



Q-rank Metric to measure Search Engine Optimization

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Abstract

All companies and foundations are competing to get a high ranking in search engines because a high ranking means more visits, more conversions, and thus more income. Search Engine Optimization (SEO) is one of the topics that has a great impact today. SEO plays an important role in increasing revenue, lowering advertising costs, and branding for any business. SEO is a powerful tool that tells developers and digital marketers how to rank high in search engines or what factors in their websites are important and should be prioritized. In this paper, we propose a new SEO metric called Q-rank to measure ranking in search engines. This metric indicates website rank and which factors on the website we should focus on to improve the website's rank. This metric (Q-rank) is dependent on on-page factors and off-page factors; this was introduced for the first time by Dina et al, and we reused it here. Keep in mind that previous works focused only on the on-page or off-page. Our proposed metric has been evaluated on three groups of websites, each from a different domain. The results of Q-rank have been compared to K-rank according to the state of the art, aside from the real search results obtained from the Google search engine. The results show that the Q-rank achieves a better order for the websites compared to the K-rank. It has a very similar order for the websites to the order on Google.

Keywords: SEO; Search Engine Optimization; on-page, off-page; seo factors.

1. Introduction

The internet is a vast repository of information, with an ever-increasing amount of data being added on a daily basis. People rely on search engines to find the information they need by using keywords [1]. These search engines, such as Google, crawl, and index web pages, then present them to users in a ranked list known as Search Engine Result Pages (SERPs) [2]. Appearing on the first page of SERPs is crucial for websites, as it can lead to increased traffic, revenue, and brand recognition.

Search Engine Optimization (SEO) is the process of improving the ranking of a website in the SERPs. Unlike Search Engine Marketing (SEM), which is a temporary form of advertising, SEO is a long-term strategy that focuses on improving specific factors known to influence a website's ranking. By adopting best practices for SEO, companies and organizations can save money on advertising and improve the quality of their website[3]. Also, SEO is a set of techniques used to improve the visibility and ranking of a website or web page in search engine results pages (SERPs). The goal of SEO is to increase the quality and quantity of organic traffic to a website from search engines like Google, Bing, or Yahoo. There are five key aspects of SEO. Firstly, keyword research: SEO starts with identifying the keywords and phrases that people use to search for a specific topic or product. Once the relevant keywords are identified, they are incorporated into the website's content, meta tags, URLs, and other on-page elements. Secondly, On-page optimization: This refers to optimizing the website's content, structure, and HTML code to make it more search engine friendly. It includes optimizing page titles, meta descriptions, headings, images, internal links, and other on-page elements [4]. Thirdly, Off-page optimization: This involves building links to the website from other high-quality websites, social media platforms, directories, and other online sources. The quality and quantity of external links to a website are important factors in search engine rankings. Fourthly, Technical SEO: This involves optimizing the website's technical infrastructure, such as page speed, mobile responsiveness, crawlability, and security. Technical SEO ensures that search engines can efficiently crawl and index the website's content. At the end, Local SEO: This focuses on optimizing the website for local searches by incorporating location-based keywords, building local citations, and optimizing the Google My Business listing[5]. It is important to clarify that this study is proposed a new and novel tool for SEO optimization called Quality-based SEO metric (Q-rank). One of the key advantages of using the Q-rank metric is that it is based on a comprehensive set of SEO factors, including both On-page and Off-page

factors. On-page factors include elements within the website, such as title tags, meta descriptions, and keyword usage. Off-page factors refer to elements outside of the website, such as inbound links and social media presence. By considering both types of factors, the Q-rank metric provides a more comprehensive evaluation of a website's SEO performance.

Another important aspect of the Q-rank metric is that it is designed to be easy to use and interpret and includes most of the SEO factors. The Q-rank metric can help developers and digital marketers decide which SEO factors to prioritise to improve their SEO. Additionally, the Q-rank metric can be used to compare the SEO performance of different websites, making it a valuable tool for benchmarking. Also, it's important to note that SEO is a field that is always changing, and new ranking factors are often added. The Q-rank metric is flexible and can be changed to consider new ranking factors as they appear.

