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The Role of Search Engine Optimization in acquiring traffic for an E-commerce website

Case study: BARBAROS E-COMMERCE AND SHOPPING

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ABSTRACT

The internet has changed completely the culture of buying things and looking for information, and from a broader perspective, it changed how companies and brands should interact with their clients, and get them what they need. With 81.5% of internet users searched online for a product or service to buy, many companies as a consequence are currently using different techniques and strategies in order to meet their clients' needs.

While there are a lot of marketing strategies that can be followed to improve the overall performance of a company, some are paid or sponsored, others are not paid or natural, Among these unpaid techniques is "Search Engine Optimization", which focuses generally on optimizing the performance of a website in the search engine results like Google or Bing and generating organic traffic. And since the online presence of a company or a business is a crucial part of its success and an indispensable element of meeting today's customer needs, and based on an important objective of Barbaros E-commerce and Shopping of acquiring more users to its website, this paper discusses the role of search engine optimization on improving the ranking of an E-commerce website in the SERP of Google, and therefore generating more organic traffic, taking advantage of the opportunities found in the digital world and the transformation of customers toward seeking their wants and needs online .

We have examined the role by implementing some SEO techniques like indexing and On-site factors and then measuring and analyzing the results obtained by using some digital solutions, following the international research model "Action research" to pursue our objective behind this study and answer the problematic of the research.

Keywords: Search Engine Optimization, Ranking, Traffic, Indexing, On site factors.

ملخص

لقد غيرت الإنترنت تمامًا ثقافة شراء الأشياء والبحث عن المعلومات ، ومن منظور أوسع ، غيرت الإنترنت الطريقة التي يجب أن تتفاعل بها الشركات والعلامات التجارية مع عملائها ، وتلبية حاجياتهم. نظرًا لأن 81.5% من مستخدمي الإنترنت يبحثون عبر الإنترنت عن منتج أو خدمة للشراء ، فإن العديد من الشركات نتيجة لذلك تستخدم حاليًا تقنيات واستراتيجيات مختلفة لتلبية احتياجات عملائها.

في حين أن هناك الكثير من استراتيجيات التسويق التي يمكن اتباعها لتحسين الأداء العام للشركة ، فإن بعضها يكون مدفوعًا أو ممولًا ، والبعض الآخر يكون غير مدفوع و نتيجة طبيعية لسلسلة من التغييرات و المحاولات . ومن بين هذه الأساليب غير المدفوعة "تحسين محركات البحث" ، والذي يركز بشكل عام على تحسين أداء موقع ما على الإنترنت في نتائج محركات البحث مثل غوغل أو بينغ وتوليد زائرين عضويين. ونظرًا لأهمية تواجد الشركات عبر الإنترنت و باعتباره جزءًا مهمًا من نجاحها وعنصرًا لا غنى عنه لتلبية احتياجات عملاءها اليوم و مواكبة العصر الرقمي، واستناداً إلى هدف مهم من أهداف شركة بربروس للتجارة الإلكترونية المتمثل في جذب المزيد من المستخدمين إلى موقعها الإلكتروني ، فإن هذه المذكرة تناقش دور تحسين محركات البحث في تحسين ترتيب موقع التجارة الإلكترونية في صفحات نتائج محرك البحث جوجل ، وبالتالي الزيادة في عدد الزائرين العضويين ، بالاستفادة من الفرص الموجودة في العالم الرقمي وتحول العملاء نحو البحث عن رغباتهم واحتياجاتهم عبر الإنترنت.

لقد قمنا بفحص هذا الدور من خلال تنفيذ بعض تقنيات تحسين محركات البحث مثل الفهرسة والعوامل في الموقع ثم قياس وتحليل النتائج التي تم الحصول عليها باستخدام بعض الحلول الرقمية ، باتباع نموذج البحث الدولي "البحث الإجرائي" .لمتابعة هدفنا من وراء هذه الدراسة والإجابة على إشكالية البحث .

الكلمات الرئيسية: تحسين محركات البحث ، التصنيف ، الحركة العضوية، الفهرسة ، عوامل الموقع.

Résumé

L'Internet a complètement changé la culture de l'achat et de la recherche d'informations, et dans une perspective plus large, il a changé la façon dont les entreprises et les marques doivent interagir avec leurs clients et leur fournir ce dont ils ont besoin. Avec 81,5% des internautes qui recherchent en ligne un produit ou un service à acheter, de nombreuses entreprises utilisent donc actuellement différentes techniques et stratégies pour répondre aux besoins de leurs clients.

Bien qu'il existe de nombreuses stratégies marketing qui peuvent être suivies pour améliorer les performances globales d'une entreprise, certaines sont payantes ou sponsorisées, d'autres ne sont pas payantes ou naturelles, Parmi ces techniques non payantes se trouve le « Search Engine Optimization », qui se concentre généralement sur l'optimisation de la performance d'un site Web dans les résultats des moteurs de recherche comme Google ou Bing et la génération de trafic organique. Et puisque la présence en ligne d'une entreprise est un élément crucial de son succès et un élément indispensable pour répondre aux besoins de ses clients d'aujourd'hui, et basée sur un objectif important de Barbaros E-commerce et Shopping d'acquérir plus d'utilisateurs sur son site Web, notre projet de mémoire donc traite le rôle de l'optimisation des moteurs de recherche pour améliorer le classement d'un site Web de commerce électronique dans les pages de résultats des moteurs de recherche de Google , et donc générer plus de trafic organique, en profitant des opportunités trouvées dans le monde numérique et de la transformation des clients vers la recherche de leurs désirs et besoins en ligne.

Nous avons examiné ce rôle en appliquant certaines techniques de référencement naturel telles que l'indexation et les facteurs sur site, puis en mesurant et en analysant les résultats obtenus en utilisant certaines solutions numériques, en suivant le modèle de recherche international « Action research » pour poursuivre notre objectif derrière cette étude et répondre aux problématique de la recherche.

Mots-clés : référencement naturel, Ranking, trafic, indexation, facteurs sur site.

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LIST OF ABBREVIATIONS

SEO: Search Engine Optimization

SEs: Search Engines

SERP: Search Engine Results Pages

ARC: Action Research Cycle

PAR: Page Average Rank

GA: Google Analytics

GSC: Google Search Console

KPIs: Key Performance Indicators

SPSS: Statistical Package for the Social Sciences

GIE: Groupement d'Intérêt Economique

INTRODUCTION

Long time ago, people had to move physically from a place to place seeking their needs, whether it was food, clothing, tools or any kind of goods. They even had to move when they needed information, whether to a bookstore, a university, a library or where knowledge had existed. But that remains in the past, Nowadays, and since the appearance of the internet and search engines, everything has transformed to the online world. Items that were only acquired by going to a physical place, information that were only available in physical stores, are all now available by a simple search and few clicks on a computer or a smartphone. Internet has changed completely the culture of buying things and looking for information, and from a deeper perspective, it changed how companies, brands and businesses interact with their clients, and get them what they need.

People now are looking for everything on the internet, searching for all kinds of things every second and every single day using search engines like Google, Yahoo or Bing. According to Hubspot, « *it's estimated Google processes approximately 63,000 search queries every second, translating to 5.6 billion searches per day and approximately 2 trillion global searches per year. The average person conducts between three and four searches each day* »¹. If that tells us anything, it tells that the internet in general and search engines in particular, have become the 1st place to go once something is needed. That's the reason of why many companies have shifted and still shifting to the digital world, transforming their expertise, knowledge and goods to their audiences, exploiting every opportunity, developing various marketing strategies to convey their messages, and compete over users' attention. Companies in the past used to market their products and services via traditional tools like Media, Billboards, Radio, Newspaper and magazines. But that's not the case anymore, since the customer behavior has changed, and his way of looking for what he wants has moved to search engines, many companies as a consequence are now using different techniques and strategies in order to meet their clients' needs. Among these techniques is "Search Engine Optimization" or as it's abbreviated SEO, which is simply applied for the purpose of « *understanding what people are searching for online, the answers they are seeking, the words they're using, and the type of content they wish to consume. Knowing the answers to these questions will allow us to connect to the people who are searching online for the solutions we offer* »². We will dive into more

¹ <https://blog.hubspot.com/marketing/google-search-statistics> Consulted on 12/06/2021 at 9:15 am

² <https://moz.com/beginners-guide-to-seo/why-search-engine-marketing-is-necessary> Consulted on 12/06/2021 at 8:15pm

details about SEO in the following chapters, but it's important to note here, that Search engines like Google, are answer machines. They scour billions of pieces of content and evaluate thousands of factors to determine which content is most likely to answer a user's query. Huanwei Wu (2011) states «*Research shows that search engine is the largest network marketing platform in the world*». Unfortunately, in Algeria, few companies are aware of the importance of Search Engine Optimization and its impact on users and customers. Many companies are relying on the traditional tools of marketing, employing TVs and Billboards to communicate their products and services, and others are relying solely on social media platforms like Facebook and Instagram. We can know that by the low number of jobs proposed in the Search Engine Optimization field and Internet Marketing, and the lack of academic studies about the topic in Algeria, although more and more users are conducting searches in the internet, and the number is increasing. Here is some statistics published by "We are social"³ in 2021:

Figure 1- Global E-Commerce activity 2021



Source: <https://www.slideshare.net/DataReportal/digital-2021-algeria-january-2021-v02> Consulted on June 15, 2021 at 10:20 am.

The report shows that among Global internet users aged 16 to 64, there is 81.5% of them searched online for a product or service to buy. 90.4% visited an online retail site or store. 69.4% used a shopping app on a mobile phone or on a tablet. 76.8% purchased a product online. 55.4% purchased a product online via a mobile phone.⁴

³ We are social is the largest and most awarded specialist social media agency in the world.

⁴ <https://www.slideshare.net/DataReportal/digital-2021-algeria-january-2021-v02> Consulted on 13/06/2021 at 11:45 am

We can clearly see the huge numbers of people that are using the internet to find what they need, yet there is a low exploitation of this opportunity by Algerian companies.

For that purpose, we have chosen as a topic for this dissertation to study the role of search engine optimization on improving the ranking of an E-commerce website in the SERP of Google , and therefore generating more traffic , taking advantage of the opportunities found in the digital world and the transformation of customers toward seeking their wants and needs online .

CHAPTER I: PROBLEMATIC

1. Context and Problematic:

Search Engines like Google are now the greatest source of information, people are constantly using SEs to obtain what they need, and more visitors are browsing and navigating through websites every year. According to Alexa Traffic Rank, Google is the most popular web site in the whole world, and it became the the first web site to reach 1 billion unique visitors in one month in May 2011 (Baye , 2016). The situation in Algeria is no different, according to We are social report 2021, the annual number of internet users in Algeria has increased by 16.1% with 26.35 million users.⁵ Based on the facts that there is a continuous increasing in the use of internet in Algeria, and on the fact that Google is the most used and most visited web site in Algeria, we decided to explore the role of search engine optimization, in improving the ranking of an e-commerce website of the concerned organization in the SERP of google, to generate more traffic and visitors, for eventually acquiring more clients organically.

