

Examining the Ability of Users in the Croatian Market to Distinguish Organic and Sponsored Search Results

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Abstract. Search engines generate most of their income through sponsored (paid) search results that appear as answers to user queries. Due to the goal of increasing profits, search engines try to reduce the ability of users to distinguish between sponsored and organic (unpaid) results. This is primarily visible in the design and structure of sponsored search results in the form of ads, which appear very similar to organic results. Although there are studies on other markets, on the Croatian market is insufficiently covered by existing research. Therefore, the aim of this paper is to investigate how much are users in the Croatian market aware of the difference between sponsored and organic search results, and how this knowledge influences their behavior based on search results.

Keywords. search engines, search engine optimization, search engine advertising, search engine results page (SERP), organic search results, sponsored (paid) search results

1 Introduction

Search engines play an important role in today's society (Schultheiß & Lewandowski, 2020) they represent the most widespread services on the Internet (Purcell et al., 2012) and the most used way to locate websites (K. Li et al., 2014) a gateway used for the purpose of searching for information, for navigating from one website to another, for shopping online or promoting (Y. Li et al., 2018) (Gupta & Mateen, 2014). Search engines are indispensable for finding relevant content and products from the vast array of options available on the web (Burguet et al., 2015). So they represent a crucial link in connecting providers and users (Baye et

al., 2016). For this reason, reliability in the search results is crucial because it is the search terms that determine the information that users access on the Internet (Ma et al., 2010). Therefore, it is extremely important for companies to ensure good visibility of search results on search engines (Kritzinger & Weideman, 2013) (Sabwa & Weideman, 2010). Companies have at their disposal different methods of search engine marketing (SEM), which is divided into two main strategies: search engine optimization and search engine advertising or paid search marketing (Krajnović et al., 2019). In order for the company's website to be positioned as high as possible in search engines, optimization (SEO) is carried out (K. Li et al., 2014). It involves the application of various techniques with the aim of increasing organic traffic to the website (Schultheiß & Lewandowski, 2020). On the other hand, paid search, as the name itself suggests, represents paid advertising, i.e. payment for displaying a website on search engines according to certain keywords (Chen et al., 2011) (Terrance et al., 2017). Both categories of increasing website visibility have a common goal, to attract as many users (potential users), i.e. to increase traffic to a certain website (Gašparić et al., 2021). In accordance with the two mentioned strategies, searching through search engines includes at least two categories of results on the search engine result page (SERP): organic and sponsored (paid) results (Höchstötter & Lewandowski, 2009) (Dumais et al., 2010) (Jansen & Resnick, 2006) (Ma et al., 2010) (Gupta & Mateen, 2014) (Yang & Ghose, 2010).

2 Organic and sponsored search results

Search Engine Results Page (SERP) represents a complete page that a search engine displays in response to a user's search query, i.e. a page that displays ads and other informational content in the form of links when the user queries the search engine (Sharma et al., 2017). It should be noted that the SERP is not identical for every user, it depends on factors such as the user's location, search language, search history, etc. (Fletcher, 2007). The display of results on the SERPs has changed over the years. The simplest SERP model displayed a list of ranked results in response to a user's query. However, when search engines started serving ads, two search results lists emerged, the organic (unpaid) search results and the sponsored (paid) search results (Lewandowski et al., 2018) (Sharma et al., 2017) that help increasing the company's visibility on SERPs (Sabwa & Weideman, 2010).

Search engines, specifically SERPs, create an environment in which the order of content presentation limits users' freedom and flexibility when browsing organic and paid content. The reason for this is that on the SERPs, the content located at the top attracts more attention of users compared to the content located at the bottom of the page (Sharma et al., 2017). For this reason, there are also changes in the SERPs appearance, which significantly affects the ability of users to recognize differences between different categories of results, that is, between sponsored and organic search results. Differentiating the mentioned types of results becomes more and more difficult over the years, considering that their appearance is becoming more and more similar (Lewandowski et al., 2018). In addition, SERPs are increasingly reducing the difference between the listed results by constant changes in the way ads are marked (Schultheiß & Lewandowski, 2021a). And that is exactly what this work is based on. The aim of the paper is to investigate the ability of users to distinguish between sponsored and organic, i.e. paid and unpaid search results.

