

# Establishing a SEO Strategy: the Case of Camping Sinervä



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Denna forskning observerar den nuvarande situationen av Camping Sinerväs webbsida och ger ytterligare idéer om hur företaget kan utveckla sin webbsida på en sökmotoroptimering (SEO)-vänligt sätt. Tävligen inom campingbranschen har ökats och för att avvika sig från de andra inom samma bransch, krävs det nya sätt att marknadsföra sig. Uppdragsgivaren för denna avhandling var Camping Sinervä, som driver en camping- och husvagnsverksamhet i mellersta Finland.

Teorin i denna avhandling baserar sig på sökmotormarknadsföringen och mer djupgående sökmotoroptimering. Arbetet innefattar också programvaran som används i Googles SEO och förklarade hur sökmotorer fungerar i allmänhet. Forskningen togs fram med en kvantitativ studie och data samlades in med Googles programvara. A/B-tester på data utfördes för att mäta den statistiska skillnaden mellan de två olika versionerna av webbsidan.

I studien hittades några problem med det ursprungliga innehållet, vilket kunde ha påverkat SEO med svagare resultat. Trots omvandlingarna från sökfrågorna hade en statistiskt signifikant ökning mellan de olika versionerna av webbplatserna, hade synligheten minskat på webbsidan. Tidsmässigt var det inte den bästa tiden för att skapa tester för SEO. Orsakerna kan bero på att proven gjordes under en kort tidsperiod och de tillämpades under verksamhetens lågsäsong. Fynden skapade nya idéer för att utveckla SEO strategin för företaget. Mer realistiska resultat kan uppnås efter en längre kontinuerlig utvecklingsprocess.

Nyckelord Digital marketing, Search Engine Optimization, SEO, A/B testing

Sidantal 38 sidor

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This research observed the current situation of the Camping Sinervä's website and the purpose was to give the commissioner ideas on how to develop the website in a search engine optimization (SEO) friendly way. Because the competition is currently increasing in the hospitality business, to stand out from the other competitors, new ways of marketing are required to survive the competition. The commissioner of this thesis was Camping Sinervä, which is a camping and caravan business in central Finland.

The theory of this thesis examines search engine marketing and more in-depth search engine optimization, as well as the software which is used in Google's SEO. In addition, an explanation of how search engines function in general was explored. The research was approached with a quantitative method and the data was collected with Google's software. Additionally, A/B testing was performed on the data to measure the statistical difference of the two different versions of the website.

In the case study, some issues of the original content were revealed, which could have affected SEO in a degenerative way. Despite that, the conversions from the search query did have a statistically significant increase between the different versions of the websites, then again, the visibility of the website did decrease. Perhaps it was not the best timing for SEO tests, due to a short test time of the website and it was applied on the off-season in the business. Nevertheless, the findings did present development ideas for SEO and the realistic results can be achieved after a longer continuous development process.

Keywords Digital marketing, Search Engine Optimization, SEO, A/B testing

Pages 38 pages

# Contents

1	Introduction.....	1
2	Theoretical Framework .....	3
2.1	Digital marketing.....	3
2.1.1	Paid advertising.....	4
2.1.2	Search engine marketing.....	5
2.1.3	Organic and paid traffic.....	6
2.2	Benefits of SEO.....	7
2.2.1	Cost value .....	7
2.2.2	Visibility and Credibility.....	7
2.2.3	User experience .....	9
2.2.4	Content quality of the website .....	10
2.2.5	Importance of quality content .....	10
2.3	Google analytics .....	11
2.3.1	Google search console .....	12
2.3.2	Performance.....	12
2.3.3	Errors and Security issues .....	13
2.3.4	Operability.....	14
2.4	Search engines .....	15
2.4.1	Technical key features of a search engine .....	15
2.4.2	Evaluating of the search query.....	17
3	Methodology .....	18
3.1	A/B testing.....	18
3.2	Hypothesis.....	20
3.3	Collecting Data .....	20
4	Results .....	21
4.1	Analyzing the original website .....	21
4.2	Second version of the website.....	23
4.3	Calculating the difference between the versions .....	24
5	Recommendations.....	28
6	Conclusion .....	29

References.....31

## 1 Introduction

The Internet is a huge library with billions of websites. Nowadays when a user enters the Internet usually they do not type the websites' full address on the browser. It is a lot easier and faster to use a search engine to type in just one word or short phrase to have a list of potential websites which match the word the user typed in. When it comes to business, it is not effective to have your website on the fifth tab on the Googles search query. Most of the users will not even look at the end of the first page. The competition between companies to earn the first position can be tough, but usually is awarded a lot of traffic, since thirty percent of the web traffic is going through search engines (Portada-online, 2021).

Having a website optimized for the search engines can help a company achieve top positions, and to be found with more than one word typed in the search engine, sounds much more effective than remembering a website's full address. One of the best parts is this is running twenty-four hours per day and does not possibly require someone working with it all the time when it is live. Every business may not have access, knowledge, or resources to invest in this, but search engine developers have created programs and guides to help a user to implement the basics of search engine optimization (SEO).

The camping and caravan business in Finland is mostly a competition between small and medium-sized enterprises. Marketing is mostly performed through newspapers of a union, word of mouth in small social groups, and some through events and social media. Camping sites in the whole country are hundreds and one municipality can have ten businesses running. New platforms where private people can rent their apartments and cottages do increase the competition within the same sector, making digital marketing even harder for the camping and caravan business. The websites which are used as a middleman for private people to rent their accommodations, tend to be larger and more invested in digital marketing. To compete against the other businesses some effort in the digital marketing strategy may be essential to reach potential customers all over the country. Due to covid-19, this kind of business has increased demand, since traveling abroad is difficult and not recommended, which had 90% decrease compared to the situation two years ago. This

phenomenon has increased domestic traveling in Finland for a third of what it was compared to the year 2020. (Suomen virallinen tilasto, 2021)

Camping Sinervä is a hospitality business in Multia, Finland which is located in the middle of Finland, it is a small municipality close to the larger city Jyväskylä. In Multia, the peace of the nature and beauty of a lake offers a comfortable place to have a hospitality business. Camping Sinervä have cottages and spots for camper vans, a restaurant, and different leisure activities. This thesis is about improving Camping Sinervä's website for more search engine friendly. In this thesis, the current situation of Camping Sinervä's SEO is mapped out and research has been done on how to improve it.

With a well-optimized website friendly for search engines the company can obtain better visibility in the search query. Specific content for each page of a product or service on the website can bring traffic from other search phrases or words, instead of the highly competitive words amongst the business (Bhan, 2021). In addition to the traffic, the customer experience on the website can be enhanced with the quality content and interactive pages to even have a conversion of the customer. The fundamental changes within the website towards being more search engine friendly can have long-term benefits, and to gain authority to compete against larger businesses. (McCoy, 2021)

The knowledge behind the skill to implement SEO on a website is crucial since the search engines do punish poor or unethical content on the Internet. This can be more damaging than leaving SEO undone on a website. These penalties may be temporary, but to avoid these some knowledge should be obtained before making radical changes to avoid these actions. With this thesis, major unethical SEO can be avoided, and to have enough knowledge to implement the basics of SEO for a website taking into consideration the size of the website and competition of positions in search engines. (Clark, 2021)

The research has been conducted with quantitative methods, data has been collected from the traffic of current keywords, the current content of the website and how new keywords and content are affecting the traffic of the website. In theory part digital marketing is explained, the basics of SEO, and the software that has been used for

optimization and data analysis. Also, an SEO strategy is composed of the results from the quantitative research and from the literature review for future optimization. This thesis will strive to answer one main research question.

