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EMPIRICAL MAPPING ANALYSIS OF WEBSITE WORLD HEALTH ORGANIZATION FROM OCTOBER TO DECEMBER 2023: A WEBOMETRIC ANALYSIS

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Abstract: This webometric analysis uses SimilarWeb, a competitive intelligence tool, in order to evaluate the World Health Organization's website using webometrics. This study investigates global and country rankings, traffic sources, channels, demographics, performance metrics, referring websites, and social media impact between October and December of 2023. Additionally, SimilarWeb provides a standardized way to assess internet usage patterns globally by assessing user engagements, website traffic, and rankings. The application uses SimilarWeb for assessing national geography websites' online presence. The analysis contributes significantly to webometrics and to improving the marketing strategies of the World Health Organization. A global ranking of #3290 is revealed for the traffic rank of https://www.who.int/, with a total of 71.93 million worldwide visits. Desktop and mobile devices are represented by 37.49% and 62.51%, respectively, in the device distribution. Mediafire.com is the primary referring website, contributing 22.06%, and file-sharing and hosting are the leading industries, contributing 22.09%. According to the analysis, the website has a higher proportion of female visitors with 62.69% compared to male visitors with 37.31%. The 25-34 age group has the highest representation of users, at 27.26%.

Keywords: Webometric, WHO, SimilarWeb, Website analysis

1. INTRODUCTION

Webometric analysis is a quantitative method used to study the World Wide Web. It has become quite popular in different fields like e-tourism, academic research evaluation, and website design quality. Researchers such as Filieri et al. (2015) and Thelwall & Kousha (2015) have contributed to this area of study. To evaluate the importance and influence of websites, this approach utilises the measurement of web impact factors, links, and visibility indicators. Several studies have been conducted on this topic, including those by Vaughan & Hysen (2002), Ramezanghorbani et al. (2020), and Ramanayaka et al. (2018). The website of the World Health Organization (WHO) at https://www.who.int/ is a significant topic for webometric analysis because of its worldwide significance and impact in sharing public health information (Das et al., 2019). This study offers valuable insights into the web presence and impact of the World Health Organization (WHO) website, a critical platform for global health information. By doing so, it contributes to our understanding of how visible and influential the organisation is online (Turcanu et al., 2022; Agusta, 2020).

The research conducted on the website https://www.who.int/ introduces a fresh perspective by incorporating the element of time. This expands the scope of statistical data used to analyse trends and future developments on the World Health Organization (WHO) website in the online domain (Kvitka et al., 2019). This innovative approach addresses a notable void in the current body of research by offering a thorough comprehension of the online presence and influence of a prominent international health organisation. By incorporating the element of time, we can analyse statistical data over a period, which helps us predict trends and anticipate how information will be presented on the WHO website. It is important to grasp the changing dynamics of web presence and its influence, especially when considering a well-known international health organisation. In addition, this study seeks to make a valuable contribution to the field of webometrics. It provides a model that can be used to evaluate the online presence of influential organisations in the public health sector (Kvitka et al., 2019). This contribution plays a crucial role in enhancing our comprehension of webometrics and how it can be applied to organisations working in the public health sector. This study aims to analyse the impact and visibility of the WHO website by considering various factors. The findings will offer practical recommendations to improve the website's online presence and effectiveness in sharing important public health information with a worldwide audience (Assarut & Eiamkanchanalai, 2022).

The study examines the impact factors and visibility indicators of the WHO website. It aims to assess how effective the website is in reaching and engaging with diverse global audiences, especially during public health crises when people rely heavily on the internet for health-related information (Assarut & Eiamkanchanalai, 2022). Understanding the effectiveness of a website in communicating public health information to diverse global audiences and informing strategies to

enhance its reach and impact relies heavily on recognising the importance of its impact and visibility. This study provides great importance due to the growing dependence on the internet for obtaining health-related information, especially in times of public health emergencies (Patil, 2020). Therefore, gaining knowledge about the web impact factors and visibility indicators of the WHO website can provide valuable insights into how effectively it reaches and engages with diverse global audiences. In addition, the results of this study can provide valuable insights for improving the website's effectiveness in reaching a wider audience and making a greater impact. This, in turn, can help in effectively sharing important health information and addressing global health issues (Farhan et al., 2022; Ali et al., 2021). This study has the potential to make significant advancements in the field of webometrics by applying its techniques to the website of a prominent global health organisation. This can greatly enhance our understanding of how webometrics can be utilised in the context of such organisations. This study presents a model for evaluating the online presence of influential organisations in the public health domain by analysing the web impact factors and visibility indicators of the WHO website. In addition, the results of this study can provide valuable insights for improving the online presence of public health organisations. This, in turn, can contribute to the overall field of health communication and information sharing (Lutz & Hoffmann, 2017).

