



# Implementation of Search Engine Optimization (SEO) in e-Commerce Website Using on Page SEO and off Page SEO

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## ABSTRACT

Implementation of Search Engine Optimization (SEO) is an important thing to do because the construction of a website alone is not enough to compete with similar websites that already exist so that there is a need for website optimization in order to compete with other similar websites because remembering that almost 62% of internet users are more choosing the top 20 search results SERP results and SEO is the right choice, using techniques on page SEO for optimization from within the website itself and off page SEO for optimization from outside the website so that it can help websites to be able to compete with other similar websites on the internet and improve the results of search engine results pages (SERP) so that with a predetermined targeted website the website will appear on the top page of the SERP and can improve website ranking and number of visitors and reach a wider market.

**Key words:** Search Engine Optimization (SEO), search engine results pages (SERP), e-commerce.

## 1. INTRODUCTION

Along with the easier access to the internet, this also has an impact on the number of internet users themselves. With the continued development of internet technology today, it has an influence on the ease of accessing information for the wider community.

According to the results of a survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2018, penetration of internet users in Indonesia was 64.8% or equivalent to 171.17 million inhabitants of Indonesia using the internet of the total Indonesian population of 264.16 million people [1].

Seeing this great opportunity, it is not impossible that an entrepreneur will start looking for ways that the products or services they offer can be seen and reached by internet users,

such as an entrepreneur in the Banyumas SS Sandal Shoes store, he began to build a website in order to market or promote his products to a wider range. But there are obstacles in achieving these goals, because the website that is built is a new website, the position or ranking of the website is in an unprofitable position or ranking. According to [2] achieving high rankings in search results is very important to attract traffic to the website and is the main driving force of search engine marketing efforts. However, achieving high rankings is very difficult because search engines do not release their ranking algorithms publicly or reveal information regarding the factors used in ranking. A profitable website is a website that has a high ranking in the Search Engine Results.

Pages (SERP) results because 62% of internet users are more interested in ranking 10 or 20 websites in the SERP results which means it is on pages 1 and 2, while the rest are as many 38% will see a website that is on the next page [3], so there is a need for optimization steps so that the website can compete with similar websites. By doing SEO optimization, the website will get high visibility in search results and search engines also make website content more accessible [4]. By using SEO as a website optimization effort, it can help the website tokosandalsepatuss.com to compete with other similar websites, the application of on page SEO is done to optimize from within the website itself, assisted with off page SEO optimization to get link or backlink relations so that it gets more attention from visitors. According to [5][6] the use of appropriate keywords on web pages is very important for indexing, retrieval and ranking or relevance that are ascribed to web pages by search engines. Website pages with keywords contained in three meta-headers (title fields, subject fields, and description fields) will achieve better visibility performance to improve website ranking[7][8].

The purpose of this research is to implement search engine optimization (SEO) to improve the results of search engine results pages (SERP) on the tokosandalsepatuss.com website so as to increase the ranking of these websites in search engine search results.

Based on the background description of the problem that has been outlined, the formulation of the problem in this research is how to implement search engine optimization (SEO) on the tokosandalsepatuss.com website to improve search engine results pages (SERP) rankings.

## 2. METHODS

In this study, researchers used the method of on page and off page SEO so that the ranking on the tokosandalsepatuss.com website can rise so that it gains the advantage of increased traffic and can compete with other similar websites that already exist on the internet, in this study conducted several stages- stages to support the implementation of SEO include: Identification of Problems, At this stage the identification of problems with the object is the website tokosandalsepatuss.com so that it can be indexed by search engines and in order to get a good ranking. Furthermore, data collection was carried out, in this data collection, researchers conducted a number of ways, namely through literature study, interviews and documentation so that the results of the data needed were maximally obtained[9][10].

The next stage is website development, this is the stage where researchers do website design using the PHP programming language and Code Igniter framework. In this development, researchers also pay attention to aspects of mobile friendly with the aim that the website can adjust the screen size of the device visitors of the website. After the website is built, the next step to implementing SEO is keyword research, which is the stage where researchers search for the right keywords so they can help in website optimization. Because the use of keywords is the main and core part of SEO implementation, determining the right keywords has a very important role in determining the success of SEO implementation[11].