K-rank and other ranking tools are ranking systems used to measure SEO success, but it has some disadvantages. It only tracks specific keywords or phrases, leading to a narrow focus on optimization and an inaccurate representation of the website's search engine visibility. Also do not track other important metrics such as website traffic, engagement, and conversion rates. Additionally, these ranking tools could use On-page tools, and some use off-page tools. Therefore, it should be used in conjunction with other SEO metrics and strategies to provide a more comprehensive view of the website's overall SEO performance.

The purpose of this paper is to focus on the important SEO factors and to propose a new metric, called Q-rank, for evaluating the rank of websites. This metric takes into account both On-page and Off-page SEO factors and is intended to guide developers and digital marketers on which parts of their website they should improve to achieve a higher ranking in search engines. The effectiveness of the Q-rank metric has been evaluated on three groups of websites from different domains and has been found to give similar rankings to those of popular search engines like Google.

This paper is organized as follows: In section 1, a concise introduction about the topic, in Section 2, we introduce all the important SEO factors, including On-page and Off-page factors. In Section 3, we discuss related work and previous SEO metrics. In Section 4, we elaborate on how we used SEO factors to develop the Q-rank metric for measuring page ranking in search engines and illustrate which factors should be improved to achieve a higher rank. In Section 5, we present the results of testing the metric on various domains. Finally, in Section 6, we provide a conclusion and outline future work.

2. SEO Factors

Search engines do not reveal all of the factors they use in their algorithms for ranking webpages. However, the Search Engine Startup Guide outlines some important on-page SEO factors. Additionally, paper by Gupta [6] proposed SEO success factors for both on-page and off-page SEO[6]. This paper collects influential factors that have a significant impact on webpage ranking, including some novel factors first defined in a study performed by Dina [7]. Figure 1 illustrates the classification of SEO factors as on-page and off-page, with Table 1 indicating which factors rely on keywords and which do not.

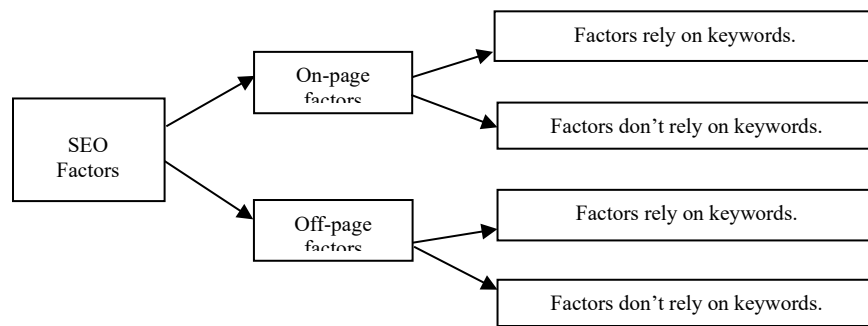


Fig.1 proposed classification of SEO metric.

Table 1 On-page SEO factors

Factors that rely on keywords							
Title tag	Meta tag	URL	Alt tag	Header tag	Content quality	Fresh content	Internal anchor text
Factors don't rely on keywords							
Web design		Domain age			HTTPS		

2.1 On-page SEO factors

In this section, the most effective on-page tags are defined.

- Title tag:** Figure 2 illustrates how the title tag appears to users in search engines results. Each page on a website should have a unique title tag that includes keywords relevant to the page’s topic. The ideal length for a title tag is between 50 and 60 characters.

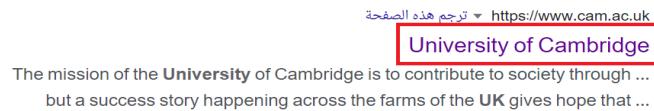


Fig.2 The search result for University of Cambridge (Title tag)

- Meta tag:** It describes the content of the web page, and each page on the website should have a unique meta tag that includes keywords that accurately depict the entire content of the page. Figure 3 illustrates how the meta tag appears to users in a search engine. Keep in mind that if a meta tag is not present, search engines will use the content of the web page as the default meta tag. It is recommended to have a length between 155-160 characters.

