Comparative Analysis Of On-Page And Off-Page White Hat Search Engine Optimization (SEO) Techniques On Website Popularity

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Abstract.
Currently, the use of Search Engine Optimization (SEO) has become a necessity to achieve better ranking results from Search Engines known as Search Engine Optimization, which is a collection of techniques for positioning a site so that it can be indexed by search engines and get a position in search engine results—result Pages (SERPs). Based on Globalstatistics data, there has been an increase in internet users in Indonesia who search for products through the search engine market, which has reached 97.38%. This study aims to increase the visibility of a website or multi-umah web page in search results to get a higher ranking on the SERPs in the search results. search results using white hat SEO by comparing on-page techniques and off-page techniques through descriptive qualitative methods, then analyzed using Google Search Console and Google Analytics tools to understand keyword performance, behavior, and customer interests on the umahmulti.biz.id website.

Keywords: Search Engine Optimation, Search engine Result Page, White Hat, Google Search Console and Google Analytics.

I.   INTRODUCTION

According to Datareportal, about 66.6% of internet users in Indonesia with parameters ranging from 16-64 years old often search for products through search engines. Search Engine Optimization (SEO) is a set of techniques that aim to position a website in search engine results or search engines in achieving visibility [1]. For any institution today, the use of SEO has become a necessity to achieve better ranking results from search engines known as Search Engine Optimization [2]. In addition, SEO is a collection of techniques for positioning a site so that it can be indexed by search engines and get a position in the results of Search Engine Result Pages (SERPs) [3].The website is one of the media for disseminating information to the wider community efficiently and up-to-date, because it is easily accessible using the internet and can be used as a promotional media for a product [4]. According to the Datareportal website, internet users in Indonesia are 202.6 million or around 73.7% of the total population in 2021. And around 41.6% were acquired from existing internet users, looking for products through the website.Website development aimed at improvement can complicate the level of competitiveness proportionally. Therefore, it is important to identify end-user search engines as the most effective tools [2]. It can be said that users spend most of the time visiting the preferred website even to the point of reading and viewing images, If a web developer wants to retain users, the website context and website loading time are important attributes, Search Engine Optimization (SEO) is directly correlated with page click rate and click frequency, because the more websites visited have an effect on the competition in terms of ranking [2].The use of SEO has become a necessity for any institution who wants to adapt in the digital era, this can be seen through searching through search engines with the highest ranking as a source of information for around 4.2 billion internet users who formulate about 4 billion Google searches every day with an average on average 51% of website traffic comes from direct browsing through the web[5].

Therefore, a good position on the search engine means being able to respond to the importance of user requests and also a high ranking as a reference agency and Google ranking is very important, because Google's search engine market share is 92.42% [6] Since June 2019 there has been a new paradigm where browser-based searches on Google without clicking on websites have generated more than half (50.3%)[7]. Furthermore Google responds to search queries, especially those from mobile devices, without clicking on any of the results. So it can be said that Google is trying to serve users through direct answers to every

question in the SERP which is a search result without going through a click that goes to Google's property, which has increased. According to Fishkin, Google's behavior has changed from being a search engine that showed searchers to websites to get answers to questions to become a machine that can provide solutions and answers to engine questions (Fishkin, 2018). Websites, which index and group other websites according to their keywords, description and content and make it easier and faster to reach the search results obtained by the sites, are called search engines. SEO "Search Engine Optimization" is one of the widely used techniques that provide a quickly accessible website (N. Yalçın, 2010).