1.1 Organizational Context:

The Algerian market is witnessing a massive change in terms of purchasing methods, long have gone the days of having to go to physical stores to buy stuff, like the international markets, the E-commerce market is growing remarkably in Algeria, along with the appearance of large players in the field like Jumia.dz and other companies. Algerian citizens are no longer obliged to go to physical stores to buy what they need, as a significant increase in internet transactions and online purchases was recorded in 2020; especially since the spread of Coronavirus. Indeed, this is what the administrator of the regulator of the interbank electronic payment system, *GIE Monétique*, *Madjid Messaoudene* told the APS press agency on April 11, The administrator indicated that the number of cumulative transactions since the launch of internet payment in 2016 reached 494,672 transactions at the end of 2019; i.e. an increase of 69% compared to the end of 2018.⁶ Not mentioning the purchases in which the payment was hand to hand once receiving the products. To take a place in this very competitive and growing E-commerce market, we were employed by Barbaros E-commerce and Shopping Company as a trainee, in order to secure a place in search engine result pages, by applying some techniques of Search Engine optimization to gain traffic and acquire new customers. Barbaros E-commerce and

⁵ <https://www.slideshare.net/DataReportal/digital-2021-algeria-january-2021-v02> Consulted on 15/06/2021 at 11:00 am

⁶ <https://www.dzairdaily.com/algerie-achat-en-ligne-internet-hausse-confinement-2020/> Consulted on 21/06/2021 at 15:30

Shopping, after knowing the huge importance of online search for products, it welcomes us to fulfill the purpose of our dissertation which is the role of SEO in E-commerce websites.

1.2 The Research Objective:

In order to fulfill the purpose of this dissertation, and to achieve better results in search engine result pages for the website of Barbaros E-commerce and Shopping, we have defined primary and secondary objectives to pursue in this study, the primary objective is to :

- Investigate the role of Search Engine optimization in acquiring traffic for the website of the organization.

Secondary objectives will be a consequence of applying SEO techniques in the website, they are as following:

- Achieve higher ranking in the SERP of Google for some pages of the website.
- Gain more traffic organically and improve the visibility of the website in search engines.

1.3 Research Question:

Following the context presented above, we came to identify the question of the research, which is:

- What is the role of SEO in improving page ranking and acquiring more traffic for an ecommerce site?

Based on the question above, we can generate other Sub-questions which will facilitate the path we will take in this research, and guide us through it, those questions are:

- How indexing can affect the ranking of webpages in the search result pages of Google to generate traffic?
- How On-site factors can affect the ranking of certain webpages to generate traffic?

2. Methodology:

Since the company has set a goal for optimizing their website visibility in search engine result pages among the fierce competition, our intervention was needed in the form of an SEO project. In order to gather data, we have chosen an action research approach. Action research was the chosen approach in this study since the organization wanted us to apply our knowledge of SEO to align with their goals, which is to increase the traffic coming to the website organically by implementing SEO techniques. The action research methodology has been used successfully in a number of information systems studies (Malaga, 2007). We have specifically used the action research cycle (ARC) which were presented by Susman and Evered (1978), and have been applied in many studies (Malaga, 2007; Anita Lee-Post, 2009). The five ARC steps are:

(1) diagnosing, (2) action planning, (3) action taking, (4) evaluating, and (5) specifying learning. These steps of action research will help us in identifying the problem that faces the company, and then carry out the necessary modification to solve the problem. For the mentioned purpose, data were collected during and after the completion of the project to assess the implemented changes to generate more traffic for the website.

3. Research Interest

The domain of SEO is less explored in Algeria, very few companies are applying the principles of SEO to improve their rankings and as a result losing much traffic. Also, there is a lack of academic studies investigating the relationship between SEO and E-commerce businesses, that's why the current research has a huge interest as it explores in a theoretical and practical manner the role and Impact of Search Engine optimization in improving the performance of companies, since more users are spending more time online, and due to the continuous grow in online purchases.

3.1 Managerial Interest:

It is known that the Algerian market is less familiar with marketing studies and market research , there are some agencies that offer services like design and creating commercials and campaigns , but very few who conduct actual market research and marketing studies. For the SEO field, it is a brand new topic in Algeria, rare companies who are actually implementing SEO in their marketing strategies, in addition to the low job offers with SEO titles, and lack of training centers who offer courses in SEO. In our thesis, we have dealt with SEO in an Ecommerce business, which is an emerging and growing market in Algeria. The company needed to examine the effect of such method in improving its online visibility and organic traffic to its website. That is why we believe to some extent that our thesis will make a good benefit for managers in marketing departments and for professionals who work in Ecommerce businesses.

4. Thesis Plan:

This paper is composed of four chapters, each chapter deals with one of the aspect of our research. The first chapter "Problematic" discusses the context behind this study, and the objectives of the research, which in our case is to generate organic traffic to a website of an E-commerce company, we have also highlighted the importance of this thesis and its contribution to managers and professionals working in the field of SEO.

The next chapter which is entitled “Theoretical framework” deals with exactly as its name reflects, the theories that shaped our study and helped us define our path to conduct our research. In the first section, we have gathered some of the previous works and articles published around our topic, we introduced the way search engines work and the different steps that a webmaster should take to enhance the visibility and the ranking of a website. In the second section, we have defined the main concepts of the research which make up the variables of this thesis. We have also covered the research model that was followed when conducting this research, called “Action research”, we mentioned the previous studies that have successfully adopted the model, and finally we made up the conceptual framework of this study, inspiring it from a previous study on the same topic as ours. The third chapter which is “Methodology”, deals with the way we conducted our thesis, we mentioned the method how data were collected before and after the project, the tools that were used, in addition to the period that contained the implementation of the SEO techniques and the appearance of the results, after that, we described the way we analyzed our data using digital solutions like Google search console and Google analytics. The final chapter “Results and Discussions”, highlights the application of the action research model with its different phases, also we have presented the data before implementing the SEO techniques, although they weren’t enough due to the late implementation of the digital solutions. After that we presented some descriptive statistics which highlight the major changes that happened on the level of the performance of the website. And to conclude, we showed the results of testing the effect of independent variables on dependent variables and summed up the hypothesis that were confirmed and the ones who weren’t, to finally state if our objective behind this study was fulfilled.

Chapter II: THEORETICAL FRAMWEORK

In this chapter, we will cover the aspects and the concept of the research. In the literature review section, we will talk about the previous studies that were conducted around our topic which search engine optimization and its relationship with E-commerce. We have selected our references carefully taking in consideration the changes that happened over time, some references were constantly consulted, while others were consulted for one point or two. The section of conceptual Framework covers the definitions of the main concepts and elements of this study, in addition to the research model that was followed in order to conduct the research, and backed it up by mentioning the studies that used and followed the same research model and same approach that we followed. And finally, we will present the conceptual framework which highlights the different variables of the research and the relationship between them, which in turn were deduced from another study made on the same topic, and which truly helped us designing the methodology Followed in this study.

1. Literature Review:

In this section, we will shed the light on the previous works that have been published around our topic which is search engine optimization, some authors were frequently consulted due to their broad explanation of the subject, and due to the similarities found in their articles.

1.1 Search Engine Optimization:

1.1.1 Search Engines:

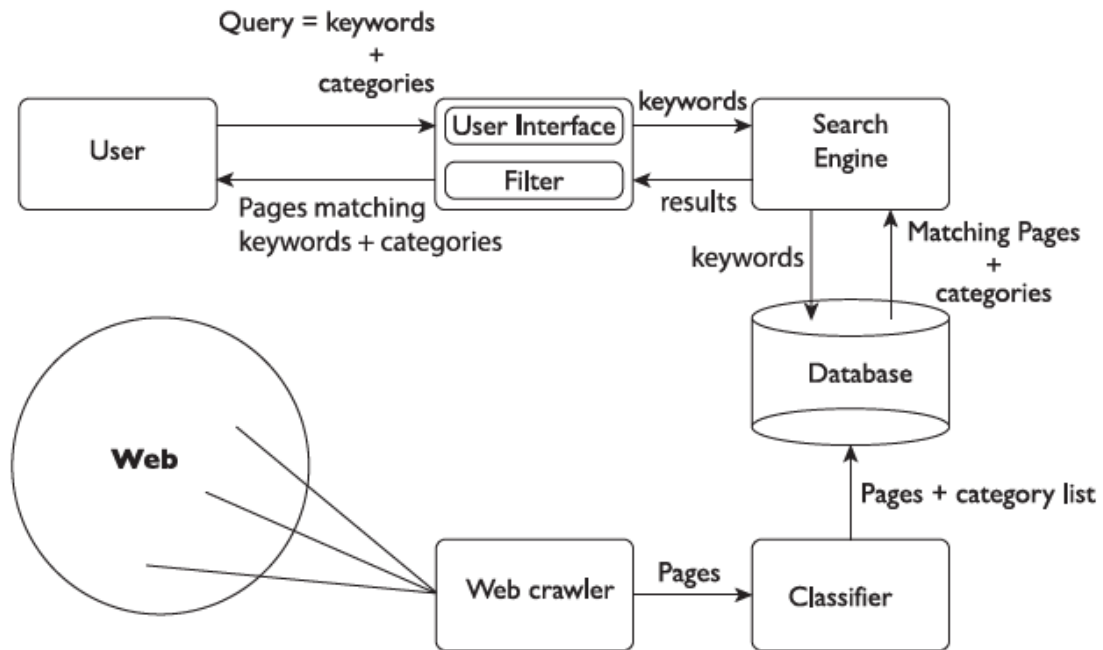
According to (Malaga, 2007), « *Search engine is simply a database of Web pages (called an index); a method for finding Web pages and indexing them; and a way to search the database* ». In other study made by (Killoran, 2013) search engine was defined as a system on the internet made up of related documents, not only contain texts, but also images, videos and audios. Sociologist Alex Havalais describes the web's ecosystem as an "attention economy" manipulated by competition for the users' attention. In such an economy, the main role of reaching users' attention is played by search engines. The appearance of search engines as (Salo, 2020) noted, came as a result of the difficulty that was found when looking for different files on the internet, when the latter used to consist only from File Transfer Protocol (FTP) sites, which were used for downloading or uploading files (Ledford, 2015), that's when a student named Alan Emtage at McGill University in Montreal created the first search tool used on the Internet called "Archie" (Salo, 2020). In 1991, a program was created named *Gopher*, by Mark McCahill, a student at the University of Minnesota, which made it possible to search for plain text references in the files and to index them, and in order to make it possible to find references, some other programs were created within Gopher (Ledford, 2015). And that's what

enabled users to search indexed information by using a keyword. That was the turning point, where Internet search was developed and find its course to what it is today. (Salo, 2020)

1.1.2 Stages that search engines go through:

(Salo, 2020) reports that it is the User Interface (UI) that users see when navigating to a search engine , The only other thing that is visible to users are the Search Engine Result Pages (SERPs), which are the results that is shown after someone hit the search button after typing a certain query. As matter of fact, what we see is search result pages, is a simple reflection of a keyword we've typed, showing us the main title of pages, and short description of the content within them. But the reality is that there is a more complex process happening in the fraction of seconds before the SERP is shown. (Malaga ,2007) states « *Search engines rely on spiders—software that follows hyperlinks—to find new Web pages to index and insure that pages that have already been indexed are kept up to date* ». In another study by (Salo, 2020), the author explains that search engines use *spiders*, *robots* and *crawlers* – which essentially mean the same thing, to gather information about every URL, catalogue the information accordingly and store the information into a database known as indexing, and when a search engine performs a search to find something on the Web, the database is scanned and search results are shown from to the collected data.

