Analyzing the Impact of Search Engine Optimization on Web Content Ranking by Applying the Technique to Article Rewriter Tools

BY

Niger Sultana

ID: 213-25-075

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Master of Science in Computer Science and Engineering

Supervised By

Abdus Sattar

Assistant Professor Department of CSE Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH January 2023

APPROVAL

This Thesis titled "Analyzing the Impact of Search Engine Optimization on Web Content Ranking by Applying the Technique to Article Rewriter Tools", submitted by Niger Sultana, ID No: 213-25-075 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 17-01-2023.

BOARD OF EXAMINERS



Dr. Touhid Bhuiyan, PhD

Chairman

Professor and Head

Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Ms. Nazmun Nessa Moon

Internal Examiner

Associate Professor

Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Dr. Faizar Ahmed

Internal Examiner

Associate Professor

Department of Computer Science and Engineering Faculty of Science & Information Technology

Daffodil International University

(2h0)10, am/cm

Md. Safaet Hossain

External Examiner

i

Associate Professor & Head

Department of Computer Science and Engineering City University

DECLARATION

We hereby declare that, this project has been done by Niger Sultana under the supervision of **Abdus Sattar, Assistant Professor,** Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

Supervised by:

Abdus Sattar

Assistant Professor Department of CSE

Daffodil International University

Submitted by:

Niger Sultana ID: 213-25-075

Department of CSE

Daffodil International University

ACKNOWLEDGEMENT

First I express my heartiest thanks and gratefulness to almighty God for His divine blessing makes me possible to complete the final year thesis successfully.

I really grateful and wish my profound indebtedness to Supervisor **Abdus Sattar, Assistant Professor,** Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of my supervisor in the field of "Analyzing the Impact of Search Engine Optimization on Web Content Ranking by Applying the Technique to Article Rewriter Tools" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this thesis.

I would like to express my heartiest gratitude to **Dr. Touhid Bhuiyan** professor and Head, Department of CSE, for his kind help to finish my thesis and also to other faculty member and the staff of CSE department Of Daffodil International University.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

Internet technologies always change their basic technique for website ranking. Search engine optimization (SEO) is the best method to get your website or webpages in the 1st page rank in Google Search results. It is the way to get traffic in free, organic, or Google search results. Search engine optimization is the best technique to take your website to search top-rated. Online top ranking is not easy, you have to need hard work for the search engine to rank. Google, Bing & Yandex are the most user popular search engine and provide the most users friendly results worldwide. All users cannot search the website name they are searching for a related keyword. So you have to rank your product by searching keywords. The top rank is very important for business people to increase their product sales. The top-ranked website sales increase day by day. And also other website owners want to get this top rank. So, in these days website ranking is very tough for SEO experts. The SEO experts have to focus on website ranking update techniques, technologies, SEO tools, and search engine algorithm updates. Search engine algorithms always give priority to unique, easy, and helpful posts or content. Several factors and techniques will be used to increase the ranking appearance of a Website in search engines. In this thesis paper, we will elaborate on Google's On-page, Off-page and Technical SEO techniques. The website www.rewritertools.com is the focus of our investigation, which incorporates On-page and Off-page SEO elements. Utilizing Google's SEERP metrics and tools, measurements are conducted to examine the overall effects of these elements. The keywords are: rewriter tool, rewriter, essay rewriter, rewrite sentences, rewrite generator, paraphrasing tool, reword generator etc.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
List of Figure	vii
List of Tables	viii
List of Abbreviation	ix
CHAPTER	
CHAPTER 1: INTRODUCTION	1-4
1.1 Introduction	1
1.2 Motivation	1
1.3 Rational of the study	2
1.4 Research questions	2
1.5 Expected output	2-4
1.6 Report layout	4
CHAPTER 2: BACKGROUND STUDIES	5-10
2.1 Introduction	5-5
2.2 Related work	6-8
2.3 Research summary	8-9
2.4 Scope of the problem	9-10
2.5 Challenges	10
CHAPTER 3: RESEARCH METHODOLOGY	11-23
3.1 Introduction	11-13
3.2 Research subject and instrumentation	13

3.3	Working Process	13-21
3.4	Data Collection	22-23
3.5	Statistical Analysis	23
3.6	Implementation requirements	23
CH	IAPTER 4: EXPERIMENTAL RESULTS AND DISCUSSION	24-31
4.1	Introduction	24
4.2	Experimental results	24-30
4.3	Descriptive analysis	30-31
4.4	Summary	31
CH	IAPTER 5: IMPECT ON SOCITY, ENVIRONMENT AND	32
SU	STAINABILITY	
5.1	Impact on Society	32
5.2	Impact on Environment	32
5.4	Sustainability	32
CH	IAPTER 6: CONCLUSION AND FUTURE WORK	33-34
6.1	Summary	33
6.2	Conclusion	33
6.3	Recommendations	34
6.4	Implication for further study	34
RE	FERENCES	35

LIST OF FIGURES

FIGURES	PAGE NO
Figure 3.1.1: Search trend for the article rewriter tool keywords	11
Figure 3.1.2: Regional interest for the keyword article rewriter tool	12
Figure 3.1.3: Searching related topics and related queries	12
Figure 3.3.1.1: Google keywords Planner	14
Figure 3.3.1.2: Keywords research and analysis process	15
Figure 3.3.2: Meta Title & Description	16
Figure 3.3.5: SEO strategy tier design	21
Figure 3.4.1: 3 months website user and search channel overview	22
Figure 3.4.2: 3 months website user acquisition and behavior	23
Figure 4.2.1: 3 months weekly audience overview	24
Figure 4.2.2: 3 month total users overview	25
Figure 4.2.3: Top 10 countries visitors 3 month report overview	25
Figure 4.2.4: 3 Month top 10 page overview	26
Figure 4.2.5: Competitive research- Domain Overview	27
Figure 4.2.6: Organic keywords rank overview (January to October)	27
Figure 4.2.7: Organic search top rank keywords position graph	28
Figure 4.2.8: Organic search keywords position report overview	28
Figure 4.2.9: Competitive Keywords Position Map	29

LIST OF TABLES

TABLES	PAGE NO
Table 4.2.1: Last 6 months visitors/ users overview table	26-27
Table 4.2.2: Top 5 competitor website reports	29

LIST OF ABBREVIATION

NLP Natural Language Processing

ML Machine Learning

CHAPTER 1

INTRODUCTION

1.1 Introduction

Internet has given all the organizations a big platform to sells and adverting their product and best service all over the world. But it is very easy to say that competition is also no very easy, competition is also very high. There is no confusion that a large number of people work hard for it another people also not passing a relax time. They also worked hard for the search ranked. There are many website products and service is same. If we use a good technique and module for the search optimization most of the time this module is not worked.

In todays all over the world every large organization have their own website for the business purpose, with search result top rank, if you not work for it then you have to suffer for this. Search engine optimization is to the salvation for this situation. It is benefited not only for your business but also your own popularity is also increase. Also student use the search engine for their study purpose. Students are use this search engine for find our many new topics.