Organic, unpaid search results appear on SERPs alone or together with sponsored search results (Terrance et al., 2017), and refer to free listings that make up the majority of SERP space (Jerkovic, 2009). They imply search results generated from the web page index of search engines using algorithms and are ranked according to a number of criteria (ranking factors) (Sharma et al., 2017) (Baye et al., 2016). Therefore, ranking in organic search is earned or achieved by adopting certain ranking factors such as keywords or phrases more relevant to a particular term than those ranked below (Sabwa & Weideman, 2010). The method of achieving as high position as possible on search engines is known as search engine optimization (SEO) (Schultheiß & Lewandowski, 2020). One of the definitions describes SEO as "the practice of optimizing web pages in a way that improves their ranking in the organic search results"

(K. Li et al., 2014). SEO ranking is driven by the relevance of keywords or phrases driven by a well-designed, user-friendly website architecture and high-quality content that includes descriptive page titles, meta tags, alt attributes, anchor text, search friendly HTML tags and code, optimizing quality content, keyword optimization and link building strategies (Sabwa & Weideman, 2010). Therefore, the company optimizes its website using various methods and tools (harmonizing, editing) in order to appear as high as possible in the search results (Jain, 2013). If done correctly, SEO provides numerous benefits that are long-lasting, such as better quality SERPs, a historical trust factor and a lower cost of ownership (Jerkovic, 2009).

Sponsored search results as the main source of income for search engines (Robu et al., 2009) (Alipov et al., 2014) involve buying ad positions for certain keywords or phrases by advertisers in order to display their ads alongside organic results searches (Park & Agarwal, 2018) (Jansen et al., 2011) (Jansen & Schuster, 2011) (Ghose & Yang, 2009). Thus, sponsored search results refer to ad links that advertisers display when users enters a query (Sharma et al., 2017) (Sabwa & Weideman, 2010). The advertiser pays only when the user clicks on the sponsored link promoted by the advertiser (Strategic Direction, 2015). In sponsored search advertising, ad positions are usually sold through auctions managed by the search engine (Arnold et al., 2013). Advertiser positions are then adjusted based on their bid and quality score as assessed by the search engine's proprietary algorithms (Park & Agarwal, 2018). After acquiring an ad position, advertisers appear on the SERP in an ordered list in response to a user's search for keywords or phrases (Yang & Ghose, 2010) (Simonov et al., 2018). The rank of the ad usually depends on the bid price and a quality score (Jansen & Schuster, 2011) (Jansen et al., 2011). Therefore sponsored search results are a part of online advertising (Bayer et al., 2020) which help companies to be at or near the top of any displayed list (Strategic Direction, 2015). They appear along with organic results on search engines in the quest to capture users' attention (Strategic Direction, 2015), typically above the organic search results, to the right of the organic results or below them (Jansen et al., 2011). Their advantages are that they have the high ability of direct response from users, targeting the right users, control over the placement of context in advertisement, attribution of sales of an individual user to specific advertisement, and the high individual impact of an advertisement on a specific user (Bayer et al., 2020). Also, one of the biggest advantages is that ranking improvements can occur almost instantly (Sabwa & Weideman, 2010) and can be used for seasonal marketing activities or during the whole year.

Organic and sponsored search results cooperate with each other as more search results increase market competition, reduce prices (Burguet et al., 2015) and

design creative ways to satisfy users and increase the quality of the search engine. However, it should also be taken into account that companies invest more and more in sponsored search results to get to the highest possible position on the SERPs more easily and quickly, and less in organic search results, which can lead to cannibalization of organic results (Moshary, 2021).