Figure 2: Architectural design of Search Engine



Source: Bhandari, 2018

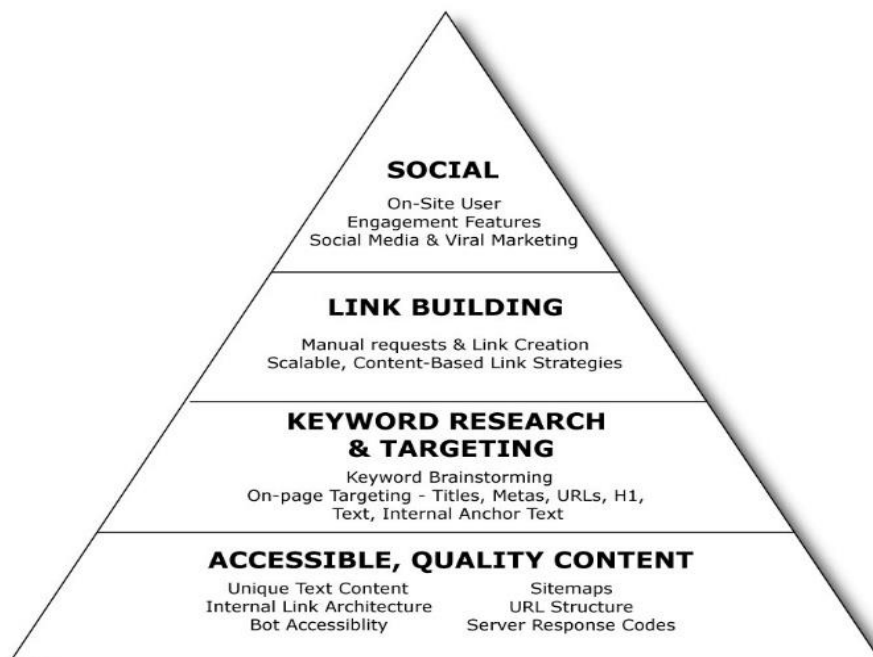
1.1.3 SEO process:

(Huanwei Wu, 2011) claims that research shows that search engine is the largest marketing platform on the internet, and by using Search Engine Optimization, the website can be enhanced in the web structure, content, lay-out and functions for the purpose of complying with the rules of search engines, so that the improved website performs better in Google, as well as other search engines. (Killoran, 2013) confirms that in order to improve visibility within one or more search engines, a process of editing a website's content and code must be carried out, the process is called Search Engine Optimization. However, we prefer the concept of SEO that was laid out by (Curran, 2004) when he states «*Search Engine Optimization is the process of improving a website's position so that the webpage comes up higher in the search results [search engine results page (SERP)] of major search engines*».

The main idea behind SEO is to make a website or an online-store more attractive and accessible to search engines, which makes it easier for users to find when using a search engine (e.g. Google or Bing) (Salo, 2020). That's why (Dover, 2011) came up with an SEO pyramid as a guide on how to build an effectively optimized site; in order to get the best results, the website needs to be easily accessible and has a high quality content. When these specifications are fulfilled, the focus then should be on how to find the most relevant keywords for the

website, those keywords are the ones that are being typed at search engines by many users. In order to benefit from all the above, a carefully link building strategy should be built and also finding ways to get the visitors to engage with the website. (Salo, 2020)

Figure 3: The SEO Pyramid



Source: Dover, 2011

According to (Malaga, 2010), the process of SEO in general can be broken into four main steps: keyword research, indexing, on-site optimization, and off-site optimization. (Salo, 2020) suggests that there are two types of keywords; Head terms and Long Tail terms. A well optimized website should have a combination of the two types in its pages. For e-commerce websites, keywords should appear in product names, web page title, web content, description tag, picture alt attribute and web links, as that would get the website to rank higher for those keywords. (Huanwei W, 2011).

After conducting the keywords research and implementing them, the webmaster must ensure attracting the search engine spiders to a certain web page, with the purpose of getting indexed, i.e.: being included in the search engine's database, and hopefully ranked well by the search engine quickly. (Malaga, 2010). The same author suggests that the main approach for a web

page getting indexed, is to acquire links to a site from other sites that were frequently visited by the spiders.”

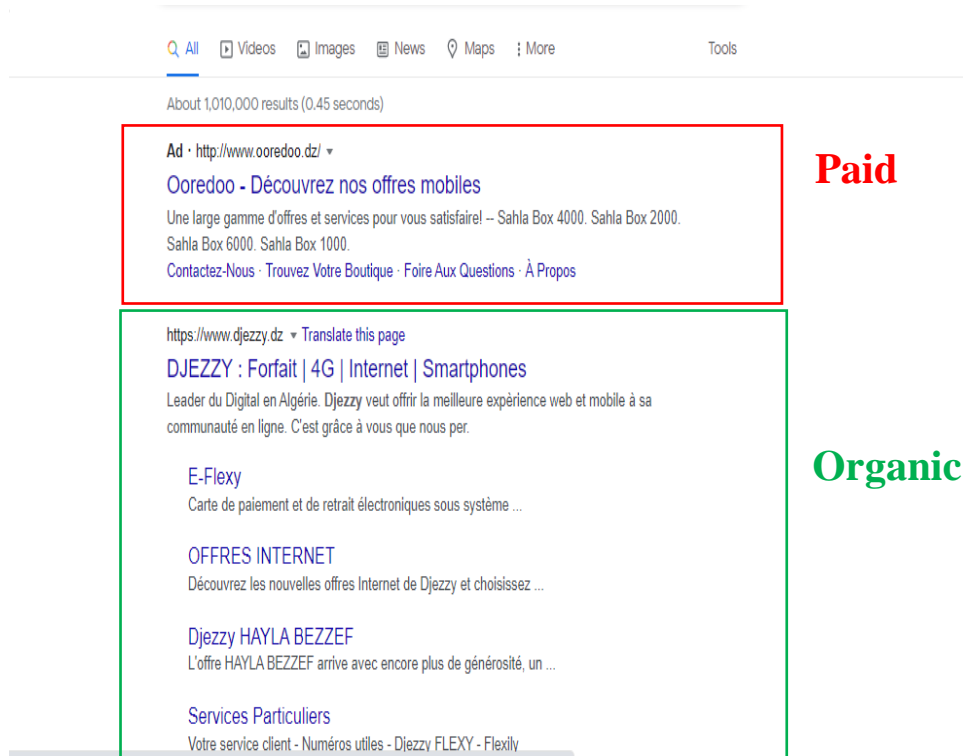
However, (Gudivada, 2015) states that «*Search engines are starting to use more sophisticated indexing algorithms such as latent semantic indexing (LSI), which calculates a page's relevance not only on the basis of keywords but also on the page's overall topic.* » The author also suggest to include Anchor text, which is about approximately short but meaningful URLs for webpages, they are preferred because they are formed by natural keywords. Similar, anchor text should cover the topic of the page that the anchor link points to.

Soon as the web page is indexed , then it's time of doing some On site Optimization , Some of the main on-site factors that are considered by the search engines to determine page rank include title tag, H1 tag, meta description tag, keyword density, and the constant adding of relevant unique content. (Malaga, 2010). (Huanwei Wu, 2011) proposes in addition to the already mentioned factors, that the topic of the website should be tailored to target users, which he refers to as “*Relativity between content and topic*”, the author explains that it is better not to include too many topics; otherwise the search engine will not have high evaluation. If a website focuses its topic, it usually gets higher rank.

1.2 Ranking and Traffic:

1.2.1 Understanding Search Engine Results pages:

According to (Salo, 2020), Search results on google and other search engines compose of many sections, but they all make a part of a combination of organic search results and paid results. The paid results which contain advertisements are shown in the very top of the results page. Meanwhile, the organic search results are shown beneath them. These results are found from search engines' index and they are ranked according to their relevance based to the algorithms (Stricchiola, 2015). The author further shows that creating a website with the aim of gaining a high search engine ranking is the key in search engine optimization (Salo, 2020).

Figure 4: Organic vs Paid results on Google

Source: Elaborated by the student.

1.2.2 Relationship between Ranking and Traffic:

(Salo, 2020) explains that SEO is a key part of digital marketing strategies because it improves the amount and quality of customer traffic to a certain website or online-store. According to (Haas, 2017) the ranking of search results has a big impact on the potential influence of information on users. Search engines confront users with many options to choose from. These choices seem a little similar at first glance, because only little information is displayed on the SERP (Hass, 2017). Thus, most users will try to acquire enough information without spending too much time and mental effort in deciding which result to choose. They will deal with the information in a quick and sufficient way. So the main heuristic key when it comes to SERPs, is the ranking of the website in the search results. The author further concludes that «*previous research can briefly be summarized with one main finding: a search result's rank on the SERP is the major factor influencing users' selection.*» (Hass, 2017).

According to (Agichtein, 2006), Most users usually to initially select results from the top of the SERP. The percentage of users that pays attention to the first SERP has grown larger over

time, indicating that more users developed some sort of trust in the given ranking, most users seem to have the concept of a ‘high ranking equals to good content’. (Jansen and Spink, 2006).

2. Conceptual Framework :

This chapter is divided into three sections, the first section will cover the concepts of the research, the concepts are related to SEO and ranking, this is to give an illustration about the variables within this study. The second section , we will present the research model that will be followed in this study when applying SEO principles , which is known as “ Action Research “ , at the end we will present our conceptual framework that will help us answering the research questions.

2.1 Research Concepts:

In this section, we will define the key concepts of the research that will help facilitate the process of the study.

2.1.1 Search Engine Optimization:

(Curran, 2004) defines search engine optimization as it is « *the process of improving a website’s position so that the webpage comes up higher in the search results of major search engines*».