With is project I want to get some pages on search engine top rank. So, if a page is optimized for Google, Yahoo & Bing then it is optimized for most of the search engines. So that, Google, Yahoo & Bing Search Engine Optimization is the most import part of the search Result.

1.2 Motivation

Facing the new digital environment of market a lot of brands and advertisers do not use longer and effective techniques for getting real and effective visitor and customer for increases their business. They do not use proper website analysis & ranking technique. They use old marketing techniques and do not use proper related keywords for their business or website.

So that, I want to create Search Engine Optimization techniques to get relative, effective and long-term satisfying users for websites. Basically this is my motivation.

1.3 Rational of the study

Search engine optimization (SEO) is the art and science of increasing the visibility of web pages in search engines like Google. Because search is one of the most common methods for individuals to find material online, ranking better in search engines can result in more visitors to a website. The results page of Google and other search engines frequently includes sponsored adverts at the top of the page, followed by normal results or what search marketers refer to as "organic search results." To distinguish it from sponsored search traffic, SEO traffic is typically referred to as "organic search traffic." Paid search is also known as search engine marketing (SEM) or pay-perclick (PPC). Search engine optimization is an important aspect of internet marketing since it is one of the major ways that visitors traverse the web. Search results are provided in an ordered list, and the higher a site ranks on that list, the more visitors it receives. For example, for a normal search query, the top result will receive 40-60% of overall traffic, whereas the second and third results will receive much less attention. Only about 2-3% of searchers go past the first page of results. As a result, even little improvements in search engine rankings can result in increased visitors and, perhaps, business. As a result, many organizations and website owners may attempt to manipulate search results so that their site ranks better than their competitors on the search results page (SERP). This is where SEO comes into play.

1.4 Research Questions

- What is SEO? Why do you need SEO?
- Why SEO is Important?
- How to use search engine optimization technique for Business purpose?

1.5 Expected Output

Google Analytics is a fantastic resource for tracking website activities such as session duration, pages per session, and the bounce rate of visitors, as well as information on the source of the traffic. It is compatible with Google Ads, allowing users to design and evaluate online campaigns by analyzing landing page quality and conversions (goals). Sales, lead generation, accessing a given page, or downloading a specific file are all examples of goals. Google Analytics has the strategy

of displaying high-level, dashboard-type data for the casual user and more in-depth data further down the report set. With techniques such as funnel visualization, where visitors originated from (referrers), how long they stayed on the website, and their geographical location, Google Analytics analysis may uncover badly performing pages. It also has more sophisticated capabilities such as custom visitor segmentation. Google Analytics e-commerce reporting allows you to monitor sales activity and performance. E-commerce reports display a website's transactions, revenue, and a variety of other commerce-related indicators. Google Analytics introduced Real-Time analytics, which allows users to gain information about visitors who are actively on the site. A user can have a total of 100 site profiles. In most cases, each profile relates to a single website. Unless the site is linked to a Google Ads campaign, it is limited to sites with less than 5 million page views per month (approximately 2 page views per second). Google Analytics include Google Website Optimizer, which has been renamed Google Analytics Content Experiments. Cohort analysis in Google Analytics aids in studying the behavior of component groups of users in addition to your user base. It is useful for marketers and analysts who want to successfully implement a marketing plan. So, my plan is to create a great technique to increase my website's views and sales. For this, we make article rewriter tools and make experimented with that website ranking. The main reason of the project is to optimize the website using many search engine optimization techniques and get it listed among the top page of the Google.

The main targets of the project are:

- Ensure effective results in a short time.
- Generate related & effective traffic.
- Ensure digital & modern marketing.
- Ensure related organic or searching visitors.
- Ensure satisfaction of a customer.
- Ensure longer and effective techniques for a website.
- Increase in organic traffic.
- Increase in number of pages on the site that generate traffic.
- Increase in non-branded search traffic.
- Increase referral traffic.
- Percentage increase in social followers/likes and so on

- Rank for main converting keywords.
- Promote business product by Search Engine Optimization (SEO).
- To get a proper, effective & related organic & searching visitors.
- Know about Search Engine Optimization algorithm deeply.

1.6 Report Layout

The proposition is figured out as follows. Partially 1, the motivation is explained and the suggestion objective and presentation are introduced. In segment 2 the appropriate work are discussed and critical poplar procedures are presented comparing related work. Section 3 presents the data arrangement, data pre-taking care of and the component assurance system. In area 4, the ways of thinking for appraisal gathering are explained and result examined. In area 5, the 3 evaluation plan, the exactness appraisal and examination are presented. To some extent 6, the end is drawn and my responsibilities are depicted.

CHAPTER 2

BACKGROUND STUDIES

2.1 Introduction

Now a day's, search engine Optimization (SEO) is very popular. Because, every website owners want to increase his website popularity. So they want to see his website Google 1st page rank. It's helpful for get website popularity and increase product sells. Search engines serve thousands and thousands of customers per day looking for answers to their questions or for solutions to their problems. If there is a web site, blog or online store, SEO can assist the commercial enterprise grow and meet the commercial enterprise objectives. Search engine optimization is indispensable because: The majority of search engines users are greater probable to choose one of the top 5 recommendations in the effects page so to take benefit of this and obtain site visitors to your web website online or clients to your online keep you need to rank as higher as possible; web optimization is now not solely about search engines but suitable search engine optimization practices enhance the user trip and usability of a web site; Users have confidence search engines and having a presence in the top positions for the key phrases the person is searching increases the internet site's trust. At the time SEO market is very difficult. The market competitors are uses different workable techniques. Every Day Google changes their algorithm so market competitors also change their technique every day. Now a days, Google algorithm working on website contents, organic visitors, keywords rankings and visitor behavior. So, we applying some Google algorithm friendly techniques for our websites and keywords Google search engine 1st page ranking. We made article rewriter tools and work hard for search engine rankings. We are working on this website keywords rankings last 3 years for good result. And also we applying these ranking technique with other websites for research and analyzing. We always update our website contents according to website visitor behavior and user experience (UX). White Hat SEO and Black Hat SEO are one of the best important topic of Search Engine optimization. White Hat SEO refers to ethical, legally permissible Search Engine Optimization that generates favorable search engine rankings. It is accomplished by organic link building, or by naturally connecting to other websites. Natural link building occurs mostly as a result of good content and user popularity. On the other hand, black hat SEO is the practice of violating search engine criteria in order to manipulate SERPs (search engine results pages) in order to get higher ranks. Marketers who are caught utilizing black hat SEO strategies may face Google penalties, being banned from search engines, or having their metrics altogether dropped. There are two ways to improve the visibility of website on search engine with White Hat SEO: 1. Search Engine Optimization (SEO) 2. Search Engine Marketing (SEM). There are three parts in the Search Engine Optimization (SEO): 1) On-page SEO, 2) Offpage SEO and 3) Technical SEO.