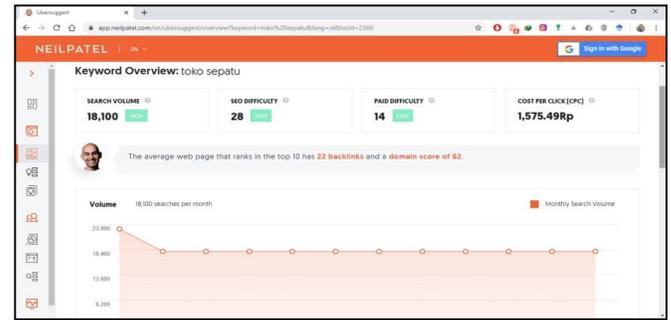
After doing keyword research, the next step is to pre-test the Search Engine Result Page (SERP). This stage is carried out as a basic reference for comparison results before and after the website is optimized. After the pre-test results are obtained the next stage is to implement SEO to the website, in this implementation is done with on page SEO techniques and off page SEO techniques. The last stage of this research is to re-test or post-test the SERP results after this stage is the stage where the test is carried out again to see the results after optimization to be compared with before optimization[12][13].

## 3. DISCUSSION AND COMMENTS

Implementation phase on page and off page SEO will be carried out in a structured and sequential manner so that we will get an easily known result, the stages of implementation carried out are:

### 3.1 Keyword Research

In conducting this keyword research the suggest website is used as a tool to find the target keywords of the suggestions given in figure 1.



**Figure 1:** Keyword Search

After conducting keyword research then further determine the target keywords as in table 1 below:

**Table 1:** Target Keywords

No.	Target Keywords
1	Toko Sandal Banyumas
2	Toko Sepatu Banyumas
3	Toko Sandal Sepatu Banyumas
4	Reparasi Sepatu Banyumas

### 3.2 Pre Test SERP

Pre-test is done to see what rank the website is in before optimizing it.

**Table 2:** Ranking SERP Website Tokosandalsepatuss.Com Before Optimization

Keyword	Position	Best	Update
Reparasi Sepatu Banyumas	40	40	28 Oct
Toko Sandal Banyumas	54	54	28 Oct
Toko Sandal Sepatu Banyumas	54	54	28 Oct
Toko Sepatu Banyumas	98	98	28 Oct

From the pre-test it can be seen that the SERP ranking of the tokosandalsepatuss.com website is still 40 and below and this is not profitable.

### 3.3 Implementation of On-page SEO

#### A. Title Tag Optimization

This optimization will manage the title of the web page by entering the target keywords, described figure 2.

```
<title>Toko Sandal dan Sepatu SS
Banyumas | Jual Berbagai jenis
Sandal dan Sepatu, serta
menerima jasa reparasi sepatu
murah</title>
```

**Figure 2:** Optimization of the Title Tag

#### B. Meta description optimization

Meta description is a piece of HTML attribute that displays a brief description of the contents of a web page. In optimizing the Meta description the recommended sentence length is no less than 150 characters and no more than 160 characters, described figure 3.

```
<meta name="description"
content="Toko Sandal Sepatu SS, toko
sandal sepatu terdekat dan murah,
menawarkan berbagai produk dengan
harga murah dan menerima jasa
reparasi sepatu dan sandal.">
```

**Figure 3:** Optimization of Meta Description

**C. Meta Keyword Optimization**

Meta keywords are a piece of HTML attribute that contains keywords that have been determined, meta keywords can contain up to 2000 keywords but it is recommended that 100 to 500 keywords are considered sufficient. Described in figure 4

```
<meta name="description"
content="Toko Sandal Sepatu SS,
toko sandal sepatu terdekat dan
murah, menawarkan berbagai
produk dengan harga murah dan
menerima jasa reparasi sepatu dan
sandal.">
```

