

# On Page & Off Page SEO Optimization of a Job Portal Website on Google Search Engine

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**Abstract**— PageRank is the technique used by Google to decide importance of page on the web. It considers all received links to a page as votes for PageRank. But if these votes from different sources weighted equally, this will main to wrong result. Thus, votes from different sources are weighted according to PageRank of voting page and number of links that voting page contains. Internet is the term which is known by everyone in this world. It is the fastest growing sector. All of us are consumer of it either as commerce, industry & individual. Search engine optimization is a technique which is used in the internet. We can say that it is a process of finding our desired result. Google is one of the known search engine. How can any web page on Google and how to rank your page with the help of tools and show your page on any search engine on the Internet such as Google, Bing, yahoo, and ask and some search engines Also, there are some search engines that also show their page in the search results page of the website on these search engines, so we use search engine optimization? We all use it in our daily life, how it works, without this knowledge. In this paper, we study how search engine optimization awakens and which tools are used and based on which algorithm it is based on.

**Keywords:** Search Engine Optimization, SEO, Offpage SEO, Onpage SEO, Google Search Engine, Job Portal

## I. INTRODUCTION

SEO is the full form of Search Engine Optimization. We all know that Google is the most used search engine in the world. In addition to Google, Bing and Yahoo are also the second search engines to be used. After doing Search Engine Optimization, we rank our website in search engines. If we know SEO very well, then You can rank your website on No.1 position. If we do not do search engine optimization on our website or blog, then it will not be seen anywhere in the search engine's search result. Let's understand this with the help of an example. Suppose, I need to get information about Pen from Google, then I will search "what is Pen" then Google shows all the websites related to the word "pen" in the search result. In this, we will see many different websites that have written a post about Pen. As human nature, we will open that website or blog which will be on 1st position on Google search page. And if we do not find satisfaction with the information in it, then we will open the 2nd and 3rd number of search result.

## II. SEO METHODS

### A. On-Page Optimization

On-page SEO is an imperative factor in getting your posts positioned at the topmost point of the search results page. You can have accomplishment without purposely actualizing this procedure on each post, however in case that you make it a need to optimize every one of your blog posts with these on-page SEO strategies, you will without a doubt accomplish

substantially more consistent outcomes. On-page optimization process includes those components directly connected to your website.

Onpage seo is important for bringing any website or blog to a higher rank in search engines and to increase organic traffic from search engines. OnPage SEO comes with all the things that a site is used to optimize for search engines, to crawl and index webpages. [14]

#### 1) Page Title

For search engine rankings, title labels are the most basic component for the search engine importance. The title tag is in the <head> area of the HTML record, and this the main piece of "meta" data about a page that impacts the most significance and positioning [3]. It speaks to the topic and primary watchwords of the specific web page. It is the blend or string of the words/content characterizes by the tag <title> in HTML archive. Following is the language structure of Title tag in HTML

<title> Your web site Title </title>



Fig. 1: Page Title of website

#### 2) Description Tag

Web page Meta description tag contains brief succinct data about the page content. Regularly it is shown after title in search engine results page (SERP). The Meta description tag is critical on the grounds that you can use it as a technique to pass on your promoting message and whole search engine visitors to tap on your posting as opposed to clicking your opposition [4]. The Meta portrayal tag is in the <head> segment after title tag. The linguistic structure is as per the following:

<Meta NAME=" description" CONTENT "your website description.">

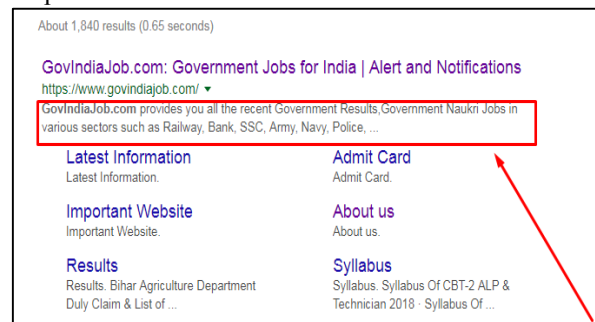


Fig. 2: Description Tag of website

### 3) Heading Tags

Heading labels are essential as these are features of the topic of the website. Heading labels are given more worth via search engines than an ordinary body copywriting. Utilizing your focused on watchwords is imperative in heading and subheading labels. Regularly heading labels are composed from H1 through to H6. Heading labels informs the search engine robots concerning the topic of the website. The H1 tag has the most significance and H6, the least and the other way around. Keeping code to H1 through H3 heading level is a perfect methodology. The linguistic structure of heading tag is as per the following:

```
<H1>Heading Title</H1>
```

