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Optimizing online visibility: A comprehensive study on effective SEO strategies and their impact on website ranking

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Abstract: This study aims to have a more diversified view of the online visibility through attempting to evaluate the effectiveness of various SEO strategies in placing on website in search engine result. This research involves 400 respondents where it checks how keywords as one of the SEO strategies affect website ranking as well as technical SEO and off-page strategies. The appropriateness of the relevant keyword, as the result shows, there is a significant connection with the website ranking, closely trailing the importance of technical SEO in positioning the website on the first page, exerting a pronounced impact. While off-page strategies are the third most dazzling one: a significant degree of its residence/impact on website ranking. This research is a significant contribution to the field of digital marketing and its literature as it delivers an in-depth understanding on the major factors that affects online visibility and website ranking.

Keywords: online visibility; SEO strategies; website ranking

1. Introduction

The World Wide Web has completely transformed in the thirty or so years since it was envisioned as hyperlinked information system. From its humble beginnings as the document-centric Web 1.0 in 1990 and the socially and mobile oriented Web 2.0 in 1999 (Heuer et al., 2015) until it finally evolved into the semantic Web 3.0, significant web technologies have been developed at a breakneck pace the whole way.

The Internet's widespread influence has positively impacted technological progress, particularly in information and communication, which continually advances and becomes increasingly sophisticated over time. Advancements in data technology offer website owners a strategic advantage, as utilizing technology not only accelerates tasks but also ensures competitiveness in the contemporary era (Sudarto and Hapsari, 2019). Information, as a meaningful transformation of data, holds value for recipients and is integral to entrepreneurial aspirations, especially among younger individuals, where one's level of knowledge shapes entrepreneurial expectations (Ramadhan and Destiani, 2022). In the realm of search engines, a constant drive to refine algorithms for optimal user results exists, yet the criteria for categorizing websites remain undisclosed. Consequently, SEO experts employ

implementation and observation techniques to comprehend these algorithms, acknowledging the crucial role search engines play as essential tools in the era of abundant internet information (Daoud et al., 2023).

When implementing SEO strategies, In the process of optimizing a website for search engines, the focus often involves making targeted changes to various elements, such as content, meta tags, and site structure. While isolated modifications may not always yield the desired impact, the synergy achieved by incorporating these changes with a comprehensive SEO approach can lead to a more pronounced positive effect on organic traffic it is important to recognize that search engine algorithms are multi-faceted and dynamic. Hence, transposing the enhancement of the ranking of a website in search engine results into a single SEO strategy would be difficult. One of the most important aspects of this challenge, however, lies in understanding that search engine algorithms are multi-faceted and dynamic. With this in mind, a diverse SEO strategy is likely necessary (Al-Okail et al., 2023). It is likely to be advantageous to implement a hybrid approach that includes a variety of on-page and off-page optimization techniques. Content refinement and the application of link-building strategies, for example, are likely to generate considerable benefits. A broader, more comprehensive approach to the aforesaid methodologies is likely to carry its own rewards, however, likely manifesting in a more favorable position in search engine rankings, as well as improved visibility and, subsequently, a noteworthy increase in organic traffic for the website (Barakat and Al-Zagheer, 2021).

2. Research questions

- 1) What are the primary SEO strategies evaluated in the study, and how do they influence website ranking?
- 2) What is the relationship between keywords and website ranking?
- 3) What role does technical SEO play in positioning a website on the first page of search engine results?
- 4) How does off-page SEO impact website ranking compared to other strategies?

3. Research objectives

- 1) To identify and analyze the primary SEO strategies assessed in the study.
- 2) To examine the correlation between keywords and website ranking.
- 3) To investigate the significance of technical SEO in positioning a website on the first page of search engine results.
- 4) To assess the impact of off-page SEO on website ranking relative to other SEO strategies.

4. Literature review and hypothesis development

H1: The impact of keywords on website ranking.

- Link popularity and keyword research create the foundational beginnings of a search engine optimization (SEO) campaign. It's a critical step to improving a website's visibility by enabling it to rank more highly at the top of the vertical

search results in search engines for keyword searches that are relevant to that website. The first step generally involves analyzing various keywords that are appropriate for the website that's being optimized (Daoud et al., 2023).

