The Impact of Google's Algorithm Updates on Search Engine Optimization Practices with Special Reference to the Views of the Urban Community

Sachitra Mahendra
Associate Features Editor of the Daily News,
Lake House

Abstract

The recurrent algorithm updates introduced and launched by Google continue to transform Search Engine Optimization (SEO) practices. This is a core practice that reshapes the mould of digital communication. The current study examines how these updates, particularly the Helpful Content Update, affect content visibility and authenticity within digital humanities, with special reference to the Sri Lankan urban community. The research used a mixed-methods approach, which combined survey data from 200 participants with qualitative interviews, participant observation, and a case study of the Daily News. The findings reveal that although SEO strategies improve visibility and audience reach, they can also cause a conflict between content authenticity and algorithmic demands. Against this backdrop, the study highlights the risks of algorithmic bias and homogenization, and points to adaptation strategies. These insights contribute to the ongoing debates about the role of SEO in shaping knowledge dissemination and cultural diversity in the digital sphere.

Introduction

Background and Research Motivation

Since the advent of the internet, search engines have

become a decisive factor in how individuals retrieve and consume information. Google is established as the global leader in this field. The search engine continually refines its algorithm, which impacts how information is organized and presented on the web. These algorithmic refinements, formally known as algorithmic updates, aim at enhancing the user experience by delivering more accurate search results. However, this process affects SEO practices.

As a result of this procedural shift, the Digital Humanities has emerged as a field at the intersection of technology and traditional humanities. Therefore, it is evident that the procedural change in question has expanded the field of communication. This study positions SEO practices within communication dynamics to highlight how algorithmic updates shape public access to information and, by extension, scholarly discourse.

The relevance of this study lies in understanding how algorithm-driven SEO practices have permeated the digital humanities. These practices influence both the quality and quantity of information produced. This research addresses the gap between visibility and information authenticity. Google's continuous algorithm updates attempt to prioritize content over SEO-driven content, making this gap particularly significant.

Taken together, these dynamics reveal that the impact of SEO practices extends beyond technical visibility to shaping the broader conditions of information access, thereby setting the stage for the central problem this study addresses.

The central problem addressed in this research is the potential alienation and isolation caused by information overload, a phenomenon exacerbated by SEO practices that prioritize visibility over content quality. This research problem focuses on understanding how algorithm updates (though designed to enhance search accuracy) may inadvertently contribute to a narrowing of perspective and a decline in the diversity of information presented to users.

It is hypothesized that Google's algorithm updates hurt the digital humanities. They enhance the visibility of user-centric content but risk contributing to a large volume of SEO-driven content that may dilute the quality of the information presented to the audience.

Literature Review

The field of Search Engine Optimization (SEO) has evolved considerably since its inception. Algorithmic updates continue to play a decisive role in ranking content. This ranking procedure decides the discoverability of information presented to users. These changes affect three significant knowledge components online: quality, accessibility, and diversity.

Since Google plays the leadership role in the search engine market, its algorithm updates remain influential. This influential role has implications for SEO strategies and the broader culture of content creation across various digital fields, including digital humanities.

The importance of SEO culture lies in its role in determining the visibility and accessibility of content on the internet. The increasing attention to visibility and accessibility has led to competition among content uploaders, resulting in digital information overload —a growing concern. SEO strategies have been criticized for prioritizing visibility over the quality and authenticity of content (Berman & Katona, 2013). Over time, SEO practices have shifted from simple keyword optimization to more complex strategies that require technical expertise and content creation to keep up with the constantly evolving requirements of search engine algorithms.

Google's algorithm is central to the way information is retrieved and ranked on the web. Algorithmic updates such as Panda, Penguin, Hummingbird, and, more recently, the Helpful Content Update, have changed the SEO landscape (First Page Sage, 2023). Each of the above updates had the sole objective

of improving the user experience by prioritizing quality content. They also influenced how websites optimize their content to remain visible in search engine results.

Panda (introduced in 2011) targeted low-quality content, focusing on removing 'content farms' from top search results (Cutts, 2011). The Penguin update (2012) penalized sites that used manipulative link-building tactics to artificially boost rankings. The Hummingbird update (2013) shifted the focus to understanding search queries more human-like and emphasized semantic search rather than merely keyword matching (Singhal, 2013).