In this study, we aim to perform a thorough webometric analysis of the WHO website. Our goal is to assess various factors that contribute to its web impact, such as links and visibility indicators. The study aims to provide a comprehensive evaluation of the website's impact and reach, offering insights into its effectiveness in effectively communicating public health information to a wide range of global audiences. In this study, we aim to find ways to make the website more effective and visible. By analysing its web presence, we can identify areas for improvement and offer practical suggestions to enhance its impact (Bačík et al., 2021). In conclusion, this study has the potential to provide valuable insights into the web presence and impact of the WHO website. This will contribute to a better understanding of webometrics in the field of global health communication. The study aims to provide practical recommendations for improving the WHO website's online reach and influence. By analysing web impact factors and visibility indicators, the study seeks to enhance the website's ability to share important public health information with a global audience (Assarut & Eiamkanchanalai, 2022).

2. LITERATURE REVIEW

The research conducted by Turner et al. (2018) highlights the growing significance of webometric analysis in assessing the influence and efficacy of websites. It is important to highlight the importance of theoretical literature reviews in understanding the evolution of a theory and the validation or rejection of its statements. We can use this method to analyse the World Health

Organization (WHO) website and assess the basis of its content and the accuracy of its statements.

In addition, Gostin et al. (2015) emphasise the important role and impact of the WHO normative authority. This perspective is crucial for contextualizing the impact and scope of the WHO website in the online domain. Gaining knowledge about the normative authority of the WHO can offer valuable insights into how its website impacts public health policies and practices. Furthermore, Jansen et al., (2022) offer valuable insights on how to measure user interactions with websites, highlighting the significance of analytics methods. This literature provides valuable guidance for the review process, helping to identify suitable metrics and methodologies for assessing user engagement with the WHO website within the specified timeframe.

In a recent study, Schmitt et al., (2020) delve into the influence of privacy laws on the behaviour of online users. This research holds relevance for the analysis of the WHO website using webometric methods. Having a clear grasp of how privacy laws affect user behaviour is crucial for assessing a website's adherence to privacy regulations and its influence on user engagement. In their publication, Prantl & Prantl (2018) provide a thorough analysis of various tools used for measuring website traffic and rankings in the field of competitive intelligence. This literature can provide valuable guidance for the review process, helping to choose the right tools and methodologies to assess the web traffic and visibility of the WHO website within the specified period.

In conclusion, when conducting a literature review on the webometric analysis of the WHO website, it is important to consider various aspects. These include theoretical perspectives, normative authority, user interactions, privacy implications, and competitive intelligence tools. By taking all of these factors into account, we can gain a thorough understanding of the website's impact and effectiveness.

3. METHODOLOGY

To perform a webometric analysis of the World Health Organisation (WHO) website between October and December 2023 using SimilarWeb, it is important to employ a thorough methodology. Webometric analysis involves various methods to study websites, including analysing website content, examining web link structures, studying web usage patterns, and analysing web technologies (Gee et al., 2022). When assessing a website, we need to consider its content, structure, usage patterns, and technological aspects. To evaluate the usability and effectiveness of the WHO website, we can utilise usability testing. This method allows us to compare its performance with other popular search engines, as demonstrated by Wang et al., (2012). When it comes to measuring website traffic and rankings, there are a couple of useful

tools that can be used. Alexa and SimilarWeb are competitive intelligence tools that can provide estimates of the WHO website's traffic data (Prantl & Prantl, 2018). In addition, a study conducted by Jansen et al., (2022) compared the standard analytics metrics from Google Analytics with SimilarWeb to gain insights into user interactions with the WHO website.

