Implementing Website Design Based on Search Engine Optimization (SEO) Checklist to Increase Web Popularity

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ABSTRACT

One way to increase website popularity is by increasing the user's visit to the website. Search Engine Optimization is a popular concept to increase website popularity or page ranking of a website in search engine, but not many designers know on how to implement the concept so their website popularity could not be controlled. This research aims to create a template based on checklist created from SEO concept. Evaluation is done by comparing website page ranking that created based on this checklist and not. The result of this research is the website popularity ranking which implement SEO design is higher.

Keywords: *Search Engine Optimization; Website Template; Website Popularity*

1. Introduction

Nowadays business is increasingly growing with the development of technology. Digital marketing becomes a way that is considered to be the best solution to increase sales. Buyers no longer need to come to the store to buy needs, but simply by visiting the desired sales website. The more interesting a website the more people will visit the website.

Therefore, people want to find ways to increase the popularity of their website. Increasing popularity is known as Search Engine Optimization (SEO). Based on Alexa, google.com is the most popular search engine in the United States and in the world, and in 2011, it was the first web to reach a million monthly unique visitors. (Baye, M.R., 2015). This is the reason to use Google SEO as a tool to increase the popularity of the web site.

It is not easy to make a website become popular on the top of the Google search engine. There are more than 200 factors that google uses in its formula to generate search results pages. Laurea University of Applied Science researches 8 on-page optimization items and 4 off-page optimization items with the conclusion that SEO helps improve online visibility in search engines and they create handbooks containing the latest SEO techniques and strategies. (Deepak, B., 2017).

The method used in this research is by listing the 200 factors (Dean, B., 2016) on the internet, analyzing its aplicability, creating a checklist, applying it to a newly built web site, monitoring the progress of pagerank in google search engine and comparing it to other sites that do not implement SEO, then then analyze the results.

2. Methodology

The popularity of a web can be seen from the order number in which the web is at the top of search engine results. Therefore in this research will be compared two same web contains sentence a specified keyword, but the first web is conventional web without any special treatment while second web is newly built and applied concept of SEO. The different sequences in search engine results from both webs determine the success of the research.

This methodology can be seen in Figure 1. It starts from downloading the Brian Dean rankings (Dean, B., 2016) in text form which is then moved into Microsoft Excel so that it is ready to be processed into the next process, filtering. Every factor of the 200 factors that is analyzed it's applicability so that in the available time can be implemented into a new web. A specified keyword is prepared for input in the Google search engine. On the other hand, a blog inserted a sentence containing as if there was an offer to exchange the goods. A phrase "tukar barang bekas" is typed in the google search engine and views what are the ranking numbers generated by both web.
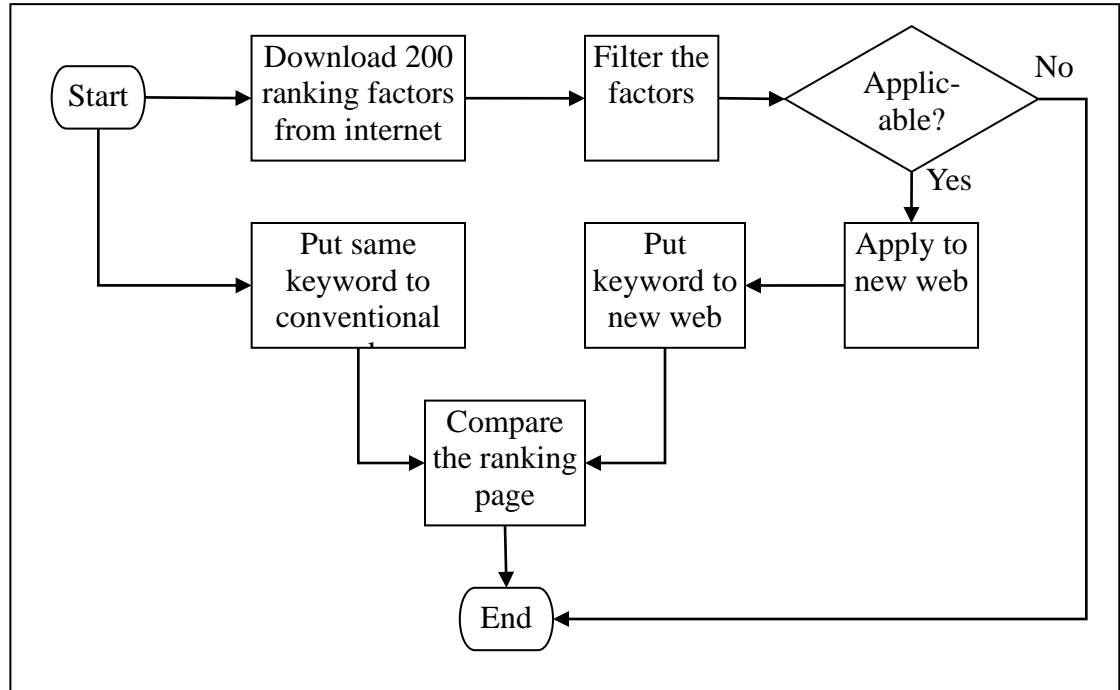
Figure 1. Methodology process flow