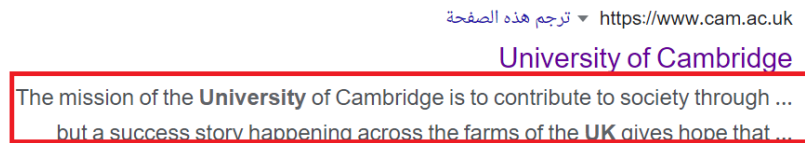


Fig.3 The search result for University of Cambridge (Meta tag)

- URL:** It should indicate your business activity and be relevant to your business's country. It is preferable to be short and easy for the user to understand.
- Header tag:** It is recommended to use the main keywords of the web page in header tags, as they can push the web page up for specific keywords that a user is searching for.
- Alt tag:** It is recommended to add Alt tags for every image on the web page, because search engines cannot see images, but they can read Alt tags to index images according to their topic.
- Content quality:** The artificial intelligence (AI) of search engines can understand the content, and search engines

are designed to deliver data that has high value; therefore, using good quality content on the web page will help the page to rank higher. Using keywords in the content of the page is very important for ranking the web page for specific keywords. Keep in mind that using copied content will result in search engines penalizing the web page.

- **Fresh content:** Search engines can sense new content, so it is recommended to have a blog on the website to ensure that there is always fresh content within the domain. It is recommended that every blog post be between 350 and 650 characters and include targeted keywords.
- **Internal anchor text:** This refers to creating hyperlinks using keywords to other web pages within the website.
- **Web design:** It is suggested that the speed of the website should be acceptable for the user, as users do not prefer to wait for a long time for a web page to load. Today, it is very important to design web pages or websites to be mobile-friendly, as most users access the internet through mobile devices.
- **HTTPS:** It is important to make your website secure and for users to feel safe while browsing your website. Therefore, it is important to have an SSL certificate for your website.

2.2 Off-page SEO

Off-page SEO is just as important as On-page SEO and has a 50% effect on ranking. Like On-page SEO, Off-page SEO also has some factors that depend on keywords and others that do not.

Off-page factors that depend on keywords:

- Social media
- External anchor text

Off-page factors that don't depend on keywords:

- Number of backlinks
- Average domain authority of backlinks [7].
- **Social media:** Adding social media links to your website can have a positive effect on ranking. Keep in mind that shares, likes, and comments on a post that contains your website or webpage URL can make search engines view that URL as valuable.
- **External anchor text:** Using your targeted keywords as hyperlinks can greatly affect your ranking on search engines.
- **Backlinks:** Obtaining backlinks is important in Off-page SEO and can help you achieve a higher ranking. Keep in mind that it's important to create backlinks on a website or webpage that is in your industry. For example, if your business is in the fashion industry, you should add your URL to fashion blogs. Be aware of the quality of the website from which you want a backlink, as search engines can tell if a website is low-quality and will assume that your URL is also low-quality. It's recommended to have a good number of backlinks and to use keywords as hyperlinks when creating backlinks.
- **Average of domain authority of backlinks:** This is an indicator of the quality of a backlink. It was first mentioned in [6], and in this paper, it is being reused with a different formula. It's recommended to have a high average domain authority because it affects the overall ranking.

3. Related work

A study performed by Matosevic [8] clarified that SEO involves both on-page and off-page actions taken

by web developers and SEO specialists to improve the ranking of web pages in search engine results pages (SERPs) according to guidelines from search engine companies. This paper aims to explore the possibility of creating a metric for evaluating the on-page SEO of a website. A new metric called "k-rank" is proposed, which not only considers the presence of certain HTML tags on a page, but also how those tags are used with selected keywords in each domain. The study focuses on ranking and comparing university websites from Croatia and the UK in the education domain using the "k-rank" metric. The results show that the "k-rank" metric can be used to rank and compare how websites utilize on-page SEO [8].

In a different study by Evans [9], the author discussed some well-liked methods for raising search engine rankings. The paper shows the results of a 50-website study after implementing SEO on those sites. This study looked at 50 well-optimized websites and found that PageRank, links, directories, and social bookmarking sites were the most effective strategies. The study is helpful for web and e-commerce sites that want to move up in Google's rankings [9].

In a different article from [3], discussed and proposed some search engine ranking algorithms and provided definitions of black hat SEO, white hat SEO, and other SEO terminology. The author proposed that, with the growth of the internet, many people rely on search engines to find information. Users usually only look at the first few pages of search results, so making sure a website is at the top of the results is an important part of building a website. SEO is used to accomplish this task, but some website developers may use unethical techniques, known as black hat SEO, to manipulate search engines and achieve higher rankings than they deserve. This article discusses the characteristics of search engine page rank algorithms, as well as both white hat and black hat SEO techniques [10].