However, the most discussed update, which is the Helpful Content Update (2022), represented a more influential shift towards user-centric content. Google aimed to reward content written for humans rather than solely for SEO, with a focus on helpfulness, originality, and expertise (Schwartz, 2022). The update directly addressed the ongoing tension between content designed to manipulate search algorithms and content that truly serves users' needs. This marked a significant development in Google's efforts to refine search results quality and highlights the ongoing struggle between authentic content creation and algorithm-driven SEO strategies.

Theoretical Framework: Digital Humanities and Algorithmic Influence

The field of digital humanities intersects technology and traditional humanities disciplines, leveraging digital tools to analyze, interpret, and present humanistic content. The digital humanities users have increasingly relied on digital platforms to disseminate research and engage with larger audiences. This naturally made them susceptible to the effects of algorithmic shifts (Kirschenbaum, 2010). The evolution of Google's algorithms directly affects the visibility of academic content, requiring digital humanists to adopt SEO strategies to ensure their work reaches a broader audience.

A critical theory underlying the impact of SEO in digital humanities is the concept of algorithmic gatekeeping (Bucher, 2018). Google's algorithms act as intermediaries between users and online content. In doing so, they perform a gatekeeping function, determining which information is easily accessible and which remains less visible. This raises concerns about algorithms' potential to limit exposure to diverse perspectives. This is currently a pressing issue in the context of digital humanities. This issue will only increase when the dissemination of cultural and scholarly materials is intended to maintain diversity.

This points to the fact that cultural capital in the digital age is closely tied to visibility, which is primarily determined by one's ability to navigate and exploit SEO practices (Bourdieu, 1986; Marwick & boyd, 2011). As digital humanity users rely on visibility to share their work, they must balance the need to adhere to SEO norms with the imperative to maintain the integrity of their content. This balance is becoming increasingly difficult as SEO becomes more technical and demanding, pushing some creators to sacrifice depth and complexity in their work to meet algorithmic standards.

Impacts of SEO on Content Creation in Digital Humanities

SEO practices continue to influence how content is created, especially in fields that rely on digital dissemination. Research suggests that the pressure to rank well in search engines has led to the rise of clickbait content and the overemphasis on keyword optimization at the expense of substantive content (Noble, 2018). The SEO strategies are effective in increasing traffic, but they encourage content that caters more to algorithmic preferences than to human readers. This undermines the depth and quality of information (Jenkins, 2013).

SEO-driven content creation prioritizes content that is easy to digest and algorithmically optimized. As a result, rigorous

scholarly material tends to be neglected. Content creators must now balance the technical demands of SEO with the need to maintain the academic integrity (Jones, 2014).

SEO's impact extends beyond textual content to the design and functionality of digital humanities platforms. Websites and digital projects must now be optimized not only for content but also for speed, mobile accessibility, and ease of navigation to meet Google's ranking criteria (Gillmor, 2018). This study does not aim to provide a comprehensive technical discussion.

Nonetheless, mentioning technical requirements, such as improving user experience, is important because they place additional demands on digital humanists, who must either acquire technical skills or collaborate with SEO specialists to maintain online visibility.

Algorithmic Bias and the Risk of Homogenization

The algorithms driving search engines cannot be considered neutral. They reflect the biases of their creators and the data on which they are trained (Noble, 2018). Google's algorithms are observed to prioritize certain types of content. These contents are authoritative or popular sources. This prioritization inadvertently marginalizes lesser mainstream voices. This can be considered a bias with important implications for the digital humanities. The diversity of perspective is neglected here.

Algorithmic bias can lead to the overrepresentation of certain viewpoints while silencing others, particularly content from marginalized or underrepresented communities (Gillespie, 2014). For example, content from large, well-established institutions is more likely to appear at the top of search results. At the same time, independent scholars or less prominent institutions may struggle to gain visibility, regardless of the quality of their work. This creates a hierarchy of knowledge that privileges dominant narratives and can homogenize the range of information available to users.