In addition, it can be valuable to evaluate the adherence of the WHO website to accreditation and quality standards by applying the principles of the World Health Organization (Chen et al., 2014). In order to determine the availability of WHO recommendations on pandemic prevention, one can analyse the content of the WHO website (Gesualdo et al., 2010). In addition, for the analysis, it is recommended to gather data from reliable sources such as the WHO website (Majumder, 2022). Furthermore, it is important to consider the influence of privacy laws on the behaviour of online users when examining the WHO website's adherence to privacy regulations (Schmitt et al., 2020). The analysis of the WHO website from October to December 2023 using SimilarWeb involved filtering data by device type, user demographics, and referral channels to provide a detailed assessment of web traffic and engagement. This includes conducting usability testing, evaluating the quality of content, measuring website traffic, ensuring adherence to accreditation standards, and complying with privacy regulations. By combining these approaches, we can thoroughly evaluate the WHO website.

4. RESULT AND DISCUSSION

a. Traffic & Engagement Overview Analysis

According to Figure 1, the website https://www.who.int/ experienced 71.93 million visits worldwide during the period of October to December 2023, reflecting a 9.73% decrease compared to the previous month. According to the distribution of devices, most visits were from mobile devices, indicating that most users access the site via mobile devices. Globally, the website holds a ranking of #3290, with a ranking of #4,023 in the United States and a ranking of 24 in the health sector. The 9.73% decline in total visits could be attributed to external factors such as changes in public health crises or competition from other health-related websites. Further research is needed to identify specific causes. In the global health landscape, the website has a significant presence with strong rankings at the global, country, and industry levels. It is recommended that the website be optimized for mobile users, that the reasons behind the slight decline in visits be investigated, and that a focus on health-related content be maintained to enhance the website's influence in the health industry.

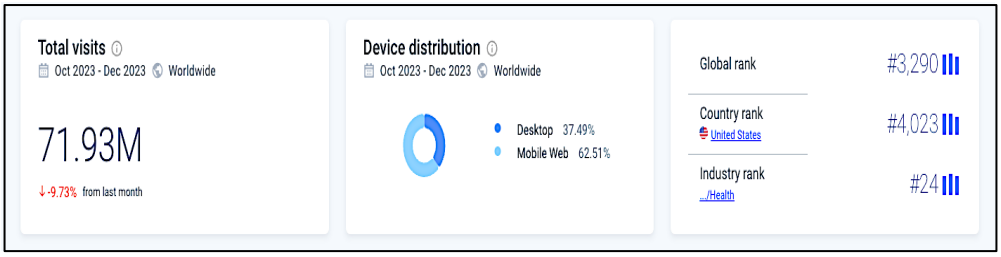

Figure 1. Traffic analysis

Figure 2 illustrates the level of engagement on the WHO website https://www.who.int/ from October to December 2023. The website garnered 23.97 million monthly visits and reached 15.46 million unique visitors worldwide. Users explore an average of 2.36 pages per visit and spend an average of 2 minutes and 22 seconds on the site, demonstrating that it delivers compelling content that engages its audience. It is important to contextualize this metric within the context of the website's purpose and content nature, even though the bounce rate is relatively high at 67.69%. It is recommended that engagement metrics are continuously monitored, potential strategies to reduce bounce rates are explored, and ways to extend average visit durations are explored, ensuring sustained user interest and interaction with the website.