This definition is cited by many researchers, among them (Malaga, 2010). (Conway, 2019) chose a broader definition for SEO and states «*Simply put, SEO is the practice of creating greater organic visibility for your website in search engines, driving traffic to your site without paid advertising. It covers a range of activities — both on your website itself and in your surrounding marketing — that are undertaken to optimize a website or web page, to achieve the highest possible ranking in a search engine results page* ». We in turn have chosen the definition of the Search Engine Marketers Professional Organization⁷, which was cited by (Killoran, 2013) «*search engine optimization (SEO) is the process of editing a web site’s content and code in order to improve visibility within one or more search engines*».

2.1.2 Crawling and Indexing:

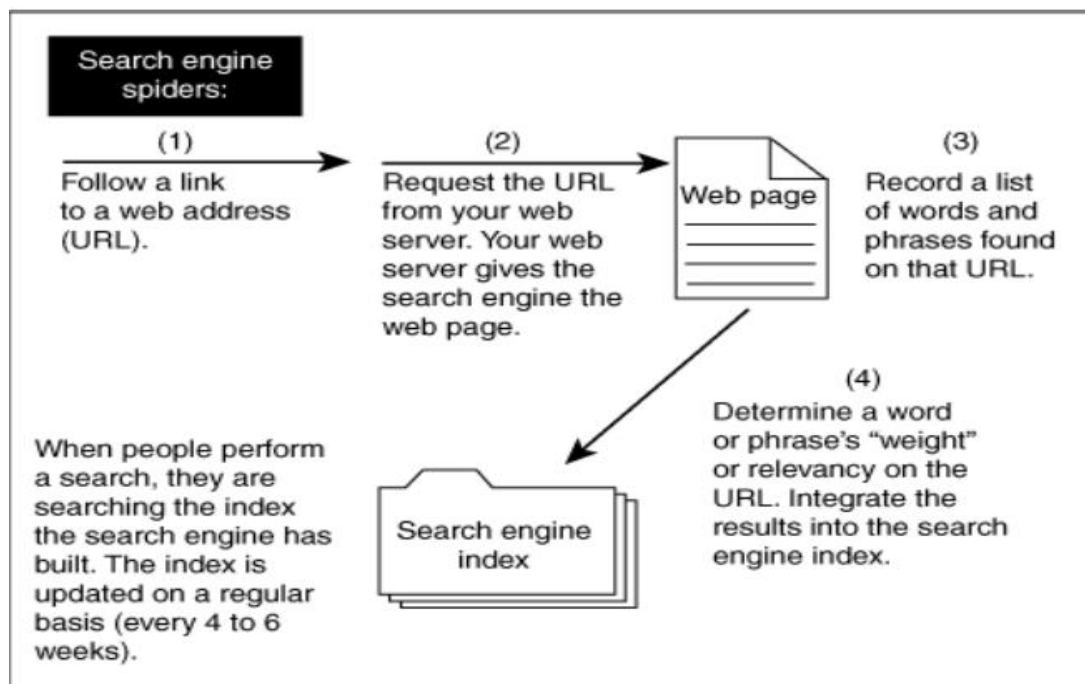
Crawling is known as when search engines collect web content in the first place mainly by using a spider (a program, also called a bot or a crawler) to repeatedly surf and explore the web link by link and record new and updated pages, defunct links, and so forth. (Killoran, 2013). In other word, Crawling is the continuous process of gathering information from the Web, using robots knowns as “crawlers”, these information are found on every available URL (Uniform

⁷Search Engine Marketers Professional Organization is the main American-based organization that represents practitioners in the field of SEO

Resource Locator), so they can finally be catalogued in the database of search engines. (Salo, 2020).

Meanwhile, Indexing refers to as when search engines catalogue the information gathered about a webpage into its database. (Salo, 2020). Moz states «*Search engines process and store information they find in an index, a huge database of all the content they have discovered and deem good enough to serve up to searchers.*»⁸ We can conclude from the previous definitions that Indexing is simply a list of webpages links containing content that was discovered by the robots of search engines. As a result, when a user look for an information in a search engine like Google, the latter executes a search to find something on the Web, the database is scanned through and then search results are shown to the user on Search Engine Result Pages. (Salo, 2020).

Figure 5: How search Engine crawl and index web pages



Source: Salo, 2020

2.1.3 Ranking:

According to Moz⁹, When someone performs a search, search engines analyzes their index for relevant content, and then orders that content to match the searcher's query. This ordering of

⁸ <https://moz.com/beginners-guide-to-seo/how-search-engines-operate> Consulted on 5th,May2021 at 10:15pm

⁹ ; <https://moz.com/beginners-guide-to-seo/how-search-engines-operate> Consulted on 8th,May 2021 at 11:00 am

search results by relevance is known as ranking. So it is believed that the higher a page in a SERP, that means a high rank, which in turn means that the page is more relevant. As (Malaga, 2007) puts it «*Each page indexed by Google is given a page rank (PR) based on the number and quality of back links to the page. PR is measured from 0 to 10 and higher numbers are better. A site with a high PR will usually rank higher in Google's SERPs than a lower PR site. Web sites can increase their own PR by having high PR pages link to them.* »

2.1.4 On page factors:

According to Moz «*On-page SEO refers to the SEO elements you control on the webpage, or the webpage code, itself. Examples of on-page SEO include content, headlines and headers, image optimization, title tags, meta descriptions, structured data, and more.* »¹⁰

Barbar and Ismail (2019) mention in their study that On-page SEO is a collection of techniques applied on web pages to enable search engines to understand the content of a website. On-page SEO helps by optimizing the webpage structure for search engines and users. The spiders of the search engine will find accessibility to read, analyze and index the content of the webpage easily and provide better results for users after submitting their search query. Some On page factors that are recommended such as page title, header tags, Meta keywords and description, headers, ALT tags, URL structure and size, internal linking, sitemaps, and robot.txt.

2.1.5 Organic Traffic:

According to Google support, Users and visitors that arrives at a website through a search engine result, this user segment is called organic search traffic. Or it's the «*Traffic that finds your site through any of default search engines appears as organic search traffic* ». ¹¹

Similarly, Evenbound states that organic traffic is any user that comes to your site from a search engine, but that isn't paid for. Any organic traffic is going to be a result of inbound marketing and SEO efforts.¹²

2.2 Research Model:

In this section, we clarify the research model that we have followed in our study. The importance of the research model which we have chosen is that it acts as a guide to apply the

¹⁰ <https://moz.com/learn/seo/on-page-factors> Consulted on 10th,May2021 at 12:30am

¹¹ <https://support.google.com/analytics/answer/2795821?hl=en#zippy=%2Cin-this-article> Consulted on 12th,May2021 at 3pm

¹² <https://evenbound.com/blog/direct-traffic-vs-organic-traffic> Consulted on 10th May2021 at 8pm

concepts of SEO and implement the strategy. The research model that we have followed in this thesis is known as “Action Research”.

Action Research

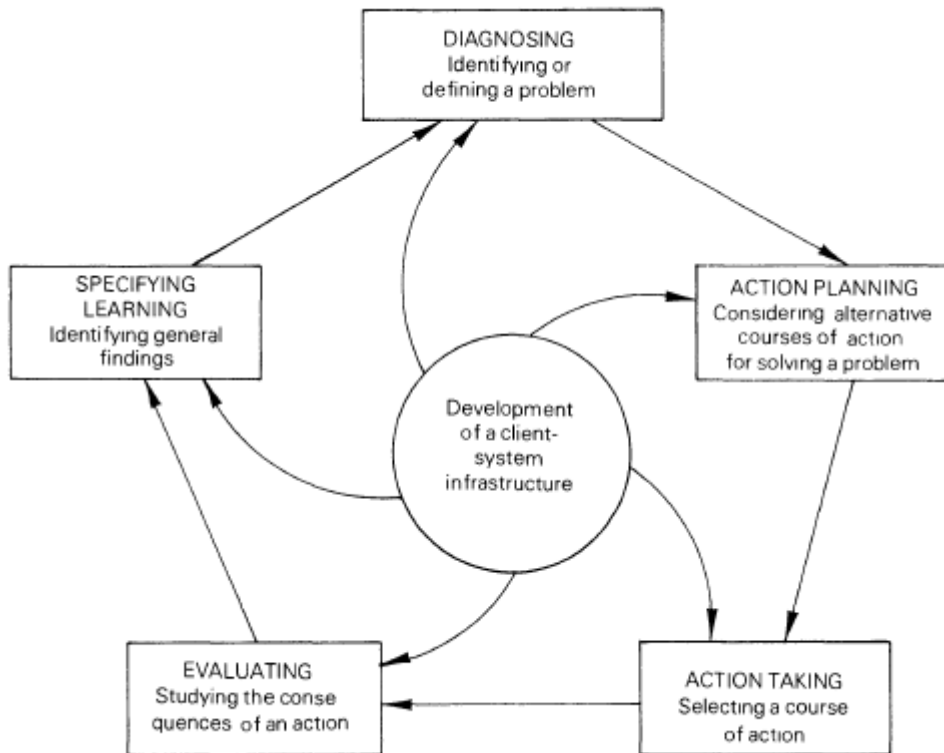
A widely cited definition of action research comes from (Rapoport, 1970), who states, «*Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework*». According to Baskerville and Wood-Harper (1996), «*action research methods are highly clinical in nature, and place IS researchers in a ‘helping-role’ within the organizations that are being studied*» (Malaga 2007). (Anita Lee-Post, 2009) has also applied the model of Action research in some of her studies and states «*Action research was introduced by Kurt Lewin in the 1940s to study social psychology and social changes at the University of Michigan’s Research Center for Group Dynamics (Lewin, 1947). Lewin’s work established the reputation of action research as a “science of practice” that is best suited for studying complex social systems by introducing changes into practice and observing the effects of these changes*».

In our study, we have used the five steps of action research cycle (ARC) which were presented by Susman and Evered (1978), and have been applied in many studies (Malaga 2007 ; Anita Lee-Post 2009) . The five ARC steps are:

- (1) Diagnosing,
- (2) Action planning,
- (3) Action taking,
- (4) Evaluating,
- (5) Specifying learning.

Those steps are clarified in the following figure:

Figure 6: The cyclical process of action research



Source: Susman, 1978

The diagnosing phase identifies impediments to successful SEO strategy and attracting traffic to E-commerce website.

To overcome these impediments that were diagnosed in the Diagnosing phase, measures can be developed in the action-planning phase.

The action-taking phase then take the measures that were developed, and apply them.

The evaluating phase examines the results and changes from the actions taken to assess and evaluate their impact on the success of generating traffic.

