

# Apply the Search Engine Optimization (SEO) Method to determine Website Ranking on Search Engines



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## Abstract

*In today's digital age, the internet has become an essential tool for various activities, including business promotion. One effective way to promote your business online is by creating a website that offers useful information to visitors. However, simply having a website is not enough; it is crucial to ensure that your website ranks high on search engine results pages (SERPs) in order to attract more visitors. One of the most effective methods to optimize a website for search engines is through search engine optimization (SEO) techniques. These techniques aim to improve a website's visibility on SERPs by using various tactics, such as keyword research, content optimization, and link building. However, it is important to note that SEO optimization is not a one-time task but rather an ongoing process. It requires constant attention and effort to maintain high search engine rankings and ensure the continued success of your online business. By optimizing your website, you can improve its visibility on search engines, attract more visitors, and ultimately drive business growth. It is important to remain vigilant in implementing SEO techniques to maintain high search engine rankings and ensure the continued success of your online business.*

**Keywords:** Website, Search Engine, Search Engine Optimization (SEO).

## 1. Introduction

The advancement and sophistication of information technology has led to the emergence of various types of web sites as information providers. At this point, there are already many websites on the Internet. Traffic is an important factor that her website owner must consider, as the success of a website is usually largely determined by its traffic. The lack of visitors is certainly detrimental to those who make the site a business on the internet. According to a study by the Association of Indonesian Internet Service Providers (APJII), there were 88.1 million internet users in Indonesia in 2014. 68.7% of Internet users are searching for information [1]. Of course, this is a great opportunity to visit the website created by many visitors. According to a 2017 survey by the Indonesian Association of Internet Service Providers APJII, 75.5% of the 13-18 year old population in Indonesia are active internet users.

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Implementing SEO techniques provides a solution so that your website can be easily recognized by data search engines and appear on the first page of search queries [2]. We implemented SEO measures on a mail-order site for small and medium-sized enterprises in Indonesia and verified the effects. He is one of the processes that SEO requires to increase sales. The culinary entrepreneur uses social media as a marketing strategy, using social media to select and update information across the web. , cater to buyers, enhance quality and price. This shows that SEO can be used to boost the reputation of MSME products. Many sources can bring traffic to your website [3], one of which is search engines. Information seekers typically enter the keywords they are looking for through search engines. Therefore, to increase your chances of generating traffic, make sure your website is sufficiently indexed by search engines so that you are more likely to appear on page 1 or 2 of a search engine results page (SERP). To make your website easily discoverable by search engines, you need to use search engine optimization (SEO) techniques [4].

Based on these things, it provides a way for your website or blog to appear higher in Google search results and bring in more visitor traffic. This is the answer for web or blog owners which created the concept. Against the background of the problem above, the problem can be formulated as follows.

How can your website or blog rank first in Google's search results and attract more traffic? The purpose of implementing SEO techniques on your weblog or blog is to give your blog a better position in search engines. Giving, that is, being the top of the first page in Google SERP, thereby maximizing the power of implementing on-page SEO methods. Apart from that, you can also prove that his SEO techniques applied work and work well [5].

## **2. Literature Review**

### **2.1 Internet**

The internet, also known as interconnected networking, is a global system that connects all computer networks that use the Transmission Control Protocol/Internet Protocol (TCP/IP) communication protocol standard. So that each user whose computer is connected to the internet can mutually access the services provided by other computers, such as data, photos, video, and sound exchange, which can be done directly according to [6].

### **2.2 Web**

The World Wide Web (WWW) or Web is one of many services available on the Internet. This service is most widely used on the Internet for transmitting information as it supports multimedia. It means conveying information not only by text, but also by images, videos, sounds, etc. In terminology, a website is a collection of pages on a website, usually grouped into domains or subdomains, on the World Wide Web on the Internet. A homepage is the home page of his website containing text, images, or information in a particular format determined by the owner of the website. The home page can also contain page nodes or a table of contents for your website pages. Potential visitors can visit her website directly or indirectly. For direct access, visitors are usually directed to the home page. For indirect access, such as by a search engine, the visitor is taken to her second page containing the keywords entered from the search engine [7].