#### B. Off-Page Optimization

Off-page optimization likewise canceled webpage optimization is alluding to the factors that have a result on your website positioning in characteristic search results specifically related with outside conditions (comprises search positioning factors not situated on your website). It is partitioned into two noteworthy segments. These are website's history and Links back (outbound links) to the website. The most important factors of off-page optimization include the following: [5],

- The measure of websites which connecting to your website I-e outbound links.
- The PageRank and connection prevalence of the websites connecting to your website
- Google Sitemap arrangement and accommodation by means of Google webmaster.
- RSS syndications and numerous different factors [5].

#### 1) Link Popularity

Link popularity refers to the total number of web locales that link to you website, in different ways link popularity is the blend of all sort of back links (for example from forums, blogs, RSS etc) to your website. It likewise incorporates the popularity of the web destinations just as substance importance of those linking to you.

#### 2) Link building

Link building is essential in search engine optimization process and a key component in off-page optimization. Directing a link building effort will improve web webpage's link popularity, increment the website traffic and in the long run improve the search engine positioning. Links are not equivalent; each website on the web has some unmistakable worth and inherent esteem contingent on its search positioning factors. Sites that are linked to high-specialist sites transform into higher in the expert chain themselves [6]. There are various methods to build links which are discussed as follows:

##### a) Reciprocal Linking

A reciprocal link is a mutual way of link building in which two websites swap their links to each other. For example, Website www.a.com has an inbound link to www.b.com in exchange of the link of www.b.com. Reciprocal links has the least worth regarding search engine rankings in any case, it is powerful to get rank and boost web traffic.

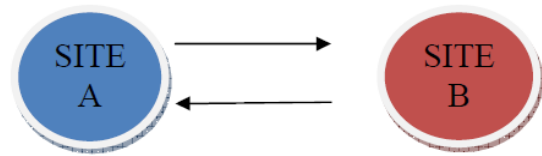


Fig. 3: (Reciprocal Linking)

##### b) One Way Linking

One-way linking is the most effective way and most valued. One-way link is the point at which another website is linking to your website and you have not linked back. Normally, websites don't give link easily. Usually the procedure of one-way linking is about purchasing links. Website links from high PageRank website are progressively costly.

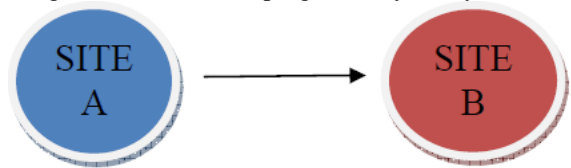


Fig. 4: (One-Way linking)

##### c) Three way or Triangular linking

In three ways linking, site An offers links to site B, and site C links back to site A. For example, site a.com wants a 3 way links from site b.com then site a.com will add link to b.com on its partner or directory site which is c.com and will ask a.com back link nearby b.com. In this way both site a.com and b.com get a one way link. This way of linking also called triangular linking.

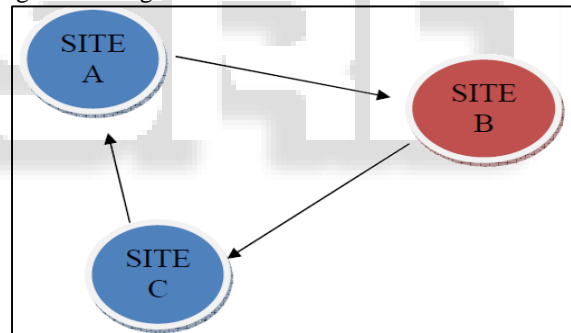


Fig. 5: (Three way or Triangular linking)

#### 3) Improve Click Property

Click popularity is an important factor for website rank in search engines. The popularity of the page regularly clicked will be high. At the point when a visitor clicks a website from SERPs, search engine will offer some certain value. Be that as it may, don't attempt to replicate clicking without anyone else website, because the clicks from a solitary IP will be checked just once [7].

