

COMPARATIVE ANALYSIS OF OECD FOUNDER COUNTRIES' MOST VISITED INTERNET JOURNALISM PAGES IN TERMS OF DESIGN, PERFORMANCE AND HCI

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ABSTRACT

Araştırma Makalesi

Research Article

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News, which was distributed by word of mouth in prehistoric times and written on paper in recent history, reaches its readers via the internet in today's digital world. This transformation has rapidly changed the speed, reliability and price of news. The opportunities provided by today's digital technologies have a great share in the fact that news has become completely a commercial product. Today, one of the most practical ways to access news is online journalism platforms. There are many studies in the literature on these platforms at local or national level. In this study, an international and interdisciplinary research was conducted on these platforms. The research aims to compare the most frequently visited online journalism sites in developed countries in terms of technique, ethics and design. The sample of the research is the most visited online journalism sites of the 20 founding countries of the Organization for Economic Co-operation and Development. These sites were examined with various parameters such as paid subscriptions, advertisements, search engine optimization, design principles, human-computer interaction, and journalism ethics principles. In addition, source code organizations, the number of visitors and upload performance of the sites were measured with universal metrics. All the results obtained were presented and interpreted with tables and graphs. The effect of these parameters on the per-capita visit of the news site was examined.

Keywords: Online journalism, Web design, Human computer interaction, News.

OECD KURUCU ÜLKELERİNİN EN ÇOK ZİYARET EDİLEN İTERNET GAZETECİLİK SAYFALARININ TASARIM, PERFORMANS VE İBE BAĞLAMINDA KARŞILAŞTIRMALI ANALİZİ

ÖZ

Tarih öncesi dönemde kulaktan kulağa aktarılarak, yakın tarihimizde ise kağıtlara yazılarak dağıtılan haberler, günümüz dijital dünyasında internet üzerinden okuyucusuna ulaşmaktadır. Bu dönüşüm, haberin hedefine ulaşma hızını, güvenilirliğini ve fiyatını hızla değiştirmiştir. Haberin artık tamamen ticari bir ürün haline gelmiş olmasında günümüz dijital teknolojilerinin sağladığı imkânların payı büyüktür. Bugün, habere ulaşmanın en pratik yollarından biri çevrim içi gazetecilik platformlarıdır. Literatürde bu platformlar üzerinde yapılmış yerel veya ulusal düzeyde çok sayıda çalışma bulunmaktadır. Bu çalışmada ise bu platformlar üzerinde

uluslararası interdisipliner bir araştırma yapılmıştır. Araştırma, gelişmiş ülkelerde en sık ziyaret edilen internet gazeteciliği sitelerinin teknik, etik ve tasarım yönünden karşılaştırılmasını hedeflemektedir. Araştırmanın örneklemini Ekonomik İş Birliği ve Kalkınma Örgütü'nün kurucusu olan 20 ülkenin en çok ziyaret edilen çevrimiçi gazetecilik siteleridir. Bu siteler; ücretli abonelik hizmetleri, reklam türleri, arama motoru optimizasyonu, tasarım ilkeleri, insan-bilgisayar etkileşimi prensipleri, gazetecilik etiği ilkeleri gibi çeşitli parametrelerle incelenmiştir. Ayrıca sitelerin kaynak kod organizasyonları, ziyaretçi sayısı ve yükleme performansı değerleri, kabul görmüş evrensel metrikler ile ölçülmüştür. Elde edilen tüm sonuçlar tablolar ve grafikler ile sunulmuş ve yorumlanmıştır. Haber sitesinin ziyaret oranına bu parametrelerin etkisi incelenmiştir.

Anahtar Kelimeler: Çevrimiçi gazetecilik, Web tasarımı, İnsan bilgisayar etkileşimi, Haberler.

