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A STUDY ON SEARCH ENGINE OPTIMIZATION (SEO) ERODE

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ABSTRACT: Search Engine Optimization (SEO) is a critical aspect of digital marketing that involves optimizing websites and web content to rank higher in search engine results pages (SERPs) and drive organic traffic. This paper provides a comprehensive analysis of SEO, including its strategies, trends, and best practices. The paper first outlines the importance of SEO and discusses the key factors that influence search engine rankings, such as keywords, content relevance, and backlinks. It then delves into the various SEO strategies, including on-page optimization, off-page optimization, and technical SEO. The paper also provides best practices for each strategy. It discusses the future of SEO and how businesses can stay ahead of the curve by adopting new and innovative SEO strategies.

I. INTRODUCTION

This SEO project involves optimizing a website or web page to improve its ranking on search engine result pages for specific keywords and phrases. The project will include analyzing the website's current performance, identifying areas of improvement, and implementing various SEO techniques to increase visibility and traffic. The success of the project will be measured by an increase in organic traffic and improved search engine rankings.

STATEMENT OF THE PROBLEM

The problem we aim to address is the low visibility of our website on search engines, specifically Google, and the lack of traffic it generates as a result. Our objective is to optimize our website for search engines and improve its ranking on SERPs to increase traffic, engagement, and user interaction. The basic problem is Website analysis, before implementing any SEO strategy, it's crucial to conduct a thorough analysis of the website to identify any technical issues that might be preventing it from ranking higher on search engine result pages. This analysis may include examining the site structure, content, backlinks, site speed, and user experience. A crucial aspect of SEO is identifying the relevant keywords that our target audience is using to search for content related to our organization's niche. The keyword research process involves finding relevant search terms and phrases, analysing the competition, and selecting the best keywords that have a high search volume and low competition.

OBJECTIVE OF THE STUDY:

To analyse and increase organic website traffic through implementing a comprehensive search engine optimization (SEO) strategy. This objective is specific, measurable, achievable, relevant, and time-bound (SMART). It focuses on the desired outcome of the SEO campaign, which is to increase organic website traffic, and provides a specific target increase. To understand the concept of generating traffic over the Profile or site. The content that are targeted to the keyword produces direct traffic to the website. SEO generated direct traffic to the website when the site is optimized for relevant keywords selected by the users.

SCOPE OF THE STUDY:

The study will involve identifying relevant keywords and search terms that our target audience uses to search for content related to our organization's niche. This will include analysing the competition, search volume, and relevance of keywords. A thorough analysis of the website will be conducted to identify any technical issues that may affect its ranking on search engine result pages (SERPs). This will include examining the site structure, content, backlinks, site speed, and user experience. The study will cover optimizing the website's content and structure to ensure that the relevant keywords are strategically placed in the right places, including titles, headings, meta descriptions, and content. On-page optimization will also include optimizing images, improving page loading speed, and enhancing user experience.



LIMITATION OF THE STUDY:

Search engine algorithms are constantly changing, which can make it difficult to conduct research on SEO strategies that will remain effective over time. The SEO data can be challenging to obtain, especially for small or medium-sized businesses. Limited data can make it difficult to conduct comprehensive research on SEO strategies and their effectiveness. SEO is a complex and multifaceted field that involves many different factors, such as keywords, content, links, and user behaviour. The complexity of the topic can make it challenging to isolate and study the impact of individual SEO strategies. Data collection methods used in SEO research can be biased towards certain types of websites or industries, which can impact the generalizability of the findings.

II. LITERATURE REVIEW

Dushyant Sharma, Rishabh Shukla, Anil Kumar Giri, Sumit Kumar (2019) Due to the presence of a vast number of websites, the Search Engine has a crucial job of providing the relevant pages to the user, Search Engines such as Google, use Page Ranking Algorithm to rank web pages according to the quality of their content and their presence over the world wide web. Search Engine Optimization is a process of increasing the chances of a webpage to appear in the first page of the search result.

Venkat N, Gudivada, Dhana Rao, Jordan Paris (2017) Because users rarely click on links beyond the first search results page, boosting search-engine ranking has become essential to business success. With a deeper knowledge of search-engine optimization best practices, organizations can avoid unethical practices and effectively monitor strategies approved by popular search engines.

Meng Cui, Songyun Hu (2020) In order to make the search engine transfer information efficiently and accurately and do this optimization to improve the web search ranking, beginning with understanding the principle of search engine, this paper exports the specific explanation of search engine optimization. And then it introduces the new website building concepts and design concepts for the purpose of the construction of search engine optimization. Through an empirical research from the fields of the internal coding method, the website content realizable form and website overall architecture, the paper expounds search engine optimization tools, strategies and methods, and analysis the new thought that the enterprise and e-commerce sites with the search engine do the effective website promotion. And when the user through the search engine to search, the website can get a good rankings position in the search results, so as to improve the site traffic and finally enhance the website sales ability or advocacy capacity.

III. RESEARCH METHODOLOGY

Descriptive Research

This is a kind of research structure typically involves collecting data through surveys, observations, or existing data sources. The data collected is then analyzed to identify patterns, trends, and relationships among variables. Descriptive research does not attempt to establish causality, but rather focuses on describing the characteristics of the subjects or variables being studied.