This is the filter bubble phenomenon, highlighting the risk of homogenization in the digital humanities. The more the users engage with algorithmically suggested content, the more they are exposed to information that reinforces their existing beliefs and interests. This limits their exposure to diverse or challenging ideas. This trend poses a significant challenge for the digital humanities, as it undermines the field's goal of promoting critical thinking and disseminating a wide range of perspectives.

Addressing the Tension Between SEO and Content Authenticity

The tension between SEO practices and content authenticity has been a recurring theme in the literature. Several scholars have argued that while SEO is necessary for visibility in the digital age, it should not come at the expense of content integrity (Enge, 2019). The Helpful Content Update introduced by Google aims to address this issue by penalizing content created solely for SEO rather than to inform or assist users genuinely.

However, the success of this update in curbing the dominance of SEO-driven content remains to be seen. Otherwise, it could be considered a questionable phenomenon where the boundary lines seem blurred. Some studies suggest that algorithm updates can improve content quality in the short term as SEO practices quickly adapt to new algorithmic requirements. These requirements find new ways to game the system (Ziakis et al., 2019). This constant tug-of-war between algorithmic updates and SEO strategies suggests that content creators must continually innovate to maintain both visibility and authenticity.

This growing tension between technical optimization and scholarly integrity provides the foundation for the present study. The following methodology was adopted to examine these dynamics in the urban context systematically.

Methodology

Research Design

This research adopts a mixed-methods approach to analyze the influence of Google's algorithm updates on the SEO culture within digital humanities. The mixed-methods framework combines quantitative data from structured surveys with qualitative insights from interviews, participant observation, and case studies. This study has utilised both quantitative and qualitative methodologies to provide a comprehensive understanding of the impact of algorithmic changes and to address the social and cultural implications of SEO practices.

The quantitative component focuses on assessing the awareness of Google's algorithm updates among media professionals, digital humanities users, and SEO specialists. It also evaluates the effects of these updates on their content creation and visibility strategies. Meanwhile, the qualitative aspect deals with the subjective experiences of key stakeholders. It explores their strategies for adapting to algorithmic changes. The objective of this exploration is to address the challenges associated with SEO-driven content creation.

Sampling Strategy

The sample for this study was drawn from an urban population in Sri Lanka, primarily focusing on individuals who engage with or contribute to digital humanities content. Several factors guided this decision. The digital divide between urban and rural areas, along with higher levels of digital literacy among urban populations, was identified as a core factor. Furthermore, urban communities have greater access to digital technologies. Therefore, they are more likely to interact with search engine algorithms and SEO practices daily.

The survey questions were designed using a combination of multiple-choice, Likert-scale, and demographic items. Care

was taken to ensure content validity by piloting the questionnaire with a small group of participants. Participants were recruited through purposive and snowball sampling.

The sampling process followed these criteria:

- Media professionals: Journalists, content creators, and editors who regularly engage in digital publishing and SEO optimization.
- Digital humanities users: Academic and research users within the digital humanities field who actively use digital tools to disseminate their work.
- SEO specialists: Professionals responsible for optimizing content for search engines, particularly those with experience adapting to algorithmic updates.
- Digital consumers: General users from the urban population in Sri Lanka, focusing on their media consumption habits and awareness of how Google's algorithm shapes the visibility of content.

The purposive sampling helped target individuals with expertise relevant to the research objectives. The snowball sampling enabled the recruitment of additional participants through referrals from initial respondents.

Data Collection Techniques:

Quantitative Data Collection

Quantitative data were collected through a structured questionnaire distributed via Google Forms. The questionnaire comprised both closed-ended and Likert-scale questions, designed to capture the participants' understanding of SEO practices, their awareness of Google algorithm updates (e.g., Panda, Penguin, Helpful Content), and how these updates influence their work or

media consumption. The survey targeted a sample of 200 urban participants.

The structured questions were divided into the following categories:

- Demographic Information: Age, education level, profession, and frequency of digital device usage.
- SEO Awareness: Familiarity with SEO practices, knowledge of algorithm updates, and their perceived impact on digital visibility.
- Content Creation Practices: For content creators, the questionnaire focused on how they balance SEO strategies with content authenticity and user experience.
- Media Consumption: For digital consumers, questions assessed their awareness of algorithm-driven content recommendations and their attitudes toward the visibility of various types of content.