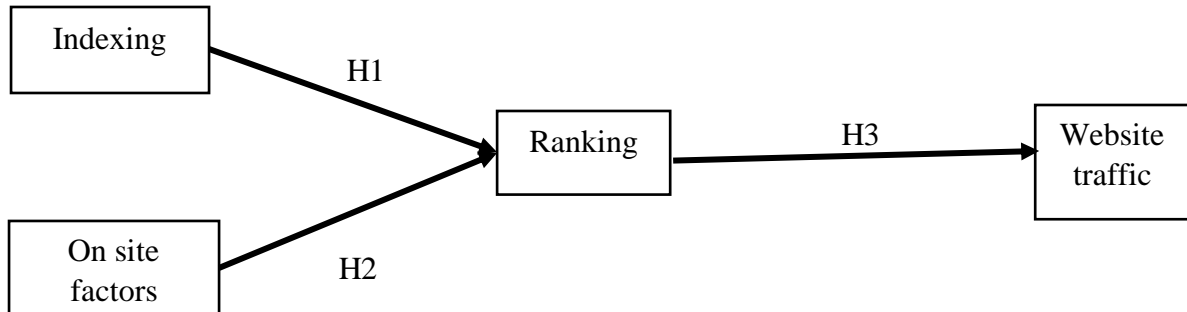
The learning phase summarizes lessons learned and experiences gained.

In our research, we have chosen the “Action research “to be our research model, because it perfectly aligns with the activity and the situation of the organization where we had our internship. Barbaros Ecommerce and Shopping is an ecommerce business, and it is so obvious that they should be present online , hence , they developed a website to sell their products , but there was problem which is the lack of organic users that should be visiting the website by a mere search on search engines . once we knew the kind of problem that was facing the

company, we have gone through many works published before to select a research model , until we finally found the “ action research “ model , the 5 steps can clearly go with our main purpose , starting from identifying the problem to evaluating the changes resulted from developed measures . The other reason is that we found many studies have followed the model and found it useful, especially (Malaga, 2007) which examined the exact same situation as ours, which is generating organic traffic to an ecommerce website.

Based on the literature review presented above, and based on the conceptual framework that was elaborated by (Malaga, 2007) which deals with the exact variables as ours, we have come across the following conceptual framework, whereas we are going to examine the impact of Indexing and On site factors on Website Ranking, and then the impact of the latter on Increasing website traffic. We should mention here that website ranking and traffic are affected by many other factors such as: Social media links, Sponsored campaigns via Facebook ads, backlinks, bounce rate and many other factors. But in our case, we are going to focus on the traffic that comes organically, which means solely by using search engines.

Figure 7 : Conceptual framework



Hypothesis:**H1: Indexing has a positive impact on website ranking****H2: On site factors has a positive impact on website ranking.**

H2 (a): Impressions has a positive impact on ranking.

H2 (b): Clicks has a positive impact on ranking.

H2(c): Page average rank has a positive impact on ranking.

H3: Website ranking has a positive impact on website traffic.

Chapter III: METHODOLOGY

In this chapter, we will illustrate the methodological approach that we have followed in making the present thesis, and the steps that were taken to conduct the study and apply the concepts of the research in in practice.

1. Methodological Approach:

In our research, we followed an experimental approach and a research model known as “ Action research “ , this approach initiates from diagnosing the situation of the company , to planning the actions and measures that will be taken , to applying those measures and finally evaluating the resulting changes and summarizing the lessons learned . Since we have dealt with an Ecommerce company, we needed to know the kind of problems that it faced, this was done in many ways: brainstorming, talking to sales representatives and marketing departments, and consulting some digital solutions like Ubersuggest, SEMrush, Google analytics, and Google Search Console. We finally detected the problem which was low organic traffic to the company’s website.

After that we conducted a documentary research and went through published works that resemble our problematic, to benefit from their literature reviews and theoretical baggage. This is illustrated in the Theoretical framework chapter.

Then we moved to applying what we have gathered from the documentary research and the digital solutions, via some tools, the most important tool that helped us was: Google Search Console.

And finally we reported the results after implementing the changes of SEO, using secondary data provided by Google Analytics and Google Search Console.

2. Data Collection:

In order to gather the data that will help us interpret the results, and see if there were any changes in the website due to the implementing of the SEO process, we have chosen two digital solutions that provided us with accurate data about the website, those digital solutions are:

Google Search Console, Google Analytics.

Our data were collected for a 68 day period, due to the late appearance of the results by the digital solutions that were consulted. And we also got some data of a prior month from GA.

2.1 Descriptions of the used digital Solutions:

In this section, we will give a brief description of the digital solutions that were used in collecting and analyzing the secondary data, which helped us in answering the research problematic.

2.1.1 Google Search Console:

According to Google support: *«Google Search Console is a free service offered by Google that helps you monitor, maintain, and troubleshoot your site's presence in Google Search results. You don't have to sign up for Search Console to be included in Google Search results, but Search Console helps you understand and improve how Google sees your site.*

Search Console offers tools and reports for the following actions:

- *Confirm that Google can find and crawl your site.*
- *Fix indexing problems and request re-indexing of new or updated content.*
- *View Google Search traffic data for your site: how often your site appears in Google Search, which search queries show your site, how often searchers click through for those queries, and more.*
- *Receive alerts when Google encounters indexing, spam, or other issues on your site.*
- *Show you which sites link to your website.*
- *Troubleshoot issues for AMP, mobile usability, and other Search features. »*¹³

We have used Google search Console tool in order to help us determine if the webpages are being indexed, and to know the number of impressions, which is how many times a certain page was seen in the SERP and also what keywords and pages we ranked for.

2.1.2 Google Analytics:

According to Tech target network, *«Google Analytics is a web analytics service that provides statistics and basic analytical tools for search engine optimization (SEO) and marketing purposes. The service is part of the Google Marketing Platform and is available for free to anyone with a Google account.*

Google Analytics is used to track website performance and collect visitor insights. It can help organizations determine top sources of user traffic, gauge the success of their marketing

¹³ <https://support.google.com/webmasters/answer/9128668?hl=en>

activities and campaigns, track goal completions (such as purchases, adding products to carts), discover patterns and trends in user engagement and obtain other visitor information such as demographics. Small and medium-sized retail websites often use Google Analytics to obtain and analyze various customer behavior analytics, which can be used to improve marketing campaigns, drive website traffic and better retain visitors. »¹⁴

Google Analytics will help us to know the source traffic of the website, in our case, we want to know how many organic traffic came to the website after implementing the necessary changes.

All professional around the world use these tools to track their customers and craft marketing strategies.

3. Data Analysis:

After gathering the data related to our study, using internal data of the company via tools like Google Analytics and Google Search Console, in the next chapter we will first present the descriptive data that were gathered, presenting each variable separately and using a Univariate analysis. The data will be composed of Traffic data, Ranking data, Indexing and Onsite factors data. Secondly, we shall proceed to study the correlation between the variables: Indexing, on site factors and Ranking using the Pearson correlation. And finally we examine if there were any impact of independent variables on the dependent variable which is website traffic, using a linear regression analysis because we have quantitative data.

We will make our data analysis using software solutions SPSS and Excel , to provide us with an adequate analysis and charts, and of course the data provided by GA and GSC.

We remind here that we have analyzed the data of 68 days, due to the late appearance of the results.

¹⁴ <https://searchbusinessanalytics.techtarget.com/definition/Google-Analytics>

CHAPTER IV: RESULTS AND DISCUSSIONS

This chapter is made up of two sections. In the first section, we will present the company where we had our internship, we will discuss the company's objectives behind our study, along with the structure of the company and other details.

The second section is the core of this study, it contains the results that were found and data that were collected after implementing some SEO techniques, following the Action research model, these actions will be mentioned in the Annex. The section also contains an analysis of the results found, and examine the effectiveness of the SEO project and the relationship between variables.

1. Presentation of the company:

Barbaros E-commerce and Shopping is an E-commerce company founded by Sami Chagar and Faycel Dous in 2019 and based in El-Eulma, Setif. The company provides products and different services for its customers.

In order to meet the growing needs and demands of its clients, and in order to develop its brand identity, Barbaros always seeks to hire young talents for its different department and multiple tasks. All the teams work in collaboration to reach the underlined objectives and contribute effectively in the growth of the company.

Business name of the company	Barbaros E-commerce and Shopping
Date of first activity	10 /10/2019
The head office	Cité EL KOUARESSE Rue DHUIBI Saleh N°01 19600 El Eulma, Algérie
Contact	contact@barbarosecom.dz 036 77 30 09
Legal status	SARL
Number of employees	20
Logo	

1.1 The values of Barbaros:

Commitment, responsiveness, respect, efficiency and customer satisfaction are the values of Barbaros. Indeed, the company gives its best to offer all its expertise in the marketing E-commerce field.

Respecting the deadlines and the choice of products by their customers are of high importance. As well as other services offered by the company such as: pre-purchase, delivery, post purchase and others. Barbaros is responsive and always in touch with its customer. Besides, the company seeks always to provide the best services and products for its clients.

Finally, the company highly respect the privacy of its users by not revealing any information communicated by its clients concerning their business.

1.2 Company vision and objectives:

Barbaros has a broad and ambitious vision. It plans to be one of the leaders in e-commerce in Algeria and become a reference in its field. Because of the high awareness of importance of internet in our daily lives, it encourages its collaborators to be always up to date with technological transformation

Its main mission is to deliver happiness to its customers and satisfy the most of the demands that are coming from customers. Among the objectives of the company, is to develop internal environment, by recruiting more employees, and high quality talents, as well as working in collaboration with other companies and freelancers to achieve its objectives that cannot be fulfilled at the moment by its employees.

1.3 Company strengths and weaknesses:

We will present in this section the strengths and weaknesses of Barbaros e-commerce and Shopping company:

1.3.1 Forces:

Barbaros has a young, passionate and creative team.

Excellent location in EL Eulma Dubai compared to the competition.

The proposition of unique services such as fast delivery, free returns products in the evening and on weekends.

The digital presence in all of the online channels, by having a website, and social media accounts in Facebook, Instagram, LinkedIn and TikTok.

1.3.2 Weaknesses:

Lack of marketing skills due to the low numbers of specialized people in the east area.

Teams composed of low number of workers especially in marketing and web development.

The strong presence of competitors, which makes it difficult to stand out due to the lack of resources.

Low posting on social networks, resulting in a lack of visibility

2. Results Analysis:

2.1 Applying the Action research model:

First, we should mention how did we diagnose the problem that was facing the company, how did we plan to solve the problem and the action that were taken.

2.1.1 Diagnosis:

In order to diagnose the problem that was facing the company, we have relied on two methods, one of them is consulting the marketing team and sales representatives, and secondly consulting digital solutions such as: GA and GSC.

After questioning the marketing team and sales representatives, we figured out that a major problem that was facing Barbaros Ecommerce and shopping, is the lack of organic traffic to the website, they had predicted that based on the lack of sales that comes from the website. Because, at the time they were only running Facebook campaigns that didn't convert to the website, but rather making purchasing directly by calling or messaging. So from that, we partially knew that there was a problem in organic traffic.

However, we didn't stop there, so we went for a further analysis of secondary data after setting up Google analytics and Google search console accounts. We did obtain some useful information concerning Indexing, onsite factors, ranking and organic traffic and other data.