1. What content for SEO can be applied on Camping Sinervä's website for increasing organic traffic in Google search engine?

## 2 Theoretical Framework

Marketing has changed dramatically with the development of technology and its objectives have transferred into digital platforms such as the Internet, web, smartphone, smart TV, and tablet. Marketing objectives are now transferred digitally between these platforms. (Chaffey, D. & Ellis-Chadwick, F., 2016, p.11)

### 2.1 Digital marketing

For efficient digital marketing, digital media needs to be supported with communicational techniques to reach the customers, such as search engine marketing, social media marketing, online advertising, email marketing, and website partnership arrangements (Chaffey, D. & Ellis-Chadwick, F., 2016, p.11).

There are three different key media types for digital marketing to create a strategy and reach customers: Paid media, owned media, and earned media. Paid media contains mostly advertising, this is what a company pays for to have their content visible on a certain platform. Owned media is what the company owns, the free media on its platforms, this can be an Instagram post what the company has created. Earned media is shared by different partners or influencers to reach the customers, the content of the media is pointed out on the company, but the company does not create nor share the content. Modern marketing contains communication between these media (Mattke et al., 2019, p.803).

Customer relationships management (CRM) in digital marketing is implemented digitally through different platforms, this enables large possibilities for data gathering. Digital media



have enabled to reach massive amounts of customers and this opens the door for the customers for large amounts of content. Interactive websites and sharing data amongst the customers and the company creates a flood of data, which can be used by the marketers to have more personalized content for the customers than ever. The possibilities have increased by digitalization and are a game-changer for customer relationship marketing, this has changed many roles in different businesses but may not have still changed the business model entirely in all businesses. (Williams, D., 2014, pp.5-11)

### 2.1.1 Paid advertising

How can users save time and find what they are looking for? Keywords are words that bring websites related to the searchers' query. These keywords can appear in titles, content, websites address, images, or anywhere words are typed. Keywords mission is to bring more detailed content about the subject. (Jones, R., 2011, p.2)

Nowadays digital marketing contains ads on these different platforms, naturally, when publishing content on a platform that is owned by another it is not free. Places where the user may see these ads are search engines (Google, Bing), social media (Facebook, Instagram), newspapers (Forbes, New York Times), actually anywhere on the Internet where the owner of a website or a search engine commits to publishing the advertisement. How this works is that every time someone clicks the ad, called pay-per-click (PPC), the owner of the platform will charge the advertiser for a certain amount of currency (Dodson, I., 2016, p.45). This kind of advertising is highly used in search engines, if the user types the keyword "*flight eu*" in a search engine, the ads matched to the keyword are triggered and get listed at the top of search results. The price of ads is calculated by how competitive the keyword is and how much the advertisers are willing to bid for each keyword. When a user wants to search for a flight, probably the user will type the keyword "*flight eu*" in a search engine. The majority of the airline companies would pay to get noticed in the search results from this keyword. The competition increases as well the bid amounts from this auction of keywords. (Sharma et al., 2012)

Keywords can be short, in a few for phrases or in very specific phrases. The competition is greater in short keywords and may generate more impressions, but the conversion rate usually decay from this due to the competition. The more specific keywords are in use the more possible conversion may happen, since the content matches with the searchers' expectations and it more authentic to become a customer. Depending on the strategy what the website wants more of these outcomes, of course both types can be used mixed. (Jones, R., 2011, pp.13-15)

Advertisers can select other models for an advertisement to match their needs, not only to pay for clicks, advertisers can use a model called cost-per-action (CPA). In this model, the advertiser pays for every conversion they acquire from ads and can be a lot safer option since the advertiser is charged from this every time they profit from a conversion. The advertiser may use the method that suits most of their current marketing strategy. (Yu et al., 2013)

#### 2.1.2 Search engine marketing

The world's leading platform in search engines is Google, even with the large market share Google has there are obviously other engines for use. Other top leading engines which have a significantly smaller portion of the share are Bing, Yahoo!, Baidu, and Yandex RU. According to Statista the market share of January 2021 on these five top search engines is divided as follows, Google 85.86%, Bing 6.84%, Yahoo! 2.76%, Baidu 0.55%, and Yandex RU 0.59%. (Johnson, 2021)

United states sums up to 67.7 billion U.S. dollars spent in 2021 for search advertising and the amount spent on search advertising worldwide is 171.6 billion. This can give a perspective of how much currency is moving in the markets. Roughly thirty percent of the web traffic is search engines, this summarises how important is nowadays to be accessible on the web. (Portada-online, 2021)

### 2.1.3 Organic and paid traffic

Search engine marketing is divided into two different categories search engine optimization (SEO) and paid search marketing (PPC). The main difference is that in SEO the traffic is non-paid, in other words also organic or natural search, which means that the match of the keyword typed in the search engine is relevant to the website according to an index which is formed by an algorithm in the search engine. Paid can be costly since every time someone clicks the ad, the company who has placed the ad will be charged by the vendor, and do not secure that the amount of the currency invested will correlate with the efficiency. (Zahay, D. 2015, p.46) In figure 1. below is shown a search query for the word “flight eu” in Google. First is shown the websites which are the paid ads, one example match is encircled with a red square after it the search query shows an organic result which is encircled with a green square.