A homepage is the page of a website that is automatically displayed when you open your browser for the first time. Of course, it will save you time if you visit certain websites frequently. Hypertext Transfer Protocol (HTTP) is a protocol used on the Internet, defined in several Requests For Comments. HTTP has seen some improvements from its first version, HTTP 0.9, to its latest version, 1.1. HTTP is an application layer protocol used for distribution and collaboration in hypermedia information systems. HTTP allows you to view HTML documents through your web browser application by sending a request to a web server using the appropriate address or URL. A web server is a computer used to store web documents. This computer handles web document requests from clients. Web browsers such as Explorer and Navigator use HTTP to communicate with web servers over networks (including the Internet). A browser sends a request to a server, requesting specific documents and services provided by

the server. Examples of web servers such as Apache, IIS (Internet Information Services), PWS (Personal Web Server) [8].

### **2.3 Search Engine**

Search engines are websites designed to search various sources of information on the World Wide Web (WWW), File Transfer Protocol (FTP), and mailing list services. The search results show a lot of informational data from his website as the source of the information. Search engines are special websites on the Internet designed to help people find information stored on other website pages. Although there are differences in the behavior of the various search engines available on the web [9], basically each search engine has three main tasks. Search engines crawl the Internet or scan parts of the Internet looking for important words. The search engine tracks an index of found words and where searches are found a search engine that allows users to search for words and phrases found in this index [10].

### **2.4 Search Engine Optimization**

Search Engine Optimization (SEO) is an effort to popularize websites for free by employing particular tactics to boost site performance on popular search engine results pages. Search Engine Optimization should include two methods:

1. On-page search engine optimization is something you can change on your website. That is:
  - a) Title tags
  - b) Header tags
  - c) Bold, italicized, underlined letters.
  - d) Alt image tags
  - e) Meta Tags (keywords, description),
2. Off Page search engine optimization is optimization of related websites (give links) to your website [11]. For example:
  - a) Use of 'Anchor text' in links
  - b) The title of the page where the link to your website is located
  - c) The 'page rank' of the page where the link to your website is located
  - d) The "theme" of the website that links to your website.

Other factors that affect SEO, namely:

1. Maintain a good site layout
2. Customer satisfaction
3. Marketing / Marketing through Impressions / comments
4. Ease of Access

Onpage SEO is doing optimization on the web by modifying the settings of certain parts of the web which will later affect the website's evaluation on search engines. These settings can be like determining title tags, meta keywords, meta descriptions, and making quality articles [12].

## **3. Research methods**

The system development method adopts the line sequential method (waterfall method) [13]. A description of the phases conducted in this study is as follows:

- a. Analysis  
At this stage, the necessary analysis is carried out in the implementation of creating an SEO plugin application for WordPress.
- b. Design  
The translation stage of the analyzed data into a form that is easy for users to understand, including making SEO applications, and building websites that contain SEO.
- c. Coding  
The system design that has been made will be implemented in the form of a coding

- program using the PHP programming language.
- d. Testing  
At this stage, trials and evaluation of the system will be carried out via a local server. If the system is running well then it will be implemented on website hosting.
  - e. Maintenance  
At this stage, improvements will be made if the system is not running properly or an error occurs under certain conditions [14].



Figure 1. SEO

## 4. Results and Discussion

### 4.1 System Analysis

Before starting to create a system, first perform an analysis of the system to be created, what to do when designing an SEO system. Its purpose is to determine what needs to be done to solve existing problems [15]. There are many factors that prevent a website from ranking in search engines. Here's a rundown of the important things website owners should do:

- a. Website owners must do on page optimization such as setting up the home page title, meta description, and meta keywords. Doing this setting will make the website more structured and easier for Google to translate [16].
- b. Article optimization is a must. Article page optimization is almost the same as homepage optimization. The optimizations performed affect titles, descriptions, and keywords.
- c. To get the best rankings on search engines, you need to do proper keyword research and match what people typically type into search engines.
- d. To win in tough competition, you should do off page optimization. The points above are the problems to be solved in this study. Through that system

If this is made, it will make it much easier for website owners to understand and simplify the SEO process [17].

## 4.2 Analysis Solutions

### 1. Algoritma Google

Google is not the only website search engine in the world. The competition from search engines such as Yahoo, Yandex and Bing is also very fierce. That's why Google is constantly updating its algorithms to compete for the better. Another goal is the satisfaction of information seekers. Google is constantly updating its algorithms to make sure the information you're looking for is more relevant and matches the keywords you enter. Search engine systems incorporate algorithms that process and analyze data on each website page, including domain name, title, keywords and content. Through this process, Google determines a website's ranking on search engine pages. Until now, most webmasters thought that in order to win on Google's first page, they had to use his old-fashioned SEO techniques that they thought were good for SEO. This is what drives Google to change its algorithm to be more human friendly. This is intended to make the information you search for more relevant to what you are looking for. In this day and age, Google based search rankings on human behavior. Google wants to turn human behavior into data to use for ranking in search engines. For example, high-quality articles are read longer and recommended to readers. Before discussing the stages of website optimization solutions, researchers want to display a schematic of the stages that website owners need to understand before optimizing [18].