DATA COLLECTION METHODS

- Primary data
- Secondary data

SIZE OF THE SAMPLE

Size of the sample is 100

Statistical Tools Used

- Simple percentage analysis
- Chi-square
- Ranking method

SIMPLE PERCENTAGE ANALYSIS

Simple percentage is a way of expressing a number as a fraction of 100. It is used to describe the proportion or relative size of one quantity compared to another. It is denoted by the symbol "%", which means "per hundred".



$$\text{Percentage analysis} = \frac{\text{Number of respondents}}{\text{Total number of respondents}} \times 100$$

CHI-SQUARE TEST:

A Chi-Squared Test is a statistical hypothesis test where the sampling distribution of the test statistic is a chi-squared distribution when the Null Hypothesis is true. It is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories. The purpose of the test is to evaluate how likely it is that the Null Hypothesis is true, given the observations.

$$X^2 = \sum (O_i - E_i)^2 / E_i$$

RANKING METHOD:

Garrett ranking technique to find out the most significant factor which influencing the respondents; Garrett ranking technique is used. As per this method, respondents have been asked to assign the rank for all factors and the outcome of such ranking have been converted into score value which the help of the following formula.

$$\text{Percent position} = 100 (R_{ij} - 0.5) / N_j$$

ANALYSIS AND INTERPRETATION OF THE STUDY

DETAILS OF THE RESPONDENTS		NO.OFRESPONDENTS	PERCENTAGE
Age	18-25 years	56	56.0
	25-35 years	33	33.0
	35-45 years	9	9.0
	Above 45	2	
	Total	100	100.0
Monthly income	10,000-25,000	31	31.0
	25,000-35,000	48	48.0
	35,000-45,000	13	13.0
	Above 45,000	8	8.0
	Total	100	100.0
Techniques used SEO process	Keyword selection	19	19.0
	Keyword generation	54	54.0
	Link exchange	24	24.0
	Other	3	3.0
	Total	100	100.0
Budget for SEO process	10,000	17	17.0
	15,000	63	63.0
	20,000	19	19.0
	25,000 or more	1	1.0
	Total	100	100.0

TABLE: DEMOGRAPHICPROFILEOFRESPONDANTS



From this table it is clear that 56% of are respondents 18-25 years, 48% of respondents monthly income is 25,000-35,000, 54% of respondents techniques used SEO process is keyword generation and 63% of respondents budget for SEO process is 15,000.

CHI-SQUARE:

Comparing the income and budget for SEO service.

1. Independent variable: Income
2. Dependent variable: Budget for SEO service

Null hypothesis (H0):

There is no relationship between the income and budget for SEO service.

Alternative hypothesis (H1):

There is a relationship between the income and budget for SEO service.

Table:

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	30.976 ^a	12	.002
Likelihood Ratio	23.717	12	.022
N of Valid Cases	100		

13 cells (65.0%) have expected count less than 5. The minimum expected count is .08.

Table value is less than calculated value

21.03 < 30.976

INTERPRETATION:

Therefore, there is a relationship between income and budget for SEO service.

Alternative hypothesis is accepted.

FINDINGS:

With help of percentage analysis these are findings from research

- 56% of are respondents 18-25 years
- 48% of respondents monthly income is 25,000-35,000
- 54% of respondents techniques used SEO process is keyword generation.
- 63% of respondents budget for SEO process is 15,000.

Chi square result shows that there is a relationship between income and budget for SEO service.

SUGGESTION:

Suggestions to improve SEO and website's ranking on search engines:

- **Conduct keyword research:** Keyword research is essential to identify the most relevant and popular keywords and phrases for business. Using tools like Google Keyword Planner, SEMrush, or Ahrefs to discover the best keywords for business and optimizing the content with these keywords helps to improve website's visibility.
- **Optimize website's on-page elements:** On-page optimization involves optimizing website's title tags, meta descriptions, header tags, and content with the target keywords. Ensure that title tag is descriptive, compelling, and accurately reflects the content on the page. Then use header tags to break up content into manageable sections and make it more readable.



- **Build high quality backlinks:** Backlinks are a crucial aspect of SEO. They help to establish website's authority and credibility. Build high quality backlinks from relevant and authoritative websites. Reach out to other websites or bloggers in our niche and ask them to link to our content helps SEO for better improvement.
- **Improve website's page load speed:** Page load speed is a crucial ranking factor. Ensure that website loads quickly by optimizing images, compressing files, and using a content delivery network.

IV. CONCLUSION

The study conclusively shows that future of marketing is in the hands of digital. With the increasing importance of online presence, businesses must optimize their websites and web content to rank higher in search engine results pages and drive organic traffic. This project has provided a comprehensive analysis of SEO, including its strategies, trends, and best practices. From analysis we know that SEO audit of the website, identified relevant keywords, and implemented on-page optimization, off-page optimization, and technical SEO strategies. By implementing the best SEO practices, we can improve website's visibility, attract more traffic, and establish website as a credible and authoritative source of information. SEO is a fundamental component of any digital marketing strategy, and investing in SEO can lead to significant returns on investment for your business.

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