2.1. Ranking Factors

Ranking Factors obtained by doing a search on the Google search engine, the results is number of varied ranking factors. The most popular ranking factor list is the one obtained from Brian Dean (Dean, B., 2016) which consist of more than 200 factors. All those factors are constructed to increase a web page in a search engine for some reason, e.g. to increase a web popularity.

2.2. Filtering the factors

The reason for filtering here is because of the limited time of research, then selected the factors that can be implemented only. Three filters that will help ensure the completion of this research are in Table 1. Factors to be used here are eligible factors: requiring "Short" time, required "Low" cost and "No" external link.

Table 1. the three items to filter the factors.

No	Filter	Description	Reason
1	Time	The estimated time required to apply the factor: Short = maximum one month Long = more than one month	Because if not limited then it's application takes a long time until the deadline of the end of research.
2	Cost	The estimated cost required to appy the factor: Low = maximum Rp 100.000,- High = more than Rp 100.000,-	Because if not limited then its application requires a large cost that can not be fulfilled.
3	External link	Yes or No	Because if it is attached to an uncontrollable external party which, if not met, can hamper the research process.

2.3. Conventional web

Conventional web is a web that already existed and owned by researchers so that can be inserted any phrases for the purpose of this research. The Web is a blog that is not implemented by any deliberate SEO factor except the factors already included automatically by the framework it self. This blog is http://budiharto.net that is created using the WordPress framework.

2.4. New web site

All selected ranking factors are applied to new web sites from domain selection, creation of each page, creation of web site frameworks, etc. then placed on a hosting owned hosting provider and then accessible to all interested parties for the purpose of this research including by the Google search engine. The new web site is http://tukarbekas.com.

2.5. Insertion of specified keyword

The specified keywords in the research here are "Tukar Barang Bekas". This keyword is inserted at least once on each conventional and new web site. In the conventional web made as natural as possible as if the web owner accidentally wrote the keyword on the web. In this research, the keyword is inserted on an article page. While in the new web, keyword placement follows the selected ranking factors.

2.6. Comparison of Ranking Page

Comparison is the last process before the results of the study. Comparisons are done by typing the specified keyword on the Google search engine and compared the order number of search results between the two website. If http://tukarbekas.com has a lower order number it means that it has higher ranking than http://budiharto.net, thus the selected ranking factor application is successful, and this ranking factor list can be made into a checklist as a guide for web makers who wish to make a higher ranking factor.

2.7. Data collection

The research began on September 18, 2017 with theme selection up to the preparation of research methodology. In early October hosting is prepared and a domain is purchased up to designing a new web by applying a ranking factor which already selected. The development of both web ranking is then monitored periodically by opening google.co.id in the internet browser and capture the resulting image. As a comparison, also done by looking at the ranking generated by both web on serp-checker.online-domain-tools.com. This activity concludes at the end of 23 October where research papers should be ready to be submitted to eJAICT.

3. Result

After going through the process of filtering the 2.2 filtering the factors against the most popular 200 rankings, 55 ranks of factors ready to be applied to the http://tukarbekas.com stone website can be seen in Table 2. The first star symbol indicates that the implementation takes less than a month, the second star means that it does not require a significant cost or a maximum of Rp 100.000, -, the third star means no links to external parties that can impede implementation.

Table 2. The fifty five selected ranking factors.