### 2. Keyword Research

Researching the right keywords is the most important aspect of website optimization. Choosing the wrong keywords can result in low traffic to the website. Therefore, the success of a website depends greatly on the process of keyword research. Before conducting proper keyword research, it is important to understand the various types of keywords that exist [19].

#### a. Short tail keyword

Short tail keyword is a keyword that consists of only two or three words. Examples include destination, culture, culture of Tangerang, and traveling. This type of keyword has a very competitive level of competition. Winning the competition in this keyword requires a long time and also requires excellent SEO optimization.

#### b. Long tail keyword

Long tail keyword is a keyword that has longer words than short tail keyword. This type of keyword can also be said as a derivative keyword from the main keyword or short tail keyword. For Example, tourism in Tangerang, how many cultures, the best destination, and relaxing place. For a new website, long tail keywords are the right choice to attract visitors from search engines. This type of keyword has a moderate level of competition so that a newly created website can get the best ranking on search engines.

#### c. Eternal keywords

The keyword "eternal" is an ageless keyword, from time to time people always type this keyword in search engines. For example, how to use T-Smart, tourism's review. This keyword is an ageless keyword, every time this keyword will always be typed by someone who wants to find the information they want.

#### d. Seasonal keywords or trending keywords

Seasonal keyword is a temporary keyword that is not always searched for by information seekers. This keyword is usually something that is popular or information that is trending. For example, the results of the motor GP race or the results of the real Madrid vs Barcelona match.

This keyword usually only brings in a lot of visitors when it is trending and lasts for 2 to 3 days at most. After understanding the types of keywords above, it's time to start researching the right keywords. To conduct keyword research, you can use Google's tool called Google Adword Keyword Planner.

There are also several other applications that can be used such as Ubersuggest and Keywordtool. Here are the steps for good keyword research:

1. Search for the main keyword  
Before conducting keyword research, it is advisable to choose the main topic of the website that is being created, and the determination of the website topic is related to the main keywords of a website. After finding the main keyword, the next step is to determine other keywords, also known as derivative keywords from the main keyword. For example, the main keywords for a website with a topic on printing are: printing, t-shirt, digital printing, clothing manufacturing, and Korean drama.
2. Looking for keywords derived from the main keyword  
After determining the main keyword, the next step is to search for its derivatives. The tool used to find derivative keywords is [ubersuggest.io](https://ubersuggest.io). Type in the main keyword that is related to the website topic and then get suggested derivative keywords from [ubersuggest.io](https://ubersuggest.io).
3. Analyze keywords  
After obtaining the derivative keyword, the next step is to analyze the keyword on the search engine in order to determine the search volume of the keyword on the search engine. The application used to analyze this keyword is Google AdWords Keyword Planner, which is provided for free by Google. Select the Get search volume data and trends menu, then upload the derivative keyword file that has been researched from [ubersuggest.io](https://ubersuggest.io). After that, click the Get search volume button which will redirect you to the Google search engine keyword analysis page. From the image above, it can provide information on how many targeted keywords are searched or typed on the search engine. From this data, the keyword "sablon kaos" is searched for around 5,400 people every month.
4. Analysis of the level of competition  
The last step that needs to be done is to see the level of keyword competition in search engines. The application needed to analyze this is a browser extension, SEOQuake is useful for viewing Alexa rank, PageRank, domain age, and other extensions are MozBar tools that are useful for viewing backlinks, page authority (PA), and domain authority (DA). From the picture above, it can be concluded the level of competition for the targeted keywords.