#### 4) Google SEO Tools

Google search engine hold the 95% of the world search market. There are some effective search engine tools presented by Google. Each search engine practitioner must chips away at Google webmaster, Google analytics, Google pattern, Google catchphrase tool in the search engine optimization process.

### III. GOOGLE UPDATES

Google's algorithms have grown enormously and now they depend on in excess of 200 one of a kind flags that empower

the clients to discover what they are searching for in the web. For a marketer, it is these signals that are important to know and to understand, or at least part of them as Google does not reveal all the signals to public knowledge. It is these signals, upon which the algorithms define whether the page is shown in first results or not. The signs are for instance keywords on websites, the region, and freshness of webpage content and additionally the ranking of the page in web seek.

The entire procedure behind search begins with crawling and indexing pages. For this, Google and other web indexes have built up their very own robots to crawl the web. These are sometimes also called spiders. Google's crawling robot is called "googlebot". These crawling robots move between various pages and investigate its contents and decide if it is significant site or not.

In the beginning, in 90's, search engines was not as effective as it is today; it was mainly focused on keyword matching and backlinks. So, it was quite easy for the low-quality websites to rank higher by targeting their exact keywords with lots of backlinks.

To solve this problem, Google introduced a algorithm to filter the results so that it could clean the web. Since then Google is continuously updating its algorithm to maintain and improve the efficiency of its search engine. Some of the major Google updates which helped it filter sites more precisely and clean the web effectively are given below:

#### A. 2016 Updates Penguin 4.0

Penguin 4.0 was declared on September 23, 2016, with few changes like it will be a piece of center calculation, will refresh progressively and will be page explicit as opposed to influencing the whole area. Mobile Friendly Boost Update It was propelled in May 12, 2016, to help mobile-friendly inviting locales on portable search.

#### B. 2015 Updates Panda 4.2

On 17 July 2015, Google took off Panda revive (Panda 4.2). It has no prompt impact on rankings. As indicated by Google, it affected 23 % of English language look inquiries.

It was taken off on 21 April, 2015. It made versatile agreeableness a vital positioning component for portable pursuits. Its activity was to help the rankings of versatile prepared pages with the goal that quality and important substance could be given to portable clients.

#### C. 2014 Updates Penguin 3.0

It was presented on 17 October 2014. It was only an invigorate that helped those sites support their positioning who were de-positioned in the past refresh (Penguin 2.1).

##### 1) Panda 4.1

It was the 27th form of Panda discharged by Google on 23 September 2014. Google said that it will help web index recognize poor substance so little or medium measured sites with quality substance could rank better.

##### 2) Pigeon

It was taken off in July 2014, for nearby organizations. Google said that it will make nearer ties among nearby and center calculations so individuals could discover valuable and exact data in neighborhood query items.

##### 3) Panda 4.0

This Panda refresh was presented on 19 May 2014, to support little sites and organizations with restricted assets. It was a change an information invigorate; an adjustment in Panda calculation.

#### D. 2013 Updates Hummingbird 1.0

It was presented by Google on 20 August 2013 to all the more likely comprehend the changing substance of the Web. It was equipped for understanding the aim of long hunt terms rather than simply perceiving explicit watchword. It helped Google perceive long-tail look terms and precisely rank responses to such long-tail catchphrases. It empowered clients to make inquiries and find fitting solutions.

#### E. 2012 Updates Penguin

It was acquainted on 24th April 2012 with focus on the destinations that were spamming the list items by purchasing connections or utilizing some other connection systems structured explicitly to support rankings. Google issued alerts through Webmaster devices and punished the destinations for not following its rules.

#### F. 2011 Updates Panda/Farmer

It was first propelled on Feb24 2011. This calculation was utilized to allocate a score to website pages dependent on the nature of the substance and de-rank the destinations with low-quality substance. Its activity was to distinguish and de-rank substance ranches, locales offering slender substance or destinations with high promotion to-content proportion.

#### G. 2010 Updates Caffeine

In June 2010, Google refreshed its caffeine calculation to present new web ordering framework. It helped Google to improve the speed of web search tool and coordinated creeping and ordering that brought about a 50% fresher record.