Additionally, a study by Joyce [11] discussed the significance of search engine optimization. This paper discusses the fundamental principles and strategies of SEO, as well as various techniques utilized by search engines to enhance their results. Additionally, the paper presents an observation section, which includes a comparative analysis of different SEO techniques.

A research study proposed by Gupta [10] explains both On-page factors and Off-page factors that affect getting a good rank. This study discussed how the development of the Internet and SEO brought about the emergence of various factors such as On-Page and Off-Page Optimization of webpages. This led to the creation of different techniques that affect the appearance of web pages, generate traffic, and improve search engine rankings. Optimization is a blend of science and marketing and involves identifying success factors through a periodic table of various parameters that lead to success. Web ranking is determined by the actions of website designers and programmers [6].

A study by Karrabaj [12] discussed and proposed the effect of On-page and Off-page factors on a website, using SEERP metrics and tools from Google to get results. In this study, the authors stated that as competition to appear on the first page of search engine results continues to increase, driving traffic to websites has become more challenging. To improve their visibility in search engine results, website owners use SEO techniques, which involve optimizing website content to rank higher on search engine result pages. This article focuses on Google SEO techniques, both On-page and Off-page. The impact of these techniques is measured using SEERP metrics and Google tools. The paper concludes with future SEO directions to improve site ranking in search engines. The results stated that the most relevant factors for SEO are the content factor and the backlink factor. Search engines like Google created SEO guides and discussed SEO factors, although not all factors are revealed as search engines don't announce their algorithms or all factors they use. It's recommended to check guidelines from search engines like [12]. Finally, to summarize, data presented in a study by Matosevic [8], didn't use all SEO factors in its metric. According to Gupta [6], there are a lot of important factors that should be included in the metric, as they will influence the ranking. Before working on On-page factors, it's important to check if the website has a robot.txt file.

4. Proposed Work

Getting all factors on a website or webpage is not the only thing that can improve the rank;also, the quality of the factors is very important to achieve a high rank. SEO experts determine the quality of factors based on the indications in Table 2 and assign a number between 0 and 1 according to their experience. SEO tools can also determine the quality of factors in different ways[8]. Therefore, considering the quality of factors when designing

a SEO metric is an essential aspect of achieving an accurate metric. Additionally, the relative weight of factors is also important Table 3. Considering the importance of SEO factors will also help to improve the SEO metric. In our proposed Quality-based SEO metric (Q-rank), both factor quality and importance are considered. Therefore, we can write the equation (**Equation 1**) for the Q-rank metric as follows:

$$\mathbf{Q-Rank} = \sum_{y=1}^{14} q_y f_y + N_i f_i \quad (1)$$

Where \mathbf{f} is the factor weight, \mathbf{q} is the quality of the factor, \mathbf{N}_i is the number of backlinks, and \mathbf{f}_i is the weight of the backlink. In this proposed Q-rank metric, we used 15 factors (Table 2 and 3). These factors are the most important for ranking any website or webpage in search engine result pages. Most of these factors are stated in the search engine optimization starter guide [13]. Others were introduced for the first time, such as the average domain authority of backlinks, content quality, and fresh content, in the previous study Dina [7], we have reused them here with a new formula (Q-rank). The previous equation presents a new, strong metric compared to previous work (e.g., K-rank) proposed by Matosevic [8]. According to this study, the K-rank could be calculated using equation (2), and as observed from the proposed equation, K-rank didn't include all SEO factors.

$$\mathbf{K-Rank} = \sum_{x=kn,k1,t1,t2,t3} (\sum_{y=1}^6 f_y t w_y) K w_x \quad (2)$$