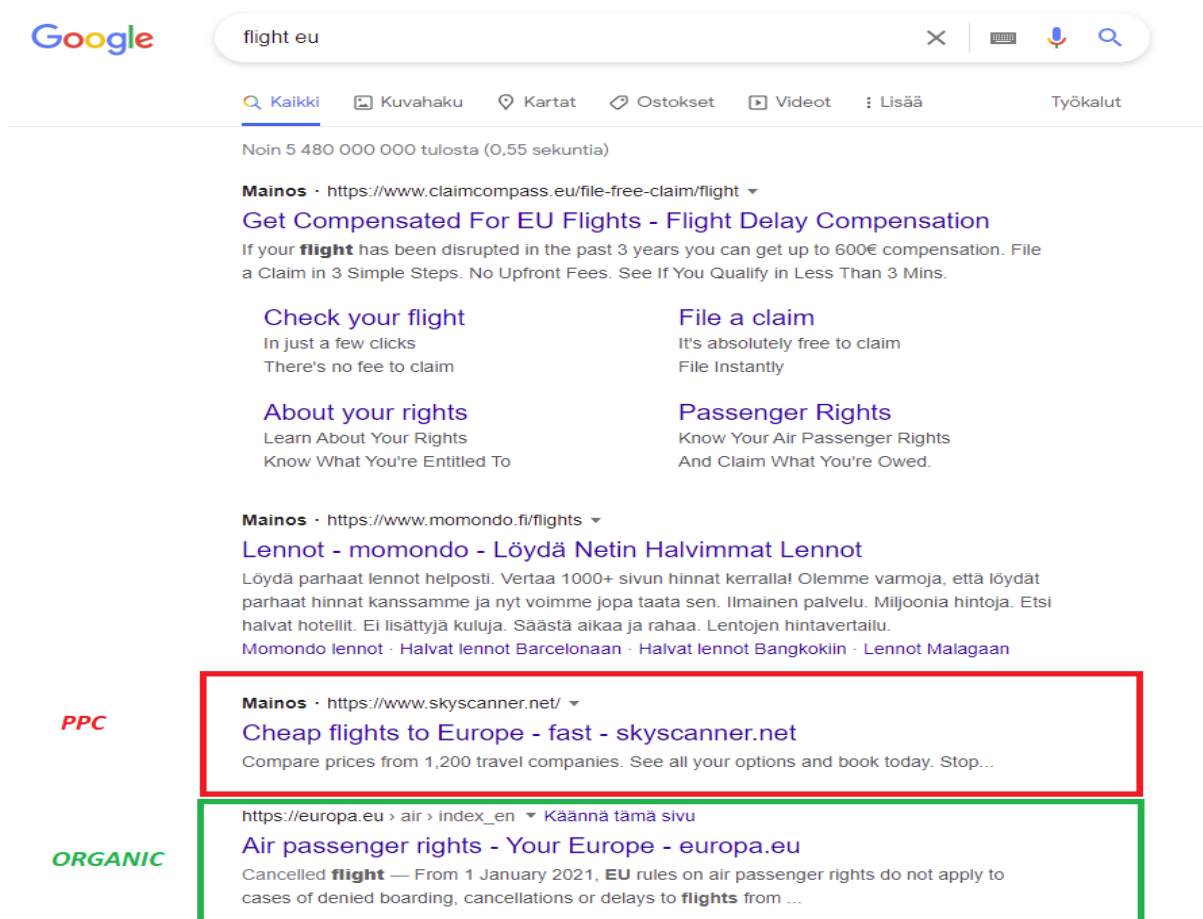


Figure 1. PPC and organic search results in a search query of Google's search engine.

(Google, n.d.-a)

## 2.2 Benefits of SEO

Having the website in the top positions of a search engine requires SEO, and the search engine requires quality content, great user experience and in return the website gains visibility, more often these websites are more trusted as well. SEO can have more benefits in comparison to the costs of other marketing campaigns.

### 2.2.1 Cost value

In the long run, SEO can be a very efficient way of implementing a marketing strategy, since 80-90% of the consumers decide to go online to look for the products before the buying decision (Olenski, 2014). SEO can bring consistent traffic to a website, but the growth of this traffic can take up to months. The flow of organic traffic does not stop directly when the user stops updating SEO, in comparison to PPC the traffic from paid ads stops when paid ads are not more shown in the search query. Organic traffics keeps coming through from search engines as soon as the website is published and the content is optimized. The user could run PPC and gain traffic as much as from SEO, but it would cost a lot especially since the more competitive sector is in question, so always it is not reasonable to use only one way to gain visibility for the website (Berry, 2020). When budgeting a SEO it is necessary to count the Return of Invest rate (ROI). With this data, the user can see how much the investment in SEO brings organic traffic to the website and count how much one acquired visitor would cost. Here the user can assume that if some visitors would visit the website later again, the ROI rate would increase since the expense of the SEO is usually a fixed cost. (Price, 2021)

### 2.2.2 Visibility and Credibility

Naturally, most of the traffic on search engines is happening on the first page of the search query, a company would not want to miss being on the first page. On search engines, the websites on the first pages are more likely to be trusted websites and have more credibility compared to the other websites on the search engine tabs. The user can see when a webpage has invested both in SEO and PPC and is appearing both first in ads and organic search results.

SEO brings in traffic to the website even if it is not focused on a specific audience group, since the content and keywords do not necessarily need to be based e.g. demographically. There is a strategy to get the advantage of targeting a broad audience by using topic clusters. The landing page or pillar page is focused on a broader audience which is linked internally to many sub-pages. These sub-pages do have a more different specific content separated from this pillar page. Thus strategy helps in the use of both popular and less popular keywords since both are needed for strong SEO ranking. This helps as well to avoid duplicate content and sorting out the keywords by topic for each page (Sickler, 2021). To compete within the competitive keywords, page authority is required and this can be hard for new websites to acquire. Topic clustering may include less competitive keywords on sub-pages and after a while, this increases the website's authority to compete there. Also, Google search engine does see the websites with a clear structure and a hierarchy more valuable, this can be fulfilled with topic clustering and gain more value for the pillar page rankings. (Bhan, 2021)

Lately, local searches have become more common and the SEO strategy can be focused on more to take into account users who are nearby and searching for services. (Muthoni, 2021) In local searches a fundamental part is what reviews the website has received and how the business do react or reply to these reviews, especially the negative ones, these play a role in the local ranking (Nyman, 2021). Rating for local places includes the review score, top reviews, and a total number of reviews. These reviews do sum up a rating from 1 to 5 stars, while 5 stars are the best rating. The rating can have an impact on the conversion rate since it boosts the credibility and trust of a brand, but this does not help in the organic search since it is not taken into account by search engine ranking. Many customers may not even consider using a business with a low rating (Nolasco da Silva, 2021). In addition, the reviews need to be fresh, only a few months old maxima. Having a high volume of reviews increases as well the credibility of the business, the more highly rated reviews the better chances are to have a conversion of a customer. Search engines take into account even the content of the reviews and this helps to bring the users relevant and specific content and helps businesses to increase their credibility. (Nyman, 2021)

### 2.2.3 User experience

Websites perform better in the algorithms of the web pages if the user experience is desirable, some of the basics are that the website loads fast and has a secure connection. Nowadays user experience is a lot more advanced than this, many users require or expect the website to be interactive to keep the user activity in another way than just reading the text of the webpage. It is not compulsory to have an interactive webpage, but it helps the website to rank higher faster since the more the user has interactive options e.g. sign up for something or ordering something, the higher chance is to gain crucial data from the user. This phenomenon is called goal conversion and many sites use it to gain additional data or a lifetime customer to the website. It does not always have to generate a goal conversion, to guarantee a good user experience can be that the user finds the information what it is searching for quickly. (Ledford, 2007, p. 27-29)

To track potential customers, the website can get benefit from using SEO conversion funneling. This enables us to analyze the whole journey from the beginning to a potential lead. This is useful to track different stages of the conversion of a visitor and where potential problems can occur (Bailyn, 2021). The keywords need to target the right audience to bring in potential customers to the website, this can be done by experimenting with different keywords to understand the customer behavior. When the customer decides to stay on the page to search for a product or a service, the content plays the central role in answering the customers' all questions before making the buying decision. In this step, it is useful to include keywords in the descriptive content of a product or service. In the last step before making the customer conversion, the journey through the funnel should have brought every detail to the customer. Now to help the customer to make the purchasing decision content that the customer didn't search for is shown, such as reviews or comparisons with other similar products of a competitor. Outside the sales, this increases authority and trustworthiness amongst the product or service. (Raddinteractive, 2022)

The ideal website is diverse and takes into consideration providing the content the user is expecting and making sure the page can be loaded on multiple devices and is accessible for most or all of the audience. Covering the functionality, accessibility, and satisfying the user

with the content it is looking for will have a positive user experience. (Montti, 2021) The quality of the content on the website will be explained later in this thesis in chapter 5. Content quality of the website.