2.1 Overview of previous research on the ability to distinguish between organic and sponsored search results

Most research conducted on the ability to differentiate search results show similar results. Research conducted in 2006 indicates that respondents feel to some degree confident in knowing how to recognize the difference between paid and unpaid search results. Likewise, respondents are biased towards sponsored search results, that is, in more than 82% of cases, they reviewed organic results first and rated the relevance of sponsored results lower than organic ones (Jansen & Resnick, 2006). The results of the research conducted in 2012 suggest that the respondents do not consciously choose organic results because they are not aware of the differences between the results on SERPs (Kobylanski, 2012). Another research conducted in the USA revealed that the majority of users (91%) indicated that they usually find what they are looking for easily, while 56% were very confident and 37% were somewhat confident in their search abilities (Purcell et al., 2012). The research carried out in the European Union territory came to similar results. (Schultheiß & Lewandowski, 2021b) found in their research that 92% of Internet users stated that they easily find what they are looking for through search engines. Likewise, 69% of respondents declared that they are clear about which search results are sponsored. (Singer et al., 2012) found in their research that users have difficulties when conducting searches, especially when it comes to complicated tasks. The respondents estimated their success in solving complicated tasks much higher than it was shown in the research. The contradiction between users' self-assessment and their real abilities when it comes to using internet search engines was also determined in the research (Lewandowski et al., 2018). The research contained questions about Google's business model, tasks with marking sponsored results and questions about self-assessment of the respondents' search skills. It has been shown that users of search engines have little or no knowledge of how search engines generate income and are unable to reliably distinguish sponsored from organic search results. At the same time, 90.8% of the same respondents rated their search skills as "excellent" or even "perfect" (Singer et al., 2012). Another study found that Internet users have difficulty distinguishing between sponsored and organic results on complex SERPs. Respondents showed difficulties in connecting organic results with the possible impact

of SEO and distinguishing them from sponsored results (Schultheiß & Lewandowski, 2021b). Another study by the same authors showed that users with a lower level of knowledge about advertising on Internet search engines are more likely to choose (click on) sponsored search results compared to respondents with a higher level of knowledge. Additionally, respondents with a lower level of knowledge showed less willingness to scroll down the SERPs to organic results. A possible reason for this is the fact that they do not understand the difference between sponsored and organic results. Respondents with less knowledge consider all results to be the same and have no need to look for further results besides those at the top of the SERPs (Schultheiß & Lewandowski, 2021a). The mentioned research confirmed the findings of another study, according to which the knowledge about advertising on search engines affects the behavior of users regarding the choice of results. In the same study, it was found that users who are unable to distinguish between sponsored and organic search results select sponsored results approximately twice as often as users who are able to distinguish between search results (Lewandowski, 2017). In a report based on the research of search engine users in the US, it was determined that the majority of respondents do not understand how search engines obtain information or how they rank and prioritize results on SERPs. About half of the respondents had a weak idea of how keywords and their relevance affect the work of search engines. When it comes to distinguishing between sponsored and organic search results, only a few respondents noticed that sponsored results were marked as such, and then only when it was easily noticeable (for example, when the mark was at the top of the SERP). The same respondents stated that they avoid results marked as sponsored because they assume that they do not contain what they are looking for, although they could not always explain exactly why they have this opinion (Marable, 2003).

3 Research

3.1 Research methodology

Considering the actuality of the use of search engines in everyday life and the increase in the use of search engine advertising, as well as the insufficient research of this topic on the Croatian market, which was observed by conducted desk research for the purpose of collecting secondary data, the problem of research is obvious. Regarding the research objectives, it is primarily important to investigate the ability of users to distinguish between organic and sponsored results on search engines and to find out whether this ability affects their selection of search results. Google was used as a representative of search engines because it accounts for over 97,23% of the market share in Croatia (Statcounter GlobalStats, 2023). In order to

collect primary data, quantitative descriptive research was conducted using a structured questionnaire on a purposive sample, an avalanche sample, given that the questionnaire was shared on social networks. The questionnaire was based on research conducted by (Lewandowski, 2017) and was open for completion from June to July 2022. A total of 128 respondents took part in the questionnaire, and 110 of them fully answered all the questions in the questionnaire, and the statistical analysis presented in the paper was performed on their answers.

3.2 Research results

If the demographic characteristics of the respondents are observed (Table 1), it can be concluded that the majority of the respondents were female (65.45%), between the ages of 25 and 35 (40.91%), and respondents who live in Zagreb and its surroundings. It is precisely from this distribution of the sample that the basic limitation of the conducted research can be recognized, apart from the sample which consisted of only 110 respondents, their distribution is not even, so the results cannot be generalized to the Croatian market, but they can certainly be a good basis for future research in this area.