On-page, the content quality factor is very important for search engine AI today. The search engines' function is to rank websites or webpages that have good content quality higher than those with low content quality, as users prefer to use search engines that have high-quality content. In addition, using On-page and Off-page factors in the same metric simultaneously makes the proposed Q-rank more accurate in measuring ranking. In Q-rank, we used the most effective Off-page factors, such as the number of backlinks, social media, and average domain authority of backlinks, for measuring the quality of backlinks. The proposed Q-rank metric has several pros and cons. On the positive side, the metric uses a comprehensive set of 15 SEO factors, including some that were not used in previous functions, such as average domain authority of backlinks and content quality. This allows for a more accurate assessment of the ranking quality of a website or webpage. Additionally, Q-rank considers both the quality and importance of factors, making it a strong metric for measuring ranking. However, the proposed Q-rank metric also has some limitations. For instance, it may not be suitable for all domains and industries (that need to be tested), as different websites may have different SEO priorities and ranking factors. This suggests that the metric should be tested across a variety of domains to ensure its generalizability. Additionally, the metric may need to be updated periodically to account for changes in search engine algorithms and updates to SEO factors. Nonetheless, overall, the proposed Q-rank metric presents a valuable contribution to the field of SEO and ranking assessment.

5. Results and evaluation

5.1. Experimental Settings

To evaluate the proposed SEO metric, three groups of websites from different countries were used (e.g., UK, Australia, Egypt). For each group, four methods were used to rank them: the proposed Q-rank, the state-of-the-art K-rank, the real search engine Google, and an online ranking tool. Each group was ranked according to these methods. To evaluate the results of the ranking, we used Euclidean distance and cosine similarity. This procedure was used to measure how well Q-rank complements the real results (ranking in SERPs), and we used Google as the search engine in this paper. It's important to note that lower values of distance are better, as it means the results are closer to the real results in the search engine. However, for cosine similarity, when the result is closer to one, it means the results of Q-rank are closer to the real results. The Euclidean distance between two vectors $X(x_1, x_2, \dots, x_n)$ and $Y(y_1, y_2, \dots, y_n)$ was used. We replaced y in equation (3) with the real result from the search engine and x with the result of the rank metric (once for K-rank and once for Q-rank).

$$d = \sqrt{[(x_1 - y_1)^2 + (x_2 - y_2)^2 + \dots + (x_n - y_n)^2]} \quad (3)$$

Table 2 Orders, names of factors with their indications that included in Q-rank.

order	Name of the factor	Indication of factor quality
f ₁	Title tag	Must have keywords from targeted main keywords of the website, its length less than 60 character
f ₂	Meta tag	Also, must have keywords and its length less than 160 character
f ₃	URL	Related to website topic or has keyword
f ₄	Header tag	Website should have different type of header tag and tags have keywords
f ₅	Alt tag	Every image in website must has alt tag to describe image, also alt tag must have keywords
f ₆	Content quality	very significant factor because any search engine focus on content quality to let user to get what he needs faster and easier. So, website must have good content with keywords.
f ₇	Fresh content	Website should have Fresh content with targeted keywords
f ₈	Internal anchor text	Using keywords as internal anchor text
f ₉	Website design	responsive design with high speed
f ₁₀	Domain age	In our case study as websites for universities, they were created from many years, so they are trusted and closed
f ₁₁	HTTPS	Website has or no
f ₁₂	Social media	Social media must use keywords with URL of website
f ₁₃	External anchor text	Must use keywords
f ₁₄	Average domain authority of backlinks	backlinks with high domain authority are better
f _i	Number of backlinks	High number

Table3 Weight of each factor used in Q-rank calculation.

Parameter	f ₁	f ₂	f ₃	f ₄	f ₅	f ₆	f ₇	f ₈	f ₉	f ₁₀	f ₁₁	f ₁₂	f ₁₃	f ₁₄	f _i
Weight	1.0	0.8	0.6	0.7	0.5	0.7	0.4	0.1	0.2	0.2	0.1	0.4	0.1	0.9	0.9

However, similarity that is closer to one is better. Cosine similarity is calculated between X and Y as follows:

$$\text{Cos}(x, y) = x \cdot y / ||x|| * ||y|| \tag{4}$$

5.2. Experimental Results

Six websites from different universities in the UK are evaluated using the Q-rank metric. The results of the website ranking between the previous K-rank and the proposed Q-rank, the real result in SERPs (real), and SEO tools

like MOZ [14], SEMRush [15], and Ubersuggest [16] are shown in Table 5. The Euclidean distance and similarity between Q-rank, K-rank, and the real result were calculated and are shown in Table 6. It is noted that Q-rank is better than K-rank. The results in Table 6 show that the distance of Q-rank is equal to 0 and the similarity of Q-rank is equal to 1, indicating that the results of Q-rank are identical to the real ranking obtained from Google. However, the K-rank from the state of the art has a similarity of 0.6 and a distance of 18, which means it fails to provide a good ranking for the websites compared to the Q-rank. Thus, the proposed Q-rank outperforms K-rank in this domain. The detailed factor aggregation is shown in Table 4 (**in Appendix 1**).