#### 2.2.4 Content quality of the website

Primarily the content should give the user a good user experience, not only to aim rank high in the rankings, by this the content is more unique and specific and less mass-produced and will perform better in the search query. Combination of the quality of the content and with SEO, at its best it will increase the performance significantly in the search query. The format of the website affects the readability of the content, a wall of text with small line spacing and paragraphs on the landing page do not necessarily tempt the user to read the page. Another issue can be that the content wanders away from the topic and the content may not be relevant to the topic. The content and keywords should stick to the topics and titles of the web page. If the website is using backlinks, the same rule does comply with backlinks, the sites where the links lead to another source should be relevant to the content and not mislead to something irrelevant. Thus will gain more credibility to the website and it gains more trustworthiness and relevancy in the search engine algorithms. (McCoy, 2021)

#### 2.2.5 Importance of quality content

The quality of the content in links, keywords and the regular written text on the websites is not only to maintain the user experience since the search engines do analyze the content of websites to avoid different poor techniques to manipulate the algorithms. Such techniques seek a shortcut to easily rank up higher in the search query, but when this is noted by the search engines the website will be penalized heavily and this leads to having a poor or non-existent ranking in the search engines. Google has set up general rules for every Webmaster to follow guidelines when doing SEO. The techniques to avoid in SEO are mostly not to spam content, links, or keywords. It is not ethical and against Google's guidelines to buy high-quality links, which can help the algorithms to see the website more trustworthy, even offering free products for links is against the rules. Not forgetting that the website's links should not contain any malicious links or that if your website is insecure and gets hacked and

injected with malicious links can get the website blocked. When it comes to formatting the website, some users can try to hide these links with the font size or adjust the link color as same as the background to not have it visible for the users who visit the website, this won't be a long-lasting solution either since it can still be read from the source code and be detected. Likewise, the content needs to be unique since duplicate content and plagiarism is naturally not ethical either and can be punished with copyrights, even changing the text with synonyms or changing the sentence structure can be detected. To follow ethical guidelines when creating SEO avoid these techniques, but if the website gets penalized by mistake, the website can be recovered from this. (Clark, 2021)

### 2.3 Google analytics

To measure the quality of the content on a website, search engines measure the quality of the website in different ways. For example, Google has different ways to measure the traffic of the websites and have access to a lot of data in their search engines. One tool to follow the traffic of the website is Google analytics. For example with this software, the user can see the bounce rate of the website, which tells how many pages of the website the visitors visit. Google analytics tells as well how much time on each page the user has spent, but this is not an accurate method since it counts the time between each loaded page, for example, if the user only visits one page, it cannot count the time spent on the first-page since it needs the timestamp when the second page is loaded to count the time spent between pages. One more important piece of information is what is the average number of pages visited by a visitor, when counting these statistics thus will help to understand how to improve the website and what pages are more popular compared to the other pages of the website. (Enge, E., Spencer, S., & Stricchiola, J. 2015, p.57) If the website sells products or services, it is useful to track with Google analytics how many of the customers tend to buy through the website a certain product or service and from which page they move into the buying decision. (Brown, 2021)



### 2.3.1 Google search console

Google search console is a software to improve the websites' to be more compatible with search engines. Google search console is intended for a beginner up till a more advanced user. The functionality is explained in chapter 5, in this chapter a more practical perspective is reviewed and what different actions the user can benefit from in SEO. (Google, n.d.-b)

### 2.3.2 Performance

In the performance report, the user can see a lot of important values: Search results, average position in the search query, click-through rate (CTR), impressions, and a lot more data. The user can here filter these different metrics to show a report of what the user wants to inspect or compare with a different type of data. (Google, n.d.-c) Useful data to read is e.g. to compare the impression rate and the CTR on a page, if the impression is high and CTR low, means that the page is seen by many but not clicked through, from this kind of comparison the user can realize something needs to change in related to keywords. (Crowe, 2014)

The Core web vitals report of the Google search console is to measure the quality of a user experience. It is measured by three metrics, largest contentful paint (LCP), first input delay (FID), and cumulative layout shift (CLS). These three metrics are listed below this paragraph. If this data is not shown it means the minimum data of these metrics is not reached, it requires only one metric to have enough data to have a page status be shown, in this case, it would appear as a poor label. There's three different status: Poor, Need improvement, and Good. These metrics are measured on each platform, on the mobile and desktop, and they are measured separately. (Walton, 2020)

- LCP: How long does it take to render the largest content of the page.
- FID: How long it takes for a website to respond for a visitor's interaction, e.g. when they click or interact on something on your page and how fast the page responds to the action of the visitor.

- CLS: Measures how much a part of the page moves unexpectedly during a loadout, e.g. if the next page/or part of the page should contain the objective where to interact after a loadout, will move to another position where expected.

### 2.3.3 Errors and Security issues

What can damage the website traffic more than a damaged website? Different errors Google search console can detect Domain Name System (DNS) errors, Server errors, 404 errors. (Crowe, 2014)

Server errors may not directly be the website manager's problem, depends who is hosting the server. Investing in a quality server can pay off in the longer run, since if a website is really popular a crash of a website or page can be harmful to a business. Usually, these are problems occur if the traffic of the website is overloaded. (Crowe, 2014)

DNS errors tell that the connection of the server may have been lost and can't access the Internet. This disables the website from the users from finding the website with the URL address since the connection between a domain name and IP address is lost. (N-able, 2019)

404 errors mean that the server could not find what the user requested, to fix this the page needs to be 301 redirected. This helps the search engines to understand the content is redirected and allows the Google search engine to keep the page indexed. (Crowe, 2014)

Security issues are another problem, the website can work but it can contain malware or other programs that can harm the users' computers. Google Search Console offers a scan to detect these problems on the website and displays a notice in the search query to warn users before entering or using the website. Google Search Console also warns if the website is being hacked or controlled by someone else. To fix these security issues the website manager may need external help from a developer since usually, security issues need more skill or understanding of programming. (Google, n.d.-d)

### 2.3.4 Operability

The URL inspection tool is used for several things in improving the URL address and to look for problems or where the URL address did succeed. It is useful to use this tool whether the page is old or new since the user can request Google to crawl the page, to keep the URL address up to date, also a new page can be previewed as the Googlebot sees the page. If the user has a problem with a page that is not indexed, this tool can be helpful to find out the obstacle behind it. Whether the content is not old or new, it can be useful to inspect the current situation of the URL address and to analyze how it is indexed. (Google, n.d.-e)

In the links section in the Google search engine, the user can inspect different stats of the links. The user can watch which sites are linking to the website and analyze which of the links are of high quality and if the content of the other website is relevant to the users' website. If there are noticed strange links the user can get them removed, this is to avoid any bad quality sites or spamming, which do not look good for the algorithms. (Google, n.d.-f)

Since traffic of mobile phones has increased on websites, Google's search engine takes into count how friendly is the website for mobile phones. How a website is designed and the content published for a mobile phone is counted in the search query rankings. Nowadays it is important to have a mobile-friendly website and this can contain problems in the future, especially if the competitors have designed their website well for both the users and Google's search engine. To test the website if it is mobile-friendly can be done by Google's own tool. The main thing is to change the website to a mobile-friendly is to include Responsive Design, this means that the layout of the page does automatically fit any device the website is viewed from. (Kent, 2020, pp.154-157)

Google search console will show an Accelerated Mobile Pages (AMP) report, where the user can inspect how well the AMP is performing and if any issues are detected within the pages designed for mobiles phones. (Crowe, 2014)

## 2.4 Search engines

A search engine is a software where a user enters a word or a phrase, to receive a list of websites, which are matched to the user's word or phrase with the help of an algorithm that analyzes a database where the information of the websites is indexed. The information of the databases is mainly keywords or phrases, the code, the URL of the page, and links inside the page. Information from websites is acquired by a crawler, spider, or a robot, these bots look up through all websites and collect keywords and phrases which are added to the database. (Ledford, 2007, p.5)

### 2.4.1 Technical key features of a search engine

The query interface is the page that is loaded first, where the user can start the use of the search engine, where the user can input their search words. Nowadays the interface can contain more personalized content besides the search box, some search engines have news and other personalized content added to their interface. The user only sees the interface, meaning that the other parts of the search engine are working in the back end. (Ledford, 2007, p.6)

Crawling in the web with spiders, crawlers, and robots are needed to match the users' search query in the best possible manner. This method means that a crawler, robot, or a spider retrieve a few quality websites from the search engines index, and from the first web sites they look for more links where they can go to and retrieve more websites matching the search word until the spiders have retrieved millions of web pages, which are saved to a database. (Google, n.d.-g)

The database contains all the data the crawlers have acquired, this amount of trillion different websites are in an index, from here the search engine searches the data that matches the user's search keyword the best. These databases are in massive data centers which can store large amounts of data, the software and capacity make it possible for the user to acquire data from here in milliseconds.(Enge et al., 2015, p.40)

The algorithm is the most important part of the search engines, the whole system is built on the algorithms. The algorithm is the part of the whole process where it is responsible for returning the most accurate results for the search words. Search engines use different types of algorithms, this can be seen by using the same words for search can return different results in the other search engine. Usually, more than one algorithm can be used at the same time to maximize the search engine results. (Ledford, 2007, p.9)

The crawlers do read the actual code of the web pages, which is in raw HTML source code, the user can view every pages source code with a browser, the crawlers go for the same text what the users see on the pages, but they read it from the HTML text source code. In addition, the crawlers do read titles and meta tags from the HTML code. In figure 2. below is shown how the user sees the meta description and in figure 3. It shows how the regular text looks in the source code and how it is implemented in the HTML code.

