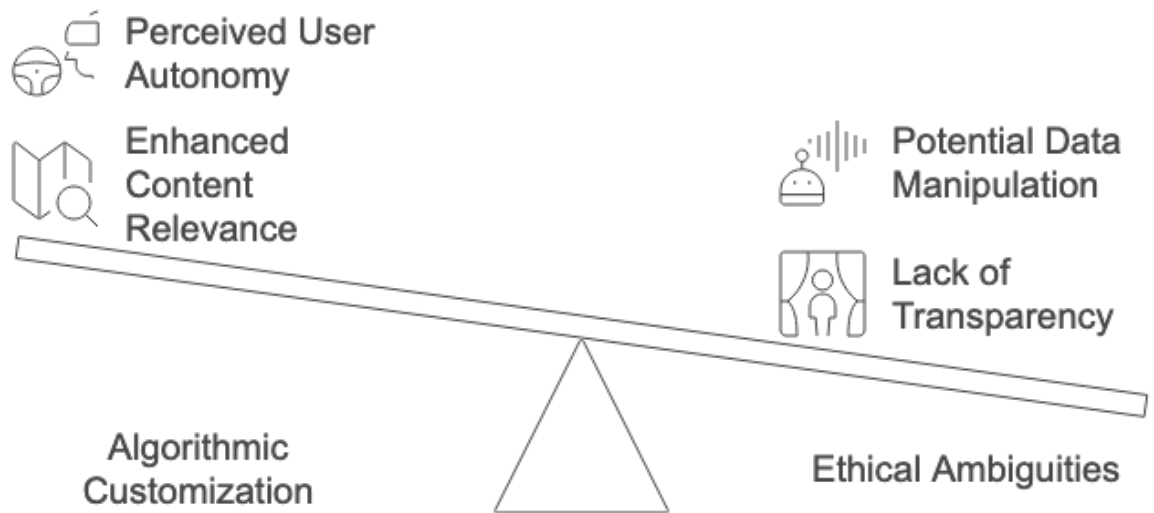
The themes reveal that digital advertising in the MENA region is not merely a branding mechanism but a dynamic socio-technical process that deeply shapes user experience. Geo-targeted personalization, even for highly media literate users, affects how users perceive trends, trust brands, and make decisions. Through the lens of Media System Dependency theory, it is clear that the more users rely on digital platforms for orientation and understanding. This outcome raises questions of transparency, ethics, and autonomy in the digital age.

While this methodology offers original insights into the interplay between algorithmic personalization and user autonomy, certain limitations must be acknowledged. Firstly, the geographical scope, although investigating four MENA countries, remains limited in fully capturing the region's cultural and economic diversity. Furthermore, participants from urban capital cities of Egypt, UAE, Morocco, and Oman may not reflect the digital realities of rural users or those in less connected communities.

Secondly, the time frame of data collection, relying on single interviews, restricts understanding of how users' perceptions might shift over time or across seasonal advertising cycles, especially in advertising peak season during the month of Ramadan. Thirdly, the study's methodological parameters, including the focus on specific platforms like Meta products, YouTube, and TikTok, may limit the exploration of other emerging digital spaces such as Snapchat, LinkedIn and viral mobile games and apps, which may conduct different algorithmic strategies. Finally, the relatively narrow age range and high media literacy levels of participants for the exploratory purpose of the research, may mean that the study may not fully account for generational or literacy-based variations in user autonomy. Addressing these limitations in future research could deepen the understanding of geo-targeted advertising's ethical impacts within diverse MENA contexts.

Discussion

This study explored the complex relationship between algorithmic personalisation and user autonomy in geo-targeted advertising across the MENA region. Drawing on MSD theory, the findings illustrate how users' dependency on digital platforms for orientation and decision-making provides them a personalized experience, yet they often fall vulnerable with reduced control to non-transparent algorithmic structures. The thematic analysis reveals four key areas: Geo-personalisation, Trend influence, Deception in curation, and Ethical decision-making. The originality of the data provided an insightful understanding of the geo-targeted personalisation within a new socio-cultural context.