We should mention here that google analytics account was set up only when we arrived, while google search console account was accepted by Google after almost one month since we started. Therefore, there wasn't any data about the past months or the previous period, which made it not possible for us to make a comparative study between different periods (before and after).

Here are some data that we collected using GA and GSC, From April 26th, to May 25th, 2021:

Table 1: Statistics for some KPI about the website before the campaign 26/04/2021 to 25/05/2021

	Indexed Pages	Average Website Ranking	Impressions	Clicks	Organic Traffic	Organic Sessions
26/ 04 / 2021 to 25/05/2021	115	15.3	504	39	22	38

Source: Elaborated by the student using GA and GSC.

From the table above, we can see the overall performance of the website, it clearly highlights the very low number of organic traffic with only 22 visitors, and the website average ranking is not too good, with an approximate position of 15.3 in the google search results pages. For the indexing status, there is only 115 indexed pages, which is fairly a low number compared to the overall pages of the website.

2.1.2 Action planning:

In order to enhance the performance of the page generally, and generate more organic traffic specifically, we have planned to make some SEO techniques which can give better results regarding Indexing, onsite factors, ranking and finally more organic traffic. Those techniques were produced based on the literature review and the experts' advice in the field of SEO.

First indexing; before, in order to get a webpage indexed, SEO practitioners had to "*attempt to have a site that is already indexed include a link to the target site. As the search engine spiders revisit the indexed site, they will follow the link to the new site.*" (Malaga, 2007). But with appearance of developed methods, and digital solution, a webpage can be indexed by requesting google to index it using the "request to index" feature in Google search console.

Second, On site factors: as previously illustrated in the literature review chapter, on site factors are couple of changes that are made on the content of the website , including site title, header tags , descriptions tags. (Malaga, 2007). These changes can be added directly to the website by the webmaster after a keyword research made by the SEO practitioner. And to measure them, we have generated three KPIs which are: Impressions, Clicks and Page Average Rank. According to (Malaga, 2007) «*A site with a high page rank will usually rank higher in Google's SERPs than a lower page rank site.* » And according to developers google¹⁵, it is possible to

¹⁵ <https://developers.google.com/search/docs/basics/measure-performance-on-google> consulted on 15/06/2021 on 12:20 pm

explore information about how a website performs on Google Search, by looking at impressions, clicks.

We should mention here that there are many other factors that were at the time affecting the results and the ranking status, among them: Facebook ad campaigns, and social media links to the website.

2.1.3 Action Taking:

After diagnosing the problem and identifying the actions that will be taken and changes that will be made, we came to apply what we have gathered from the literature review and the SEO experts.

For indexing; we made a list of the most important pages on the website, we did some technical changes and then requested google to index those pages via google search console. We wanted also to add Site maps to these pages, but unfortunately that wasn't possible due to the unavailability of the web developer.

For on-site factors: We had selected one page which is the home page, we changed its Meta tags after a keyword research, and changed the page's title and description tag.

2.1.4 Evaluating:

After performing the actions previously illustrated, we needed to evaluate if there were any changes regarding the variables of the study.

It should be mentioned here that the period of the internship is from 01/04/2021 to 01/07/2021, but the SEO techniques were executed by the end of April, and the data from google search console weren't shown until the end of May, and in order to get meaningful results, we needed at least the data of another month, that's why we've kindly asked the organization to give us access to the data of July, which they happily did.

We obtained our data using Google Analytics and Google search console. We checked how many pages were indexed, the impressions and ranking of a key page after making the necessary on site changes, and we observed the organic traffic to the website.

2.1.5 Specifying learning:

This part is where we are going to mention the lesson learnt and insights gathered after implementing the SEO techniques and evaluating the results, it's another word for conclusion.

2.2 Statistics after implementing SEO techniques:

Table 2: Statistics about indexing status, website ranking and organic traffic on weekly basis, between 25/05/2021 to 31/07/2021

Date	Indexed Pages	Website average Ranking	Organic traffic
25/05/2021	115	15.3	22
31/05/2021	132	14.8	30
07/06/2021	139	12.3	47
14/06/2021	193	11.8	67
21/06/2021	221	12.2	86
28/06/2021	239	12.4	114
05/07/2021	250	12.7	121
12/07/2021	291	12.8	136
19/07/2021	309	13.4	162
26/07/2021	325	13.9	180
31/07/2021	337	13.9	197

Source: Elaborated by the student via GA and GSC

We can clearly observe in the Table 2, that there is a continuing increase in the indexed pages of the website, where we could move from 132 indexed pages at the beginning of the project to 337 indexed pages by the end of July, which indicates that our attempt on indexing as much pages as possible was successful. according to the data provided by google search console , there is unstable changes happening on the level of website ranking , sometimes the website gets higher in the SERP as in the period between 08/06/2021 to 14/06/2021 , and sometimes it gets lower in other periods. But we can conclude generally that the website average ranking was enhanced in comparison to its ranking before the campaign, it moved from the position 14.8 to 13.9. Finally, we clearly notice the improvement of organic traffic to the website, there is a continuing growth, where the website had only 23 organic visitors between 25/05/2021 to 31/06/2021, and 193 organic visitors by the end of July.

Table 3: Home page statistics before and after controlling some On Page factors

	Title tag	Description tag	Impressions	Clicks	Page Ranking	Organic traffic
26/04/2021 to 25/05/2021	Barbaros E-Commerce And Shopping	/	6	0	8	22
25/05/2021 to 31/07/2021	Acheter sur internet en algérie- Barbarosecom.dz	Votre plateforme pour acheter sur internet en Algerie , avec une livraison rapide à domicile dans 58 wilayas et paiement à livraison. Faites vos achats en ligne sur Barbarosecom.dz	8	0	7.3	30
07/06/2021	17		1	7.4	47	
14/06/2021	44		10	6.8	67	
21/06/2021	82		22	6.8	86	
28/06/2021	113		33	6.3	114	
05/07/2021	152		45	6.1	121	
12/07/2021	199		58	5.7	136	
19/07/2021	236		68	5.7	162	
26/07/2021	258		79	5.6	180	
31/07/2021	273		85	5.5	197	

Source: Elaborated by the student by consulting the data from GA and GSC

In order to examine the effects of on page factors, we had to perform some changes on the level of the most important pages, as a result we have chosen the home page to work on, , which its results are presented on Table 3.

From table 3, we can see the difference before changing some of the website's elements, and after. Before, the home page had only 6 impressions¹⁶, and 0 clicks which is fairly a very low number. After the modifications were made, the number of impressions has raised to 267, and the number of clicks increased to 85. We can also see there is an improvement in the ranking of the page, it climbed from position 8 to become higher in the SERP with average position of 5.5.

¹⁶ Impressions: How often someone saw a link to your site on Google. Source : <https://support.google.com/webmasters/answer/7042828?hl=en> Consulted on 20/06/2021 at 2:15pm

Table 4: Some SEO key performance statistics for the period between 26/04/2021 to 25/05/2021 and 25/05/2021 to 31/07/2021

	26/04/2021 to 25/05/2021	25/05/2021 to 31/07/2021	Increasing rate
New organic visitors	22	176	700%
Sessions	38	345	808%
Engaged session per user	1.73	1.92	11%
Average engagement time	1m23s	2m44s	98%
Page views	91	1442	1485%

Source: Elaborated by the student with consulting data from GA

From the table 4, we can clearly see an increase in the key performance indicator of SEO, even though the two periods are not the same, we are comparing one month data with a two month data, and that's because Google Analytics didn't provide us with data before April. But still, there is an improvement in the website performance, where the number of organic visitors have moved from 22 visitors to 176 new organic visitors, with a 700 % increasing. Similarly, there is a big improvement in the other indicators, with an acceptable increasing rate of 11%.

2.3 Testing the relationship between variables:

In order to examine the effects of independent variables on dependent variables, we have ran Linear and Multiple regression test because we have quantitative variables , and to examine the strength of the relationship , we have ran a Pearson correlation test.

Testing the effect of Indexing on the website Ranking:

From the (table 5) we can observe the statistical significance of the test with $0.021 < 0.05$. The independent variable indexing only explains 7.9 % of the dependent variable ranking, which is low. There is also a moderately positive relationship between the two variables (0.280) which indicates that the more pages are indexed, the website ranking gets higher. As a result, Indexing has a positive impact on Ranking.

Table 5: The results of linear regression analysis of Indexing on Ranking

Independent variable	Dependent variable	R square	Adjusted R square	F	β	T	Sig
Indexing	Ranking	0.079	0.065	5.633	0.280	2.373	0.021

Elaborated by the student via SPSS

The Pearson correlation coefficient, r , can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value from 0.1 to 0.39 indicates a positive weak correlation; from 0.40 to 0.69 indicates a moderate correlation, and from 0.70 to 1 indicates a strong correlation. A value less than 0 indicates a negative association; that is, as the value of one variable increases, the value of the other variable decreases. (Schober, 2018)

From (table 6), the correlation between the two variables indexing and ranking, is weakly positive (0.280), which indicates that as one variable increases, the other increases too. And the Sig value is $0.010 > 0.05$ which proves that our correlation test is statistically significant.

Table 6: Correlation Matrix

Correlations			
		ranking	Indexing
Pearson Correlation	ranking	1.000	.280
	Indexing	.280	1.000
Sig. (1-tailed)	ranking	.	.010
	Indexing	.010	.

Elaborated by the student via SPSS

Testing the effect of On-site factors on Ranking:

In order to examine the effect of the independent variable On site factors on the dependent variable Ranking, we had run a multiple regression analysis between the component of On-site factors (Impressions , Clicks ,Page Rank) and Ranking .

From (table 7) , we deduce that the independent variable On site factors with its components (Impressions , Clicks and Page Rank) explains 43.8 % of the dependent variable Ranking, which is a good percentage , and our model is valid based on the Adjusted R square value 41.1 % . The Anova value is 0.000 which is less than 0.05 which proves the statistical significance of our test.

Impressions sig value is $0.133 > 0.05$, which indicates that Impressions does not have an impact on Ranking.

Clicks sig value is $0.228 > 0.05$, which indicated that Clicks doesn't have an impact on ranking.

PAR sig value is $0.000 > 0.05$ which proves that Page Average Rank has a positive impact on Ranking.

Table 7: Results of multiple regression analysis of On site factors on Ranking

Independent variable	Dependent variable	R square	Adjusted R square	F	β	T	Sig
On site factors (Impressions)	Ranking	0.438	0.411	16.616	1.540	1.521	0.133
On site factors (Clicks)					-1.233	-1.218	0.228
On site factors (Page average Rank)					6.168	6.168	0.000

Elaborated by the student via SPSS

From the table of Correlations (Table 8), We observe that the sig values of all the independent variables (Impressions, Clicks, Page Average Rank) and the dependent variable Ranking, all are less than 0.05 which means that our test is statistically significant. We can also there is an average positive relationship between Page Average Rank and Ranking 0.572 which means if there is an increase in page rank , there is also an increase in website Ranking.