#### **4.3 On-Page Search Engine Optimization**

The initial step that website owners need to take is to perform on-page SEO optimization. On-page optimization involves optimizing the website structure to be well-organized [20], which will make it easier for Google to read. Here are the steps to perform on-page SEO optimization:

- a. Home Page Title Tag  
The Home Page Title Tag is the first set of words that a search engine robot reads. It also serves as the primary keyword and the main title of a website. An example of a Home Page Title Tag is "tourism and culture"
- b. Meta Description  
Meta description is a description that explains the title tag that has been created earlier. Optimizing meta description is highly favored by Google, but besides that, optimizing meta description can also attract the attention of information seekers to visit the website. An example of meta description is: "smart-t.alphabetincubator.id is a website that shares information about tourism and culture. and more."
- c. Meta Keyword  
Meta Keyword is the main keywords that represent the website's topic. Optimizing these meta keywords can also help search engines interpret the website's keywords, which can have an impact on the ranking on the SERP. Example of meta keyword: "Culture, Destination, Tangerang"
- d. Performing URL Optimization  
URL optimization, or link optimization, is just as important in achieving the best ranking in search engines. Search engines will better understand the intended keywords if website owners perform good URL optimization. The website's URL plays an important role in the website optimization process because the URL strengthens the website's

topic. It is best for the website's URL to contain targeted keywords. An example of a good URL is "https://smart-t.alphabetincubator.id". This setting can be done on the settings page in WordPress by selecting the permalinks menu and choosing the post name option

Figure 2. Setting Permalinks

#### 4.4 Creating Optimized Content

The better the article and the more beneficial it is, the greater the chance of appearing on the front page of the search engine. Here are the important elements that need to be present in a good and high-quality article [21].

- a. Create a catchy title  
The title is the main spearhead for a website because a good title can attract the attention of information seekers to click on the website in search engines.
- b. Write complete articles  
Writing a complete article is something that website owners must do. Information seekers will certainly be very helpful if an article is able to explain well and completely what they are looking for, so they don't need to search for information on other websites. Quality articles usually have a minimum of 1000 words, long articles will certainly make the article become quality and provide good benefits. However, not all long articles are necessarily of high quality.
- c. Use pictures to explain the content of the article  
A good article should have a combination of words, images, and videos that can fully explain the topic being discussed. The presence of images that can explain the purpose of the discussion topic will make information seekers feel helped and will be willing to read the article for a longer time. To obtain a better ranking in search engines, it is even better to optimize images by saving them according to the targeted keywords.
- d. Use videos if needed  
The presence of a video in an article will enhance its quality. A suitable video will provide more information and provide comfort to visitors who read the article

#### 4.5 Optimasi Search Engine Off Page

Off-page SEO optimization is an optimization effort conducted outside of the website. In highly competitive keyword searches, on-page SEO optimization alone is not enough, and off-page SEO optimization is needed to compete with other websites. Google has a bot that works by visiting websites from links listed on each website page. Google bots use links as their navigation, and websites with many high-quality external links are prioritized by the bot. Website owners need to find high-quality external links.

One good example of an external link or backlink is social media. Social media is one of the easiest ways to introduce a website to a large audience. The more popular the website is on social media, the greater its impact on search engine rankings. Therefore, a good website should promote itself on social media [22].

Off-page SEO can be considered a popularity game for a website. Google uses several factors to evaluate the popularity of a website.

1. Quality Backlinks

In determining high-quality backlinks, Google has strict evaluation criteria. Quality backlinks have a significant impact on search engine rankings compared to low-quality backlinks. The elements of high-quality backlinks can be summarized as follows:

- a. The reputation and activity of the website that provides a link to the owner's website.
- b. Similarity of language and topic of discussion
- c. Placement of backlinks on the website

2. Using anchor text in backlinks

Anchor text is a keyword given a link. Google gives more evaluation if the backlink is created with anchor text. However, the use of repetitive anchor text in one article will no longer have a positive impact. Therefore, it is best to have one backlink anchor text in one article.

3. Active on social media

## 5. Conclusion

In conclusion, search engine optimization (SEO) is a critical tool for improving website ranking on search engines. By utilizing various SEO methods, website owners can optimize their websites to rank higher on search engine results pages (SERPs). This increased visibility can result in more traffic to the website, ultimately leading to business growth. The process of website optimization involves both on-page and off-page optimization strategies. On-page optimization involves optimizing website content, including keyword research and content optimization. Off-page optimization, on the other hand, focuses on improving the website's authority and credibility through link building.

In addition to the technical aspects of website optimization, the importance of quality content cannot be overstated. Websites with high-quality content are more likely to attract and retain visitors, resulting in increased traffic and improved search engine rankings. It is also important to note that SEO is an ongoing process that requires regular attention and effort. As search engine algorithms change and evolve, website owners must adapt their SEO strategies to remain competitive and maintain high rankings.

Overall, applying SEO methods is crucial for determining website ranking on search engines. By implementing effective SEO strategies, website owners can improve their website's visibility, attract more visitors, and ultimately achieve business success.

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