Search Engine Optimization can also be said to be a process where someone can [1] make efforts to increase the visibility of a website or web page in search results [8] to increase the number of visitors on a particular website or page [9].Previous research on efforts to increase ranking or visibility in search engines such as google, effective yahoo search engine optimization aimed at increasing user interaction with websites focused on off-page SEO technique analysis will help to improve results in search engines [8]. According to [10] introduced a new technique at startup and reduced efforts for off site SEO by classifying keywords to get low competition and generate faster results and revenue. Website Optimization is about making important modifications to the parts of the website with proposed techniques for web page visibility i.e. in a better way than to see if it is working properly or not [11]. This study aims to make efforts to be indexed by search engines and get a position on the results of the Search Engine Result Pages (SERPs) using a comparison of White Hat Search Engine Optimization (SEO) analysis with on page and off page techniques.Umah Multi, which is a Micro, Small and Medium Enterprise (UMKM) engaged in digital printing services, graphic design and website creation, has a website with the domain umahmulti.biz.id as its marketing medium. But the website has not been indexed on search engines, because the website has not implemented SEO. So this research was conducted on the Umah Multi website for a comparison analysis of the influence of White Hat Search Engine Optimization (SEO) with on page and off page techniques. on the impact of the popularity of the Umah Multi website so that it can position the Umah Multi website so that it can be indexed by search engines and get a position on the results of the Search engine Result Pages (SERPs).

Search Engine Optimation (SEO)

Search engine optimization or what is known as SEO has different meanings in different people's judgments. But in that sense, SEO is about On page design strategies which are optimization in terms of the structure of the website itself such as the application of keywords in meta tags and associated with content, while Off Page includes the image of the website in the internet world such as link building to several trusted sites, so that it can increase traffic ranking of a website on search engines [3]. SEO has 2 different optimization methods, namely White hat SEO and Black hat SEO, where the implementation of the technique has the same thing but the emphasis is different. White hat SEO prioritizes search engine guidelines to be used as references such as strengthening keywords and quality content. While Black hat SEO has techniques that do not follow search engine guidelines such as strengthening link building but in an illegal way. This technique can be marked by search engines as fraudulent websites and will reduce the trust of search engines on the website [12]. Research on SEO is rarely conducted due to the lack of available data for important variables such as clicks on each link, the ever-changing complexity of ranking algorithms and the difficulty of measuring important variables such as the semantic relevance of website content [13]. An example of research identifying the most important SEO strategies undertaken [14] found that investments in quality and brand awareness increase organic traffic to websites both directly, by influencing consumer behavior in the SERPs, and indirectly by improve the ranking or prominence of links on SERPs and website authority, research finds content-related factors such as content relevance of titles and snippets as the most important factors in determining organic rankings in Google SERPs [15].

White Hat Technique

SEO techniques that conform to the guidelines set by the major search engines are generally called "white hat" while those that violate the guidelines are called "black hat". Sites that use black hat techniques can be penalized or banned by search engines. However, many of the tools and techniques used by black hat methods in optimizing efforts can also help in introducing SEO [16].Search Engine Optimization techniques

may not result in a sudden increase in the ranking of a website or web page but the effects may appear slowly. This white limit technique includes original content writing with high quality keywords [17], important meta html tags, heading tags, inbound links or internal links that help search engines to recognize website structure.On page is an optimization step from the web side itself. The optimization in question is optimizing web pages with keyword and key phrases density, keyword format, keyword placement in content, anchor text, performance and document meta tags [18]. It can be said on page is a step to adjust web page content and key phrases or keywords to be searched for.Off Page is the opposite of On page SEO optimization, which is optimization that is done from outside the website. What needs to be done is to focus on link building. Increase inbound links (links from other sites that point to the website). The more quality the link that leads to the website, the higher the website's ranking on search engines [18].

II.   METHODS

The research method applied is a descriptive qualitative approach with White hat SEO techniques applied to umahmulti.biz.id, namely on page and off page optimization, which will be described as follows:
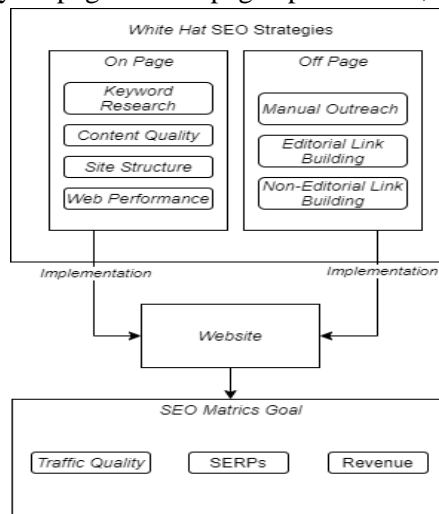