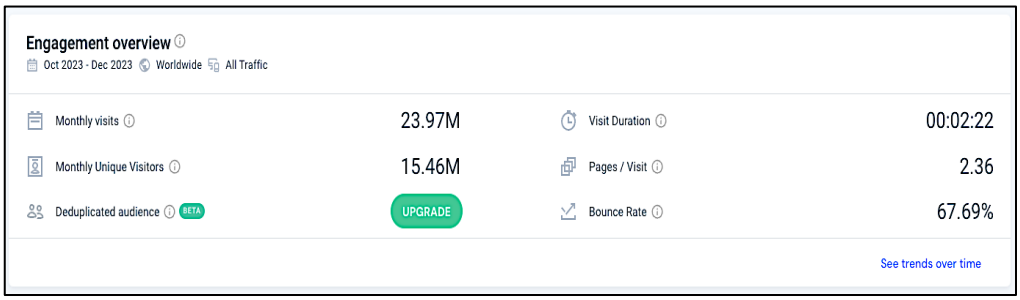

Figure 2. Engagement overview analysis

b. Visits Over Time Analysis

According to Figure 3, the website https://www.who.int/ attracted 71.93 million visits during the period October-December 2023, demonstrating its global significance in disseminating health information. Based on a comparative analysis with other health-related websites, who.int maintained consistently high visit numbers, peaking at 24.67 million, demonstrating its dominance in the field of health. There was a considerable difference between the World Health Organization's website and its counterparts, including cdc.gov, paho.org, and thelancet.com, which also demonstrated steady user engagement. The visit numbers for Intelihealth.com were generally below 5,000, which indicates the potential for improving the website's online visibility and reaching a wider audience. As recommendations, Intelihealth.com should leverage the strengths found in WHO's performance, evaluate best practices from other websites, and implement strategic measures to increase its visibility

Figure 3. Visits over time analysis

c. Geography Analysis

According to figure 4, between October and December 2023, the top countries contributing to traffic to https://www.who.int/ have undergone significant changes. At 16.34%, the United States held the highest traffic share, with a substantial decline of 10.16%. There was a remarkable 20.30% increase in traffic from India, which solidified its substantial user base at 10.04%. There was also a drop of 11.67% in traffic from the United Kingdom, contributing 4.20% to the website's traffic. In Mexico, user engagement decreased by 41.08%, resulting in a 3.48% traffic share. The Philippines remained a significant source of traffic for the website despite a decrease of 18.56%. According to the recommendations, content and strategies should be tailored for heightened engagement in the United States, India, and the United Kingdom, Mexico growth should be sustained and enhanced, and factors contributing to the decline in traffic from the Philippines should be investigated for strategic re-engagement.

Figure 4. Geography analysis

d. Organic Search Analysis

In Figure 5, the webometric analysis of https://www.who.int/ shows a nuanced pattern in organic search traffic from October to December 2023. The World Health Organization (WHO) accounted for 21% of desktop traffic, indicating that a substantial number of users are actively seeking information about it directly. As a result, 79% of the website's traffic is non-branded traffic, reflecting the website's visibility and relevance in broader health-related searches. Branded search terms include "who" and "oms", with the latter seeing a remarkable

1.12% and 0.64% respectively, suggesting increased interest in WHO using its acronym. The search terms “ICD 11” and “World Mental Health Day” demonstrated declines of 37.20 percent and 92.96%, respectively, underscoring the website's relevance in health-related topics. To increase overall visibility and engagement, we recommend capitalizing on the increased interest in branded searches, optimizing content for popular non-branded terms, and monitoring emerging trends.

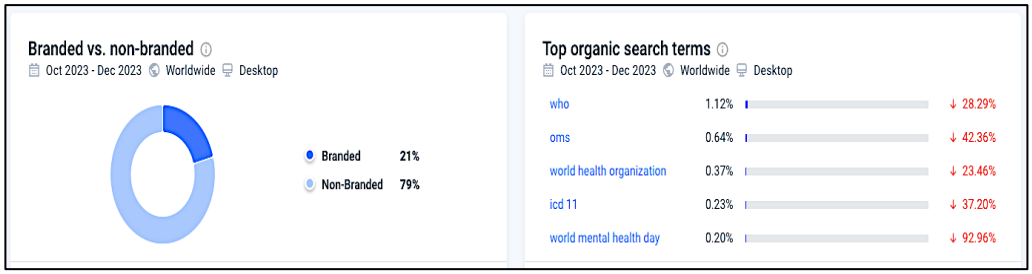

Figure 5. Organic search analysis

e. *Referrals Analysis*

The figure 6 illustrates the referrals analysis for October through December 2023, highlighting significant trends in referring websites and industries. Mediafire.com emerged as the top referrer, contributing 22.06% of desktop traffic, suggesting a significant portion of users access WHO resources through file-sharing sites. Paho.org is ranked second with 6.97%, demonstrating the importance of collaboration within the health sector, while nih.gov and Wikipedia.org are both ranked third with 4.37 and 4.10 percent, respectively. File-sharing and hosting websites contribute 22.09% of traffic, which highlights the unique way in which WHO resources are accessed through file-sharing platforms. The share of traffic from government entities has declined by 5.22%, indicating low engagement and interest. In order to enhance overall visibility and impact, recommendations include optimizing collaborations with Mediafire.com, Paho.org, and Wikipedia.org, tailoring content for governmental needs, and further exploration of user behavior within the File Sharing and Hosting industry. The percentage of website traffic derived from referrals is 4.8%