The quantitative data collected from the survey were analyzed using SPSS to identify trends, correlations, and patterns in the influence of Google's algorithm updates on participants' practices and perceptions.

Qualitative Data Collection

The qualitative data were gathered through the following techniques:

01) Interviews: Semi-structured interviews were conducted with a sample of 20 participants, including SEO experts, digital humanities scholars, and media professionals. These interviews were designed to provide in-depth insights into their personal experiences with adapting to Google’s algorithm updates, how they navigate the challenges posed by SEO requirements, and

their strategies for maintaining content quality while optimizing for search engines.

The interviews focused on the following key themes:

- The impact of major algorithm updates (e.g., Penguin, Helpful Content) on SEO strategies.
- Balancing SEO optimization with the integrity of scholarly content.
- Perceptions of algorithmic bias and its implications for information diversity.
- Future expectations for SEO practices and search engine algorithms in the digital humanities.

02) Participant Observation: To further understand how SEO culture manifests in real-world scenarios, participant observation was carried out in several settings, including newsrooms, academic conferences, and digital content creation workshops. The researcher observed how content creators and SEO specialists responded to algorithmic changes, including the discussions and strategies they used to adapt.

Key aspects observed include:

- The interaction between content creators and SEO experts when planning digital strategies.
- The role of algorithms in shaping the selection of content topics, language use, and presentation formats.
- The challenges content creators face when attempting to balance SEO and creativity.

03) Case Study: A case study was conducted on the Daily News, a Sri Lankan newspaper that transitioned to digital in 1995. As one of the first South Asian newspapers to go online, the Daily News provides a unique historical perspective on how media outlets have adapted to both the digital environment and the ever-evolving algorithms of search engines. The case study involved an analysis of archival records and interviews with key

figures from the Daily News to trace how algorithm updates have shaped their SEO strategies over time.

The case study focused on:

- The technical and editorial challenges faced during the transition from print to digital.
- The evolution of SEO strategies in response to Google's algorithm updates.
- The impact of these updates on digital visibility and reader engagement.

Data Analysis

3.4.1 Quantitative Data Analysis

The quantitative data obtained from the survey was processed using descriptive statistics and correlation analysis in SPSS. Descriptive statistics provided insights into the demographic composition of the sample, their level of SEO awareness, and the impact of algorithmic updates on their content creation or consumption practices.

Correlation analysis was employed to explore relationships between:

- SEO awareness and media consumption patterns (e.g., whether those who are more aware of algorithm updates are more selective in their media consumption).
- The influence of Google updates on content creators' strategies, particularly how knowledge of updates like the Helpful Content Update correlates with changes in their SEO practices.

The results from the quantitative analysis helped identify patterns and trends that were further explored through qualitative methods.

Qualitative Data Analysis

The qualitative data gathered from interviews, observations, and the case study were analyzed through thematic analysis. This involved identifying recurring themes and patterns in how algorithmic updates shape SEO culture and content creation in the digital humanities. The analysis focused on:

- The adaptation strategies used by content creators and SEO specialists to cope with algorithmic changes.
- The perceived tension between SEO-driven optimization and maintaining the authenticity and academic rigor of content.
- Concerns about algorithmic bias and the potential marginalization of certain voices or perspectives in the digital humanities.

Ethical Considerations

• This study adhered to standard research ethics. All participants were informed of the study's purpose and provided informed consent before participating. Data confidentiality was ensured, and no personally identifiable information was disclosed.

Limitations

This study focuses on the urban population of Sri Lanka, which may limit the generalizability of its findings to other geographical regions or demographic groups. Additionally, the study is constrained by the relatively small sample size for qualitative interviews and participant observation, which may not fully capture the diversity of experiences within the digital humanities community. Lastly, the research focuses specifically on Google's algorithms, potentially overlooking the influence of other search engines or digital platforms on SEO practices.

Results

This section presents the findings from the mixed-methods research conducted with 200 urban Sri Lankan participants, complemented by qualitative interviews, participant observation, and a case study of the Daily News. The results illuminate how Google's algorithm updates have reshaped SEO practices in the digital humanities, while also highlighting the broader cultural and communicative consequences for Sri Lanka's urban media landscape.

