Implementation of SEO on Dusun Nusantara Web-based Application as Tourism Promotion Media

Ahmad Akbar[1], *Indri Sulistianingsih[2], Fariz Harindra Syam[3], Bagus Kurniawan[4]

Address: Universitas Pembangunan Panca Budi, Program Studi Sistem Komputer, Indonesia[1,2,4], Universitas Pembangunan Panca Budi, Program Studi Arsitektur, Indonesia[3]

Email: akbarmuno@pancabudi.ac.id[1], indie@pancabudi.ac.id[2], farizharindrasyam@dosen.pancabudi.ac.id[3]

* Corresponding author

Abstract

This study explores the implementation of SEO on the Dusun Nusantara web-based application as a tourism promotion media. This implementation aims to increase the number of tourist visits to Desa Kota Pari by improving the website's ranking in search engines like Google. The study analyzes the Google Analytics data for the last 90 days to evaluate the effectiveness of SEO implementation. The results show that the implementation of SEO has successfully increased the number of users and sessions on the application, indicating an increase in user interest in visiting the application. However, the high bounce rate of 76.76% needs improvement. Despite this, the average session duration of 1 minute 29 seconds indicates that users are interested in exploring pages in the application. The study concludes that implementing SEO in the DusunNusantara.com application is an effective strategy for promoting tourism in the area. By utilizing a web-based application, managers can provide complete and accurate information about existing tourism in Desa Kota Pari and Pantai Cermin, which can expand the reach of tourism promotion and increase the number of tourists visiting Desa Kota Pari. However, it is essential to improve the application's content to make it more exciting and relevant and to provide a more engaging and interactive experience to the app to increase visitor session duration. Thus, implementing SEO in the Dusun Nusantara application can be an effective strategy for promoting tourism and increasing tourist visits to the area.

Keywords – *SEO, Tourism, Promotion Media, Dusun Nusantara, Desa Kota Pari*

1. Introduction

Tourism has become one of the major contributors to the global economy, providing employment and generating revenue for the countries[1]. The advancement of technology has brought tremendous changes to the way the tourism industry operates. The use of the internet as a promotional tool has become an essential part of destination marketing. The development of web-based applications has provided an opportunity for tourism stakeholders to promote their destinations through online channels. However, the effectiveness of a website as a promotional tool depends on its visibility to the target audience[2]. Traditional tourism promotion media include brochures, billboards, posters, and print advertisements in newspapers and magazines. They are effective in reaching out to local communities and travelers who are not yet tech-savvy. However, their reach is limited, and they may not be able to convey the latest information about tourism products and services. On the other hand, digital tourism promotion media are internet-based channels, including websites, social media platforms, search engines, and email marketing[3]. They provide tourism stakeholders with a broader and more diverse audience, including global travelers. Digital media also allow for more interactive, personalized, and up-to-date content that can be tailored to the needs and preferences of individual users[4].

Search Engine Optimization (SEO) is a widely used technique in improving the visibility of websites on

search engines[5]. It involves the optimization of website content to increase its ranking on search engine results pages [6]. The use of SEO in the development of web-based applications for tourism promotion has become essential for increasing the visibility of websites to potential visitors. Search Engine Optimization (SEO) is a digital marketing strategy [7] used by tourism stakeholders to improve the visibility and ranking of their websites on search engines. SEO involves optimizing website content and structure, using relevant keywords, building high-quality backlinks, and following search engine guidelines. By doing so, tourism stakeholders can increase their website traffic, enhance user engagement, and ultimately generate more bookings and revenue[8].

This research aims to provide a solution for tourism development in the coastal village of Pari Kota, particularly for the Dusun Nusantara community, through the development of a web-based application as a tourism promotion media. The application will use SEO techniques [9] to improve its visibility on search engine results pages, making it easier for potential visitors to find the website. The research framework for this study will comprise three main stages: the development of the web-based application, the implementation of SEO techniques, and the evaluation of the application's effectiveness in promoting tourism in Kota Pari Village.

The study will focus on the Dusun Nusantara community and its tourism products to determine the effectiveness of the developed application in promoting their destinations. The findings of this study are expected to contribute to the development of the tourism industry in Pari Kota and other coastal villages by providing a solution for destination promotion through online channels.