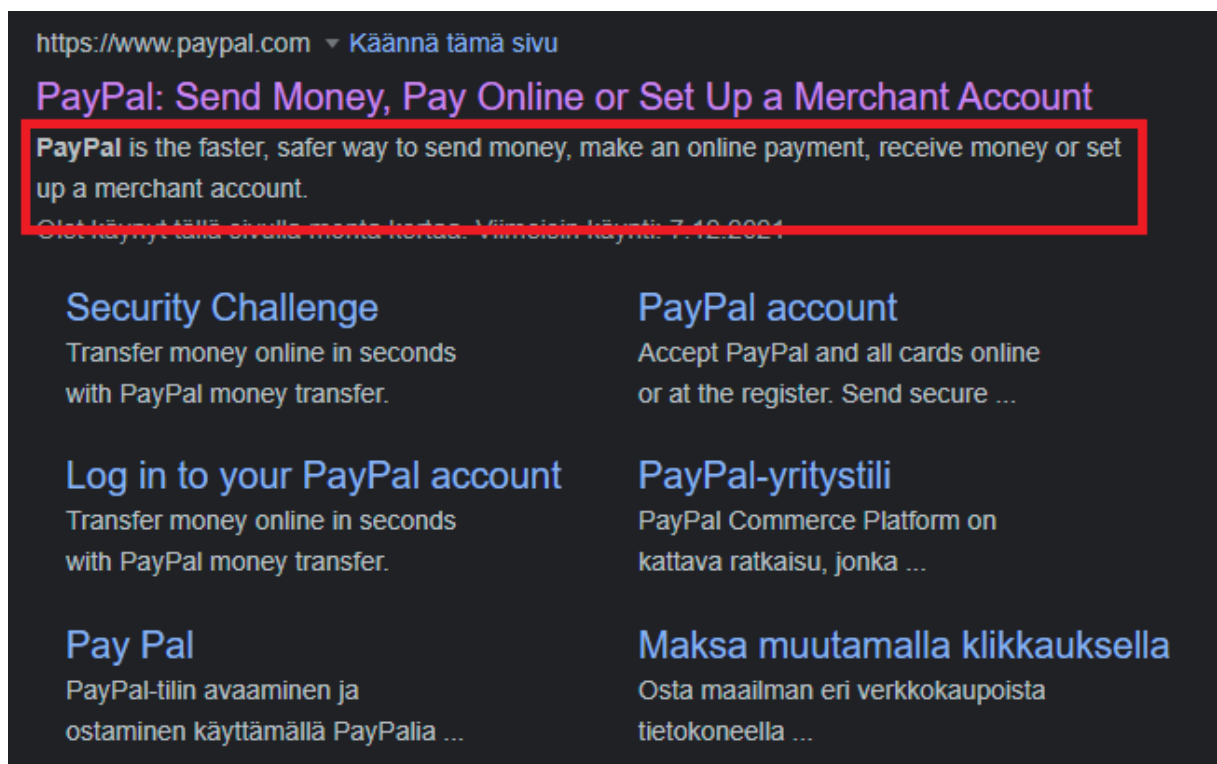


Figure 2. Shows how the user sees the meta description in the search results. (Google, n.d.-h)

```

<div class="col-xs-12 col-md-6 editorial__container editorial__text text-md-left">
  <h2 class="paypal-heading editorial__headline">Check out with crypto</h2>
  <p class="editorial__paragraph">
    "Access a new way to pay. Sign up for an account and spend crypto at millions of online
    stores with PayPal."
  <br>
  <br>
  <span class="disclosure"> == $0
    "Checking out with crypto is a taxable transaction. Fees and exchange rates will apply.
    Buying and selling cryptocurrency is subject to a number of risks and PayPal does not make
    any recommendations. Consult your tax advisor. Merchants are paid in fiat currency."

```

Figure 3. Shows the unique content and regular text looks in the source code. (PayPal, 2021)

The meta tags of the HTML code can't be seen on the website unless the user does watch the source code. These tags should give information to the search engines about the content of the pages, sadly meta tags are useless nowadays in most search engines since it was violated by users to manipulate results. A more important role plays are meta description and titles, the figure 4. Shows the content of meta description. The meta title is what is shown in the search results and the meta description is a summary of what the content is about. (Enge et al., 2015, pp.46-47)

```

<meta name="description" content="PayPal is the faster, safer way to send money, make an online payment, receive money or set up a merchant account.">

```

Figure 4. Meta description in the source code. (PayPal, 2021)

#### 2.4.2 Evaluating of the search query

To serve the user's search, the relevance of the search results is important. To satisfy the user, the list of websites that are returned in the search needs to be related to the searcher's query and ranked in the order of importance and relevance. These two factors format the ranking order, relevance is about how relevant the content is linked to the searcher's query and the importance is how much the relevant content is used in a different context. (Enge et al., 2015, p.41)

The content of the web pages tells what the web page is about, the navigational parts of the websites might be similar to many other websites and they do not tell what the web page is about. Search engines need to analyze the unique content of the page, and it can contain a lot of text instead of a few words, this helps the search engines to match the unique content

with the search query. When crawlers search for web pages to answer the search query, they analyze the content of the data and try to match the search word as well as possible to the content of the web pages. The more the unique content matches with the search query, it's more likely to rank up higher in the results. (Enge et al., 2015, pp.42-43)

### 3 Methodology

In this chapter, the methodology to find answers to the research question is explained. In this quantitative study data will be measured from secondary resources and the versions are tested by A/B testing, in this case, the statistical significance is tested by an independent t-test to determine if there is any statistical difference between the two versions of the website (Kohavi R., Longbotham R. 2017).

The website will be tested with different versions to see how it will affect the traffic to the website. Changes will be made to areas that are mentioned in the literature review, but both versions of the test strive to obey quality content, performance, operability and to avoid errors and security issues.