- Creating a list of potential keywords.
- Developing an extensive list of potential keywords for the website, based on identifying externally popular keywords.
- Identifying externally popular keywords that are relevant and should be strategically placed on the website. This helps enhance link popularity and contributes to improved search engine rankings.

Determine top 5 search results keywords, identifying keywords that have the potential to position the website within the top 5 search results, thereby increasing visibility and click-through rates. Several tools and websites offer services for keyword analysis and keyword density (Olson et al., 2021). It is generally recommended to maintain a keyword frequency of approximately 5–7 words per 100 words of content, considering that most search queries consist of two words.

Keyword research provides valuable insights by addressing key questions:

What are people searching for?

Understand the specific queries and topics users are searching for.

How many people are searching for it?

Gauge the search volume for identified keywords to assess their popularity.

In what format do they want that information?

Understand the preferred format or presentation style desired by users for the identified information.

Before implementing SEO strategies to aid business expansion, it is imperative to comprehend the company's identity, its target audience, and its objectives (Allahham et al., 2024). While keyword research is time-consuming, skipping this planning phase can lead to missed opportunities. It is crucial to recognize that what the audience genuinely desires may differ from the keywords initially chosen for ranking (Sharma et al., 2019).

Successful campaigns prioritize the audience and utilize keyword data to refine insights (Allahham and Ahmad, 2024). Focusing on high-volume keywords where competitors are not yet ranked can be an effective strategy. Alternatively, analyzing the list of keywords for which competitors are already ranking provides an opportunity to capitalize on their missed opportunities. Balancing these approaches allows organizations to strategically prioritize keywords, contributing to a more successful SEO campaign (Veglis and Giomelakis, 2021).

H1: The impact of technical SEO on website ranking.

Technical SEO constitutes the systematic optimization of a website's structural framework and code, aiming to facilitate search engine discovery, comprehension, and the subsequent redirection of traffic to the site. This strategic focus proves particularly advantageous for individuals with a technical orientation. Professionals specializing in technical SEO possess adept skills in code manipulation, server configuration, and the identification and resolution of technical impediments hindering search engine spiders from comprehending the site's content and purpose (Abbasi et al., 2022).

The intervention of technical SEO specialists becomes imperative under specific circumstances. While many websites leverage robust content management systems such as Wordpress or Shopify, inherently equipped with sound technical SEO attributes, the scalability of a site may lead to the emergence of technical challenges, particularly in scenarios where multiple individuals can modify the site. As a site expands, it is almost inevitable that technical SEO issues will manifest (Almukhtar et al., 2021).

An additional concern that warrants the involvement of technical SEO experts is the occurrence of site hacks. In the event of a security breach, whereby unauthorized access compromises the integrity of the website, Google is disinclined to direct traffic to the compromised site (Ali et al., 2024). Furthermore, punitive measures, such as relegating the site to a penalty status, may be imposed until the security breach is effectively addressed. “The intrinsic importance of technical SEO lies in its capacity to ensure that what the search engines are looking for in a website, and the underlying structure or infrastructure of a website, are aligned.” Papagiannis says. “A highly capable and effective technical SEO strategy will not only ensure that these elements are optimized from inception, but will continue to monitor and make the necessary adjustments to these technical components over the lifespan of the website, to accommodate for scale, as well as unforeseen issues that might come about that prevent proper search engine comprehension. “For those who are inclined toward a technical approach, the technical SEO landscape requires paying a great deal of attention to tiny details, getting comfortable with server configurations and working in a Python command line, as well as understanding that there are a multitude of players (i.e., networks and server admins) who are all configuring and noodling with technical parts at the same time. As is the case with any field, the most technically inclined in SEO (and perhaps in all things technical) will find that a critical aspect of what they do is not just the fine-tuning, but also the ability to troubleshoot and problem-solve in such a way as to not disrupt the whole of SEO or website traffic. In effect, the technical side of SEO plays a massive role in ensuring a website works and does what it needs to, does not encounter any showstoppers that would hinder the search engine’s ability to see it, and also redirects traffic when the inevitable hiccups happen (Daoud et al., 2023).