2.2 Related Work

The development of World Wide Web early year to parallel with the new internet with the new internet technologies the search engine focusing on the web contents. There is no doubt that internet is the most popular source of article and news. The majority of internet user mainly read the first page websites contents. A survey on the behavior of users from iProspect (2006) declared that 90 percent of search engine users never click third page of results and the 62% of them click the first page results. A recent information of Chitika (2013) Google organic Search Engine Result Pages (SERPS) received 32.5 percent of traffic from first pages result, 17.6 percent from second page result and 11.4 percent from third page result. The average 92% organic Traffic generate from the first page search result. One of the best advantage of SEO which is depend on clear web page optimization and it will give the long term durability and performance. Matt Cutts (2012) describe in his article, good search engine optimization and content s will helpful for both search engine and social media marketing. The best search engine optimization result depend on some factors, guideline and SEO related techniques [1].

By doing a Search Engine Optimization (SEO) examination of the website, the technical side of Search Engine Marketing Management (SEMM) may be significantly enhanced. The SEO tools may be used to increase website traffic, which in turn increases sales income. Both SEO and SMM will progress your website Search Engine Marketing Management (SEMM). And this marketing management process will promotes the position of the website's products or services towards the beginning of the search result. Keyword research is one of the most significant, useful, and high-ranking activities in Search Engine Optimization. Google Keyword planner one of the best keyword analysis tool. We can also use SEMrush as a best keyword research SEO tool. The SmallSEOTools is one of the biggest free online SEO tools provider website. The factors that impacts the SEO of the website is depicted here: 1. Meta title or page title length should be less

than 65 characters, 2. Meta description length should be less than 165 characters, 3. Primary Keywords, 4. Heading tags, 5. Sitemap, 6. Hyperlinks and broker links, 7. Image Alt Tags etc. These factors is also called website on-page optimization techniques [2].

Initially, every website owners has to host their website first. Then, on each website, Google analytics is set up to track the various indicators. Owners must first sign up for Google Analytics before they can start. Owners received the unique JavaScript code after completing the sign up procedure, which must be inserted in the head < > section of every page on the website. This is referred to as JavaScript tracking. This tool provides insight into numerous parameters such as the number of visitors, their geographical location, new vs. repeat visitors, bounce rate, and so on. Applying the following experiential and collaborative learning techniques for analyzing the impact of search engine optimization techniques on web development: step-1: select related keyword, step-2: related content optimization, step-3: website link optimization, step-4: analyze Google Analytics report [3].

Backlinks analysis and creation is another most important part of SEO. A backlink is one of the ways Google finds new pages to display in search results. Google will continue to retrieve the most relevant sites for certain keywords. Backlinks are designed to assist websites in being found by Google and appearing in search results. The more high-quality backlinks a website has, the higher it's ranking on Google. Web sites can then get high rankings in search results. Backlinks can deliver traffic from links that have been on the backlink website provider, in addition to traffic from Google search results. It also has a major influence if the backlink offered by a website has a solid Google reputation and receives a lot of traffic. The traffic collected from the backlink giver's website leads to the backlink website destination. Building a website with excellent backlinks takes a lot of time and work. The most crucial thing to do before building a quality backlink is to first lay the groundwork, which is content. It doesn't matter how many backlinks you have if you don't have original, comprehensive, and quality content. Backlinks must also meet specific requirements in order to be effective. Furthermore, users should always do study before opting to apply backlinks using the stated indications. As a result, backlinks benefit the website [4].

The following SEO Tools will provide more in-depth information on the actions of search engine optimization. a) Google Webmaster Guidelines (Google, 2009d): these give thorough reports on a page's visibility on Google. b) Google Analytics (Google, 2009e): This basically reveals what is

occurring on the website and presents statistics comparable to Google Webmaster Tools. c) Google Website Optimizer (Google, 2009b): this gives the tools required to optimize the Website. d) Google Trends (Google, 2009f): webmasters use this to compare various search keywords. e) Meta tag analyzer (SEOCentro, 2009): used to examine the various Meta tags inside a Website; researchers compared the SQU Website to highly ranked Websites in terms of Meta tag keywords, description, title, and so on. f) SEOmoz tools (SEOmoz, 2009f): the SEOmoz toolbox comprises over twenty SEO tools meant to assist with all aspects of SEO, such as on-page targeting, site crawl ability, competitive analysis, ranking, checking, and keyword difficulty [5].

The initial impacts of the SEO campaign will be obvious less than a week after the site has been optimized, with improved ranks on relevant keywords and more visits. These gains would be sustained for several months. The monitoring of some parameters, such as Google positioning of the site for selected keywords, keywords used by visitors, and site traffic, allowed us to make some observations on how to improve the site's optimization further: such an optimization must be part of an ongoing, long-term effort in order to be effective in the long run [6].

After the three months of SEO model and Techniques implementation the SERP will be increased and the keywords will be listed in top 10 pages. Similarly, the website traffic will be increasing day by day hundreds to thousands, especially returning users and special users will also increasing. Off-page optimization is another good methods for any search query. Blogging, social media sites and web 2.0 are also very important for traffic generation [7].

2.3 Research Summary

SEO strategies are not intended to fool or manipulate search engines in an unethical manner; rather, they are used to increase a website's exposure and relevancy in organic search results by supporting it in reaching high ranks. SEO may be thought of as a set of approaches for strategic webpage updating; this process reveals the most relevant page aspects to search engines and helps boost its significance in the search engine results page. SEO is a time-consuming procedure that needs a great deal of experience, prior knowledge, and patience. Because search engines' ranking algorithms are continually being changed and improved, it is the SEO engineer's responsibility to stay current. Google claims that its ranking system considers more than 200 parameters when evaluating page ranks. As a result, SEO engineers must be aware of the most critical variables in

order to carry out a successful SEO implementation. Although Google does not completely divulge all of the elements considered, it does give suggestions for SEO engineers or webmasters to follow in order to improve the overall ranks of websites. Chapter 3 discusses the SEO methods utilized in my study and how they were implemented. In this paper, I am covering the early beginnings of SEO, the importance of SEO and its goals on website rankings, on-page SEO and off-page SEO, white-hat SEO and black-hat SEO, SEO ranking factors and techniques, and finally the result or output of applying the methods.

2.4 Scope of the problem

At present, Search engines have become part of people's daily lives; it is through most people begin their online activities and business. People are becoming increasingly dependent on the web as their major source of information in a wide range of essential fields other than entertainment. Search engines have made it simpler for users to find information online by making billions of web pages available. It is a difficult process to sort through billions of pages and offer just the most relevant results to the visitor. This has made it more difficult for websites to remain visible. According to a recent survey, around 3 million new websites are launched on the internet each month. As a result, competition among websites has increased, with everyone competing for high positions in search engine results pages (SERP). Similarly, less and fewer individuals are buying things or finding services through conventional media such as newspapers, periodicals, radio, and television. Previously, the media served as a "link" between those seeking to acquire items or services and companies. When most individuals are seeking anything, they use search engines. As a result, ranking on the first page of Google may make or break a business, as more than 80% of visitors who visit a website for the first time do so through a search. More than 76% of these visitors use Google. As internet search becomes more significant and conventional advertising becomes less relevant, Google will remain a key link in the process by which customers and companies find one other. Businesses that do not keep current and do not have a strong and up-todate Google marketing plan will not survive. All others who accept this continual change will be well-positioned for future growth.

2.5 Challenges

To get a keyword position is the big challenge of this system.