Another six samples from Australia were used, and Q-rank was applied. The results of the website ranking between the previous work (K-rank) and the new technique (Q-rank) are shown in Table 8. In Table 8, the Q-rank ranking is similar to the real results ranking in 4 out of 6 cases. The distance and similarity were measured in Table 9. It is noted that Q-rank is closer to the real result than K-rank. In Table 9, the results of the Euclidean Distance and Cosine similarity of Q-rank are better than K-rank as well. Q-rank has a similarity of 0.97 and a distance of 2, while K-rank has a similarity of 0.68 and a distance of 10. The details of this experiment are described in Table 7 (**in Appendix 1**).

The results of Q-rank for other samples in Egypt were derived. Table 11 shows the results of the website ranking between the previous work (K-rank) and the new proposed metric (Q-rank) of Egypt's samples. Unfortunately, it can be seen that Q-rank did not perform well with domains in Egypt. This may be due to several reasons, such as the use of black hat SEO by websites, the presence of some copied content, the dependence of some websites on traffic, the effect of the website's fame on traffic, and the use of bad backlinks. Other reasons may also exist. The details of this experiment are shown in Table 10 (**in Appendix 1**).

Table 5 Comparison between Q-rank, previous work (K-rank) and real result for UK.

Website	K-rank	Q-rank	Real	Tools
cam.ac.uk	5	1	1	1(92)
ox.ac.uk	4	2	2	2(92)
ucl.ac.uk	6	3	3	3(91)
nottingham.ac.uk	2	6	6	5(79)
gla.ac.uk	1	4	4	4(87)
southampton.ac.uk	3	5	5	6(74)

Table 6 Distance and similarity of Q-rank and K-rank with real result UK.

Website	K-rank	Q-rank	Real
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cam.ac.uk	4	0	1
ox.ac.uk	2	0	2
ucl.ac.uk	3	0	3
nottingham.ac.uk	4	0	6
gla.ac.uk	3	0	4
southampton.ac.uk	2	0	5
Similarity	0.681	1	
Total distance	18	0	

Table 8 Comparison between Q-rank, previous work (K-rank) and real result for Australia.

Website	K-rank	Q-rank	Real	Tools
sydney.edu.au	2	1	1	1(86)
newcastle.edu.au	1	3	3	3(79)
utas.edu.au	3	4	4	4(71)
uq.edu.au	6	2	2	2(83)
usc.edu.au	5	5	6	6(61)
cqu.edu.au	4	6	5	5(64)

Table 9 Distance and similarity of Q-rank and K-rank with real result for Australia .

website	K-rank	Q-rank	Real
sydney.edu.au	1	0	1
newcastle.edu.au	2	0	3
utas.edu.au	1	0	4
uq.edu.au	4	0	2
usc.edu.au	1	1	6
cqu.edu.au	1	1	5
Similarity	0.868	0.979	
Total distance	10	2	

Table11 Comparison between Q-rank, previous works (K-rank) and real result for Egypt .

website	K-rank	Q-rank	real	Tools
tanta.edu.eg	4	3	5	5(34)
mans.edu.eg	2	2	2	2(49)
cu.edu.eg	1	4	1	1(59)
kfs.edu.eg	5	1	4	4(40)
helwan.edu.eg	3	5	3	3(44)

Table 12 Distance and similarity of Q-rank and K-rank with real result Egypt.

website	K-rank	Q-rank	Real
tanta.edu.eg	1	2	5

mans.edu.eg	0	0	2
cu.edu.eg	0	3	1
kfs.edu.eg	1	3	4
helwan.edu.eg	0	2	3
Similarity	0.981	0.764	
Total distance	2	10	