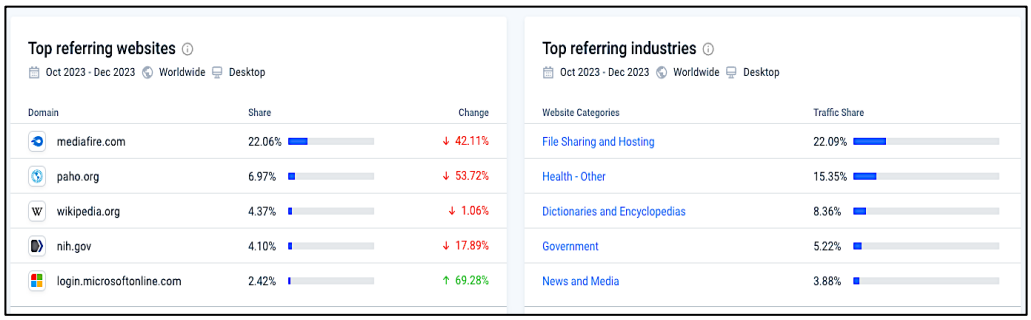

Figure 6. Referrals analysis

f. Outgoing Traffic and Ads Analysis

The webometric analysis of https://www.who.int/ reveals significant trends in link and ad destinations from October to December 2023 (Figure 7). The top link destination is login.microsoftonline.com, representing 23.27% of traffic share, indicating that a substantial amount of WHO-related resources are accessed through Microsoft Online services. It should be noted that nih.gov contributes 11.83%, emphasizing the cross-referencing and collaboration between the WHO and the National Institutes of Health. While Paho.org (3.81%) emphasizes the association with regional health organizations, Zoom.us (2.74%) suggests the use of virtual meeting platforms. Among the ad destinations, app.unv.org displays a significant 13.07%, demonstrating how effective its advertisements are at engaging users. However, destinations such as fw.cmcvellore.ac.in, zazporn.com, and Eid.elsevier.com require further investigation to determine their nature and alignment with the WHO's guidelines. The recommendations include improving collaboration with Microsoft Online services, strengthening partnerships with health-related organizations, exploring regional health collaboration opportunities, and conducting detailed analyses of ad destinations for strategic improvements.

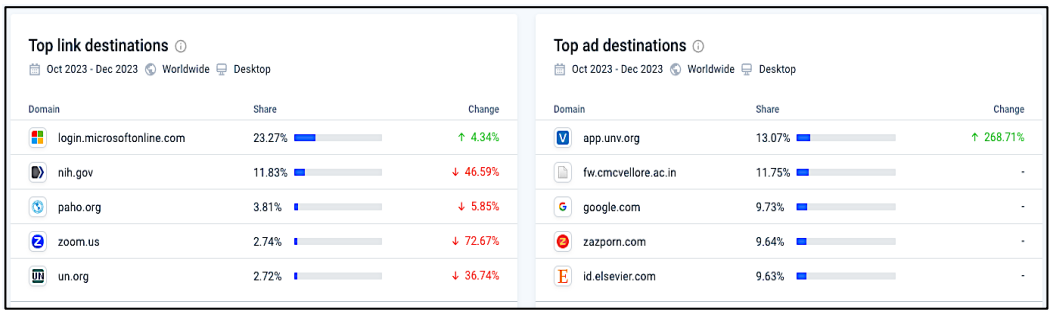

Figure 7. Outgoing traffic and ads analysis

g. Display Advertising Analysis

In Figure 8, display advertising is analyzed in the period between October and December 2023 based on the webometrics of https://www.who.int/, indicating a diversified and strategic approach to display advertising. As the primary display ad network for the WHO website, AdSupply occupies a significant 81.96% share, indicating its essential role in facilitating ad display. A concerted effort has been made to maximize reach and impact through multiple ad networks, with PopMyAds contributing 7.53% and Google Display Network contributing 7.1%, respectively. Besides skimlinks, other unidentified networks play an important role in the WHO's ad strategy. It is noteworthy that Americanthinker.com emerged as the top publisher, contributing a significant 60.83% of top publishers with a notable 222.16% increase, demonstrating the effectiveness of this collaboration. It is recommended that AdSupply continues to optimize its effectiveness, monitor diverse ad networks strategically, and

strengthen collaborations with top-performing publishers while investigating opportunities for improvement in others. Display ads makes up <1% of website traffic.