#### H. 2009 Updates Caffeine (Preview)

In August 2009, Google discharged Caffeine (Preview); the up and coming framework change to improve and coordinate ordering, creeping and scope of their web crawler file.

##### 1) Vince

It was presented in February 2009. It was viewed as a major change that would support huge brands however Google's Matt Cutts cleared that it was a minor change concentrated on positioning signs like trust and specialist.

#### I. 2007 Updates Buffy

It was presented in June 2007. This refresh was named to pay tribute to Google's Vanessa Fox. Matt Cutts said that it was only some minor changes like the joining of list items with news, pictures and recordings, and so on.

#### J. 2005 Updates Bigdaddy

It was taken off in December 2005. It was a framework change that conveyed new details identified with URL canonicalization, diverts, and so on. It helped Google to plan for future advancements.

### K. 2004 Updates Brandy

This refresh was propelled in February 2004. It extended Google's record and fused Latent Semantic Indexing (LSI) which empowered Google to more readily comprehend equivalent words.

### L. 2003 Updates Florida

It was presented on 16 November, 2003. It conveyed huge change to Google's calculation and put a conclusion to the utilization of catchphrase stuffing to control internet searcher results.

#### 1) Google Mobile-Friendly update (Mobilegeddon)

One fine day with a blast and a haze, an update took off and it caused a little blend. Regardless of the terrifying name it got from SEO geniuses, locales didn't bite the dust.

All Google did was present another portable hunt positioning component: the client experience quality when seen on little screens.

Such a development was impelled by a noteworthy increment in the quantity of quests being directed on cell phones. Google suspected we were making a beeline for a versatile first world – and was totally right. The need to adjust their look calculation for gadgets other than PCs was defended.

This portable amicable update, a.k.a. Mobilegeddon, touched base in 2015, and as far back as at that point, there has been discussion of another, independent list for portable amicable sites. It at last observed the light of day in 2018, and destinations that readied for it early were expeditiously included this new record.

## IV. SEO PAGE RANKING TOOLS

- 1) Keywords Everywhere - Keyword Tool (keywordseverywhere.com)
- 2) Google Keyword Planner (ads.google.com/official/keywordplanner)
- 3) Google Trends (trends.google.com/trends)
- 4) Ahrefs Backlink Checker (ahrefs.com/backlink-checker)
- 5) Keyword Shitter (keywordshitter.com)
- 6) Keywordtool.io
- 7) Small SEO Tools (smallseotools.com)

## V. STATUS OF WEBSITE

All backlinks and page rank is zero.

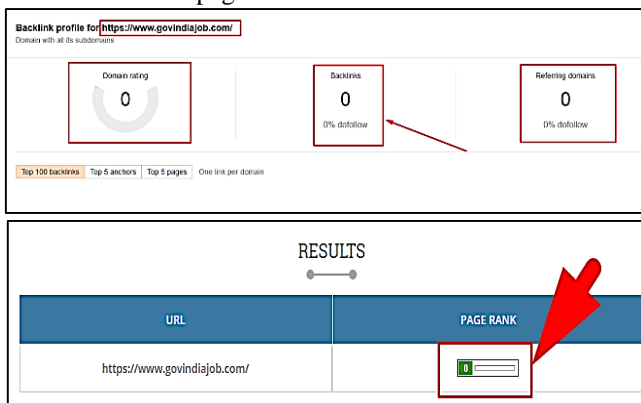


Fig. 6: (25/10/2018) backlink is 0 (Zero)