- High competitor keywords are very tuff to get rank.
- You have to need 3-4 months' time to get a good rank. It's not easy to get a better result.
- Every day you have to follow the instruction otherwise you can lost the result.
- Day by day progress is very much important for Search engine ranking.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In early November 2016, before I could begin developing the experimental website where the SEO techniques would be applied, first I needed to choose a subject or topic for the site. After doing some searching and brainstorming, I decided to create an article rewrite tool-related website as the main theme of the website for student writing to help. It is a very helpful tool for students and content writers to write an article or essay. If you feel you are weak in English don't worry, this tool is for your writing improvement. Before starting the research, I need to do market research on people searching keywords for article rewriter tools or not. The user felling interested in these types of websites or not. I used Google Trends to begin the market research; this is a Google tool for researching and analyzing worldwide or local statistics in keyword searches. I decided to perform a worldwide Google trend analysis from 2010 to 2020. The Google trend analysis report is here.

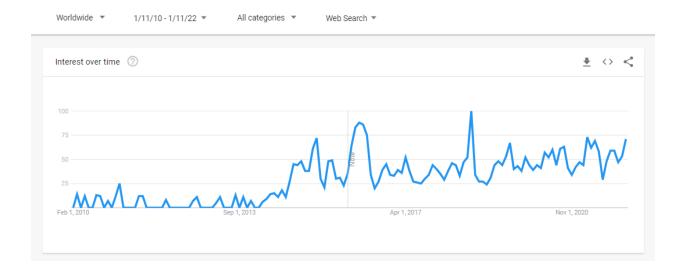


Figure 3.1.1: Search trend for the article rewriter tool keywords.

In addition, on the left side of the trend graph, there are values ranging from 0 to 100. "These figures show how many searches have been done for a given phrase, compared to the overall

number of searches done on Google throughout time (during the specified period range)," according to Google. These are not absolute search volume figures; rather, the data has been normalized and is provided on a scale of 0-100. Each graph point is divided by the highest point, or 100.

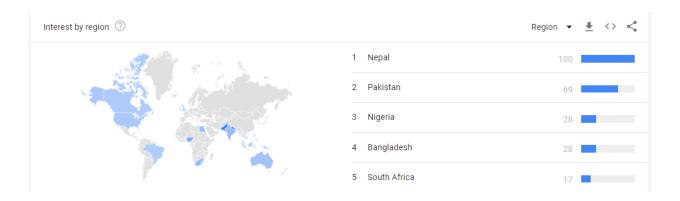


Figure 3.1.2: Regional interest for the keyword article rewriter tool.

A crucial feature of Google Trends is the ability to explore the "Regional interest" of the phrase you're looking for. To put it another way, you may view a list of nations where your term is most popular.

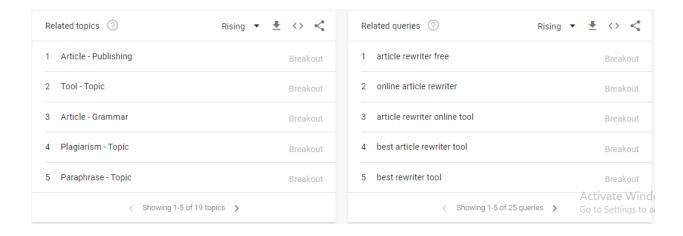


Figure 3.1.3: Searching related topics and related queries.

Next, Google Trends displays a table of related search keywords (related topics and related queries) to the one you're looking for.

Completing the market analysis, I had to search for a domain name from Namecheap and GoDaddy and I selected rewritertools.com as a domain name for my website.

3.2 Research Subject and Instrumentation

Finally I selected the research subject name is "Analyzing the Impact of Search Engine Optimization on Web Content Ranking by Applying the Technique to Article Rewriter Tools". This is the most powerful process of NLP. The Language process in NLP is very helpful for this experimental project. For Website Development: HTML- 5 and CSS using for Frontend design and PHP, MySQL using for Backend. Wordpress for blog side.

SEO Tools:

- ➤ Google keyword planner, Semrush and Ahrefs for keyword search.
- ➤ Google Analytics for data and visitors Analysis.
- ➤ Google Trends for worldwide and country size keywords engagements analysis.
- > Semrush and Ahrefs also using for website growth, backlinks and global rank analysis.
- > Search engines webmaster tools for webpages and Google updates monitoring.

3.3 Working Process

The next stage was to begin building content for the site by adding web pages, but first I needed to finish the most important step in the SEO process: keyword research. The keyword research approach would assist me in determining which keyword (or combination of keywords) to focus on for this analysis, which is the topic of the next section.

3.3.1 Keyword Research

Effective, best searching and low competitive keyword research is the heart of Search Engine Optimization (SEO). Without proper KW research, it's impossible to rank in search engines. Brian Dean once said - "SEO is basically nothing without proper KW research". Usually, when people search for something in a search engine, this is called a keyword. The keyword is the most important thing in on-page SEO. When we're doing on-page SEO optimization, give the most

priority to the KW research. Since it will be completely foolish to start the site with a high-competitive keyword, we should search for low-competitive ones. This is how we can attract a high amount of visitors. But, we can analyze a niche and know the low competitive keywords for that niche? We can select our effective keywords through these keyword tools such as Google Keywords Planner, Ahrefs, SEMrush, Ubersuggest, etc.

Keyword (by relevance)	Avg. monthly searches	Three month change	YoY change	Competition	Ad impression share	Top of page bid (low range)	Top of page bid (high range)
article re writer	1K - 10K	0%	0%	Low	-	US\$0.03	US\$0.19
article re writer tool	100 – 1K	0%	+900%	Low	_	US\$0.04	US\$0.22
article rephrase	10 - 100	0%	0%	Low	_	US\$0.04	US\$0.25
article rephrase tool	10 - 100	+∞	+∞	Low	_	-	_
article rephrasing tool	10 - 100	0%	0%	_	-	-	– Activate V
article rewrite online	100 - 1K	+900%	0%	Low	_	US\$0.06	Go t USSO t18ng

Figure 3.3.1.1: Google keywords Planner

The monthly searching visitor result depends on the keywords global search, local search and keywords trends. Competitors keywords Analysis also a part of effective keywords research. So, I selected some keywords for my website using these techniques and tools: article rewriter tool, rewrite tool, rewriter, essay rewriter, rewrite sentences, rewrite generator, paraphrasing tool, free paraphrasing tool and reword generator, rewrite paragraph etc.

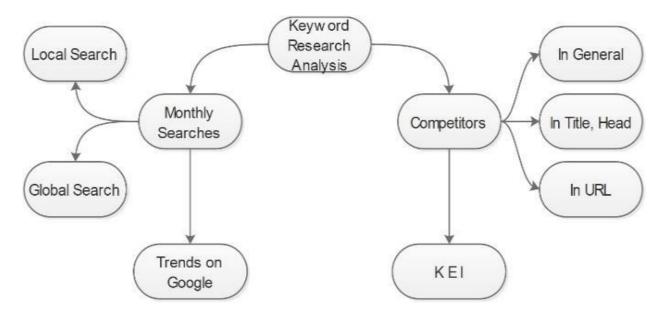


Figure 3.3.1.2: Keywords research and analysis process.