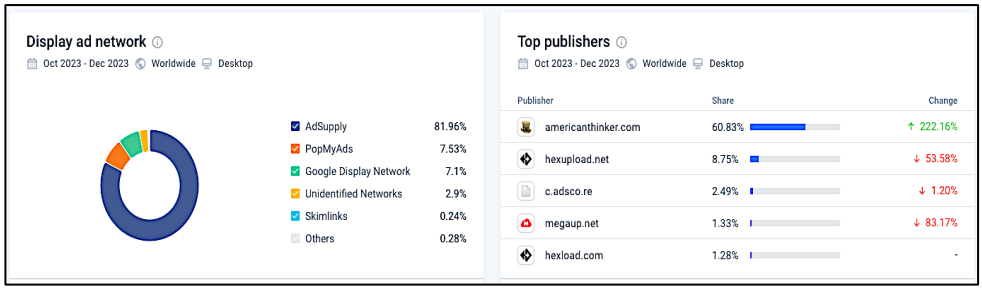

Figure 8. Display advertising analysis

h. Gender and Age Distribution Analysis

As shown in figure 8, the webometric analysis of https://www.who.int/ website indicates a diverse audience both in terms of gender and age. Based on the gender distribution, female visitors make up 62.69% of visitors, compared to male visitors who make up 37.31%. There is a significant concentration of users in the 25-34 age group, with the highest representation at 27.26%, followed by the 18-24 age group with 22.28%. There is an active audience for the website, including users in their prime working years (35-44) and those approaching or in mid-life (45-54). According to the engagement from 55-64 and 65+ age groups, the website is relevant to the senior demographic, indicating a broad appeal across a variety of life stages. There are several recommendations included in this report, including tailoring content to meet the specific needs of different age groups, exploring strategies to increase engagement with the 65+ age group, and monitoring demographics for ongoing content adaptation.

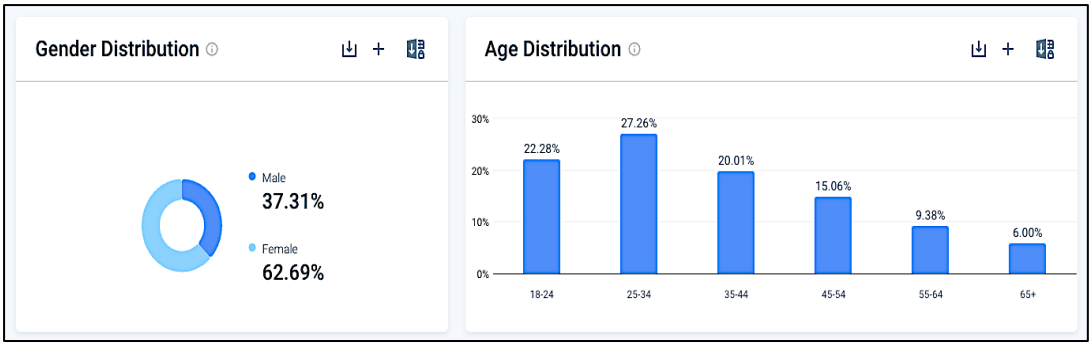

Figure 8. Gender and age distribution analysis

In conclusion, this study of the webometrics of the World Health Organization (WHO) website provides valuable insights into its digital impact and effectiveness. The analysis utilizes key webometric methods such as link search commands and web validity hypotheses to evaluate hyperlink counts, information retrieval, and connectivity. The webometric techniques,

including link counts, citation indexes, bounce rates, and page load times, offer empirical evidence of the website's digital authority and influence. These quantitative metrics help assess the reach, engagement, and visibility of the WHO website, providing a clear picture of its impact on a global scale. Furthermore, an assessment of web accessibility and quality contributes to determining the website's influence in the public health sector. The following table summarizes the key metrics of WHO's website performance from October to December 2023:

Table 1. Key Webometric Metrics (October - December 2023)

Metric	Value/Description
Total Visits	71.93 million (9.73% decrease from previous month)
Device Distribution	Majority of visits from mobile devices
Global Ranking	#3290 (Global), #4023 (U.S.), #24 (Health Sector)
Engagement (Pages per Visit)	2.36 pages per visit
Average Visit Duration	2 minutes 22 seconds
Bounce Rate	67.69%
Organic Traffic	79% non-branded traffic
Top Referral Source	Mediafire.com (22.06% of desktop traffic)
Top Link Destination	login.microsoftonline.com (23.27% of traffic)

The analysis also covers aspects like traffic over time, geography, organic search, referrals, and outgoing traffic, which provide additional layers of understanding of how users interact with the website. For instance, the traffic from the United States dropped by 10.16%, while traffic from India increased by 20.30%, reflecting regional shifts in engagement. The website's visibility in organic search is particularly notable, with 79% of traffic coming from non-branded sources, indicating strong relevance in health-related search queries. The WHO website also benefits from substantial collaboration with organizations like Paho.org and nih.gov, which contribute significant referral traffic.

Overall, the webometric analysis highlights the WHO website's strong digital presence and global influence in public health communication. It provides actionable insights for optimizing mobile user engagement, improving content strategies to reduce bounce rates, and expanding visibility in emerging regions.

5. DISCUSSION AND CONCLUSION

The analysis of the World Health Organisation (WHO) website provides a comprehensive perspective on its influence and effectiveness. Informetric methods applied to the World Wide Web, also known as Webometrics, were introduced by Almind and Ingwersen in 1997. These methods help us understand how to analyse the web using specific methodologies. This approach is very useful for thoroughly assessing the reach and impact of the WHO website in the digital realm. Furthermore, a study conducted on medical travel facilitator websites provides valuable insights into the examination of web page contents and the range of services available to potential users (Cormany & Baloglu, 2011). Examining this viewpoint can be quite useful in comprehending the user-oriented elements of the WHO website and its capacity to deliver pertinent and easily understandable information to its audience. In Thelwall's work on quantitative web research for the social sciences, a thorough introduction to webometrics is presented. This provides a framework for conducting quantitative analyses of web-based data (Thelwall, 2009). Applying this framework allows for a structured and systematic evaluation of the impact of the WHO website's webometric analysis.

By analysing the webometric data of the WHO website from October to December 2023, we can gain a better understanding of the demographic characteristics of its visitors. This information is crucial for improving content strategies and making sure that the website remains relevant to a wide range of audience segments. Based on the data, it is interesting to note that there is a significant majority of female visitors, accounting for 62.69% of the total, while male visitors make up 37.31%. It is crucial to create content that addresses the health concerns and interests of women, as they play a significant role in making healthcare decisions within households. Moreover, having a grasp of the gender dynamics allows for the development of tailored messaging and campaigns that are inclusive and responsive to the distinct health requirements of all genders.

The demographic analysis of the WHO website reveals that it is especially popular among younger users, with 22.28% of the audience aged between 18 and 24 and 27.26% between 25 and 34 years old. These groups, typically students and young professionals, benefit from content on preventive healthcare, mental health, and emerging health issues, which are pertinent to their lifestyles. However, the website could improve its engagement with the 65+ age group, which may struggle with accessibility features. To better serve this demographic, the WHO could implement strategies similar to those used by the National Institute on Aging (NIA), which has adapted its website to be more senior-friendly by including larger text, high-contrast color schemes, and simple navigation. Additionally, the CDC has created content tailored to older adults, such as audio guides and step-by-step instructions for managing chronic conditions. The WHO could adopt similar features, such as voice-assisted navigation, interactive health quizzes, and personalized health tips focused on chronic disease

management and mental health to improve accessibility and engagement. Moreover, simplifying the website's design and offering content with more visual aids (e.g., videos, infographics) would enhance usability for seniors, helping them find critical health information more easily. By prioritizing these accessibility improvements, the WHO website could better engage the 65+ demographic, ensuring that older adults not only access health information but also interact meaningfully with it.