#### 3.1 A/B testing

Since the website offers no data from before, A/B testing is chosen for the research method to gain more knowledge about what keywords, content, or user experience are performing well to map out what changes have a positive impact on the website's traffic. The A/B testing is a fast method to use and to gather data between different versions of the website. The original version is often called the control, and the other web page with variations made is called the Treatment. (Firmenich et al., 2019) Recording the data from these two variations, a statistical difference can be measured to use for a comparison between the Control and the Treatment for the rejection of the null hypothesis. Usually, the null hypothesis is referred to as there are no differences between the variations, and to verify the rejection the data needs to be statistically significant, and this can be confirmed with a confidence level of the data. To avoid random rejections of the null hypothesis, there is a confidence level used to avoid probabilities of a false positive result by a random chance

from the data sample. Usually, 95% is used as a confidence level of testing, which means that 5% of the outcomes in a sample can be a false probability of rejection of the null hypothesis. If the null hypothesis is rejected when it is true, the result returned is a Type I error, meaning that there can be some factors that are irrelevant causing the statistical difference or a measurement error. In this case a Type I error would mean that there is a difference in the traffic between the variations of the websites, when there is no different. The other type of error is a Type II error, which happens when a false null hypothesis is retained, this type of error can happen when there is not enough data to demonstrate to reject the null hypothesis, when would be a statistically significant difference between the variations. Again, in this case a Type II error would mean that there is a difference in the website traffic between the variations of the websites, but the sample would not show any different in the traffic. This can be controlled to have enough so-called Power in the statistics, in other words, to make sure there is enough data to avoid the Type II error for making the calculations statistically significant, a value between 80-95% is usually used to verify this. (Kohavi et al., 2009, pp. 149-151)

	<b>Null hypothesis is TRUE</b>	<b>Null hypothesis is FALSE</b>
<b>Reject null hypothesis</b>	Type I Error (False positive)	Correct outcome! (True positive)
<b>Fail to reject null hypothesis</b>	Correct outcome! (True negative)	Type II Error (False negative)

Figure 5. Type I and Type II Errors of a null hypothesis in a graph (Anderegg et al., 2014).

For calculating the significance of the discrete data and to test if the two versions are different from each other an independent t-test is performed to calculate values to have a correct outcome of the findings. Thus, we can compare if the hypothesis is different from the null hypothesis and have a possible rejection. (Saunders et al., 2007, pp.440-443)



Calculating the outcomes from the data software called SPSS will be used, this software is developed by IBM to be used for statistical analysis (IBM, n.d.)

### 3.2 Hypothesis

In quantitative research it is important to form a hypothesis since the statistics may not directly answer the research question. With forming a null hypothesis, the researcher can evaluate the data's validity by rejecting the null hypothesis, a null hypothesis can be formed easily by changing the research question into a statement. (Farrugia et al., 2010). To validate the data in this thesis, the research question is formed into a null hypothesis denoted as the symbol  $H_0$  and if the data shows an opposite result and the null hypothesis is rejected, an alternative hypothesis is approved which is denoted as the symbol  $H_a$ . (Brownlee, 2018)

$H_0$ : Improving the content of SEO do not improve Camping Sinervä's organic traffic.

$H_a$ : Improving the content of SEO improve Camping Sinervä's organic traffic.

### 3.3 Collecting Data

The data will be recorded from the website visitors over a specific period from both versions. Google Search Console enables a collection of quantitative data which are drawn in graphs to ease the reading of the data. Using secondary data sources is a good alternative to analyzing data in a short time compared to primary data. Other advantages of using and gathering secondary data are that the gathered data can be used for comparison with other data, reanalyze to discover new relationships between different variables and it is permanent for later use. (Saunders et al., 2007, pp.259-260)

To ensure the data's reliability the data needs to be suitable for the research question and the data collection process needs to be well planned, understood, and noted (Adams et al., 2014, p.106).

It is important to know the validity of the data's source as well, whether it is from a trustworthy organization or a source. To make sure the collected data is accurate it should be considered how the data is collected. (Saunders et al., 2007, p.265)

Problems may occur with secondary sources if the data is not consistent and includes gaps in between the recording events. Other problems with secondary sources can occur if the data is not enough comprehensive to research a consequence of a difference in the statistics or to cover all different possible variables. (Adams et al., 2014, p.105).

## 4 Results

The results were recorded with Google Search Console because the recording does show how many conversions the keywords do have in total and how much visibility is occurring. It is important to understand if the changes cause visibility or clicks from the search query to meet the expectations of the desired results. The overall data was recorded from 30.1.2022 to 24.3.2022 and the first three weeks were recorded from the website without making any changes to have data for comparison to the other versions record the next three weeks with optimization based on the literature review.

### 4.1 Analyzing the original website

Before making any changes to the website, it was analyzed to gain knowledge of the current situation and to gather ideas and suggestions for possible changes in a matter of improving the SEO. Upon searching for the case company's website in the Google search query the website's result is shown as in figure 6. Here was noticed a typing error and the title tag was only the business's name without any addition of description or other keywords used.

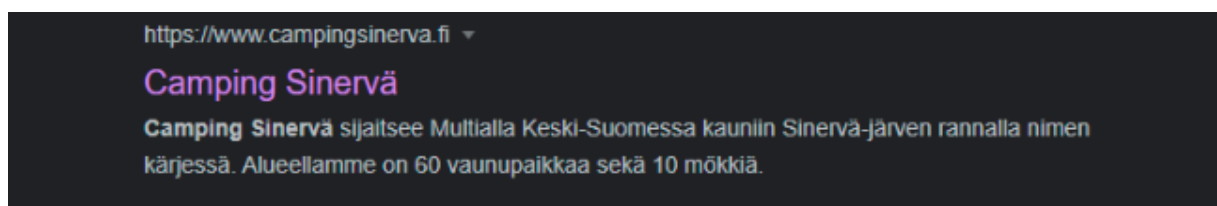


Figure 6. The original result of the case company in Google search query.

When clicking the case company's title in the search query to get redirected to the website's front page, the same description appears which is used on the website's front page, and this was noted as duplicate content as can be seen in figure 7.

Camping Sinervä sijaitsee Multialla Keski-Suomessa kauniin  
Sinervä-järven rannalla nimen kärjessä. Alueellamme on 60  
vaunupaikkaa sekä 10 mökkiä.

Figure 7. A capture of the content on case company's original front page.

All headers on the front page of the website did only contain the business's name, and no description or extended keywords were used to describe the business. Another major problem was recognized when analyzing the front page, the content was incoherent and there was a lot of different information about the business. This causes an issue of having extraordinary information on the front page, which could have been more focused on the subpages where the subject is covered comprehensively.

The traffic of the original website was recorded in the Google Search Console between 30.1.2022 to 20.2.2022, shown in figure 8. The chart shows how many times a user has clicked on the link in the search query which is drawn as a blue line in figure 8. The purple line tells how many times the website has been shown in the search query when the search engine has brought it as a relevant website to the search query, as well known as visibility. The original page had 100 clicks and was shown 1790 times in the search engines query.

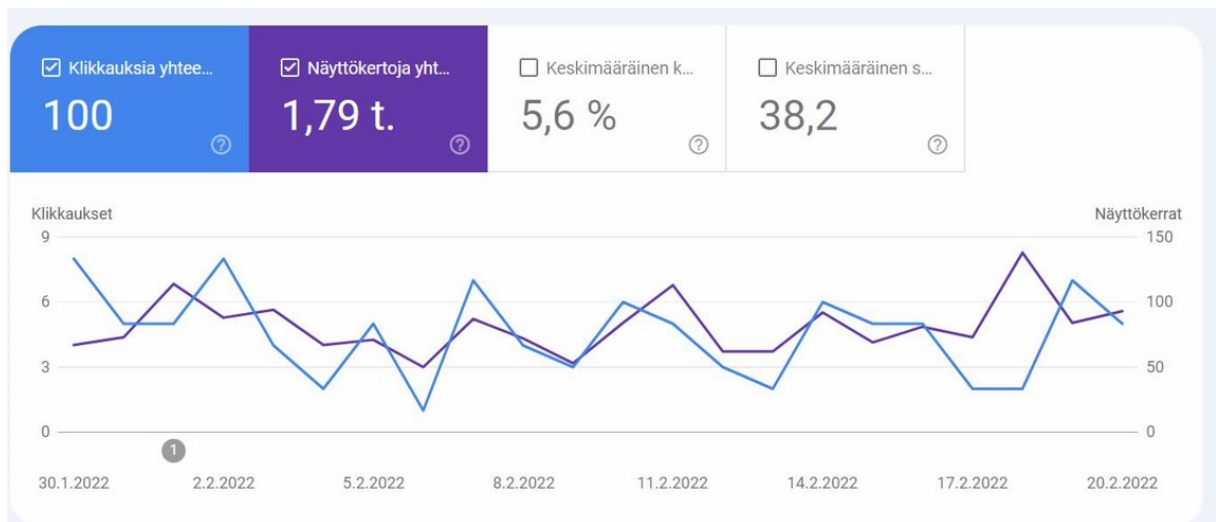


Figure 8. Click and visibility results of the sample from the original website in the Google Search Console.