Ranking Factors	Ranking Factors	Ranking Factors
1. Public vs private whois ★ ★ ★	20. Outbound link quality ★ ★ ★	39. Duplicate content on-site ★ ★ ★
2. Keyword in title tag ★ ★ ★	21. Outbound link theme ★ ★ ★	40. Breadcrumb navigation ★ ★ ★
3. Title tag starts with keyword ★ ★ ★	22. Grammar and spelling ★ ★ ★	41. Mobile optimized ★ ★ ★
4. Keyword in description tag ★ ★ ★	23. Number of outbound links ★ ★ ★	42. Youtube ★ ★ ★
5. Keyword appears in H1 tag ★ ★ ★	24. Multimedia ★ ★ ★	43. Site usability ★ ★ ★
6. Keyword is most frequently used phrase in document ★ ★ ★	25. Number of internal links pointing to page ★ ★ ★	44. Linking domain age ★ ★ ★
7. Latent semantic indexing keywords in content (LSI) ★ ★ ★	26. Broken links ★ ★ ★	45. Link title attribution ★ ★ ★
8. LSI keywords in title and description tags ★ ★ ★	27. Affiliate links ★ ★ ★	46. Link location in content ★ ★ ★
9. Page loading speed via html ★ ★ ★	28. URL length ★ ★ ★	47. Link location on page ★ ★ ★
10. Duplicate content ★ ★ ★	29. Page category ★ ★ ★	48. Linking domain relevancy ★ ★ ★
11. Rel=canonical ★ ★ ★	30. Too many outound links ★ ★ ★	49. Page level relevancy ★ ★ ★
12. Page loading speed via Chrome ★ ★ ★	31. User friendly layout ★ ★ ★	50. Linked to as Wikipedia source ★ ★ ★
13. Image optimization ★ ★ ★	32. Parked domains ★ ★ ★	51. Word count of linking content ★ ★ ★
14. Regency of content updates ★ ★ ★	33. Contact us page ★ ★ ★	52. Quality of linking content ★ ★ ★
15. Magnitue of content updates ★ ★ ★	34. Site updates ★ ★ ★	53. Google+ circles ★ ★ ★
16. Historical updates page updates ★ ★ ★	35. Number of pages ★ ★ ★	54. Big brand preference ★ ★ ★
17. Keyword prominence ★ ★ ★	36. Presence of sitemap ★ ★ ★	55. Links to bad neighborhoods ★ ★ ★
18. Keyword in H2, H3 tags ★ ★ ★	37. SSL Certificate (ecommerce sites) ★ ★ ★	
19. Keyword word order ★ ★ ★	38. Term of service and privacy pages ★ ★ ★	

Since the first day of monitoring, the conventional web is not found on the first page of google search results, and to be more convinced that the conventional web is not in the first hundred then the monitoring is done using Search Engine Result Page (SERP) checker online serp-checker.online-domain-tools.com. By entering the google region is Indonesia ie google.co.id, keyword "tukar barang bekas" and budiharto.net domain name, conventional web is not met as shown in Figure 1.

Figure 1. Conventional web capture that can not be found within top 100 ranking.

As for the new web, since the first day of monitoring has appeared to be second on the first page of google search results as shown in Figure 2.
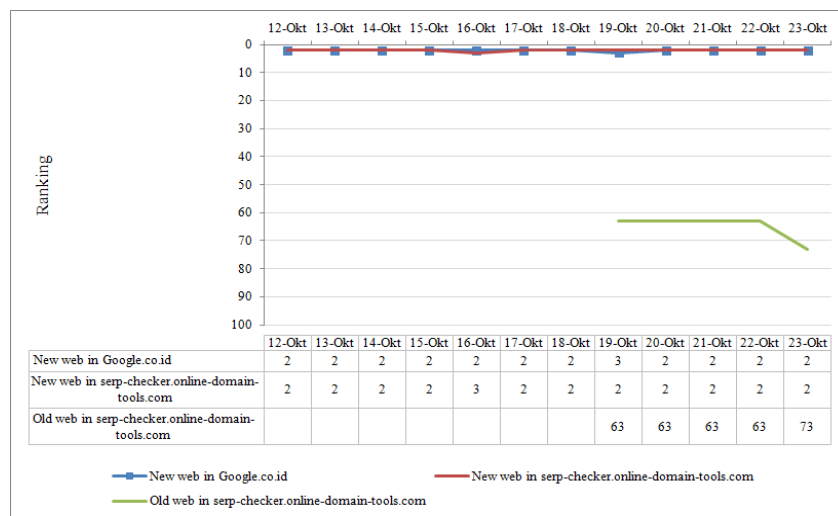

	12-Okt	13-Okt	14-Okt	15-Okt	16-Okt	17-Okt	18-Okt	19-Okt	20-Okt	21-Okt	22-Okt	23-Okt
New web in Google.co.id	2	2	2	2	2	2	2	3	2	2	2	2
New web in serp-checker.online-domain-tools.com	2	2	2	2	3	2	2	2	2	2	2	2
Old web in serp-checker.online-domain-tools.com								63	63	63	63	73

Figure 2. New web ranking monitoring.