**Figure 4:** Optimization of Meta Keywords

**D. URL optimization**

URL or Uniform Resource Locator is a series of characters according to a certain format that is used as the address of a web page. A good or SEO friendly URL is a URL that is easily understood by humans. Such as described in figure 5.

```
<meta name="description"
content="Toko Sandal Sepatu SS, toko
sandal sepatu terdekat dan murah,
menawarkan berbagai produk dengan
harga murah dan menerima jasa
reparasi sepatu dan sandal.">
```

**Figure 5:** Optimization of Website URLs

**E. Add a Robots.txt file**

Robots.txt file is a file that is used as a warning to search engine robots to do what is listed in the robots.txt file, the command gives info to be able to index web directories or are not allowed to index certain directories of a web due to privacy concerns. For example the admin page (for those who use self hosting). Described in figure 6.

```
<meta name="description"
content="Toko Sandal Sepatu SS, toko
sandal sepatu terdekat dan murah,
menawarkan berbagai produk dengan
harga murah dan menerima jasa
reparasi sepatu dan sandal.">
```

**Figure 6:** File *Robots.txt*

**3.4 Off page SEO implementation**

**A. Backlinks**

In doing backlinks, the thing that needs to be considered is regarding the DA / PA ranking of the website that will be backlinked to the tokosandalsepatuss.com website (figure 7).



**Figure 7:** Target Website for Backlinks

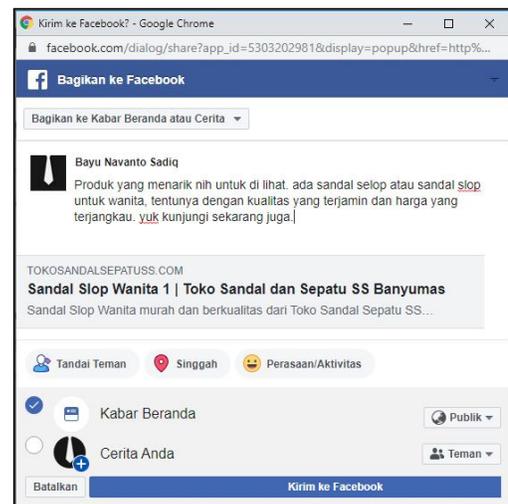
After determining the website that will be the next target is to do a backlink by commenting on the website so that it gets a URL that will link the website with the website tokosandalsepatuss.com (figure 8).



**Figure 8:** Backlink Comments

**B. Social Media Sharing**

Social media sharing is similar to the backlink that distinguishes that social media sharing is done on a social media as a place to put a link that is connected directly to the website tokosandalsepatuss.com, such as described in figure 9.



**Figure 9:** Sharing Content on Social Media

**3.5 Post SERP Test**

After implementing SEO on the website tokosandalsepatuss.com, the next step is to retest the SERP ranking from the tokosandalsepatuss.com website so that a result will be obtained whether the SEO implementation process has an effect on the ranking of the website or not.

**Table 3:** SERP Ranking Website tokosandalsepatuss.com after SEO Optimization

Keyword	Position	Best	Update
Reparasi Sepatu Banyumas	1	1	05 Dec
Toko Sandal Banyumas	3	3	05 Dec
Toko Sandal Sepatu banyumas	1	1	05 Dec
Toko Sepatu Banyumas	13	13	05 Dec

From the pre-test results found that from each of the target keywords get a significant ranking increase within a period of two months

#### 4. CONCLUSION

Based on the results of research on the implementation of search engine optimization (SEO) using on page SEO and off page SEO techniques, it can be concluded that it can be used to improve the ranking of search engine results pages (SERP) on the tokosandalsepatuss.com website with predetermined target keywords. Giving the effect of ranking improvement which was originally ranked 40th can gradually rise to rank 6 SERP results in a period of approximately two months. Based on the evaluation carried out, there are some suggestions that need to be considered, namely maximizing off page SEO techniques by increasing the number of quality backlinks and often doing social sharing so that website ranking becomes more robust and stable. In addition, the newly built website also needs further research on brand awareness so that internet users are expected to have more sensitivity to the website being built

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