2. Research Method

White hat SEO refers to ethical and legitimate techniques that follow search engine guidelines and aim to improve the ranking and visibility of a website in search engine results pages (SERPs). White hat SEO methods prioritize user experience and content quality, and do not involve any deceptive or manipulative tactics that could harm the website's reputation or ranking in the long term[10].
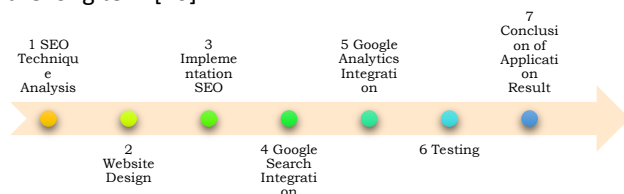

Figure 1. Research Method Flow

The research method for the study would involve the following:

a. SEO Technique Analysis: Conducting an analysis of the SEO techniques currently being used on the Dusun Nusantara web-based application. This would involve identifying keywords, optimizing content, improving website structure, and other techniques that could improve the website's visibility and ranking on search engine results pages (SERPs).

b. Website Design: Analyzing the design of the Dusun Nusantara web-based application, including its layout, color scheme, typography, and overall user experience. This would involve conducting usability testing to identify areas where the website can be improved to enhance user engagement and satisfaction.

c. Implementation of SEO: Implementing SEO techniques on the Dusun Nusantara web-based application to improve its visibility and ranking on SERPs. This would involve making changes to the website's content, structure, and design to optimize it for search engines.

d. Google Search Integration: Integrating the Dusun Nusantara web-based application with Google Search to improve its visibility and ranking on SERPs. This would involve submitting the website's sitemap to Google, using Google Search Console to monitor website performance, and implementing other SEO strategies specific to Google

e. Google Analytics Integration: Integrating the Dusun Nusantara web-based application with Google Analytics to track and report website traffic. This would involve setting up Google Analytics on the website, configuring goals and conversion tracking, and using the data to improve the website's performance.

f. Testing: Conducting tests to evaluate the effectiveness of the SEO techniques and website design changes implemented on the Dusun Nusantara web-based application. This would involve conducting A/B testing to compare different versions of the website, testing different SEO strategies to see which ones work best, or conducting user testing to evaluate the website's usability.

g. Conclusion of Application Result: Analyzing the results of the research and drawing conclusions based on the findings. This would involve evaluating the effectiveness of different SEO techniques and website design changes, identifying areas where the website can be improved further, and making recommendations for future research or improvements to the website.

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3. Result and Discussions

a. Overview of Dusun Nusantara Web-based Application

Dusun Nusantara is a web-based application that aims to promote tourism in the village of Kota Pari Pantai Cermin, North Sumatra, Indonesia. The application was developed to provide information about tourist destinations, accommodations, and activities in the area. It also allows users to make reservations and plan their trips. The Dusun Nusantara web-based application was developed using the Wordpress CMS, PHP framework and MySQL database. The front-end of the application was designed using HTML, CSS, and JavaScript, while the back-end was developed using PHP.

The application consists of several features, including a home page, a destination page, an accommodation page, an activity page, and a reservation page. The home page provides an overview of the tourist attractions and activities available in the area, while the destination page provides detailed information about each tourist spot, including its location, description, and photos. The accommodation page provides information about available accommodations in the area, including hotels, guesthouses, and homestays. The activity page provides information about activities that can be done in the area, such as hiking, fishing, and sightseeing. Finally, the reservation page allows users to make reservations for accommodations and activities in the area. Overall, the Dusun Nusantara web-based application is designed to provide users with a comprehensive guide to the tourist attractions and activities in the village of Kota Pari Pantai Cermin.

b. Website

As an admin of the dusunnusantara.com website built using WordPress CMS, perform various tasks to manage the site. Here are some featured of the website for admin:

1) Adding and editing content: As an admin, you can add new pages, posts, and media to the website. You can also edit existing content to keep it updated and relevant.
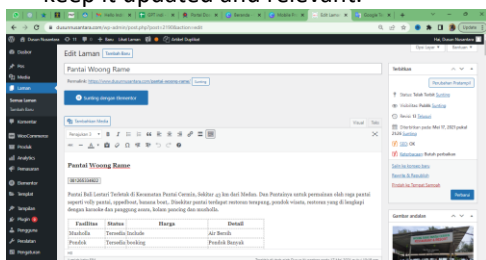