Table 1. Demographic characteristics of the respondents

Demographic characteristics		Real number	Frequency
Gender	Male	38	34,55
	Female	72	65,45
Age	18-24	11	10,00
	25-34	45	40,91
	35-44	18	16,36
	45-54	17	15,45
	55-64	14	12,73
	65+	5	4,55
Region	Zagreb and surroundings	98	89,09
	Northern Croatia	2	1,82
	Slavonia	5	4,55
	Lika and Banovina	1	0,91
	Istria, Primorje and Gorski Kotar	4	3,64
	Dalmatia	0	0,00

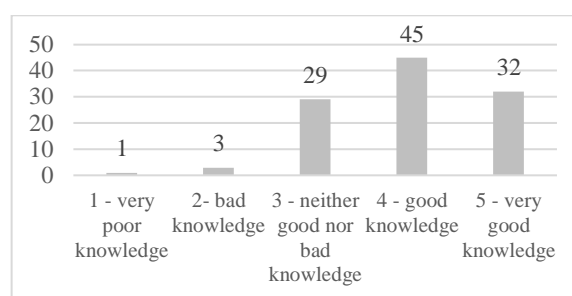
Source: research

After the questions related to the demographic characteristics of the respondents, the elimination question "Have you used Google to search on the Internet in the last 3 months?" followed. This question

served to distinguish users of the search engine Google from those who have not used this search engine in the last three months. Only respondents who answered affirmatively to the mentioned question continued to fill out the questionnaire. 110 of the respondents answered yes to the elimination question, therefore the research in this paper is based on their answers.

After that, the respondents were asked to rate their knowledge when it comes to searching with Google using a 5-point Likert scale. From Graph 1, it can be noted that the largest number of respondents rated their knowledge as good (45 respondents). Based on the average grade of 3.95, it can be concluded that the respondents on average rated their knowledge as good.

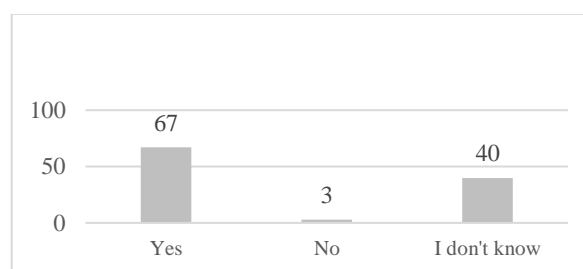
Graph 1. Respondents' knowledge when it comes to searching with Google



Source: research

Then came the question "Is it possible to pay Google to have a particular business appear at the top of the search engine results page (SERPs)?" From Graph 2, it can be seen that 67 respondents answered that it is possible for a company to pay Google to be at the top of the SERPs, 3 respondents answered that it is not possible, while 40 respondents declared that they did not know, i.e. they are not familiar with it.

Graph 2. Is it possible to pay Google to appear at the top of the search engine results page (SERPs)?



Source: research

To the question "Is it possible to distinguish sponsored results from organic search results on Google?", the largest number of respondents (71 of them) answered that it is possible, 6 respondents answered that it is not possible, while 33 respondents did not know whether it was possible or not to distinguish sponsored from organic search results (Graph 3).

When the last two questions are considered, it can be concluded that 40 users of search engines do not know that it is possible to pay Google for the preferred positioning on the SERPs, or that they do not know that it is possible on Google to distinguish between organic and sponsored search results (33 of respondents). In these results the space for user education on the one hand, and the use of their knowledge by companies on the other hand can be noted.

Graph 3. Is it possible to distinguish sponsored results from organic Google search results?



Source: research

After the question about the search engine, the purpose of which was to determine how the respondents evaluate their knowledge when it comes to using the Google search engine and whether they understand the role of advertising in the Google business model, tasks related to the ability to distinguish between search results followed. The tasks prompted respondents to indicate on screenshots various of SERPs any areas where they believed that sponsored or organic search results appear. Screenshots of SERPs with different elements were used to make them as similar as possible to real search results during the research period. Also, different types of queries were used in the tasks. Search queries are classified according to Broder's classification into informational, navigational, and transactional search (Broder, 2002). Navigation search was exceptionally not used in this research. The distinction between the mentioned types of search is explicitly stated in each individual question, where the respondents were explicitly informed that the search is carried out either for the purpose of purchasing a specific product or for the purpose of informing about a specific topic.