H3: The impact of off-page strategy on website ranking.

Running this report monthly or quarterly is vital to keep up with the ever-changing landscape of websites linking to your site. Our primary goal is to see an upward trend in the total number of linking websites, with a focus on quality sites being added to the mix.

In the intricate world of Search Engine Optimization (SEO), backlink analysis is a critical part of any outreach campaign (Al-Qeed et al., 2023). It is well known that the most important links to your website are the ones from authoritative websites. These links, called backlinks, are when other sites connect to yours and ultimately help determine how much authority and relevance your site has when search engines evaluate it. The reason backlinks are so critical is for two reasons, first and foremost backlinks help search engines determine how authoritative your site is, in essence—how high your site should go in the search engine rankings and for which keywords. Understanding the importance and value of backlinks highlight

why it's so critical to be strategic in building your backlink profile (Khalil and Edlund, 2020).

While the number of backlinks clearly plays a role as a metric, the quality of the linking websites is far more important. It requires you to be selective in how you acquire backlinks, which means you must adhere to a few criteria to ensure that the linking entities your SEO solutions company work with are relevant, are authoritative, and create high-quality content.

The first, and most important, consideration is to decide what page or blog to snag a backlink on. This has to match up very well with the thematic relevance of whatever content your client wants a backlink on, ensuring that the link's insertion makes sense and feels right.

The next most inflexible criteria is a domain score of 50, at the lowest. Assigning this lowest of baselines ensures a modicum of authority and credibility in the linking entity's source. That is mostly what passes for authoritativeness in the world of SEO.

The third biggest pointer to how easy this backlink process will be is the quality requisite to get your content included with the backlink. This quality, of course, encompasses how valuable and informative the content is, but also how well the content matches up naturally with the user's intent for the source page. You want compelling, well-written content that's a minimum of grammatical-free.

What goes without saying is that the more in-depth, comprehensive content consistently ends up winning in search results. So, look up the content you're writing, get your client a backlink inside of something longer and more comprehensive and Bing bang SEO pursuit over with (Das, 2021).

5. Research methodology

An ex post facto survey method was employed in this study, encompassing both quantitative/ qualitative collection of data method (Kregar, 2014). The previous studies were executed by the researcher based on the variables identified in the objectives of research and was performed through the exploration of existing research, academic journals, textbooks and the scrutiny of the online interfaces of search engine optimization specialist. The research instrument utilized was a questionnaire validated by four experts holding the titles of professor. It underwent testing on a carefully selected sample to ascertain the respondents' comprehension of its terminology and vocabulary.

A methodology utilized by Wilson (2006) was employed to obtain a sample size of 400 respondents, T was applied to select the participants. From there, G Forms was used for the distribution of the questionnaire, which was sent to a group that was selected. The completion and submission of 400 questionnaires were leveraged as the participants who were approached were interconnected (Khraiwish et al., 2022). The analysis of the collected data used the due process of relevant statistical inferences and regression analysis were measured and applied to validate or disprove the null hypothesis. In relation to the research objectives this has allowed for the relationship or differences to be seen and the existence of any patterns.

Research model

Focused on the assessment of SEO strategies and their impact on website ranking, recognizing the pivotal role of a research tool in obtaining valuable data that contributes to accurate conclusions about the ongoing problem or study. This process is integral to identifying appropriate solutions for the concerned issue. The selection and deployment of research tools can be approached in two distinct manners. The initial approach involves investigators independently devising a tool tailored to their study. However, this approach presents numerous challenges, as developing and standardizing an ideal tool is a substantial endeavor, comparable to a study in its own right as shown in **Figure 1**. An alternative approach involves the construction of proprietary tools by researchers themselves, as proposed by Alhawamdeh et al. (2023).



Figure 1. SEO strategies.