Figure 2. Adding and Editing Content

2) Managing users: You can manage user roles and permissions, add or delete users, and control their access to different areas of the website.
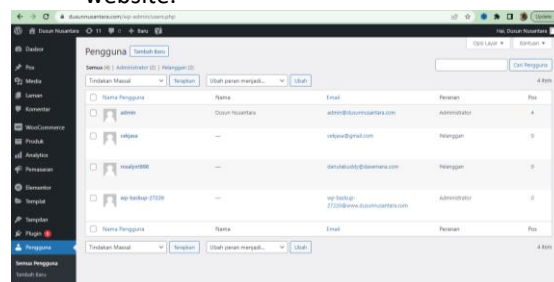

Figure 3. Users Management

3) Customizing the website: WordPress CMS allows users to customize the website's appearance and functionality. You can install and activate themes and plugins, configure settings, and add custom code.

Figure 4. Customizing the Website

4) Analyzing website performance: use tools like Google Analytics to track website traffic, user behavior, and other important metrics. This data can help Users make informed decisions about improving the website's performance.
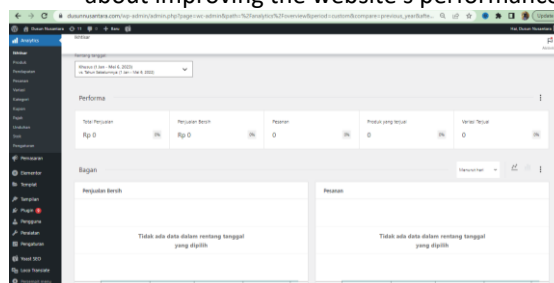

Figure 5. Analytic Featured

5) Maintaining website security: Users can install security plugins, update WordPress and its plugins, and monitor the website for any security threats.

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c. Implementation of Search Engine Optimization (SEO)

The implementation of White Hat SEO strategy involves a systematic and well-planned approach to achieve optimal results. The initial stages of research preparation involve analyzing website design, implementing White Hat SEO approaches, integrating with Google Search Engine and Google Analytics[11], testing, and drawing conclusions based on the implementation outcomes. The planning phases for applying White Hat SEO strategies to websites are illustrated in Figure 2 and described below.
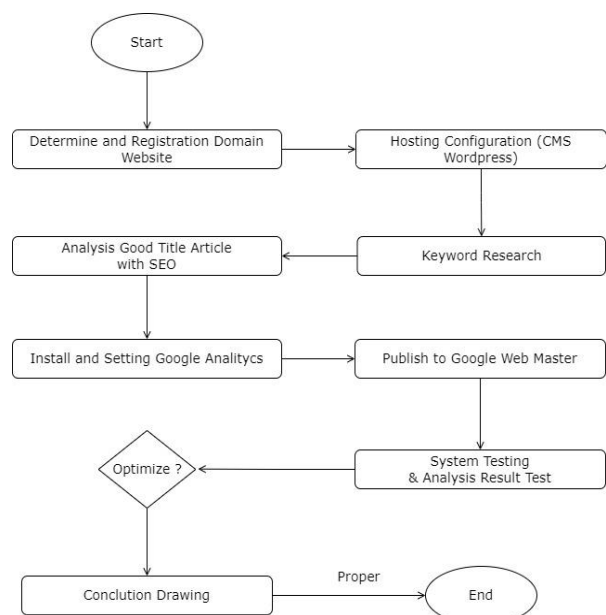