6. Conclusion

Search Engine Optimization is a highly researched topic today. Companies compete to get a good ranking on SERP, as a high rank leads to more visitors, purchases, and income. We have introduced Q-rank as a measure of On-page and Off-page SEO quality. The ranking obtained using Q-rank is identical to the real ranking obtained from Google search engine for websites in the UK domain. In the case of Australian domains, Q-rank ranking is very similar to Google ranking. This indicates that Q-rank has the ability to rank websites accurately, highlighting the importance of the factors used in the proposed Q-rank and the design of the metric. The results of Q-rank can assist website owners in improving their website rank by detecting which factors need to be improved. The paper helps SEO specialists determine which factors to focus on and which to improve to achieve a high rank. In future work, other influential factors that have not been included yet should be incorporated, and a larger number of websites should be tested to thoroughly examine the advantages and disadvantages of Q-rank. An investigation into the poor effectiveness of Q-rank in some domains, like .eg is also considered future work.

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Appendix 1:

Table 4 Q-rank result for some UK universities website

website	q ₁	q ₂	q ₃	q ₄	q ₅	q ₆	q ₇	q ₈	q ₉	q ₁₀	q ₁₁	q ₁₂	q ₁₃	q ₁₄	q _k	Q-rank
cam.ac.uk	0.5	0.9	1	1	0.68	1	1	0.8	1	1	1	1	0.9	0.92	6.3	12.16
ox.ac.uk	0.5	0.6	1	1	0.7	1	1	0.7	1	1	1	1	0.75	0.92	4.77	10.18
ucl.ac.uk	0.5	0.7	1	1	0.3	1	1	0.6	0.5	1	1	1	0.7	0.92	3.42	9.33
nottingham.ac.uk	0.5	0.8	1	1	0.8	1	1	0.3	1	1	1	1	0.4	0.92	0.63	6.37
gla.ac.uk	0.5	0.7	1	1	0.5	1	1	0.5	1	1	1	1	0.6	0.92	1.44	6.79
southampton.ac.uk	0.9	0	1	1	0.35	1	1	0.5	1	1	1	1	0.5	0.92	1.08	6.38

Table 7 Q-rank result for some Australia universities website

website	q ₁	q ₂	q ₃	q ₄	q ₅	q ₆	q ₇	q ₈	q ₉	q ₁₀	q ₁₁	q ₁₂	q ₁₃	q ₁₄	q _k	Q-rank
sydney.edu.au	1	0.9	1	1	0.4	1	1	0.9	0.7	1	1	1	0.9	0.92	6.7	12.20
newcastle.edu.au	0.65	0.8	1	1	1	1	1	0.75	0.7	1	1	1	0.7	0.9	0.09	6.795
utas.edu.au	0.5	0.2	0.7	1	0.35	1	1	0.4	1	1	1	1	0.4	0.9	1.1	5.835
uq.edu.au	0.6	0.8	0.9	1	0.75	1	1	0.65	1	1	1	1	0.7	0.9	1.6	7.24
usc.edu.au	0.5	0.8	0.9	1	0.1	1	1	0.5	0.55	1	1	1	0.5	0.8	0.04	5.586
cqu.edu.au	0.5	0.8	0.9	0.8	0.5	1	1	0.6	0.8	1	1	1	0.75	0.85	0.2	5.44

Table 10 Q-rank result for some Egypt universities website

website	q ₁	q ₂	q ₃	q ₄	q ₅	q ₆	q ₇	q ₈	q ₉	q ₁₀	q ₁₁	q ₁₂	q ₁₃	q ₁₄	q _k	Q-rank
tanta.edu.eg	0.5	0.9	1	0.7	0.7	0.55	0.45	0.8	0.8	1	1	0.7	0.4	0.2	0.37	5.468
mans.edu.eg	0.9	0.8	0.9	1	0.9	0.7	0.6	0.9	0.65	1	1	0.8	0.9	0.28	1.4	6.402
cu.edu.eg	0.5	0.5	0.5	1	0.95	1	0.7	0.8	0.75	1	1	1	1	0.3	0.45	4.78
kfs.edu.eg	0.6	0.8	0.9	0.8	0.8	0.55	0.6	0.9	0.75	1	1	0.8	0.2	0.24	5.9	9.951
helwan.edu.eg	0.3	0.1	1	1	0.8	0.6	0.7	0.8	0.75	1	0	0.7	0.5	0.23	0.2	3.9