*Image 4. I*llustration of mapping the autonomy and ethics in algorithms

Thematic Analysis of Geo-Targeted Advertising
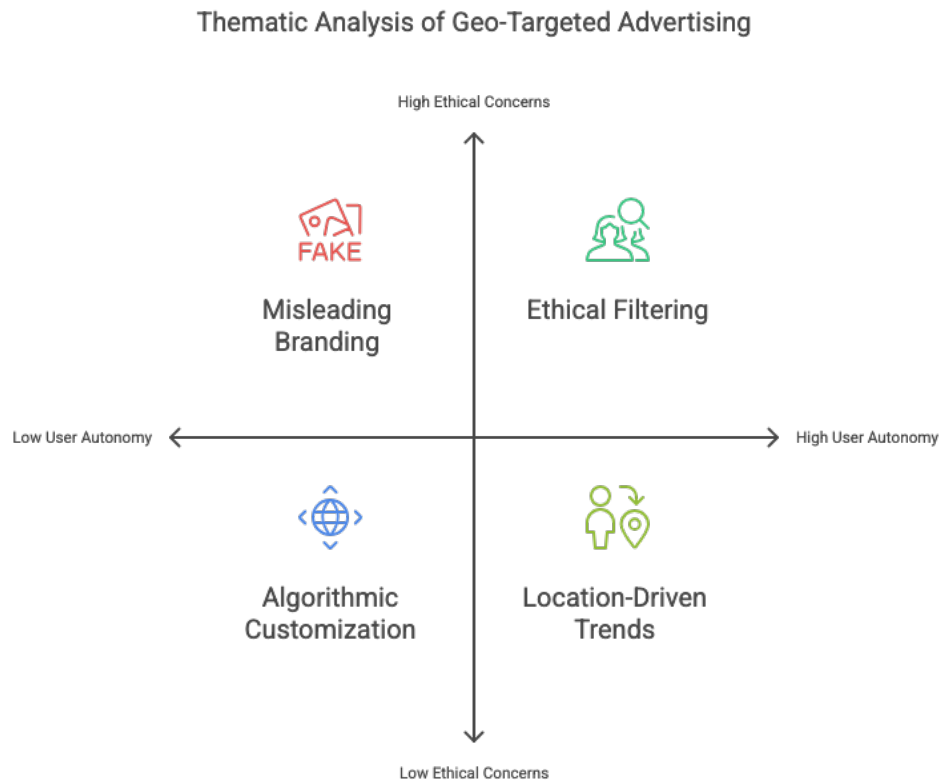
The first objective of the study aimed to define algorithmic personalisation. As the literature has noted, algorithmic systems use user-generated data and artificial intelligence to optimize digital advertising based on behavioral and locational data cues (Ullah et al., 2016; Hocutt, 2024). The findings confirm this, with multiple users reporting significant alterations to their newsfeeds and recommendation algorithms when changing locations. This aligns with existing research (Ali et al., 2019), but extends it into the MENA region, addressing a noted geographical gap in the literature. For instance, Egyptian and Moroccan participants highlighted distinct content shifts and regional targeting that subtly reframe user perceptions, fulfilling Objective 2 regarding regional user experiences.

In line with MSD theory, this study confirms that users' increasing dependency on digital platforms for orientation makes them target to manipulation through geo-personalised content. Thematic codes such as "location-driven trends" and "algorithmic customisation" illustrate how platforms shape what users view as socially relevant or commercially valuable. These results mirror the theory's notion that when individuals depend on media for orientation and decision-making, media systems gain greater influence over users' beliefs and actions (Ball-Rokeach and DeFleur, 1976; Kim, 2020). This was notably reflected in the Emirati user's statement, referencing the purchasing of a trending locally-based brand. The decision was initially out of his personal preference and despite the individual resistance, he confirmed the social trend based on his current location. This insight highlights how

personalization leverages emotional and social dimensions of dependency, which resonates with the role of digital media and user determination as self-learners in a Heutagogical framework (Marrie, 2024).

Objective 3, which explored the influence of advertising on user autonomy, was especially evident in themes related to deceptive branding and ethical ambiguities. Users described instances of misleading pricing and brand origin confusion. Demonstrating occurrences and experiences that are consistent with Ullah et al.'s (2016) critique of data manipulation in targeted advertising. For example, the Egyptian participant who encountered unexpected international tariffs after assuming a brand was local underlines how algorithmic opacity compromises informed decision-making, echoing broader concerns about ethical digital advertising (Hocutt, 2024).

Regarding ethics, Objective 4, the focus on the ethical implications of geo-targeted advertising is reflected in users' responses to content that dealt with socio-political instabilities and uncertainty in the economic environment. Participants cited boycotting brands complicit in regional conflict and feeling targeted by content that exploited their emotional responses. This suggests that while users may exhibit agency and control, their responses are still, yet, influenced and shaped by geographic curation. Hence confirming MSD's relevance in today's algorithmic media structure.