1. Quantitative Findings: Awareness and Adaptation

The structured survey distributed to urban respondents via Google Forms and supplemented by in-person oral administration revealed significant patterns in SEO awareness and media consumption:

• Awareness of Algorithm Updates:
A majority (62%) of respondents indicated familiarity with major updates such as Panda, Penguin, and the Helpful Content Update. However, only 38% felt confident in their ability to adapt to these changes without compromising the quality of their work or consumption choices. This points to a gap between awareness and practical application. Many respondents acknowledged that they relied on second-hand information from peers, workshops, or online forums to stay updated.

• Perceived Impact on Content Quality:
Over half of the surveyed content creators (54%) admitted that they had adjusted writing styles. Examples include shortening articles, increasing keyword frequency, and structuring headlines to meet SEO requirements. Among consumers, 47% expressed the belief that online content was becoming repetitive and less diverse. This is attributable to algorithmic filtering that privileges familiar sources over new perspectives.

• Consumption Patterns:

The analysis of demographic and media-use data showed that younger respondents (aged 18–30) were more likely to engage with news via mobile devices and social media platforms, whereas older participants leaned toward established digital newspapers. Across all age groups, participants reported increased reliance on algorithm-driven recommendations (such as Google's Top Stories or trending news) as a primary filter for content selection.

These results suggest that the urban community demonstrates high levels of digital literacy in terms of device use. However, there is less confidence and sophistication in adapting to the shifts caused by algorithmic updates. The SPSS analysis also revealed a weak but significant correlation between awareness of algorithm updates and selective media consumption. This indicates that those with greater awareness tended to diversify their content sources.

2. Qualitative Findings: Lived Experiences and Perceptions

Interviews

Semi-structured interviews with 20 participants, including SEO specialists, media editors, and content creators, provided insights into the challenges of balancing authenticity with visibility. A recurring theme was the quantity over quality dilemma. Here, the algorithmic incentives encouraged frequent updates and superficial content. One SEO specialist remarked:

"The balancing act between SEO and content quality is becoming more difficult, especially when algorithms keep evolving at such a rapid pace."

Editors highlighted the pressure to choose trending, SEO-friendly topics over long-form investigative journalism. A digital humanities scholar echoed this concern, noting that Google's Helpful Content Update, despite its intention to prioritize user- centric content, often still rewards formulaic structures optimized for search rankings.

Observations

Observational studies conducted in Colombo's public spaces, including cafes, buses, trains, and university campuses, confirmed the ubiquity of digital device use across urban demographics. The data revealed consistent patterns of multitasking, where individuals engaged simultaneously in content consumption and interpersonal interaction. The researcher observed that algorithm-driven feeds often dominated participants' engagement, with conversations revolving around trending topics surfaced by search engines or social platforms.

These observations underscore a broader trend of digitally mediated attention. Here, the interpersonal communication is filtered through algorithmic priorities, sometimes at the expense of face-to-face dialogue.

Participant Observation

Active participation in SEO-focused forums, academic workshops, and digital content creation communities revealed internal debates about the ethics of SEO practices. Some practitioners embraced technical strategies to game algorithms. Others expressed discomfort, viewing such practices as undermining the authenticity of digital humanities content. This reinforced the survey's finding of tension between visibility and academic rigor, particularly among scholars attempting to maintain intellectual depth while remaining discoverable online.

Case Study: Daily News and the Digital Transition

The Daily News, which became the first South Asian newspaper to establish an online presence in 1995, provides an illustrative case study of long-term adaptation to digital shifts.

- Sender Perspective: Early challenges included a lack of technical know-how in web development and content management. Editorial teams were compelled to experiment

with basic digital infrastructures, relying on trial-and-error learning.

- Receiver Perspective: At the time, internet accessibility in Sri Lanka was limited, and the concept of online readership was unfamiliar to most citizens. This mismatch created challenges in building an initial audience.
- Outcomes: Despite these difficulties, the Daily News' pioneering move established an important precedent for South Asian digital journalism. Over time, however, interviews with editorial staff revealed increasing reliance on SEO strategies to remain competitive. By the 2010s, the newspaper was prioritizing keyword-heavy headlines and frequently updated stories to sustain visibility within Google's search rankings.