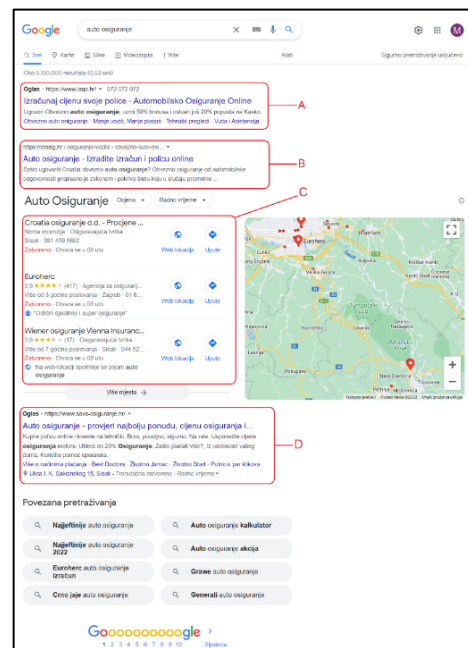
The first question related to information on a certain topic was „Imagine that your car insurance is about to expire and you want to find out about different insurance options on the Internet. After a Google search, the following page was displayed (Figure 1). Check for sponsored search results on the page. If they exist, select each letter with which they are marked.“

The second question related to information on a specific topic assumed the situation that users on Google are looking for information about the career of fashion designer Vivienne Westwood and that they get search results that are shown to them with an image as part of the question. Respondents were asked to study existing ads, i.e. sponsored search results (Figure 2)

and, if there are any, to select each letter that identifies them.

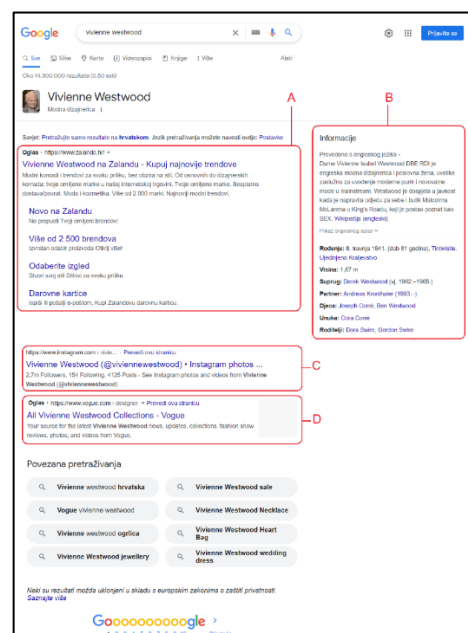
The third question was related to the search for a specific product. The picture shows respondents a page with results related to the search term „sunglasses“. Respondents were asked to select a letter next to each result for which Google was not paid, i.e. to select organic results (Figure 3).

Figure 1. Car insurance search results



Source: research

Figure 2. Vivienne Westwood search results

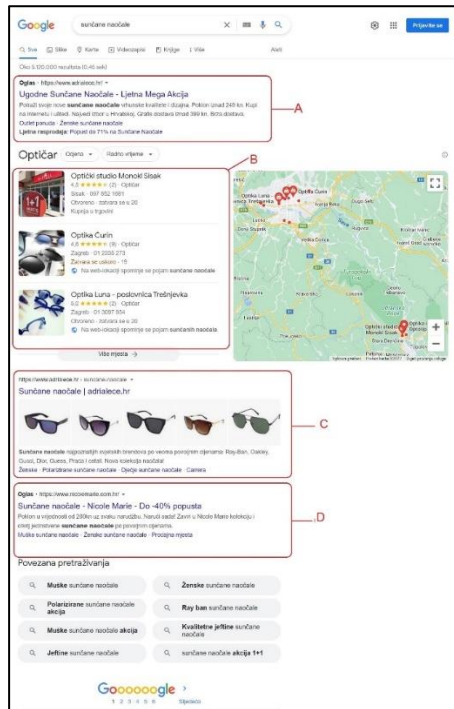


Source: research

The last question with the displayed images was related to the purchase of a certain product and the