#### 4.2 Second version of the website

As mentioned in the literature review some changes for improvement were directly observed, when analyzing the original website. This gave an idea to extend the title tag in the search query and to get rid of the duplicate content, meaning that a new meta description and an extended title was highly recommended. To begin the title tag was extended to match the business operation and the location of the business, see figure 9.

```
<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<title>Camping Sinervä | Leirintäalue Keski-Suomessa</title>
<meta name="viewport" content="width=device-width,initial-scale=1,view
```

Figure 9. Caption from the source code of the second version of the title tag.

To avoid duplicate content which has significant relevance for the rankings in the search engine, a new meta description was created to uplift the luxuries of the business. The location estimated travel time from the nearest popular locations, and luxuries about the business and the area were mentioned in the meta description, the changes can be seen in figure 10. The content was considered to match a user's typically used keywords to find this kind of business.

```

=610056eee3 as= style">
<link rel="stylesheet" href="https://use.typekit.net/njp4uh1.css">
<meta name="description" content="Camping Sinervä sijaitsee Multialla Keski-Suomessa kauniin Sinervä-
järven rannalla. Tunnin matka Tuurista sekä Jyväskylästä. Tule viettämään yö suosituilla rantapaikoill
amme, nauttimaan hirsisaunan lämmöstä tai vaikka istumaan terassille!">
<meta name="keywords" content>

```

Figure 10. Caption from the source code of the second version of the meta description.

After these changes in the second version of the website, data were recorded for the same interval as the original to create a comparison in the manner of having equal time intervals. The traffic of the second website was recorded in the Google Search Console between 03.03.2022-24.3.2022, it had 158 clicks and was shown 2290 times in the search engines query, shown in figure 11.

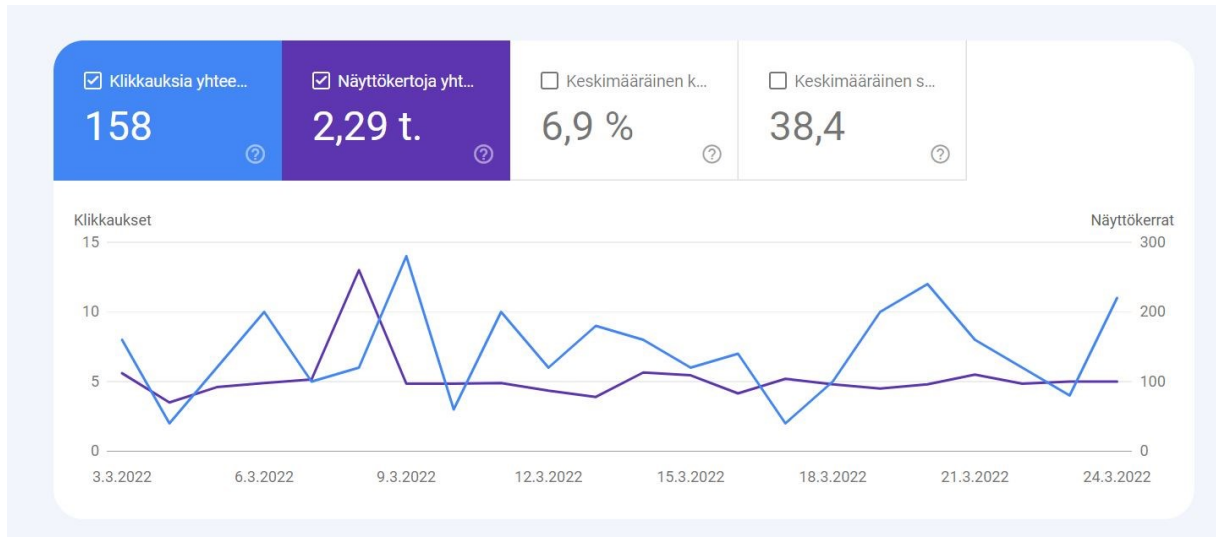


Figure 11. Click and visibility results of the sample from the second version of the website in the Google Search Console.

#### 4.3 Calculating the difference between the versions

To confirm the validity of the collected data calculations is done with help of a statistical analysis software called SPSS provided by IBM. Two tests are completed each for the number of clicks from the search query and the amount of visibility with the help of this program. The first test is provided for the number of clicks from the search query into the website results can be seen in figure 11.

When comparing the differences between the two versions of the website two sample sizes are taken, the sample size is denoted as the symbol  $N$ . Both variations of the groups, control (A) and the treatment (B) has the sample size of 22 days in this case. The average count of daily traffic is a result from the sum of the traffic divided by the sample size, which is denoted as *Mean* with the symbol  $M$ . (Hayes, 2022a) Daily traffic can have different values, meaning that each day can have a different value compared to the mean, with this the dispersion between values can be counted, the smaller the SD value is, the closer it is to the average value, this is called as *Standard Deviation* and denoted as  $SD$ . (Hargrave, 2022)

The confidence value is often denoted or talked about as a *p value*, if the 95% confidence level is used, it is expected to have a 5% maximum false value of the data. The higher the confidence level is, the lower the maximum percentage for the false value is accepted. Strong evidence is proven with a 95% confidence level, when the percentage is converted into numerical *p value* of 0.05 and compared with the values in the figure 11. there can be seen that the *p value* is  $p = .045$  and is lower than  $p = .05$ , meaning there is strong evidence. (Flechner, L., & Tseng, T. Y. 2011).

When analyzing the values from the t test, two critical factors are needed to understand. The first factor is the degree of freedom denoted as *df*, this is calculated for each sample size subtracted with one, here we have two sample sizes, and both are subtracted with one, summing up to  $df = 42$ . The other factor is the t score, which is the other output value from the test, see figure 11.  $t = -3,290$ . These two values are needed to read the table in figure 12. t score horizontally and df vertically. To compare the output values from this t test with a 95% confidence level, this t score value needs to be greater compared to the values which are pointed out in figure 12. When it is a two-sample test, a negative score can be converted into a positive value, as we can see the 3,290 is significantly higher compared to the 2.018, which is described in the t score table, telling us this result is valid. (Hayes, 2022b)

The clicks from 22 days of the alternative page ( $M = 7,1818$ ,  $SD = 3,17185$ ) compared to the clicks from 22 days in the control page ( $M = 4,5455$ ,  $SD = 3,17185$ ) demonstrated significantly more clicks in the search query,  $t(42) = -3,290$ ,  $p = .045$ .