Figure 6. Flowchart of White Hat SEO Implementation Stages

Figure 7 shows a flowchart that outlines the planning process of White Hat SEO, which begins with registering a domain with Google and concludes with decision-making. The system runs until the stage is successfully completed or functions as anticipated. In case the results are not satisfactory, the process goes back to the initial step, which involves registering a domain with Google. The acronym SERP refers to the Search Engine Result Page that displays top keywords from search engines like Google, Bing, Yahoo, and so on. The SERP's objective is to evaluate the caliber of our website or blog, with a higher quality website or blog attaining a higher position in search engine results (SERP).
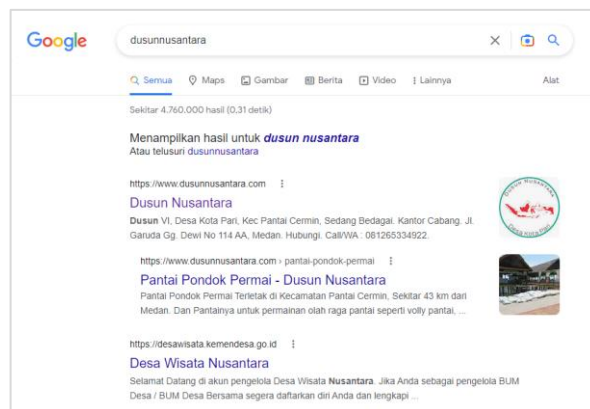

Figure 7. SERP display after SEO is applied

1) Keyword Reseacrh

By doing the following, the appropriate keywords [12] for the website can be determined and maximize traffic and conversion. Here are some ways to determine keywords, such as:

- Relevant Keyword Analysis: identify relevant keywords that fit the website topic.
- Analyze Competitor Keywords: see what keywords Userswebsite competitors are using to attract traffic.
- Use Keyword Research Tools: some tools like Google Keyword Planner, SEMrush, and Ahrefs can help Users find potential keywords.
- Use Long-Tail Keywords: focus on long-tail keywords as they are easier to achieve and more targeted.
- Connect with The Audience: make sure the keywords that choose meet the needs and questions of the target audience.

d. Website Crawling Results on the Google Search Engine

Web scraping or web crawling refers to the procedure of automatic extraction of data from websites using software. It is a process that is particularly important in fields such as Business [13]. This following SERP display after SEO is applied.
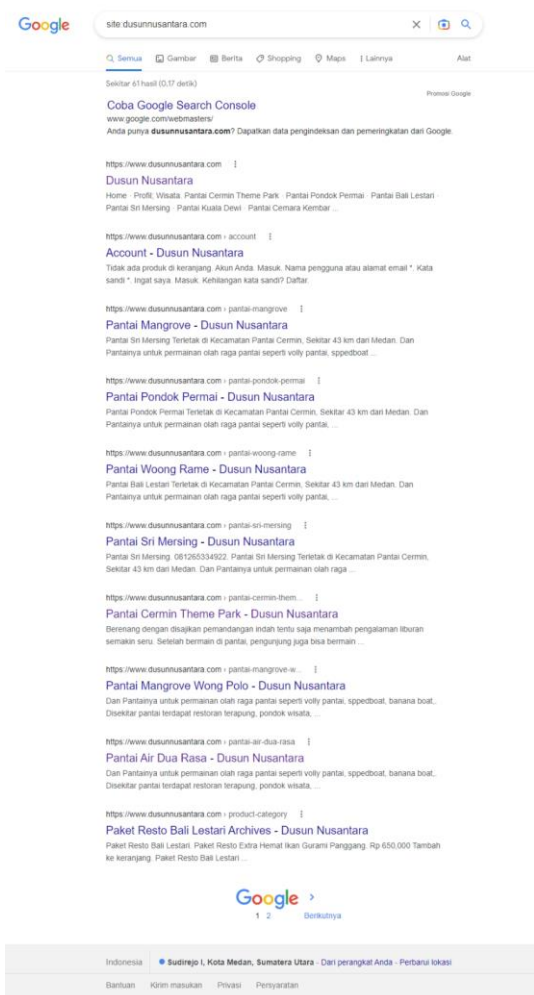
Figure 8. SERP display after SEO is applied

e. Analysis of SEO Effectiveness

The analysis of the effectiveness of SEO in promoting Dusun Nusantara as a tourism destination was conducted by evaluating the website's performance on search engine results pages (SERPs). The following key performance indicators were monitored and analyzed:

a. Keyword ranking: The ranking of targeted keywords related to Dusun Nusantara on major search engines such as Google was monitored[4].

b. Traffic: The number of visitors to the Dusun Nusantara website was tracked to measure the impact of the SEO strategy.

c. Click-through rate (CTR): The percentage of users who clicked on the website link on the SERP was calculated to evaluate the effectiveness of the meta description and title tags[14].

d. Bounce rate: The percentage of users who left the website after viewing only one page was

analyzed to determine the relevance and user-friendliness of the website[15].