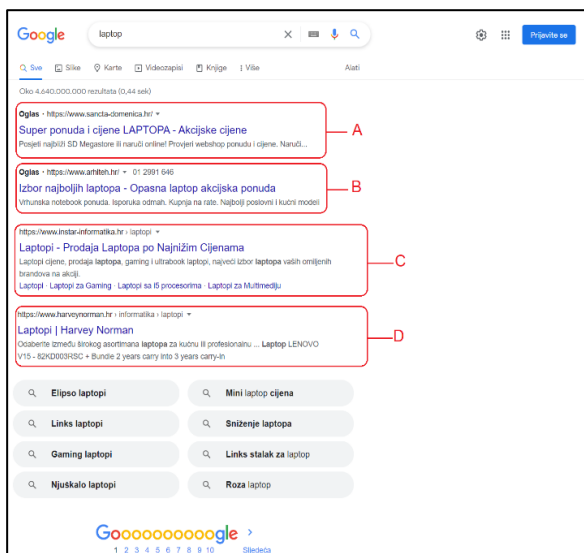
respondents were asked to imagine the following situation: „You want to buy a laptop, so you typed the term "laptop" into the Google search engine. You get the following search results (Figure 4). Please select all letters next to areas that Google did not get paid for (organic results)“.

Figure 3. Sunglasses search results



Source: research

Figure 4 Laptop search results



Source: research

The results related to the tasks set before the respondents can be summarized as follows (Graph 4). Looking at all tasks together, only 32% of respondents correctly identified all required fields (35 respondents).

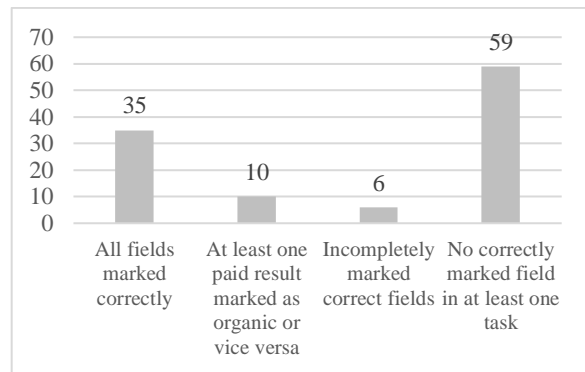
The other 68% of respondents had at least one error when marking the results, and they were as follows:

- In at least one task, 10 respondents incorrectly labeled a sponsored result as organic or vice versa.
- 6 respondents correctly marked a certain type of a result that was requested of them (organic or sponsored result), but did not mark all possible correct answers of that type.
- The remaining 59 respondents were not able to correctly identify any required result in at least one task. Of the above 59 respondents, 7 of them did not correctly mark any of the required fields in any task.

Taking all tasks into account, the results show that the majority of respondents (in practice) are unable to distinguish sponsored from organic Google search results.

In the last part of the research, the respondents were asked one more question: „Imagine that you want to prepare squid and you use Google to search for recipes. Your search query is „squid recipe“. Which of the following results would you click on spontaneously? Select the letter the result is labeled with“. In this question a custom SERP screenshot (Figure 5) was used that contained only organic results to provide respondents with the most relevant results. Then, the first two search results were marked as ads, and thus a modified SERP view was offered to respondents.

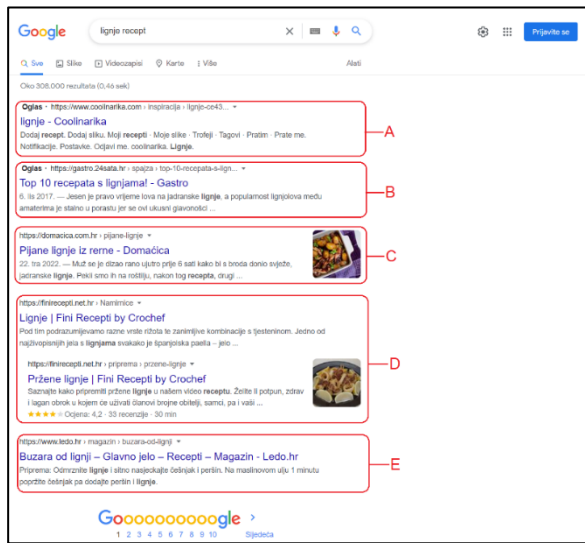
Graph 4. Distribution of correct and incorrect answers in questions with the tasks of recognizing organic and sponsored results