Group Statistics				
VAR00001	N	Mean	Std. Deviation	Std. Error Mean
VAR00002 A	22	4,5455	2,01724	,43008
B	22	7,1818	3,17185	,67624

Independent Samples Test									
Levene's Test for Equality of Variances					t-test for Equality of Means				
	F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
VAR00002 Equal variances assumed	4,286	,045	-3,290	42	,001	,002	-2,63636	,80142	-4,25369 -1,01904
Equal variances not assumed			-3,290	35,599	,001	,002	-2,63636	,80142	-4,26234 -1,01038

Figure 11. T-test results from an independent t-test and statistical values to describe differences in the values of the number of clicks.

DF	A	0.80	0.90	0.95	0.98	0.99	0.995	0.998	0.999
P		0.20	0.10	0.05	0.02	0.01	0.005	0.002	0.001
1		3.078	6.314	12.706	31.820	63.657	127.321	318.309	636.619
2		1.886	2.920	4.303	6.965	9.925	14.089	22.327	31.599
3		1.638	2.353	3.182	4.541	5.841	7.453	10.215	12.924
4		1.533	2.132	2.776	3.747	4.604	5.598	7.173	8.610
5		1.476	2.015	2.571	3.365	4.032	4.773	5.893	6.869
39		1.304	1.685	2.023	2.426	2.708	2.976	3.313	3.558
40		1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
42		1.302	1.682	2.018	2.418	2.698	2.963	3.296	3.538
44		1.301	1.680	2.016	2.414	2.692	2.956	3.286	3.526

Figure 12. T score table, where the t score value with 95% significance and 42 degrees of freedom are pointed out with a red square. (MedCalc, 2022)

Enough large power of the test gives a better chance to recognize the differences of the test and enables the avoidance of a Type II error. To ensure the null hypothesis is correctly rejected a power percentage of 80% is used to have an enough strong sample size in order to have reliability of the rejection of the null hypothesis. In figure 13. the power is calculated to be .895 converting to percentages 89,5%, thus tells that in the first test the power is significant to have accurate data of the test. (Kohavi et al., 2009, pp. 151-152)

### Tests of Between-Subjects Effects

Dependent Variable: VAR00002

Source	Observed Power <sup>b</sup>
Corrected Model	,895
Intercept	1,000
VAR00001	,895
Error	
Total	
Corrected Total	

a. R Squared = ,205 (Adjusted R Squared = ,186)

b. Computed using alpha = ,05

Figure 13. The power for validating the test value from search query clicks.

The second test is provided to calculate the amount of visibility in the search query of the website, results can be seen in the figure 14. The visibility of 22 days in the search query of the alternative page (M = 104,0909, SD = 36,39978) compared to the the visibility of 22 days in the search query of the control page (M = 81,2273, SD = 20,94194) demonstrated no significant difference of visibility in the search query,  $t(42) = -2,554$   $p = .914$ .

Group Statistics				
VAR00001	N	Mean	Std. Deviation	Std. Error Mean
VAR00002 A	22	81,2273	20,94194	4,46484
B	22	104,0909	36,39978	7,76046

Independent Samples Test										
Levene's Test for Equality of Variances				t-Test for Equality of Means						
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
VAR00002	Equal variances assumed	,012	,914	-2,554	42	,007	,014	-22,86364	8,95318	-40,93189 -4,79538
	Equal variances not assumed			-2,554	33,529	,008	,015	-22,86364	8,95318	-41,06810 -4,65917

Figure 14. T test results from an independent t-test and statistical values to describe differences in the values in the amount of visibility.

In the second test, the desired confidence was not high enough, nor did it has enough power to confirm the results either and showing that a larger sample size would have been needed to have significant data for analysis. The power values in figure 15. were returned as .704 meaning that 70,4% is too far away from accurate results when a confidence level of 80% is used.



### Tests of Between-Subjects Effects

Dependent Variable: VAR00002

Source	Observed Power <sup>b</sup>
Corrected Model	,704
Intercept	1,000
VAR00001	,704
Error	
Total	
Corrected Total	

a. R Squared = ,134 (Adjusted R Squared = ,114)

b. Computed using alpha = ,05

Figure 15. The power for validating the test value from search query visibility.

## 5 Recommendations

This thesis took place in the off-season for Camping Sinervä, which had an impact on the efficiency of the tests. Although the data was accurate, it did not provide enough broad results as desired due to low activity. A new sample size should be taken later when the season of the camping starts to provide enough activity. Even though the clicks had a significant increase statistically it requires finding out, which search words caused the conversions of the clicks. The visibility of the website in the search engine is easier to follow since there is no need to think about the conversion rate, but often has a higher amount of traffic. Therefore, a larger sample size is needed to provide desired results for the improvements, which could be seen in the hypothesis testing. During the off-season, the time interval of data measurement is higher due to less traffic, which makes A/B testing harder in a short time, it would be recommended to do these tests when the season is most active and to compare the yearly difference of the seasons.

Establishing new tests should be enough narrow to have accurate A/B testing results, to notice which changes do take effect for the SEO traffic. The future changes of the website should consider the theoretical framework chapter to ensure the new changes are considered SEO friendly. Mapping out the data from different tests helps to allocate the direction for the future changes and trends, this would be a long process for Camping Sinervä, but enables strong fundamentals for SEO.

When the traffic is greater or increased compared with the thesis results, A/B testing turns out to be even faster and multiple A/B tests would be possible to be established in a short time. On the other hand, if a scenario would happen where the traffic would starve or an improvement in the off-season visibility is needed, the SEO strategy can be supported with the paid advertisement to boost the visibility. For instance, combining PPC and SEO will already give a double amount of data to analyze, meanwhile PPC will grant visibility to the first results in the search query. Therefore, both ideas which work in PPC often work in SEO since the data is shared, that is why PPC can be a faster way to test some differences out, which could take a longer time to test out with SEO. (Fathom digital marketing, 2011)

Likewise, when optimizing the first page is the tip of the iceberg, when thinking of the whole website. Nevertheless, it should be considered to optimize the other sub-pages of the website to match the findings of this thesis. According to chapter 2.2.2 visibility and credibility, the links with sub-pages increase the diversity of the content to offer for search engines. Eventually, this would increase traffic when many sub-pages are well optimized and link the content of each page to the search engines.

Perhaps in the start when the data gathered is at the lowest some ideas could be taken from other competitors, all over the other top camping websites in Finland to gain an improvement for the current situation of the whole website. This would be a good starting point for closing the gap for top businesses in the current situation in marketing and to gain faster a direction for possible profitable differences.

## 6 Conclusion

This research aimed to find out what content could Camping Sinervä use to improve its SEO to gain higher organic traffic. Accordingly, the quantitative research established of the websites' search engine traffic, visibility did not have a statistically significant difference. Then again, this research was conducted in the off-season and the traffic was not high enough to prove the difference in visibility. However, conversion of the clicks in the search query did have a statistically significant increase, but the conversion of the clicks was increased it should be considered from which keywords these conversions came from.

To find out what specific content do improve the organic traffic needs more research to be conducted, at least the website's front page and meta content is now search engine friendly and will not be prevented from the penalties from Google. To prove the difference in statistical data A/B testing is an efficient and comparatively easy way to find out the difference between two samples of data. Although when analyzing the results of the traffic and noticing the inadequate power of the data for A/B testing it generated a new question: how could SEO be intensified combined with other methods in search engine marketing?

Eventually, even though this research was conducted with poor timing the traffic can rise exponentially during the season and the sample size of 22 days from each version would have enough visitors to prove both tests. However, during the quieter season, other marketing strategies should be considered to support which content can improve the search engine optimization. Overall, this helped to realize what content should be considered and avoided, when establishing a search engine marketing strategy. Also, what kind of changes on the website is necessary to make it strong and compatible for search engines.

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