The case study demonstrates the trajectory from experimentation to dependence on algorithm-driven practices.

Emerging Themes

From the integration of quantitative and qualitative data, three cross-cutting themes emerge:

01) Tension between authenticity and visibility

02) Across all data sources, respondents emphasized that while SEO practices enhance discoverability, they dilute content authenticity. For example, survey participants noted that repetitive formats were becoming the norm. The interviews revealed a persistent struggle to reconcile academic rigor with search engine requirements.

03) Algorithmic bias and cultural homogenization

04) The results confirm that algorithmic gatekeeping favors established institutions and dominant narratives, sidelining smaller voices. Urban consumers frequently reported seeing the same global or Western news sources, with limited representation of local or alternative perspectives. This

raises concerns about cultural alienation and the erosion of Sri Lankan media diversity.

05) Digital alienation

06) Observations and interviews both highlighted a sense of alienation, consistent with Marx's theory of estrangement. Individuals reported feeling disconnected from in-person interactions and overwhelmed by information overload. While digital platforms promised greater connectivity, they often produced isolation, reinforcing echo chambers and limiting exposure to diverse viewpoints.

Empirical Generalisation

Although the study sample was limited to Sri Lanka's urban community, the triangulation of surveys, interviews, and observations supports a broader interpretation. The consistency of findings across diverse contexts—from public transport to academic settings—suggests that these patterns cannot be considered confined to Colombo. Moreover, given Google's global influence through its algorithm, the findings have broader relevance for other developing countries experiencing similar transitions from traditional journalism to digital media.

Summary of Key Results

- High awareness of algorithm updates, but limited confidence in adapting without loss of content quality.
- A growing dependence on algorithm-driven recommendations among consumers is leading to homogenized information flows.
- Content creators and media professionals experience tension between SEO optimization and authenticity, with visible effects on journalistic and academic integrity.
- Observational data highlights screen-dominated communication

patterns, often at the expense of face-to-face interaction.

- The Daily News case study exemplifies the long-term shift from digital experimentation to reliance on algorithm-driven SEO.
- Broader implications include cultural homogenization, algorithmic bias, and digital alienation within Sri Lanka's urban media landscape.

These results frame the subsequent discussion on how Google's algorithm updates shape SEO practices and thereby influence communication, culture, and identity in the digital sphere.

Discussion

Building on the empirical results, this discussion interprets the implications of Google's algorithm updates for SEO practices, digital humanities, and the broader field of communicology. The findings reveal the complexity of balancing visibility with authenticity. It also draws attention to emerging risks of cultural homogenization and digital alienation.

Authenticity Versus Visibility

The results highlight a persistent tension between the pursuit of visibility and the preservation of content authenticity. Survey participants and interviewees alike expressed concerns that SEO-driven strategies, such as keyword-heavy headlines, short-form articles, and rapid publishing cycles, compromise scholarly depth. This confirms the clickbait conundrum described by Jenkins (2013), where the imperative to generate traffic undermines intellectual discipline.

Google's Helpful Content Update was designed to reward human-centric writing. However, the findings show that it has not fully addressed the prevalent tension. Content creators

continue to perceive algorithmic incentives as encouraging formulaic, quantity-driven production. This outcome represents a structural challenge in contemporary communication: visibility metrics dominate content strategies, at the expense of nuance and originality.

Algorithmic Bias and Cultural Homogenization

The study further confirms the role of algorithmic bias in amplifying dominant voices while marginalizing local or independent perspectives. Interviews with media professionals revealed that content from well-established, globally recognized outlets consistently outperforms smaller or alternative sources. This pattern does not take quality into consideration.

This situation echoes Noble's (2018) critique of the algorithmic discrimination dynamic, which contributes to a homogenization of content. The risk can be considered acute in the Sri Lankan context. Western narratives dominate the online space, which can marginalise the local cultural identities. Observational data reinforce this concern, as urban consumers reported encountering a limited range of perspectives shaped by algorithm-driven recommendations. The danger is that Sri Lanka's cultural diversity is subsumed under global, homogenized media flows.