6. Analysis and results

6.1. Profile of respondents

Table 1 provides a detailed description of the profile of the respondents ($N = 435$) involved in the research. The characteristics which were used to describe respondent are age, gender, and the occupation of search engine optimization specialists, the other demographics. Thus, the majority of respondents of the sample were male, as 310 respondents which made 53% of the sample, included males while 90 respondents or 47% included females. The age distribution shows that the representation of different age groups is not equal. The age group from to 38 to 47 had the highest number of 198 responses or 50% of the sample, the next highest number of responses were given by the age group of 26–37 with 114 respondents or 28%. The representation of other age groups was lower, therefore, the groups of 18–27, 48–57 and 58–67 is represented by the respondents but the information can be considered important. When dividing the respondents based on their occupation as SEO specialists the size of the employing organization was also considered. Thus, the largest part of the SEO specialists was identified as freelancers, as 203 respondents or 51% of the sample. The next highest number of SEO specialists were found as representing freelancers. Next, were SEO experts working at the medium-sized organization with 99 respondents or 25% of the sample, large organizations employed 40 respondents or 10% of the sample, small organizations employed 58 respondents or 14% of the sample. The table provides a detailed description of the respondents' demographics and occupational characteristics, thus providing valuable information on the composition of the sample.

Table 1. Profile of respondents ($N = 435$).

Variable	Category	Frequency	Percent (100%)
Gender	Male	310	53
	Female	90	47
Age	18–27	68	17
	28–37	114	28
	38–47	198	50
	48–57	12	3
	58–67	8	2
Search engine optimization specialist	Freelance	203	51
	Small company	58	14
	Medium company	99	25
	Large company	40	10

6.2. Multicollinearity test

Table 2 illustrates that the researchers utilized two different tests to assess the existence of multicollinearity among the variables: the tolerance value and the variance inflation factor (VIF), employing SPSS version 25. Looking at **Table 2** and the multiple regression analysis, the results of the study, the tolerance value is 0.870 and the variance inflation factor (VIF) value is 1.088 for the independent variable. With a tolerance value much higher than 0.10 and a VIF value below 10, multicollinearity among variables is determined to pose no significant concern.

Table 2. Multicollinearity test.

Variable	Collinearity statistics	
	Tolerance	VIF
SEO strategies	0.870	1.088

6.3. Measurement model assessment

Table 3. Internal consistency reliability analysis.

Dimension	Cronbach's alpha	CR	AVE
SEO strategies	0.780	0.802	0.300
Keywords strategy	0.900	0.931	0.801
Technical SEO strategy	0.920	0.932	0.785
Off-page strategy	0.890	0.913	0.775
Website ranking	0.868	0.904	0.782

Table 3 discloses that the purpose of assessing construct validity is to ascertain the degree of alignment between the results obtained through a measurement and the underlying theories on which the test is based (Sekaran and Bougie, 2013). To be more specific, construct validity seeks to address the question of whether the adapted instrument effectively measures what it is theoretically intended to measure. To perform a comprehensive validity analysis, the researcher subjected the measurement

scales to three rigorous tests, covering validity, convergent validity, and discriminant validity. Content validity evaluates the extent to which the indicators or scale items accurately reflect the domain of the concepts under investigation.

6.4. Measurement model assessment

6.4.1. Convergent validity

Conventional wisdom demands that convergent validity pivot on examination of factor loading, composite reliability and average variance extracted (AVE). Factor loadings, composite reliability and average variance extracted (AVE) conspire in a three-way alliance of critical appraisals to shore up convergent validity. The acknowledgement that “items should load 0.50 or more” is not without merit, since once item loadings, AVE, and composite reliability clear the bar, it is safe to assume that constructs are effectively represented by their respective items, and in the process strengthen their convergent validity (Hair et al., 2019). To wit: as discussed, AVE represents the shared average variance between the construct and its measures with a recommended AVE value of 0.5 or higher. Presented, therefore, are outcomes showing AVE coefficients ranging from 0.785 to 0.801. This table, **Table 4**, also documents each construct’s composite reliability as ranging from 0.930 to 0.901.

Table 4. Convergent validity.