Meanwhile, there is a moderate relationship between the independent variables Clicks (0.296), Impressions (0.306) and Ranking, which means if there is a decreasing in Impressions or Clicks, there is a decreasing in Website Ranking too.

Table 8 : Correlation Matrix

		Ranking	Impressions	Clicks	Page Rank
Pearson Correlation	Ranking	1.000	.306	.296	.572
	Impressions	.306	1.000	.996	-.010
	Clicks	.296	.996	1.000	-.008
	Page Average Rank	.572	-.010	-.008	1.000
Sig	Ranking	.	.006	.007	.000
	Impressions	.006	.	.000	.468
	Clicks	.007	.000	.	.475
	Page Average Rank	.000	.468	.475	.

Elaborated by the student via SPSS

Testing the effect of Ranking on Website Traffic:

From (Table 9), we see the results of the examination of the independent variable's effect (Ranking), on the dependent variable (traffic). We can clearly observe that Ranking explains 7.3 % of the variance in website traffic, which gives us a low linear model, indicating that 92.7% of the variance in website traffic are explained by other factors.

With a sig value of $0.026 < 0.05$, Website Ranking has a positive impact on website traffic.

Table 9: Results of Linear regression of Ranking on Organic traffic

Independent variable	Dependent variable	R square	Adjusted R square	F	β	T	Sig
Ranking	Traffic	0.073	0.059	5.190	0.270	2.278	0.026

Elaborated by the student via SPSS

Hypothesis

H1: Indexing has a positive impact on ranking, but with a low correlation between the two variables.

H2: On site factors in has a partially positive impact on ranking.

H2 (a): impressions does not have an impact on ranking,

H2 (b): Clicks does not have an impact on ranking,

H2(c): Page average ranking has a positive impact on ranking,

H3: Ranking has a positive impact on website traffic.

CONCLUSION

To conclude this thesis, we will sum up the research's objective, the followed methodology, the most important results, the delimitations of the study and final recommendations to the hosting company.

So the main objective behind conducting this research, was to investigate the role of search engine optimization and its impact on acquiring and generating organic traffic to an E-commerce website, which is in our case the website of Barbaros E-commerce and Shopping, a growing E-commerce company in Algeria.

In order to accomplish that, we have followed an action research model, which is based on applying the knowledge of a certain topic on real cases, we started with the diagnosing the problems that were facing the website of the company, and then moved to plan and apply the necessary actions to improve its organic traffic, following some SEO techniques which are Indexing and On-site factors. Our internship lasted 3 months, but we have only used the data of two months, and that's due to the late appearance of the results on the digital solutions that were consulted.

Our study has resulted in confirming some hypothesis and declining others, which are as following:

Indexing has a positive impact on ranking, but with a low correlation between the two variables.

On site factors in has a partially positive impact on ranking, where we found two of its dimensions (impressions and clicks) do not have an effect on ranking , meanwhile , Page average ranking has a positive impact on ranking .

Ranking has a positive impact on website traffic.

We concluded from those results that applying some of SEO techniques has improved the overall performance of the website, but still, there are many other factors that affect and the ranking and organic traffic of the website. However, while there is a huge transformation to the digital world and the constant changing of the consumer behavior, Search Engine Optimization can totally make a business acquire more traffic and as a results more revenue with low costs, because SEO is considered to be a long-term strategy, therefore, we recommend for Barbaros E-commerce and shopping to:

- Keep enhancing their website due to its huge importance in generating organic customers.

- Working on the SEO of the website, with focusing on elements such as: Indexing status, on site factors, Website layout.
- Enhancing user experience to attract its attention and make users spend more time on the website which will enhance automatically the website ranking.
- Keep up-to-date with Google algorithms which change regularly, so that the website always meet the standards set by google.
- Conducting keyword research to generate useful head tags and description tags which will improve the number of impressions and clicks.
- Perform SEO techniques on the most important pages of the website, to enhance the average page rank of those pages.

As for the delimitations of the study, here are some of them that affected the overall results of the study:

- The data sample which were composed of the data of 68 days, weren't sufficient in order to get more accurate and much better results. According to the experts of the field, the results of an SEO project need at least 6 months to appear.
- The lack of technical support and assistance by the web developers, has resulted in leaving some technical problems unsolved, which has a big effect on indexing pages of the website.
- It was planned to create a blog on the website, so we can generate more backlinks which will reinforce the strength of some pages, but due to the lack of resources, the blog wasn't created.
- There were some other factors that were affecting the ranking of the website negatively such as the low time spent on the website from users that came from other channels like social media links and sponsored campaigns.
- In order to generate more meaningful techniques, we have only relied on free tools which give very limited access to its features, the paid versions could not be used due to financial issues.

As a final thought, we can conclude by emphasizing and accentuating on the importance of the digital opportunities that can be exploited by companies and shift their attention to meet today's needs and means of looking for information and things for users, designing an unforgettable experience for customers in the digital world can be the turning point of the growth of any business.

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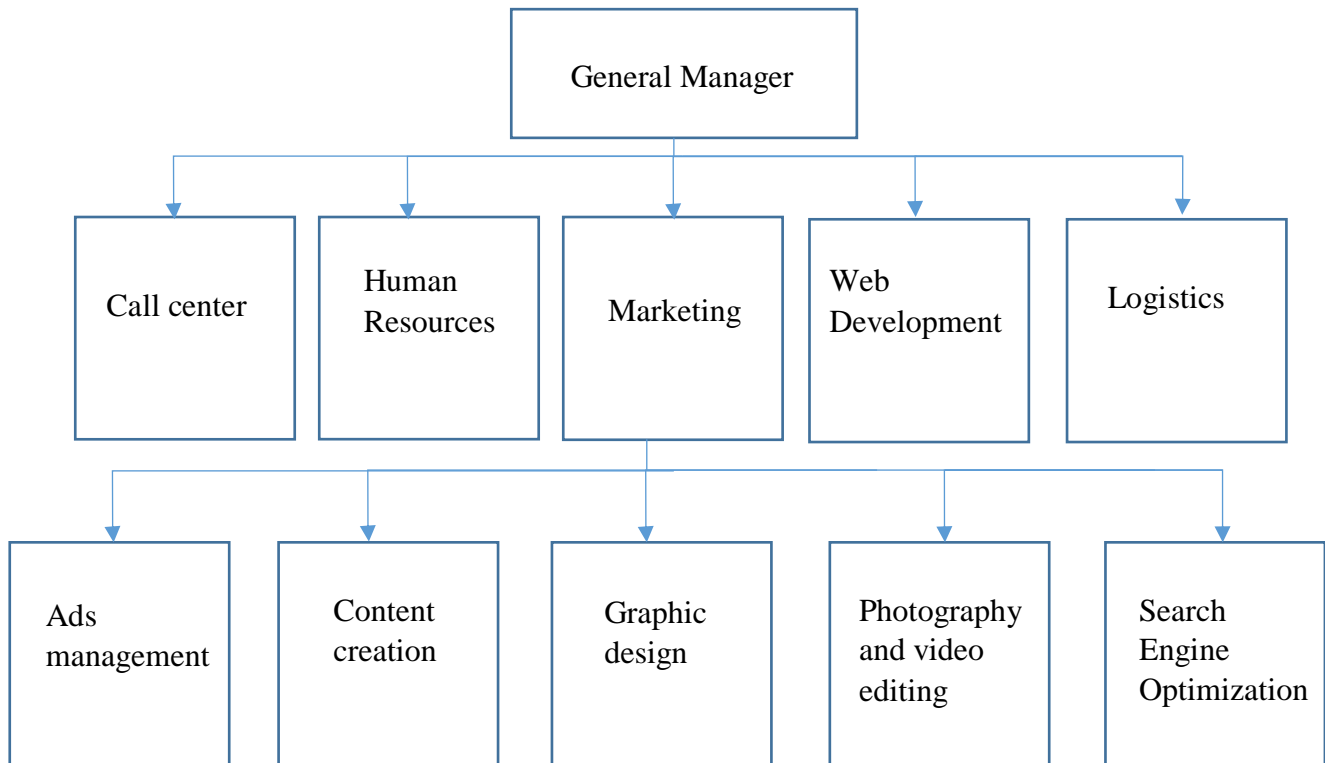
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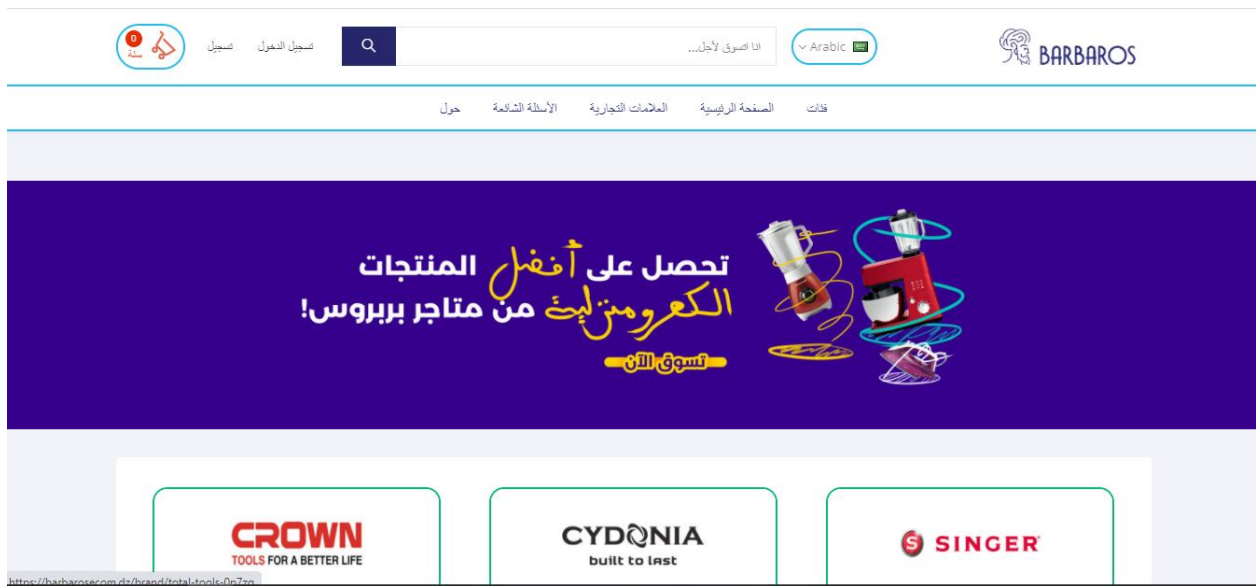
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ANNEXES