3.3.2 On-page SEO

On-page SEO is about enhancing your content by increasing its quality. Moreover, you will introduce the main keyword with the help of on-page SEO optimization. The secondary keywords implementation, link building, providing Meta tags, headings, sub-headings, well-written content, etc., are all parts of the on-page SEO. On-page SEO is an on-sight technique that greatly assists the content to get ranked on the SERP. It will help your content to get a ranking in the first results of Google. Further, the more you will follow the on-page SEO techniques, the more your content or site can draw meaningful users. On-page SEO assists to analyze your site thoroughly and shows which things need to be introduced to build proper content. It also helps the content connect to the site. This is how it can acknowledge whether the user's search intent relevant to your site or not. Nowadays, Google is frequently updating its algorithm. They're focusing on more in-detail and pinpoint contents. Since Google is updating, you also need to update your site to keep up the pace. As a result, on-page SEO is crucial. On-page SEO remains highly popular due to its massive Return-On-Investment (ROI) aptitude. It can provide huge benefits in the long run that helps websites to grow consistently. It's not possible to grow your business or rank for search queries without the proper optimization of SEO. If you fail to design a proper on-page SEO strategy, there's a big chance your site will fail. The search marketing world is growing consistently. Hence,

the importance of on-page SEO is also growing. To do this properly, many big companies are hiring digital agencies.

Now, I'll discuss some essential features of on-page SEO. Let's check it out -

- Website Analysis: Firstly, I will check the website thoroughly. Different websites have different perspectives and business strategies. As a result, I have to understand the site's business reason perfectly. This is how I can set my goal and which exact areas of on-page SEO I'll focus on. I will find out the problem of website design, development and responsive issues (for mobile, Desktop and tablet view). If I see any problem, I will immediately solve these issues.
- Competitor Analysis: After selecting the keywords, I searched these keywords on Google search engine and analyze the 1st page ranked websites Meta title, description, headings, images, tags, hyperlinks, pages URL, website contents etc.
- Title & Meta Description Optimization: The Meta title tag specifies the page title and tells the search engine what the page is about. The Meta title tag must be unique. It should be optimized by the focus keyword and it would be between 50 to 60 characters. Other hand, Descriptions or meta-descriptions show below of title in the search result and it provides a description of the website or page. It would be between 150 to 160 characters.

https://rewritertools.com > article-rewriter :

Free Article Rewriter Tool | Online Reword generator | Meta Title

Most Advanced Free Article Rewriter tool and Reword generator online. This sentence rewriter giving a power of content rewrite. | Meta Description

Figure 3.3.2: Meta Title & Description.

• **Header (H1, H2, H3...) Tags Setup:** Header tags should be sequentially, first header must be h1 tag and 1 page would be one h1 tag. Then, h2, h3, h4, h5, h6 would be used sequentially in a page heading.

- Internal & external link strategy: A Web page must use one internal link and one external link. Internal link creation means our website has another page URL that is related to this page's content and external link creation means linkup with this webpage's contents with another website page.
- **Premium Yoast Settings:** The premium Yoast is a plugin that settings would be used for web post-on-page SEO optimization. Optimizing the content in premium Yoast will also massively assist content to rank in Google.
- Clean Permalink Structure: A clean permanent structure is necessary to get a good sight in the search engine. The permalink should be written according to your focus keyword. Besides, the reason is if you write a permalink that matches the main keyword of the post, the chance of the content ranking in the search engine gets increases. Most people ignore this fact and write a URL as their wish. But, it's a wrong approach. Sometimes, a proper permalink structure can be the reason to get a higher ranking in Google. So, ignoring this fact is absolutely terrible.
- Image Title & Alt Tags: Image is an essential part of a blog post. It has a considerable impact on on-page SEO optimization. Thus, it has an influence over higher search engine ranking. If you want to optimize content, you must optimize its images. Readers don't get practical knowledge of the content without images. Images enhance the beauty of content. Additionally, search engines also rank images in the search results.
- Content Optimization: Keywords research is very much important for website content optimization. You must use your focus keywords and related keyword in your web content. Include the main KW in the first 100 words of the content. When it comes to Google, using the focus KW in the title tag is necessary. Try to put the main KW in the page's URL. Use the KW in the H1 and H2 sub-header. Use KW-rich images in the content.

3.3.3 Off-page SEO

Off-page SEO is also known as off-site SEO. It indicates what other people are saying about the site. Further, the works of Off-page SEO generally happen outside of the blog. This is why it is off-page SEO. When your site gets a good ranking in the search engine, it's time to do some work outside of the website to increase the number of organic visitors. Off-page SEO is a fundamental part of SEO. It is like a painting. Without paint, a wall's structure will be damaged for sure. The same thing goes for Off-page SEO. Without its presence, a site's composition won't be effective and it will fail eventually. Some examples of Off-page SEO are earning backlinks, creating branding, infographic creation, etc. Some people say that Google has abandoned Off-page SEO. But, it's wrong. The importance of Off-page SEO is still at large. Google likes website branding so much. The websites that have extensive popularity online, Google like to rack them earlier. Google has a ranking factor named PageRank. This algorithm is generally used for checking out the quality and quantity of the backlinks (backlink is the most essential part of off-page SEO). If users provide good reviews of the site, Google takes this into its consideration and gives a good rank to the site. The Link building methods are here:

- > Search Engine Submissions
- ➤ High PR Web Directory Submission
- Guest Posting
- Social Bookmarking
- Local Business Listing / Local Citation
- Video Submissions
- ➤ Image Sharing
- Document Sharing / PDF Sharing
- Power Point Presentation Submission
- ➤ Ping Site
- ➤ Relative Blog Comments
- > Forum posting
- ➤ Web 2.0 sites / Blog Posting
- ➤ Article Submission

- ➤ Link Wheel creation
- Press Release Submission
- Competitor Backlinks creation
- Classified Ads Submission
- ➤ Infographic Submission
- Question and Answer Submission

3.3.4 Technical SEO

Technical SEO refers to the aspects that run your organic growth engines behind the scenes, such as site architecture, mobile optimization, and page speed. Technical SEO refers to everything you do to make it easier for search engines to crawl and index your website. Technical SEO, content strategy and link-building techniques all work together to help your sites rank well in search results. Gtmetrix, PageSpeed Insights and SEO site checkup are the best tools for technical SEO analysis. Here is the list of Technical SEO Processes:

- ➤ Index ability Optimization
- > Schema Markup for Google Rich Snippets
- Canonical Links
- > Permalink management
- ➤ SSL Certificate (HTTPs) Enforceability
- > XML Sitemap Creation
- ➤ 404 & Redirection
- ➤ Robots.txt
- > SEO Audit & Reporting
- Search Console integration
- ➤ Google analytics and sitemap creation
- > Site speed optimization (premium)
- Responsive Checking (Mobile, Desktop, Tab)
- Verify with Google insights (Mobile, Desktop)
- ➤ Facebook Pixel Setup for e-Commerce Website

3.3.5 Smart Plan (Off-Page SEO)

- ➤ Tier System; in this system we can get result easily and firstly. This technique is very workable. In this Tier system we have select a website that's called money site. This money site is my website. This technique is called linked building technique.
- ➤ 4 Tier is connected with a website that means my money site.
- ➤ Tier number 4 is connected with Tier 3 & 3.1.
- ➤ Then next step Tier 3 is connected with tier 2. In the other side Tier 3.1 is connected with Tier 3, Tier 2 and 2.1
- ➤ Then Tier 2 is connected with Tier 1, in the other hand Tier 2.1 is connected with Tier 1 and 1.1.
- Next Tier 1 is connected with the Money site or main website and also 1.0 Tier connected with Money site. It's the unique technique for getting better result in a short time.