Finally, this research addresses the literature gap by offering empirical, region-specific insights into MENA users' engagement with digital advertising based on geo-algorithmic content. While media personalisation has been extensively studied in marketing contexts and indicated an enhanced experience, this study introduces culturally situated experiences that questioned the notion of algorithmic neutrality. The results call for greater transparency and ethical responsibility in platform design and content curation. This argument is reinforcing Objective 5 and advocating for regionally responsive media regulation.

Conclusion & Recommendations

This study explored the relationship between algorithmic personalisation and user autonomy in geo-targeted digital advertising within the MENA region. Anchored in MSD theory (Ball-Rokeach and DeFleur, 1976; Kim, 2020), the paper investigated how users interact with, perceive, and navigate digital media with location-sensitive advertising content across platforms such as Meta products, Youtube and TikTok. Through qualitative, semi-structured interviews with users in Egypt, UAE, Morocco, and Oman, the study has reached several insightful data concerning the ethical and cognitive implications of algorithmically mediated experiences.

The literature review established a growing concern within digital media studies regarding the influence of artificial intelligence and location-based algorithms on consumer behavior (Ullah et al., 2016; Ali et al., 2019). However, existing work largely neglects the unique socio-technical dynamics of the MENA region. This study addressed that gap by contextualising geo-personalised advertising within

regional digital cultures and by offering empirical accounts of how users interpret algorithmic influence on their digital journeys and media conception.

Thematic analysis provided four overarching areas of concern: geo-personalisation and location-sensitive feeds; trend and brand perception; deceptive digital curation; and ethics-driven decision-making. These themes reflect a paradox between user dependency and reliance on digital media for orientation and their diminishing autonomy and control over the content, due to the lack of transparency in curation. MSD theory provided a useful framework for understanding how dependency on media systems, especially for decision-making and social validation, can affect the user's autonomy when systems are manipulative or even unclear.

By fulfilling this regional and theoretical gap, this paper contributes to the broader discourse on ethical advertising and user rights in digital media studies. It reaffirms the importance of transparency in algorithmic designs, and calls to empower users with meaningful control over how their data, which is utilized and interpreted on the digital platforms.

Beyond the research methodological and regional contributions, this paper coined algorithmic personalisation and algorithmic compromisation as an original and impactful terminologies that may grab deeper scholarly and corporate attention. By positioning algorithmic personalisation and compromisation as a critical findings, this paper invites future debates about how algorithms shape user experiences in complex patterns, which may rank it as an essential for researchers, policymakers, and advertisers to prioritize fairness and user empowerment within digital media.

Recommendations for Future Research

Based on the limitations discussed within the Methodology, there are several recommendations for the future research.

Longitudinal and cross-cultural studies, a larger and more demographically diverse participant base would improve the generalisation of the findings. Including users from small cities or rural areas, rather than capital cities. Comparisons between the media consumption of age groups and different platforms. Different socio-economic backgrounds across MENA would uncover additional insights and further layers of algorithmic personalisation experiences.

Adopt alternative or mixed methodologies, while this study used qualitative interviews, future research could benefit from ethnographic methods, where researchers document their own digital experiences across locations to provide immersive, autoethnographic insights (Pink et al., 2016).

A mixed-method approach, combining interviews with surveys or behavioral tracking, may allow for statistical generalization while retaining contextual nuance. Explore alternative theoretical frameworks: While MSD theory provided foundational insight, theories like Surveillance Capitalism (Zuboff, 2019) or Uses and Gratifications may offer additional perspectives, particularly around agency, resistance, and data commodification.

A systematic content analysis of algorithmically served advertisements across regions could validate user claims and reveal patterns of commercial targeting, deception, or manipulation.

On the other hand, a narrower geographical focus, may provide an alternative perspective. Future research work might benefit from a country-specific case study (e.g., Egypt or UAE) to explore legal, cultural, and algorithmic dynamics in greater depth, offering higher contextual precision. Integrate platform-specific studies, algorithm behavior varies by platform. Future research should consider comparing personalisation models across TikTok, Meta products, and YouTube to better understand their differential impact on autonomy and perception.

Finally, this study advocates for greater ethical accountability in digital advertising and calls for regional digital media studies that keeps pace with ever-changing and evolving algorithmic environments.

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