## VI. RESULTS ON GOOGLE SEARCH ENGINE

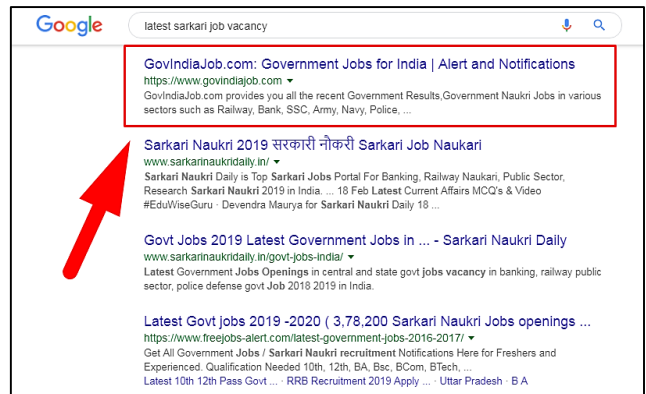


Fig. 7: First result on Google.com



Fig. 8: 9<sup>th</sup> result on Google.com

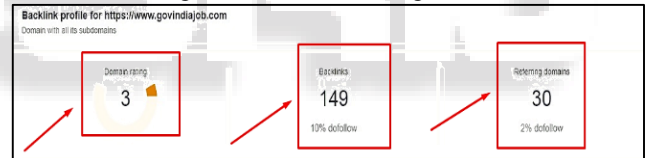


Fig. 9: Backlinks report

All results are shown above with screenshot proof. By following SEO page ranking tool. We can achieve keyword ranking on Google search engine.

## VII. CURRENT RESEARCH DETERMINATIONS

Aanchal Kakkar [8] have studied that the PR of page is calculated by google spider once it come in contact with it which has no idea nearly the contented or size of the page or the language and the text used in the link.URL strips off to the parent page when present on the toolbar. With the proper understanding of page rank under different cases we have summarized the result as follow:

- 1) The normalized probability distribution of page rank will be 1.0
- 2) When number of pages includes and when we start page with 1, the little iterations required to converge to a suitable result.
- 3) No negative value can be estimated.
- 4) Each time an algorithm is executed it gets closer to the final value.

Kai Li [9] We have study that PSM and SEO are two main advertising services available to advertisers in search



engine marketing. In this study, we build two mathematical models, one in microeconomic method and another in game theoretic method, to analyze the competition between PSM and SEO. Search engine quality, which is divided into two dimensions: algorithm effectiveness and algorithm robustness, is introduced as an important factor in the model. Based on search engines, algorithm effectiveness brings in online searchers which are recipients of online advertisements that are the revenue source of both PSM and SEO. Algorithm robustness helps search engines to keep away from SEO firms' chasing and reduce the noise made by SEO firms in organic searching. This enhances the searching experience of online searchers in organic searching, and also positively influences the searchers' clicks of sponsored links. SEO firms always have motivations to chase search engines in search algorithm, so search engines have to keep running away to maintain their algorithm robustness. However, when a search engine has a relatively low level of algorithm effectiveness, keep investing in algorithm robustness contrarily reduces the total revenue. SEO is an interesting but not well studied issue in the online advertising area. In this study, we endeavor to break down the supportability of SEO firms, and explore the effect of SEO and different factors on SEP's benefit. A few fascinating bits of knowledge rise up out of the examination of the SEO firms' supportability. To begin with, the supportability of SEO firms depends, in any case, on the promoters' readiness to-pay for web based publicizing. As this valuation ascends after some time, SEO firms offer favorable position over paid inquiry. This outcome is principally because of the diverse estimating arrangements received by the web crawler and SEO firms. Also, algorithm heartiness has a monotonic negative impact on the manageability of SEO on the grounds that it legitimately limits the act of SEO. The viable ramifications, consequently, is that SEP could improve its benefit through steady learning and "outflank" SEO firms, with the goal that its outcomes are less defenseless against SEO practice all in all. Thirdly, algorithm viability decidedly influences the maintainability of SEO firm. All the more imperatively, a web search tool is conceivably subject to "without riding" impact from SEO firms, in view of the parasitic idea of these organizations. As the web index put resources into algorithm adequacy improvement, SEO firms may likewise profit by this venture since more web crawler client implies more clicks in the two sides of web crawler. So as to receive a more full reward from speculation, SEP has the motivating force to improve its algorithm vigor in the meantime. This marvel has been as often as possible saw in Google Dance Syndrome, a purposeful endeavor at improving its algorithm strength. Because of the extension requirement and the kind of the investigation, there are a few confinements to this examination. Initially, the uniform circulation supposition of publicists' readiness to-pay is shortsighted as a general rule. Second, the model is constrained in publicists in a single industry. One conceivable augmentation is to demonstrate industry distinction and promoter contrast with a various leveled circulation and in this way, separate the two impacts. The outcome could yield administrative experiences as far as market division. Then again, level separation model could be utilized to address the promoter heterogeneity in keyword inclinations.