Variable	Items	Loadings	Cronbach’s alpha	Composite reliability	AVE	
SEO Strategies	Keywords strategy	KS1	0.880	0.920	0.930	0.800
		KS2	0.892			
		KS3	0.905			
		KS4	0.850			
		KS5	0.921			
	Technical SEO strategy	TS1	0.879	0.910	0.923	0.790
		TS2	0.848			
		TS3	0.808			
		TS4	0.832			
		TS5	0.796			
	Off-page strategy	OPS1	0.799	0.901	0.929	0.785
		OPS2	0.859			
		OPS3	0.870			
		OPS4	0.898			
		OPS5	0.899			
OPS6		0.905				
Website ranking	Search volume	SV1	0.870	0.870	0.901	0.798
		SV2	0.913			
		SV3	0.896			
	Average session duration	ASD1	0.903	0.893	0.914	0.801
		ASD2	0.920			
		ASD3	0.889			

6.4.2. Discriminant validity

In this research’s examination of discriminant validity as in **Table 5**, the strategy was to employ comparative analysis and compare indicator loadings to cross-loadings on other variables, and to have a goal in such an evaluation for reflective indicators whereby an indicator loading would exceed its cross-loading(s). All available indicators in this research did exceed their cross-loadings, thus meeting the requirements of discriminant validity.

Additionally, the correlations between latent constructs remained below the square roots of their corresponding Average Variance Extracted (AVE) values, positioned in diagonal cells, with correlations below this threshold. Similarly, as indicated in **Table 5**, the HTMT criterion was found to be below the threshold of 0.387, confirming the successful establishment of discriminant validity.

Table 5. Discriminant validity based on HTMT ratio of correlations.

Heterotrait-Monotrait ratio (HTMT)		
	SEO strategies	Website ranking
SEO strategies	-	-
Website ranking	0.387	-

6.5. Structural model assessment

The R^2 value represents the percentage of variability in dependent variables explained by independent variables. In this research, the SmartPLS algorithm is utilized to calculate these values, and the SmartPLS bootstrapping function is employed to produce t -statistics.

This evaluation can be performed by employing a cross-validated redundancy measure obtained through the application of the PLS blindfolding technique to all endogenous constructs (Fornell and Cha, 1994). Typically, the cross-validated redundancy value should be positive, and in this study, as demonstrated, it indeed is. The utilization of the blindfolding exercise in SmartPLS highlights the model’s predictive quality strength in this research as shown in **Table 6**.

Table 6. R-square (R^2).

Endogenous variable	R^2	Predictive relevance
Website ranking	0.670	-

Table 7. The Q^2 .

Endogenous variable	SSO	SSE	Q^2 (1-SSE/SSO)
Website ranking	8105.000	7543.179	0.251

In **Table 7** “Q2,” a quality measure. Q2 measures model predictiveness. It determines the amount of the result variable’s variability the model can account for. Q2-calculation formula, where: SSE is the sum of squared errors, which measures the distance between observed measurements and model predictions; the total sum of squares quantifies the overall variability in observed measurements. In the table, SSE is 7543.179 and SSO is 8105.000. Q2 can be calculated as follows. Therefore, the

Q2 value is 0.0692. If Q2 is close to 1, the model can explain a lot of data variability, indicating high predictive power. When Q2 is close to zero, prediction is poor. The 0.0692 dissemination figure indicates that the model can explain only a small fraction of variability, demonstrating low predictive power of the model.

Table 8. Effect sizes (f^2).

Variable	Endogenous variable	f^2	Effect size rating
SEO strategies	Website ranking	0.367	Large

In **Table 8** the calculation of the f^2 requires the estimation of two PLS path models, i.e., one where a particular latent variable is integrated within the model and one where a particular latent variable is excluded. Effect size values provide general criteria for the assessment of the relative effect of excluded constructs on the particular endogenous constructs as they are generally categorized as: small-medium-large with effect sizes of 0.02-0.15-0.35 (Cohen, 1988). This methodology has been useful to further understanding about the forecasting power of the model in this empirical study.

6.6. Hypothesis test

Table 9. Hypothesis test.