Fig 1. *White Hat* SEO *Strategies*

III.   RESULT AND DISCUSSION
Data Analysis
A.   On Page Optimation

The following is a description of the results of implementing on page optimization using the application of keywords in meta tags, sitemaps, and Google Search Console. By using the keyword site:umahmulti.biz.id to display the indexed pages of a site, it can be seen in Figure 2. The SERPs results show that the Umah Multi website has appeared on the Google search engine as shown in Figure 3 below:
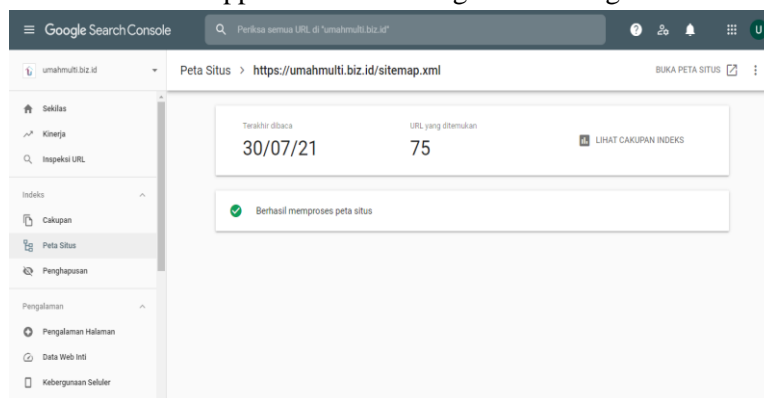

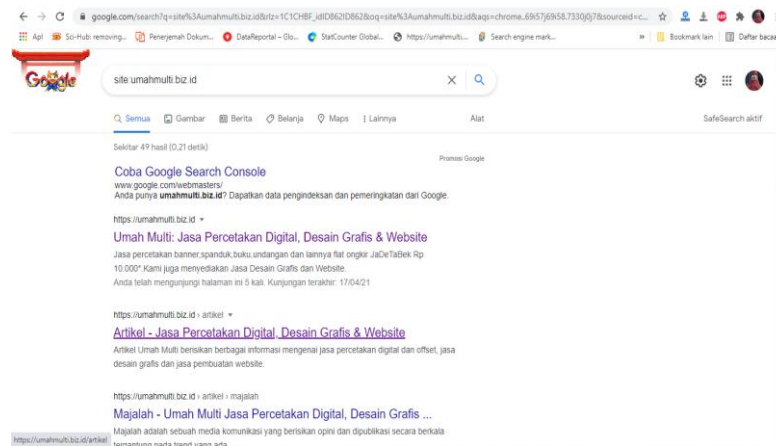**Fig 2.** The results of the successful upload of sitemaps on Google Search Console.

Fig 3.SERPs results on search engines.

Source: https://www.google.com/ accessed on July 26, 2022

Traffic data generated from the implementation of white hat SEO is then analyzed using Google Search Console and Google Analytics tools, to understand keyword performance, behavior and customer interest on the umahmulti.biz.id website.