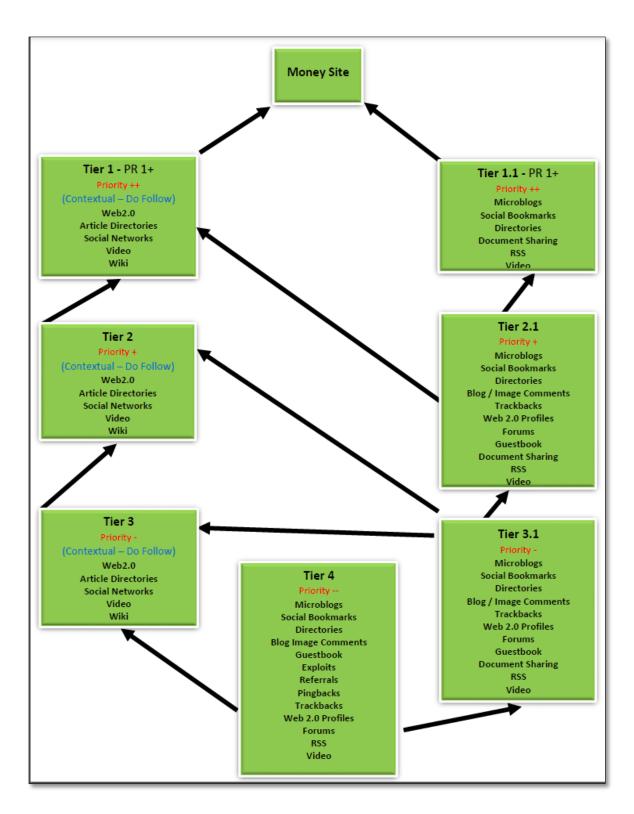


Figure 3.3.5: SEO strategy tier design.

3.4 Data Collection

Google Analytics is a free tracking tool for website data collection. This free service is offered by Google to generate detailed statistical information about the users of a website. This free analytical tool is the most extensively used traffic analysis tool in the world. It's one of the best powerful tracking tools that provide you the detailed data on how users are arriving at your website, what keywords are searching the most visitors, which countries visitors are visiting most, and much more detailed information statistics for analysis.

Here are the last 3 months (01-Sept-2022 to 01-Dec-2022) rewritertools.com website visitors and searching channels overview.

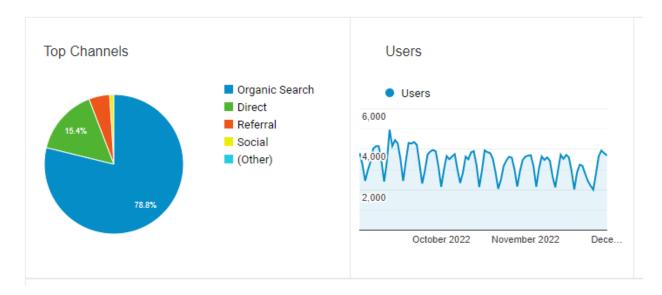


Figure 3.4.1: 3 months website user and search channel overview.

Here are the last 3 months (01-Sept-2022 to 01-Dec-2022) rewritertools.com website visitors acquisition and user behavior overview. The total number of users is 2,11,700 among them new users 2,00,813. The overall page Sessions are 3,63,245, with an Overall Bounce Rate of 61.84%, Pages/Session 1.82 and Avg. Session Duration 00:02:57.

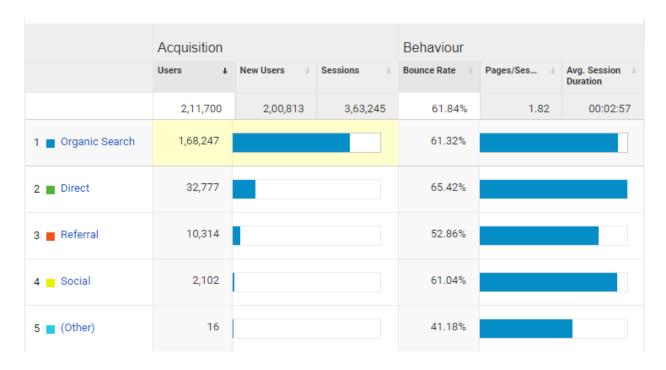


Figure 3.4.2: 3 months website user acquisition and behavior.

3.5 Statistical Analysis

- 1. The average bounce rate 61.84% (a good bounce rate is somewhere under or around 50%)
- 2. The 78.8% organic traffic.
- 3. The pages/sessions 1.82. (a good page per session is 4.4)
- 4. Avg. Session Duration 00:02:57.
- 5. 15.4% are direct visitors.

3.6 Implementation Requirements

We need a web designer, developer and content writer for our website's regular updates according to the Google algorithm update. Also, need to update our skills with the technology update.

CHAPTER 4

EXPERIMENTAL RESULTS AND DISCUSSION

4.1 Introduction

As I said earlier, we started our experiment in early November 2016 and still now we are working on it and changing our daily work and technique according to Google updates. The experiment result is very important for this work progress checking. I always follow Google analytics for exact statistic reports like Numbers of visitors, New Visitors, Returning Visitors, Page views, Keyword ranks, First page of Google rank, etc. Other most import tools for Result analysis are Google Webmaster report, Semrush and Ahrefs.

4.2 Experimental Results

In the last 3 months 01 September to 01 December 2022 my website's total visitors 2,11,700. And Below Audience Overview is showing the weekly reports for 3 months of visitors' analysis.

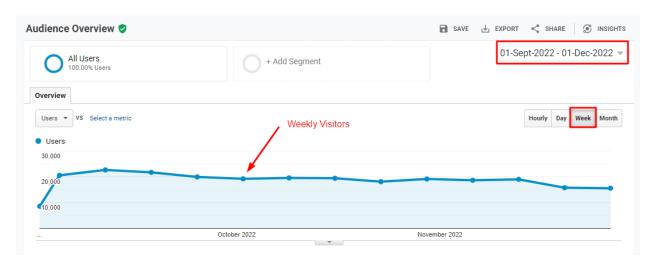


Figure 4.2.1: 3 months weekly audience overview.

In the last 3 month total of 2,11,700 users, new users or visitors are 2,00,811 and the percent of new and returning visitors is 79.9% and 20.1%. The total page views are 6,61,069 and the

bounce rate is 61.84%.