Source: research

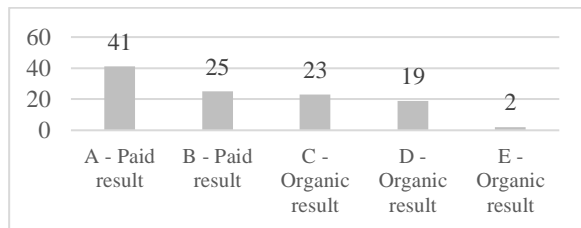
When choosing results, the majority of respondents (66 of them) chose sponsored search results (letters A or B), while 44 respondents chose organic search results (letters C or D). From the results (Graph 5) it is evident that the number of users who selected individual results decreases significantly the more the result is located at the bottom of the displayed SERP.

Figure 5. Squid recipe search results



Source: research

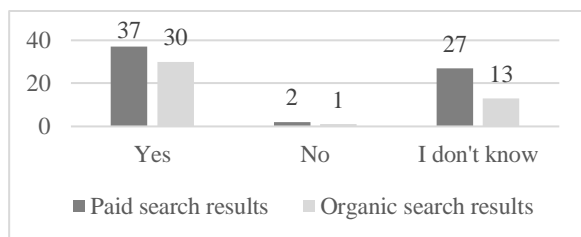
Graph 5. Respondent's choice of sponsored or organic search results



Source: research

When observing the connection between users' knowledge about the possibility of paying for a preferred position on the Google search engine and their choice of sponsored or organic results (Graph 6), it is evident that there is a significant connection between users' knowledge (or the lack of it) and their choice of sponsored search results.

Graph 6. Comparison of user knowledge about the possibility of paying for a preferred position on Google and the choice of an organic or sponsored search result

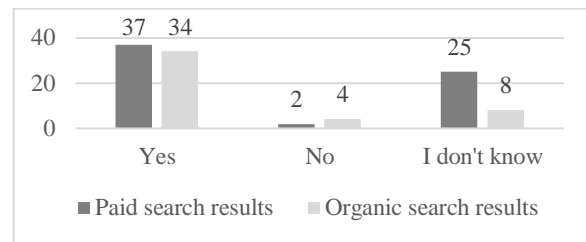


Source: research

The relationship between users' awareness of their ability to distinguish between sponsored and organic search results and their choice between sponsored and

organic search results is clearly worth exploring. In this research, a significant difference can be seen in the responses of users who answered the question positively from those who answered negatively, i.e. that they did not know the answer to the question.

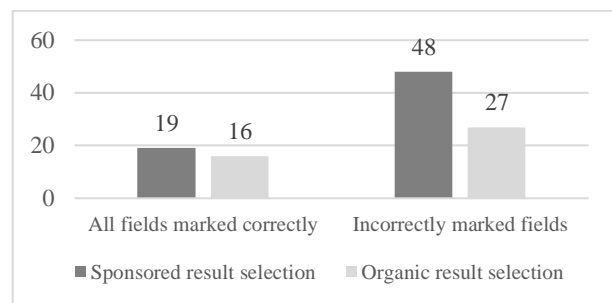
Graph 7. Comparison of user awareness about their ability to distinguish sponsored from organic Google search results and the choice of an organic or sponsored search result



Source: research

Next, in this research the task-based abilities were studied, i.e. the relationship between subjects who demonstrated their ability to consistently distinguish sponsored from organic search results in the task portion of the test and subjects who did not demonstrate this ability. A significant difference in sponsored search results selection behavior was found between users who demonstrated the ability to distinguish sponsored from organic search results versus those who did not (see Graph 8).