Google Search Console

The following is a brief description of traffic based on keyword performance resulting from applying keywords to meta tags.
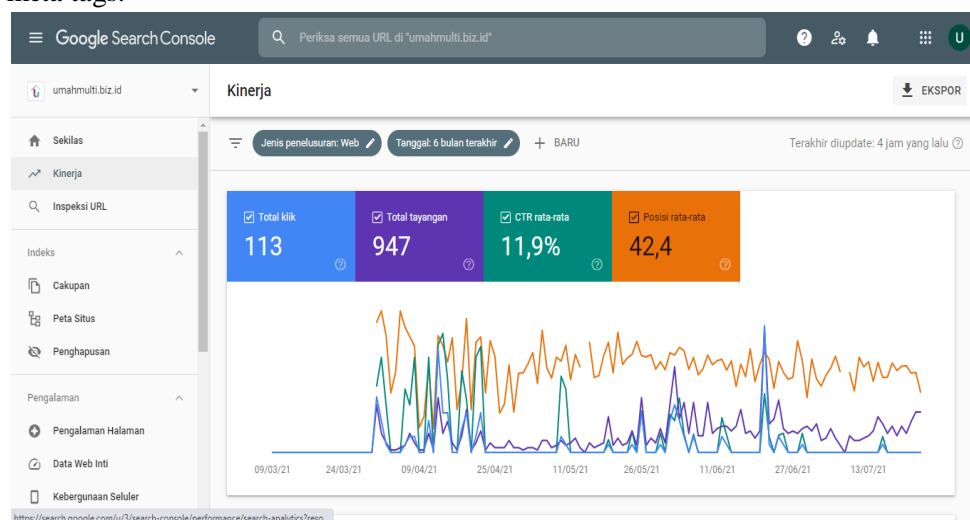

Fig 4. Google Search Console traffic graph on page optimization results

Source: https://search.google.com/ accessed on July 26 2022

Umahmulti.biz.id has a total of 113 clicks from a total of 947 impressions or about 11.9% of searchers with several queries relevant to keywords. Customers can make visits to the website because the average page rank on the SERPs is at position 42.4. The small percentage of visitors on the website is due to a lack of brand awareness regarding the Umah Multi brand which is not competitive with competing companies based on business age, business scale and website features such as payment services that have not been done virtually (Bahcecika et al., 2019).

B.   Off Page Optimation

The following is a discussion of the application of the umahmulti.biz.id off page website to test meta tags that have been implemented using social media such as Facebook, Twitter, Linkedin. The results of the application of the off page optimization technique were analyzed using google analytics which is described as follows.

Google Analytics

The following is a brief description of the analysis of user interests and behavior in finding the Umah Multi business using social media Facebook, Twitter, Linkedin. So that it can be determined which social media is suitable for product marketing.
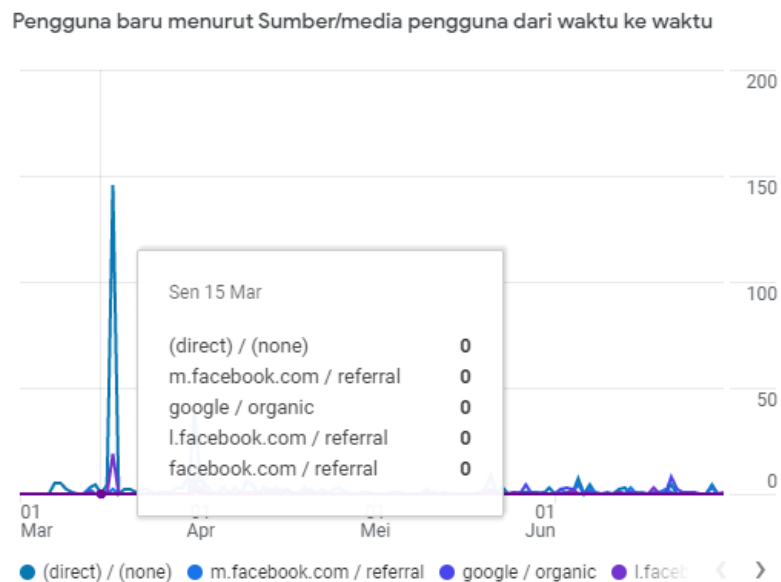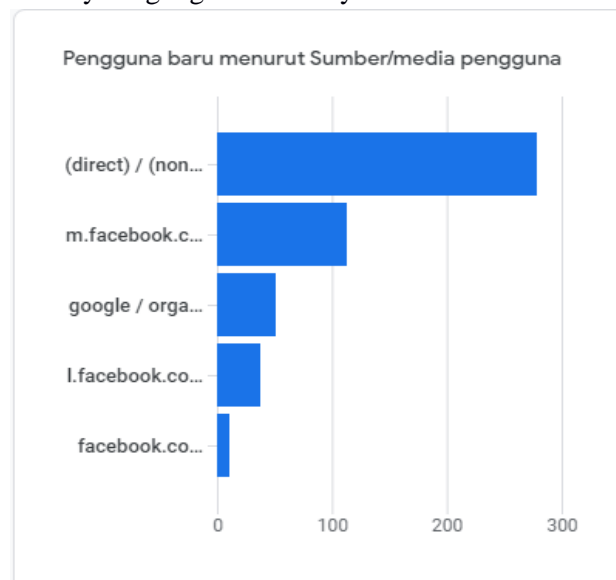
Fig 5. Google Analytics traffic graph.
Source: https://analytics.google.com/analytics/web/ accessed on July 26, 2022.