Figure 4.2.2: 3 month total users overview.

Now here I show the Google Analytics statistics 3-month top 10 countries' users' numbers and percentages. It also shows us the specific city visitors' report, if I want to see the overview for analysis. The Google Analytics tool is the best and most user-friendly for researching user experiences.

Country	Users % Users
1. El United States	71,507 33.37%
2. India	30,935 14.44%
3. Philippines	14,773 6.89%
4. Pakistan	12,970 6.05%
5. GIR United Kingdom	8,695 4.06%
6. Australia	6,520 3.04%
7. China	6,418 3.00%
8. East South Africa	5,988 2.79%
9. • Canada	5,058 2.36%
10. Indonesia	3,735 1.74%

Figure 4.2.3: Top 10 countries visitors 3 month report overview.

Here are the 3 months' top 10 Page views and the page view percentage. It's very important for SEO experts to analyze the user's page view experience. The SEO Experts always try to give a

good experience for top 10 page visitors and try to increase their website content and useful options.

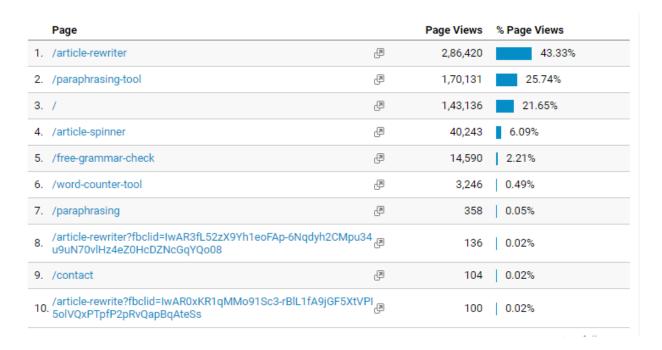


Figure 4.2.4: 3 Month top 10 page overview.

The below table shows the last 6-month overall visitors reports. The table shows that visitors are not stay-able, the new visitor percentage is overall 74% to 77% and the returning visitor percentage is overall 23% to 25.5% and also the site bounce rate average 60% to 65%, where a good rate is under or around 50%. So, I am trying to improve these returning visitors and bounce rate part.

Table 4.2.1: Last 6 months visitors/ users overview table

Month	Total Visitors	New Visitors	New Visitor Percent	Returning Visitor Percent	Bounce Rate
June- 2022	73,233	64,885	74.9%	25.1%	61.36%
July- 2022	60,977	54,198	75.4%	24.6%	62.82%
August- 2022	70,431	62,630	76.4%	23.6%	63.36%
September- 2022	79,203	71,564	76.6%	23.4%	61.83%

October- 2022	73,770	64,668	76.9%	23.1%	62.09%
November- 2022	70,025	62,079	76.9%	23.1%	61.60%

The figure shows the rewritertools.com Domain Authority Score of 38, Organic search traffic average of 40.1k, Keywords rank of 7.5k, Backlinks of 42.3k, Referring domains of 1.1k, and Paid Search Traffic 0. I am not doing any paid backlinks to increase traffic.

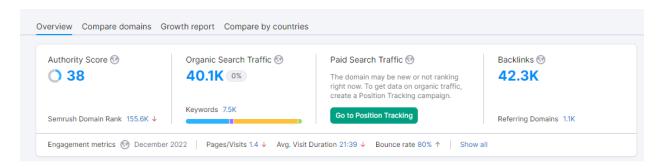


Figure 4.2.5: Competitive research- Domain overview.

October 2022, search engines total organic searching keywords 7,517 among them top 3 ranked searching keywords 377, top (4-10) ranked keywords 1.6k, next (11-20) ranked keywords 1.5k, next (21-50) ranked keywords 1.9k and (51-100) ranked keywords 2.1k. The graph shows the keywords increasing day by day.



Figure 4.2.6: Organic keywords rank overview (January to October).

The left side graph shows our top organic 2,853 keywords in the US and the right side shows the organic keywords position distribution graph.

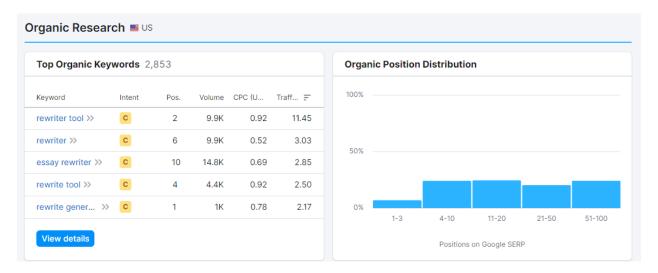


Figure 4.2.7: Organic search top rank keywords position graph.

US organic search keywords position list with CPC (Cost-per-click) rate, keyword difficulty, SERP (Search Engine Results Page) result, etc.

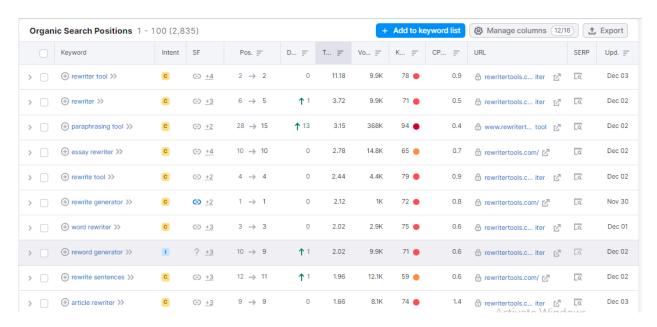


Figure 4.2.8: Organic search keywords position report overview.

This is the top five competitor website positioning organic search monthly reports graph. And the top five competitor websites' monthly search keywords, Search Traffic, and common keywords with my website searching matching keywords are shown in the table below:

Table 4.2.2: Top 5 competitor website reports

Competitive Website	Keywords	Traffic	Common Keywords
paraphrasing-tool.com	3.11k	34.91k	1.18k
paraphrase-online.com	5.76k	30.76k	955
rewritetool.net	2.53k	30.7k	634
seomagnifier.com	8.68k	29.03k	1.05k
rewriteguru.com	6.24k	9.76k	565
rewritertools.com	2.84k	11.68k	-

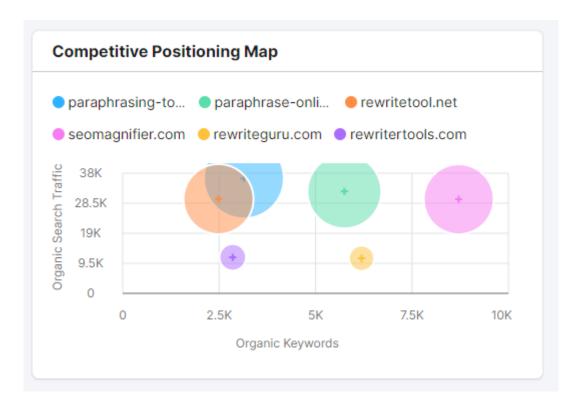


Figure 4.2.9: Competitive Keywords Position Map.