In Figure 2. the new web ranking rankings are in the top position from the beginning to the end of monitoring both based on the google search results page and online SERP Checker, always ranked number 2 except on October 16 in the SERP Checker online and October 19 in google, the new web is ranked number 3. Conventional web began to appear on the eighth day of October 19, starting from and stable in the 63rd rank then down to rank 73rd in the last day of monitoring.

4. Discussion

If we look further that the 55 ranking factors are derived from six categories of factors from Brian Dean (Dean, B., 2016), namely:

4.1. Domain Factors

Domain factors are the factors applied to the domain name side, in this case the item number one of 55 selected factors ie public vs private whois. This factor is very important as the page resulted from the search engine will mainly shows the domain name as the first row under the page title as shown on figure 3. The address listed in the contact page must be exactly the same as the address listed in the whois domain.
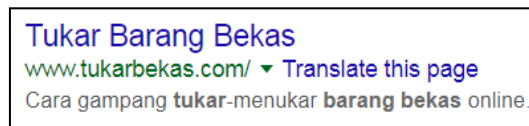

Figure 3. Domain name position on the result page of search engine.

4.2. Page Level Factors

Page level factors are factors applied in the files of each web page, in this case in items 2 to 32. This factor is the most important factor as the result will place in the first and third row of the result as shown on figure 4. Keywords must: be in the title tag, preferably in the first order of title tags, in the description tag, written in H1 , H2 and H3 tags, should be used frequently in documents, not multi-perceptions including those in title and description tags. Lightweight html design while loading, avoiding duplicate content, listing rel = canonical on url links, lightweight image selection, local content selection, more and frequent content changes, proper keyword sequence, links to appropriate authority sites, grammar and spelling, outbound links that are not excessive, the more of internal links, avoid broken links, avoid most affiliate links, the use of short url, the existence of page categorization, user friendly layout, avoid the use of parked domain.
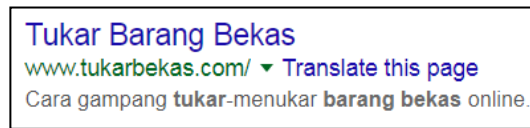
Figure 4. Page level factor position on the result page of search engine

4.3. Site Level Factors

Site level factors are factors that are applied in the internal web, in this case on items 33 to 43. The website must have a contact us page, more updated content, less number of pages, site map, SSL usage on commercial sites, the terms of service and privacy, avoid duplicate content in meta information, the presence of breadcrumb navigation, responsive pages for different screen sizes, the existence of links to youtube, the easiness to use web site.

4.4. Backlink Factors

Backlink factors are factors that are applied so that visitors return to the web again, in this case there are items 44 to 52. Backlinks should be placed on a long-standing domain, avoid the use of link attributes on the backlink, the selection of links at the beginning of the body of the page, backlinks with relevant sites only, relevant page level, backlinks on Wikipedia, backlinks from sites with lots and meaningful content.

4.5. Special Algorithm

Special algorithm factors is a factor with special rules, in this case is contained in items 53 and 54. Web authors should be a member of Google+ Cirle and the link to the big brand takes precedence.

4.6. On-site Web Spam

On-site web spam factors are factors that are applied to avoid spam attacks, this is in the last item number 55. Avoid using links to bad neighboring sites, such as daily savings and loan sites.

If we look for ways to implement SEO by searching the phrase "search engine optimization techniques to increase website popularity", on the first page obtained various links. Verticalresponse (Verticalresponse) writes 6 SEO tools that can be used to increase the page rank, from Google Trends to Responsive Design Test which turned out to be a tool that can see the extent to which page rank has been achieved.

Neil Patel (Neilpatel) shows how to increase page rank differently in 19 steps. Most of these steps are already in the 200 ranking factors of Brian Dean so that at first glance it appears that what Neil Patel wrote is part of the 200 ranking factors. So did 10 smartways written by Felix (Tarcomnicu F), Five ways written by Michigan Tech (Michigan Tech), 101 ways written by Jayson (DeMers J), and 13 super easy ways written by Daniel Louis (Louis D). John Hughes (Hughes J) wrote down even fewer numbers which he said were called 3 important steps. These 3 steps are high level and seem only a title that is relatively difficult to implement.

5. Conclusion

Based on the above data it can be concluded that the 55 ranking factors selected is the most proper method that can be used as a checklist for web programmers who want to increase the ranking page. From Figure 2, it is proven that the 55 ranking factors are already optimal to improve page rank, without having to provide time and cost much.

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