Digital Alienation and Social Isolation

Observational and interview data also shed light on the phenomenon of digital alienation. The individuals become estranged from meaningful interpersonal interaction. Consistent with Marx's theory of alienation (Petrović, 1963), participants described increased isolation despite greater online connectivity. The displacement of communal, face-to-face interaction by screen- dominated engagement suggests that algorithms not only curate content but also shape social rhythms and habits.

This alienation raises questions about the long-term consequences of algorithmic mediation on communication practices and social cohesion. It emphasizes the importance of digital literacy not only as a technical skill set but also as a cultural and ethical framework within the digital information ecosystem.

Implications for Policy and Cybersecurity Law

The findings also point toward the need for future research in Cybersecurity Law and digital regulation. Algorithmic gatekeeping, SEO manipulation, and the homogenization of content highlight gaps in governance around transparency, accountability, and fairness in digital information systems. As algorithms increasingly determine access to knowledge, they also raise questions about data privacy, digital rights, and the ethical responsibilities of technology companies.

Opening this conversation to the domain of cybersecurity law is crucial. Regulation could address:

- Transparency requirements for algorithmic decision-making.
- Protections against algorithmic bias to safeguard cultural diversity and minority voices.
- Data privacy and surveillance concerns, as SEO-driven personalization relies on user tracking.
- Accountability frameworks ensuring that digital platforms operate in ways consistent with democratic and cultural values.

This research aims to establish a link between SEO practices and cybersecurity law to invite interdisciplinary dialogue that extends beyond communicology into law, policy, and governance. Such integration would strengthen user protections and help preserve cultural integrity in an increasingly algorithmic society.

The study demonstrates that SEO practices shaped by

algorithmic updates cannot be understood purely as technical adjustments. They are communicology phenomena with cultural, ethical, and political dimensions. To protect authenticity and diversity, adaptation strategies such as selective optimization, collaboration between academics and SEO specialists, and targeted digital literacy programs must be pursued.

At the same time, this research highlights the urgency of developing legal and policy frameworks to mitigate algorithmic bias and alienation.

Conclusion

This study has examined the impact of Google's algorithm updates on SEO practices within Sri Lanka's urban digital humanities community. Through a mixed-methods approach, incorporating surveys, interviews, participant observation, and a case study of the Daily News, the research revealed a persistent struggle between visibility and authenticity. While algorithmic updates such as the Helpful Content Update aim to promote user-centric content, in practice, they reinforce a culture of repetition, formulaic production, and algorithm-driven incentives that dilute academic rigor and journalistic depth.

The findings also highlight the risks of algorithmic bias and cultural homogenization. The search engines prioritise dominant voices and established institutions and marginalize alternative or local perspectives. This narrows the range of information accessible to users. For Sri Lanka, this presents a serious cultural challenge. The erosion of local identities in the face of globalized, homogenized content flows are a case in point. Observational and interview data further highlight how algorithm- driven consumption feeds digital alienation, displacing communal interaction and deepening social isolation.

These insights have important implications for communicology and the digital humanities. They reveal that SEO practices cannot be reduced to technical optimization

strategies but must be understood as cultural and communicative phenomena that reshape knowledge production, media practices, and social relationships. Addressing these challenges requires not only adaptive strategies such as selective optimization, collaboration with SEO specialists, and digital literacy programs but also broader frameworks that situate SEO within questions of power, governance, and ethics.

In this regard, the study points toward an urgent need to extend research into the domain of Cybersecurity Law and digital regulation. Algorithmic gatekeeping and SEO manipulation raise unresolved questions about transparency, fairness, and accountability in digital communication systems. Policies in this area could ensure that algorithmic practices respect cultural diversity, protect user rights, and mitigate the risks of bias and alienation. Future interdisciplinary research should therefore explore how communicology can intersect with cybersecurity law to design regulatory mechanisms that balance innovation with cultural integrity, ensuring that digital platforms serve both informational accuracy and societal well-being.

The integration of communicology perspectives with legal and policy insights, scholars, and practitioners is a necessity as it can contribute to building a more inclusive, ethical, and culturally grounded digital environment. This paper focused on Sri Lanka's urban community with its implications that extend far beyond its borders. The objective was to offer a lens for understanding the global intersections of technology, communication, and human culture in the algorithmic age.

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