4.3 Descriptive Analysis

The experimental website was launched November 2016, and my on-page SEO was completed 20 November, 2016. Off-page is ongoing experiment, it started from 21 November, 2016. The following data show the positive result of my SEO strategies:

- 1. **Number of Visitors:** In December 2022, the last 6 month total number of visitors are 70k-80k. I am trying to increase this number of visitor day by day also try to apply different techniques and strategies on it. But, this website most of the visitor are from US, UK that's why the December and January number of visitor decrease compare the another month visitor number. December and January Europe, America vacation time period.
- **2. Page Views:** The page views of last 3 months (1st September, 2022 30 September, 2022) is 2,41,866 (1st October, 2022 31 October, 2022) is 2,12,837 and (1st November, 2022 30 November, 2022) is 1,98,539. This page view depends on number of visitors, if the visitor down the page view also down and if the number of visitor up the page view also up. And the number of visitors are not stable, it's up and down process.
- **3. 1**st **page keywords ranking:** My target 377 keywords are in 1st page 1 to 3 ranked. Among of them some keywords ranking are: rewriter tool-2, rewriter-5, rewriter tool-4, rewrite generator-1, word counter-3, paraphrasing tool-5, etc.

4.4 Summary

We always changing our SEO techniques and strategies according to Google algorithm update. The visitor and website ranking always change according to Google updates. Recently we are working on contents optimization, easy and related topic selection. I am also working on decreasing my website bounce rate, Increase page view, returning visitor, also working on website design and functional updates like, creating an application section for students and employee, it will be our website new update.

CHAPTER 5

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

5.1 Impact on Society

The Impact of search engine optimization on social is increasing day by day. Now a day, people depends on internet for buy any product or sell any product. So product owner want to show his product on the search engine result page for increase product sells. This impact showed on restaurant business, travelling and Education. The digital world people now depends on Social media and Search engine searching for all information colleting. So, People are addicted on search engine and Social media.

5.2 Impact on Environment

To survive and compare with the latest market people and developing countries we need to change business marketing strategies and now a day we are following this strategies to survive. And it's good for our business and people. Peoples are get their daily needs easy and fast. So, SEO makes the positive impact on local market environment and local people.

5.3 Sustainability

- The SEO Strategy implementation sustainability is long term. You will get it result long time.
- If you create your own website branding using search result impact, you will get more projects proposal from others and will be benefited from business purpose.
- SEO first aim to get returning visitors and longtime users. So, among the total users 30%-40% users will be previous users.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Summary

The availability of information will rise considerably as the Internet continues to grow. If people are to locate what they are seeking for online, there must be order. As a result, search engines will continue to play an important and "prominent role in the online world." They will continue to be a part of most people's daily life and will only grow more vital and required as people seek information more easily. The following are some noteworthy statistics from recent studies.

- Search engines account for more than 80% of all initial visitors to a website.
- Google is used by more than 76% of global searches.
- 84% of Google users never scroll past the second page of search results.

6.2 Conclusion

The mission revolves around the precise domain of search engine optimization which comes under the time period of SEO. The purpose of the venture is to be very efficient and a nice so as to attain a sizable rank. And subsequently discovering and imposing ways to make bigger the chance of discovering a properly listing. The record explores all aspects of the system. This will decorate the typical perception of the technique and its usage in a very sensible manner.

This mission files goals to acquaint the reader with the novel techniques of search engine optimization for riding greater and greater customers to the website. We would use the aforementioned techniques constantly and find out more and extra users having access to our task website. In addition to it we intention to get sub hyperlinks that are assigned by Google which is assigned to an internet site which has more wide variety of users. Although the method of website positioning isn't that new however it's utility in the present instances has improved a lot with the emergence and widespread acceptance of e- commerce.

6.3 Recommendations

The SEO process takes time, and efficient SEO implementation necessitates thorough keyword research. Despite the fact that just one keyword was employed for optimization, there was a considerable rise in the number of visitors to the experimental site as well as an increase in Google search ranks. Furthermore, the keyword was not very competitive. This might explain why high rankings were reached in such a short period of time. Other, more competitive keywords may necessitate more time. In addition, more complicated SEO methods, such as link-building, may be required.

6.4 Implication for Further Study

As search engines continue to update and improve their search ranking algorithms, SEO experts must adapt and learn new SEO methods on a regular basis. The findings of this study confirm and expand on previous SEO studies. This study provides a comprehensive analysis and step-by-step application of chosen search engine optimization approaches that were proved to boost exposure, attract more visitors, and achieve higher positions in search results for a broad range of websites. As a result, it is intended that this article will serve as a roadmap for new SEO specialists as well as a foundation for future SEO research.

REFERENCES

- [1]. Giomelakis, D. and Veglis, A. (2015) "Employing search engine optimization techniques in online news articles," *Studies in Media and Communication*, 3(1). Available at: https://doi.org/10.11114/smc.v3i1.683.
- [2]. Terrance, A.R., Shrivastava, S. and Mishra, A. (2018) "Importance of search engine marketing in the Digital World," *Proceedings of the First International Conference on Information Technology and Knowledge Management* [Preprint]. Available at: https://doi.org/10.15439/2017km24.
- [3]. Yogesh Pawade, D. (2021) "Analyzing the impact of search engine optimization techniques on web development using experiential and collaborative learning techniques," *International Journal of Modern Education and Computer Science*, 13(2), pp. 1–10. Available at: https://doi.org/10.5815/ijmecs.2021.02.01.
- [4]. A. Setiawan, Z. Harahap, D. Syamsuar, and Y. N. Kunang, "The optimization of website visibility and traffic by implementing search engine optimization (SEO) in Palembang Polytechnic of Tourism," CommIT (Communication and Information Technology) Journal, vol. 14, no. 1, p. 31, 2020.
- [5]. A. H. Al-Badi, A. O. Al Majeeni, P. J. Mayhew, and A. S. Al-Rashdi, "Improving website ranking through search engine optimization," Journal of Internet and e-Business Studies, pp. 1–11, 2011.
- [6]. Gandour, A. and Regolini, A. (2011) "Web site search engine optimization: A case study of fragfornet," *Library Hi Tech News*, 28(6), pp. 6–13. Available at: https://doi.org/10.1108/07419051111173874.
- [7]. K. ur Rehman, A. Yasin, T. Mahmood, M. Azeem, and S. Ali, "Seo: A unique approach to enhance the site rank by implementing efficient keywords scheme," 2019.

Plagiarism Checked by Abdus Sattar, Assistant Professor, Department of CSE

Daffodil International University



17-01-2023

ORIGINA	LITY REPORT				
	0% RITY INDEX	15% INTERNET SOURCES	5% PUBLICATIONS	13% STUDENT PAPERS	
PRIMARY	SOURCES				
1	WWW.Slic	leshare.net		3	%
2	Submitte Student Paper	ed to Daffodil II	nternational U	niversity 2	%
3	Submitte Student Paper	ed to Global Ba	nking Training	1	%
4	digitalsch Internet Source			1	%
5	docplaye			1	%
6	Submitte Student Paper	ed to Kingston	University	1	%
7	www.me	cs-press.org		1	%
8	annals-co			1	%
9	Submitte Student Paper	ed to RK Univer	sity	1	%