Fig 6. Graph of the top 5 sources / media that bring traffic to the umahmulti.biz.id website.
Source: https://analytics.google.com/analytics/web/ accessed on 27 July 2022.

     Based on the two line graphs above, it shows that the highest traffic activity from time to time comes from direct, which means direct access through the website address umah multi. Further traffic is accessed through social media, namely m.facebook.com, google/organic link, I.facebook.com and facebook.com. m.facebook.com/referral generated 112 active users with 120 sessions. User interest resulted in 88 engagement sessions with an average duration of engagement of 13 seconds and 0.79 engagement sessions per user, and has an engagement ratio of 73.33%. Then the generated events per session have a value of 4.76 for a total of 571 events.l.facebook.com/referral generates 40 active users with 71 sessions. User interest resulted in 39 engagement sessions with an average duration of engagement of 2 minutes and 0.98 sessions per user engagement, and has an engagement ratio of 54.93%. Then the generated events per session have a value of 16.44 for a total of 1167 events.Facebook.com/referrals generates 11 active users with 11 sessions. User interest resulted in 10 engagement sessions with an average duration of engagement of 12 seconds and 0.91 engagement sessions per user, and has an engagement ratio of 90.91%. Then the events generated per session have a value of 5.27 for a total of 58 events.

IV.   CONCLUSION

Based on the results of research on the application of white hat SEO on the Umah Multi website, it can be concluded that,

1) The Umah Multi website has appeared on Google search engine pages after implementing White Hat SEO, especially On Page optimization, having a total of 113 clicks from a total of 947 impressions or about 11.9% of searchers with several queries relevant to keywords. Customers can make visits to the website because the average page rank on the SERPs is at position 42.4. The small percentage of visitors on the website is due to a lack of brand awareness regarding the Umah Multi brand which is less competitive with competing companies based on business age.

2) The implementation of white hat with Off Page optimization can be seen based on google analytics traffic data, the highest traffic activity from time to time comes from direct, which means direct access through the umah multi website address, then traffic activities using social media and google, namely: m.facebook.com , google/organic link, I.facebook.com and facebook.com. From google analytics, it can be seen that the Off Page optimization is the highest activity in direct direct through the umah multi website so that this has a strong influence in marketing Umah Multi products. The next activity can be used other social media such as facebook, twitter and linked and from the results due to the quality of the traffic above it can be said that facebook has a very good average user, session, duration and engagement compared to other social media tested. This shows that Facebook users have an interest in the products marketed by Umah Multi. If you strengthen marketing with Facebook and get traffic that continues to increase and can also increase website rankings on search engines.

Suggestions

The implementation of white hat SEO on the Umah Multi website still has drawbacks due to limited organizational capabilities such as the absence of a physical office. This causes a lack of brand awareness to customers. On the other hand, there is one tool from Google, namely Google My Business which is able to increase SEO scores. Based on the experience of researchers in implementing White Hat SEO using Google My Business, it can have a big impact on maintaining the position of the SERPs. Some examples of websites that have been applied to White Hat SEO by researchers are destinationsindonesia.co.id, idhalalcenter.org, pt-tsa.com, pt-aep.com & adpboilerparts.com.

V.   ACKNOWLEDGMENTS

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