Google Analytics uses a simple formula to calculate the bounce rate or bounce rate, by dividing the number of visits that only view one page (bounce) by the total number of visits to the website. Mathematically, the formula for calculating the bounce ratio is as follows:

$$Bounce\ Rate = \frac{Number\ of\ Visits\ Viewing\ Only\ One\ Page}{Total\ Number\ of\ Visits} \quad (1)$$

The number of visits that only view one page is usually calculated based on the duration of the visit, if the duration of the visit is less than 30 seconds then it is considered as viewing only one page. Google Analytics also provides information about which pages are landing pages and have high bounce rates. This can help website owners identify problems with the page and fix them.

Google Analytics can be used to determine the growth of website traffic [16], Based on the results of Google Analytics for the last 90 days, it can be concluded that the implementation of SEO on the Dusun Nusantara web-based application has succeeded in increasing the number of users and sessions on the application. During this period, the number of users reached 2,300 people and the number of sessions reached 2,900, indicating an increase in user interest in visiting the application. Although the bounce rate of 76.76% is quite high, the average session duration of 1 minute 29 seconds indicates that users are interested in exploring pages in the application.
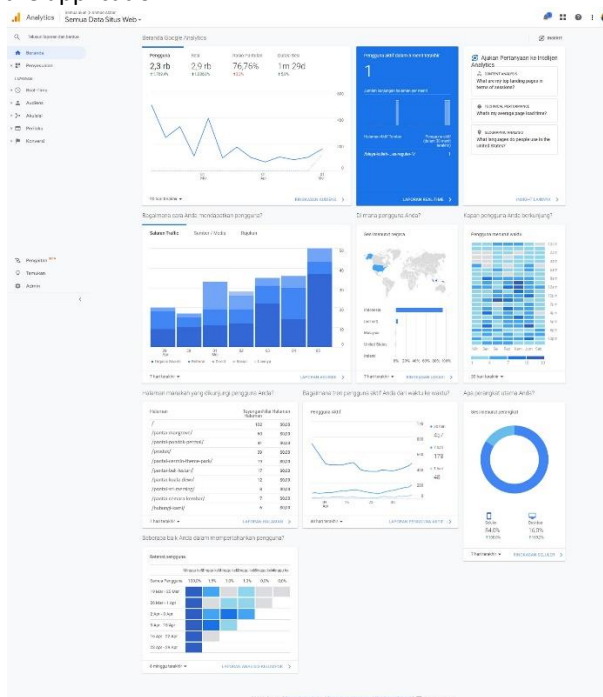

Figure 9. Google Analytics

4. Conclusion

Based on the results of Google Analytics for the last 90 days, it can be concluded that the implementation of SEO on the Dusun Nusantara web-based application has succeeded in increasing the number of users and sessions on the application. During this period, the number of users reached 2,300 people and the number of sessions reached 2,900, indicating an increase in user interest in visiting the application. Although the bounce rate of 76.76% is quite high, the average session duration of 1 minute 29 seconds indicates that users are interested in exploring pages in the application.

Dusun Nusantara web-based application utilizes SEO techniques to enhance tourism promotion. SEO (Search Engine Optimization) is a website optimization technique to get a better ranking on search results pages of search engines like Google. By implementing SEO techniques in the Dusun Nusantara application, it is hoped that it can increase the website's ranking in search engines so that it is easier for potential tourists to find it. This will expand the reach of tourism promotion and increase the number of tourist visits to Dusun Nusantara. In addition, by utilizing a web-based application, Dusun Nusantara managers can provide complete and accurate information about existing tourism in Dusun Nusantara, so that potential tourists can get a clear picture before making a visit. The web-based application also allows managers to update information easily and quickly. Thus, the use of SEO techniques in the Dusun Nusantara web-based application is very important to increase tourism promotion and optimize the use of information technology in the tourism sector.

This shows that the implementation of SEO in the Dusun Nusantara application is an effective strategy for promoting tourism in the area. However, to maintain visitor interest in the application, it is necessary to improve the bounce rate by improving the content to make it more interesting and relevant. In addition, efforts should also be made to increase visitor session duration by providing a more engaging and interactive experience to the app. Thus, the implementation of SEO in the Dusun Nusantara application can be an effective strategy in promoting tourism and increasing tourist visits to the area.

Acknowledgement

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