In terms of strategy, the WHO can use the findings from this analysis to improve educational programmes, make content delivery more effective, and create focused campaigns for different demographic groups. As an example, by developing engaging and easily understandable content for young people, focusing on the importance of preventive care for middle-aged individuals, and adapting information for older adults, the website can strengthen its position as a valuable global health resource. The WHO should monitor demographic trends and focus on enhancing the mobile user experience, given the high proportion of mobile visitors. Additionally, strategies for re-engaging users in countries like the United States and Mexico, where traffic has declined, should be prioritized. To ensure effective operations, the WHO can employ various strategies. These include setting up feedback mechanisms, conducting user surveys, and utilising analytics tools. By doing so, the organisation can obtain real-time insights and make agile adjustments to its content and features. This approach allows the website to constantly adapt and respond to the needs of its diverse global audience. It is designed to effectively serve users by providing authoritative health information worldwide, which is in line with the WHO’s main objective.

The findings from this webometric analysis of the WHO website have significant interdisciplinary relevance, offering insights that extend beyond digital metrics to broader fields like public health communication, digital literacy, and international health policy. In the realm of public health communication, the study demonstrates how the digital presence of global health organizations like WHO can shape public understanding and behavior, particularly in relation to health crises and preventive measures. Understanding user engagement with health content can inform strategies to improve communication effectiveness, ensuring that crucial health information reaches diverse audiences in an accessible format. In the field of digital literacy, this analysis highlights the need for enhancing accessibility features, especially for older adults, thereby contributing to the ongoing discourse on making digital content more inclusive and user-friendly. Lastly, the study's findings can inform international health policy, particularly in terms of how digital platforms can be utilized to disseminate health information across borders. Policymakers can use insights from the study to strengthen global health communication strategies and ensure equitable access to accurate health information, particularly in low-resource settings.

The webometric analysis of the WHO website is subject to several limitations that may affect the reliability of the findings. Firstly, incomplete datasets can arise due to the limitations of web analytics tools such as SimilarWeb and Alexa, which may not fully capture all traffic sources, particularly from regions with limited internet access. Language barriers also pose a challenge, as the WHO website offers content in multiple languages, potentially hindering engagement for non-proficient users. Additionally, technical limitations in webometric tools may prevent a nuanced understanding of user behavior, such as the causes behind high bounce rates. Finally, privacy regulations (e.g., GDPR) may restrict data collection, leading to potential gaps in user demographic and interaction data. These factors must be considered when interpreting the study's results.

In conclusion, this study of the webometrics of the World Health Organization (WHO) website offers valuable insights into its digital impact and effectiveness. Using webometric and informetric methodologies, the analysis provides a comprehensive view of the WHO website's network-based communication and quantitative metrics. Key webometric techniques, such as link search commands, were applied to evaluate hyperlink counts and information retrieval, assessing the website's digital authority and visibility. Additionally, evaluating web accessibility and content quality helped us understand how widely the website is used and how effective it is at reaching its audience. By looking at the website's link structure and applying web validity hypotheses, we gained a better understanding of how well the website connects with other sites and its overall trustworthiness. These findings offer a robust framework for assessing the WHO website's global impact and its effectiveness in disseminating health information.

6. ETHICAL CONSIDERATIONS AND RECOMMENDATIONS

While conducting the webometric analysis of the WHO website, ethical standards were strictly adhered to, particularly concerning the collection and use of visitor demographic data. All data was obtained from publicly accessible tools, ensuring compliance with privacy regulations. No personally identifiable information (PII) was collected, and any demographic data used was anonymized to protect user privacy. These precautions ensure transparency and confidentiality, reinforcing the integrity of the study.

Looking ahead, future research could benefit from comparative studies between the WHO website and those of other major health organizations such as the CDC, UNICEF, and the Pan American Health Organization (PAHO). These comparisons could uncover best practices and areas for improvement in global health communication strategies. Additionally, further investigation into the user engagement of older adults with health-related content could help optimize accessibility for this demographic. Finally, future studies could incorporate visual

tools, such as graphs, visitor trend timelines, and hyperlink network maps, to present data more intuitively and engage a broader audience.

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