Graph 8. Comparison of the user's ability to distinguish between organic and sponsored search results and the choice of an organic or sponsored search result



Source: research

4.3 Research conclusion

The presented results confirm earlier findings of (Purcell et al., 2012) that users have a high level of self-confidence regarding their ability to use Internet search engines and that they are convinced that their skills are sufficient to use search engines effectively. Namely, 77 respondents out of 110 rated their ability to use Google very highly. However, the results show that most respondents are unable to distinguish clearly and with the same high confidence sponsored from organic search results. The task-based part of the questionnaire

showed that only 35 respondents were able to correctly choose all the required boxes. The part of the research based on general questions showed that there is a certain amount of misunderstanding of certain aspects of Google advertising, i.e. that 40 respondents are not aware of the fact that it is possible to pay Google for a certain position on the SERPs and that it is not possible to distinguish sponsored from organic search results (33 respondents).

The results further show that those users who are not aware of the difference between the search results choose the sponsored search results about twice as often. However, it should be emphasized that ads (sponsored search results) can be useful in satisfying the user's need to search for specific information. Therefore, not distinguishing between sponsored and organic results is not always necessarily the cause of a bad user experience, for example in cases where ads lead users to relevant content. However, while choosing a sponsored search result should not be characterized as a bad thing, choosing a sponsored search result without the knowledge of that, could result with bad experience. Some, surprising results were discovered in this research. Namely, it was discovered that users who, according to their own statements, do not know that it is possible to pay Google for a certain position on the SERPs, i.e. that it is not possible to distinguish sponsored search results from organic search results, choose sponsored search results much more often. However, it was found that even users who know about these options also choose sponsored search results more often.

Possible reasons why these respondents choose sponsored search results more often are that they do so intentionally, considering that the ads may be relevant to their search, or that they trust the way Google ranks its search results. The same results were obtained in the part of the research with tasks. The group that prove correct answers was able to recognize organic or sponsored results chose organic search results 16% more often, while the group that failed to prove the above ability chose sponsored search results even 44% more often compared to organic.

The results presented in this paper indicate the need for search engines and advertisers to establish clearer regulations and presentations of their results, i.e. more transparency of their search algorithms. The research revealed a lack of users' ability to distinguish sponsored from organic search results, given that the majority of respondents included in this research are not able to distinguish between the results. The same respondents chose sponsored search results twice as often compared to other respondents. The inability to differentiate results is thought to be caused by the high similarity in the appearance of sponsored and organic search results. Although sponsored search results are marked as such, it can be concluded that the current marking method is insufficiently efficient. The lack of ability to distinguish sponsored from organic search results is a problem when users select sponsored search

results under the mistaken assumption that those are organic search results.

4.4 Research limitations and recommendations for future research

This research has certain limitations, the most obvious of which is related to the demographic characteristics of the respondents. Although the survey includes respondents from almost all groups, their distribution is not even. Also, the sample of only 110 respondents is too small to generalize the results to the entire population of Croatia. In future research, the limitation of this research should be eliminated, which can be a good foundation, as well as exploring the difference between the use of search engines on different devices.

5 Conclusion

This paper presents research on the ability to distinguish between sponsored (paid) and organic search results of users of the search engine Google in order to get insights into the awareness of users on how this is impacting their behavior in reviewing the results. Considering the small number of such researches on the Croatian market, the contribution of the work is notable. The research was conducted on the basis of the respondents' answers to the questions in the questionnaire and on the basis of their solutions to the tasks with recognition of the stated results. Additionally, a test question sought to find out whether users' ability to distinguish sponsored from organic search results affects their choice of a certain type of search result. The results of the research show that Croatian users lack certain knowledge when it comes to Google search results, i.e. that there are differences in behavior regarding the choice of sponsored or organic search results between users who were able to accurately distinguish the search results and those users who do not have this ability. Users who did not demonstrate the ability to distinguish between sponsored and organic search results selected sponsored results approximately twice as often as users who successfully recognized sponsored results. The mentioned research results show that users' trust in Google is by default, even if it may be unfounded. If users are unable to distinguish sponsored results from organic ones, and are not aware of this inability, they will consider the ads as credible content. Although the sponsored (paid) search results may be relevant to the user's query, the users should be more aware that the messages they communicate are always biased, i.e. favorable to the interests of the advertiser. From this it can be concluded that Google's income comes not only from advertising but from advertising that is largely mistaken for organic content. Therefore, the results of the conducted research clearly indicate the need for better regulation of the display of sponsored results on

the one hand and user education on the other, i.e. more transparency of their search algorithms.

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