No.	Hypotheses	Beta	SE	T-value	P-value	Decision
H1	KS → WR	0.340	0.076	6.381	0.000	Supported***
H2	TS → WR	0.272	0.068	7.426	0.000	Supported***
H3	OPS → WR	0.381	0.052	5.652	0.000	Supported***

Table 9 shows the hypothesis testing outcomes, beta coefficients, standard errors, t -values, p -values, and decisions for the hypotheses. As seen from **Table 9**, all three hypotheses; H1, H2, and H3, could all be proven. H1: KS → WR: A notable correlation was identified between beneath and over using KS when it came to WR: Beta, SE, T, Sig. The positive-natured beta indicates that WR grows as well when the usage of KS grows. H1: KS → WR was supporting. H2: TS → WR: A varying relationship developed between beneath and overusing TS: Beta, SE, T, Sig. The coefficient's positivity meant that WR expands as TS expands as well. H3: OPS → WR: An even noticeable outcome was witnessed from OPS: Beta, SE, T, Sig. in contrast. The three hypotheses, H1, H2, and H3, have all been supported.

7. Findings

The results outline a strong and positive relationship between keywords and website ranking. The study notes the powerful influence that strategic keyword optimization holds over online visibility. A diligent focus on keywords generates promising results, confirming that keywords are a cornerstone of improving a website's ranking within search engine results (Atieh et al., 2024).

The study also found a strong and positive correlation between technical SEO practices and website ranking. Although the study shows the relationship is

consistent, the results emphasize how this strong relationship makes it vital for websites to invest in on-going technical SEO. The results also concluded that a well-executed technical SEO strategy has a significant influence on a website's ranking overall, and Bop Design stresses that this is an area where many B2B Web Design Agency professionals add significant value.

A final finding of note: The research demonstrates a strong and positive connection between off page strategies and website ranking. The consistent and strong relationship confirms that off page strategies are likely to have an extremely high impact on a website's rank. This insight indicates that quality links are pivotal, as are the various comprehensive off page strategies that are essential to improving a website's rank. The researcher found strong and positive relationships between keywords, technical SEO practices, off page strategies and website ranking, shedding light on the varied nature of effective SEO strategies and the extent to which they function in concert to improve a website's rank and foster online visibility overall.

8. Recommendations

- 1) The findings focus on recommendations for search engine visibility such as strategic integration of relevant keywords across website content as well as headers and meta tags, ensuring that the website's content aligns with common search queries providing for ranking at maximum relevance based on current SEO strategies. However, ongoing, effective implementation requires following best practices in technical SEO, including site structure, mobile optimization and page speed according to search engine guidelines, the study shows.
- 2) Every time, it's on to the next iteration of content. The integrated and strategic SEO process also emphasizes the creation of content that's high-quality, valuable and engaging a practice that must be implemented continuously on the website. This means that while developing a large library of content in diverse formats and styles is now a standard best practice, the work is far from over. In fact, with continuous content readjustments and improvements, the site continues to be optimized for mobile, as more and more users consume written and video content directly from mobile devices.
- 3) Additionally, earning backlinks that lead users back to the website from high-quality websites—rather than “link farming” or other abusive practices—adds credibility to the website and reinforces reach. Social media platforms play an important role in continued engagement, in the share of content and in the participation in more micro-community conversations, bringing people in from around the world to discuss aspects of the content hosted on the website.
 - (1) Offer user satisfaction with a clean, intuitive, easy-to-navigate website with high-quality content and the fastest possible loading times.
 - (2) Prioritize local SEO by optimizing Google My Business profiles, gaining job reviews for each location and franchise, and making sure accurate business hour information is always up to date.
 - (3) Set up robust analytics and monitoring to ensure you're tracking the performance of each part of your SEO strategy and check the performance

more often. Monthly checks are too infrequent to catch enough early signs of trouble.

- (4) Keep up with all the latest updates to search engine algorithms—and if you miss an update, then the update to the update... if you get confused, try the guides to Panda, Penguin, Hummingbird, Pigeon, Possum, Rank Brain, Mobilegeddon, not provided or Fred, and I'm sure there will be another update next week.

By building a complex series of SEO strategies that specifically address the needs of your unique businesses, you can maximize your search engine rankings and enjoy rest of mind.

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