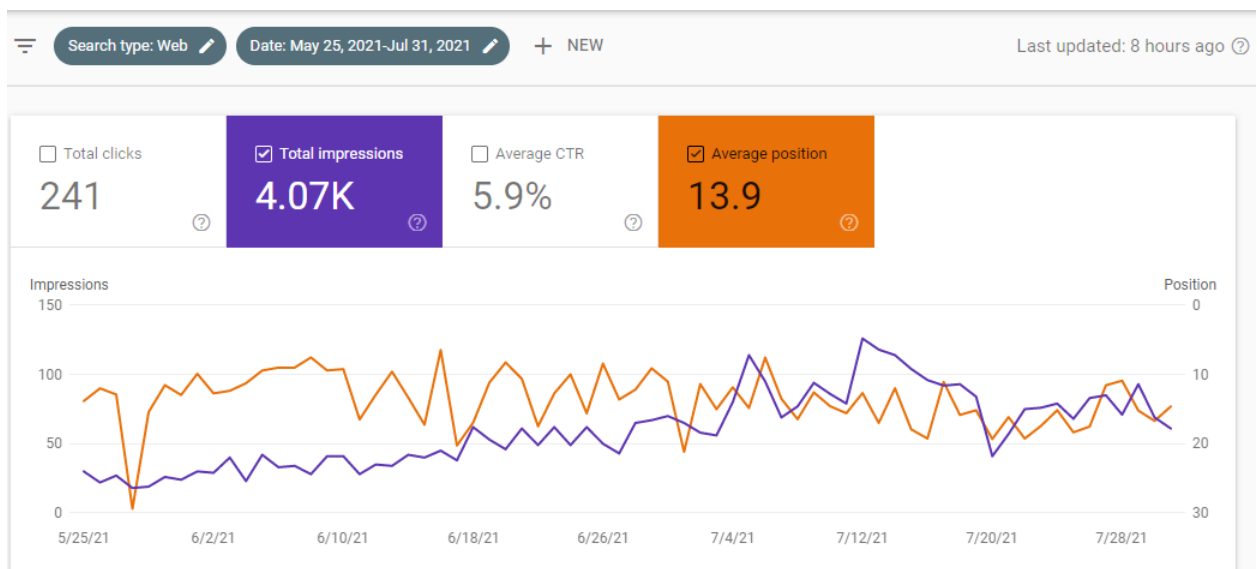
ANNEXE A – COMPANY STRUCTURE



ANNEXE B - INSIGHTS

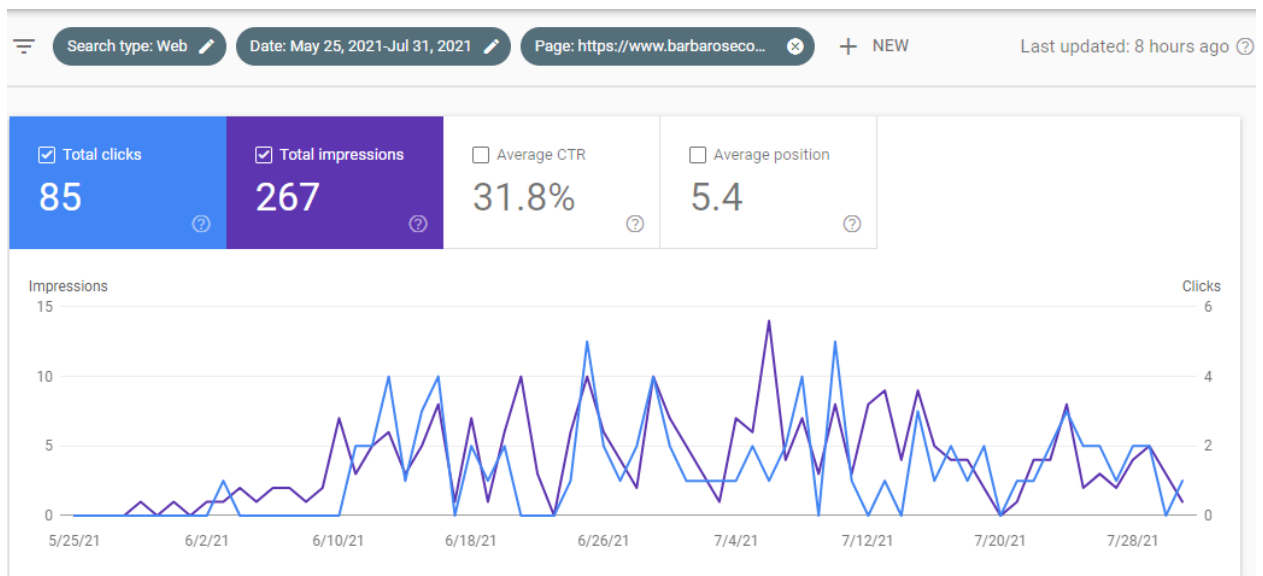
Figure 8: Interface of Barbaros website

Elaborated by the student

Figure 9: Overall performance of the website between 25/05/2021 to 31/07/2021

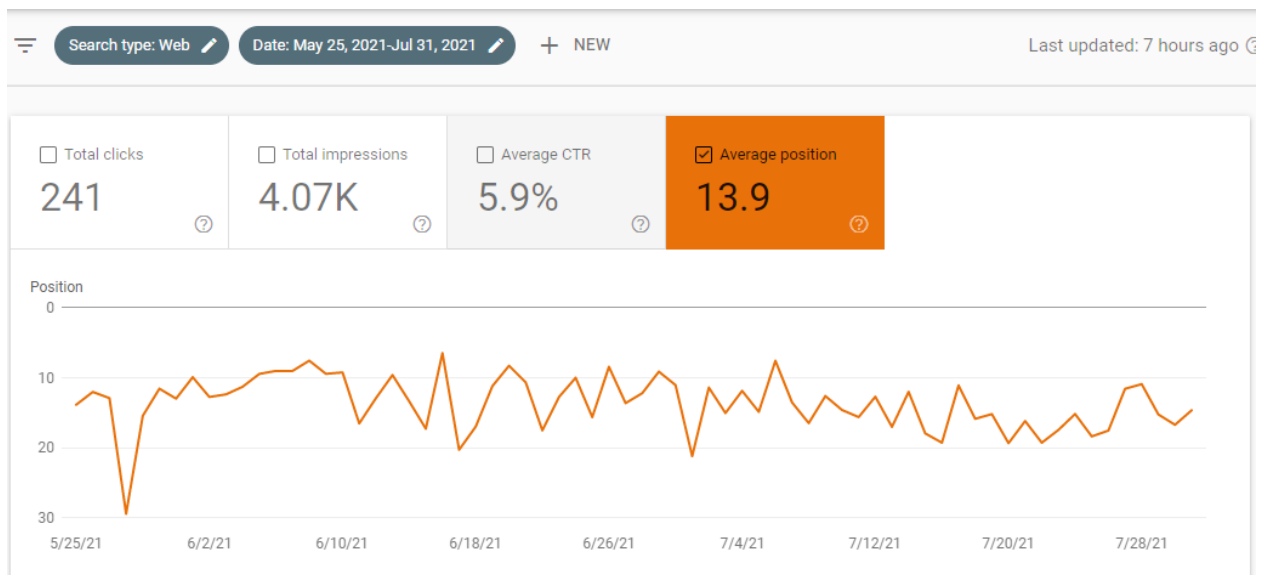
Elaborated by the student via GSC

Figure 10: Impressions and clicks between the period 25/05/2021 to 31/07/2021

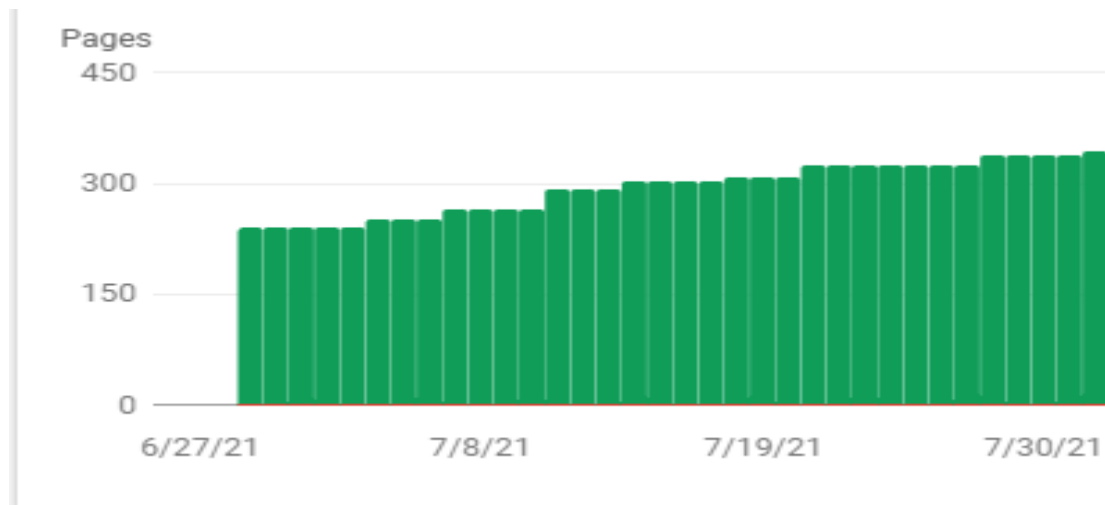


Elaborated by the student via GSC

Figure 11: Website ranking between 25/05/2021 to 31/07/2021



Elaborated by the student via GSC

Figure 12: Indexing Status

Elaborated by the student via GSC

Figure 13: Organic traffic between 25/05/2021 and 31/07/2021







Traffic acquisition: Session source/medium + + Custom May 25 - Jul 31, 2021 + + +

Search... Rows per page: 10 Go to: 1 < 1-10 of 26 >

Session source/medium	Users	Sessions	Engaged sessions	Average engagement time per session
1. [blurred]	100	100	100	1m 13s
2. [blurred]	100	100	100	1m 13s
4. google / organic	193	788	788	2m 13s
3. [blurred]	100	100	100	1m 13s







Elaborated by the student via GA

Figure 14: Keyword research using free digital tool

KEYWORD IDEAS	SUGGESTIONS	RELATED	QUESTIONS	PREPOSITIONS	COMPARISONS
KEYWORD ?	TREND ?	VOLUME ?	CPC ?	PD ?	SD ?
site d'achat en ligne avec livraison en algerie 		720	34,47ع.د	23	28
site d'achat en ligne en algerie 		30	61,59ع.د	47	20
site d'achat en ligne livraison algerie 		20	21,45ع.د	16	10

Elaborated by the student via Ubersuggest

Figure 15: Some technical problems on the website

Details			
Status	Type	Validation ↓	Trend
Excluded	Duplicate without user-selected canonical	N/A	
Excluded	Crawled - currently not indexed	N/A	
Excluded	Not found (404)	N/A	
Excluded	Blocked due to other 4xx issue	N/A	
Excluded	Page with redirect	N/A	
Excluded	Excluded by 'noindex' tag	N/A	

Elaborated by the student via GSC

و الحمد لله رب العالمين