WangBin [10] we have studies that University website for search engine optimization strategy research has broad application value, it has profound guiding significance to improve website ranking, this article from the website design, keywords, web pages, links and so on several aspects to discuss SEO technology optimization, and do search engine optimization (SEO) during the practice process for our web site for. Through SEO optimization, our website has been well promoted, which has raised the visibility of our college and has established a good brand effect.

Surbhi Chhabra [11] analysed that each web search tool is partitioned into assorted modules including crawler module on which web index depends the most. A crawler is used to download and store web pages for internet searcher. For any crawler two issues should be considered. First the crawler should organize and select a strategy to decide which pages to download next. Second, It needs to have optimized and robust structure with a goal to download maximum pages per second including accidents and crashes. Web crawler is focused on data and can be orchestrated to target what we require. A superior crawler for large search engine needs to address the accompanying issues: It needs a profoundly advanced framework design that can download an extensive number of pages every second. It ought to have great memory administration framework to dodge the memory stack overflow. It needs to choose which pages ought to be downloaded next. It must be strong and solid against crashes. It has to be managed by the accessible resources and web servers. To construct a viable web crawler, different issues should be considered because the size of the web is enormous and such far reaching scope is exceptionally troublesome. Several crawling strategies or algorithms are utilized for downloading web pages from the World Wide Web. There are numerous more procedures and techniques that might be considered for crawler to enhance its execution and performance. Focused Crawler is intended for highly advanced users who crawl over a small part of the internet for specific topic. Focused crawler is created to extort only pertinent website pages of intrigued subject from the Internet with quicker recovery speed furthermore helps in giving Clean client submitted content against a sheltered white-list, to forestall XSS attack. Due to constraint of network bandwidth and time a web crawler can't download all pages, it is critical to pick the most imperative ones amid the crawling process and going by numerous immaterial pages.

Vishakha Chilpipre [12] We have analyzed that survey the working of web search engine and analyses the role of web search optimization, web crawler, web mining. Increase in the user of web facility results in insert, delete and manipulate of huge amount of data in web so study of Search engine optimization, web crawler and web mining for search engine helps to provide an efficient structure to the system that will handle web data as per the user convenience. Also we have discussed some of the challenges that web search engine faces in web. To extract, manipulate and presentation of information are discussed in terms of SEO, Web crawling and Web mining on which search engine rely.

Sana [13] we have study that SEO strategy—and using the right tools to help you along the way—is crucial to your success in search. Equally important is ensuring a proprietary advantage that your competitors will be hard-

pressed to duplicate. We outlined a long-term strategy for creating a powerful SEO roadmap specifically tailored to you and your business. Search Engine Optimization is constantly changing as new aspects come into play, and others go. Fundamentally, businesses need to recognize the two crucial fundamentals for high-quality SEO, on-page and off-page. On-page SEO refers to what a publisher can control directly, whereas off-page SEO basically relies on user behavior, social engagements, visitors, and other publishers. Organizations must recognize - to have the top spots in the search engine results page, recognition, support and the backing of others is required.

#### VIII. CONCLUSION

Search Engine Optimization (SEO) is a long-term strategy, which should lead to a higher ranking on search results page and, subsequently, bring higher traffic to a website. Although the result of optimization is not guaranteed, the right mix of off-page and on-page optimization techniques is extremely vital. Creating a unique and interesting website content is an absolute necessity. User-friendly URL structure, clear domain name, relevant titles, descriptive headings, and structured source code with quickly loading interface are another suggestions imperative to on-page SEO. Publishers cannot forget about the off-page aspect either and must focus on building quality links with relevant partners.

In in the future SEO will be an important tool to rank the website. With the help of SEO, we can show any keyword in search results like search engine like google and bing on your website page. In the future, Google will rank the website on which the article above is 500 to 1000 words, as well as its less bounce rate, because there are many such websites on Google that the article's quality of content is very poor and this website appears at the top of Google's search engine, If Google promotes less bounced rates website, then we can get the quality of content website on Google.

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