INTRODUCTION

Since prehistory, people have felt the need to be informed about what is happening around them, to share their own experiences and to express their thoughts. This need has created the act of communication (İnuğur, 2005, p. 25). The act of communication, which is done by word of mouth, has made significant progress with the invention of writing (Cağlak, 2013, p. 18). Humanity has developed the concept of journalism to provide the news that society needs (Kovach & Rosenstiel, 2007, p. 12). “Acta Diurna Populi”, which started publication in 59 BC under the personal guidance of Emperor Julius Caesar, is considered the first official newspaper in human history. The Chinese discovered the printing press during the T'ang Dynasty between 618-907, and published the official newspaper called "Tipao", eight hundred years before Europe introduced to the printing press (Avanaş, 2021, p. 11). With the widespread use of electricity in the 19th century, humanity was introduced to radio and television, and the foundations of today's modern press concept were laid (Macit, 2023, p. 252). The low cost of broadcasting had been an important factor in the spread of radio and television (Kahraman & Yavuz, 2019, p. 127). Thus, the task of determining the agenda became the job of radio and television, as well as newspapers (Törenli, 2005, p. 188). Although the form and presentation are different, the concept of news is the same in all media tools. According to journalists, news is a product that can be expired quickly. Because if the news is not fresh, it is no longer “news” (Caplı, 2002, p. 63). Even if the news is presented to the reader quickly in journalism, the reader must scan

the newspaper page by page to reach the news they are interested in. This causes the reader to be exposed to a lot of news outside their interest (Aktaş, 2007, p. 37). The news that the reader is exposed to, willingly or unwillingly, affects their mental and emotional processes, and can even shape their personality (Kara, 2019, p. 20). Today, journalism has largely been freed from these problems. Technology has largely changed the conditions of journalism and news (Taşkıran, 2018, p. 20). The concepts of technology and journalism, which have been separate from each other for centuries, have come together with the development of computer technologies (Duman, 2018, p. 259). The first example of this is the teletext system called "BBC CEEFAX", which started operating in 1973, as shown in figure 1.

Figure 1. The First Teletext System of History



Source: (Amos, 1978, p. 5)

New media journalism, which emerged with developing technology, has offered new opportunities for the reader who was passive in traditional journalism (Güller, 2007, p. 55). The emergence of the internet accelerated the international circulation of information, introduced the concept of digital media and simulated the world as a global village (Avaş, 2021, p. 16). Digital media is a term that covers radio, television, newspaper, cinema, computers, and all media tools that have been converted into digital (Sezer & Yılmaz Sert, 2013, p. 71). New media tools have changed the way news is produced and consumed. A large amount of news can be transmitted to millions of users very quickly (Song et al., 2017, p. 1178). This journalism, which offers brand-new opportunities for the creation and publication of news, is referred to as "internet journalism" or "digital journalism". This new concept makes it possible to publish not only the text and photos of the news, but also its audio and video (Duman, 2018, p. 261). In addition, the reader has the opportunity to switch

between news rapidly (Tokgöz, 2010). In fact, the authority to decide what is really news and what is not has now passed into the hands of the reader (Atikkan & Tunç, 2011, p. 214). Internet journalism, which provides great advantages to the reader, also offers new opportunities to the journalist. Thanks to digital archive opportunities, both reporters and journalists can access past news with a single click. Time restrictions on accessing digital newspapers have also been eliminated. However, in traditional journalism, the newspaper can only be accessed at certain times of the day (Araslı, 2011, p. 103). The increasing number of institutions and organizations creating websites and making important announcements through these sites has changed the perception of news sources for journalists (Törenli, 2005, pp. 213-214). Journalists can now write their news by reading bulletins on the Internet without leaving their desks or seeking around (Gürcan, 1999, p. 84). With these advantages, digital journalism has replaced traditional journalism in recent years, and all traditional media companies have created digital journalism websites.

1. Method

The main purpose of this study is to examine internet journalism sites in developed countries. The sample of the study is the most visited digital journalism sites of the 20 countries that are founding members of the Organization for Economic Co-operation and Development (OECD), which consists of 38-member countries. Countries considered to be economically strong were selected as the sample. The 20 countries in the sample account for 48% of the global economy, according to Statisticstimes and Worldometers' "GDP by Countries 2025" reports. The 18 countries that joined the OECD later have a very small share of GDP comparing to founders. Semrush, Similarweb and Sitechecker web applications were used to determine the sample. The organic traffic measured in these applications for the month of December 2024 is given in Table 1. In addition, the information about the countries where the sample is located and the rate of visitors to each online journalism site according to the population are also given.

The study used multi-parameter comparison, which includes content analysis and comparative analysis methods. Comparative analysis is a complex study involving a combination of different methods. Objects are compared according to selected

criteria and comparison parameters (Bolbakov et al., 2020, p. 3). Here, comparisons are made between object features, examining whether the objects have the same weight. The weights are quantitative measures such as the news website's number of visitors, technical performance parameters, and code size. However, features open to interpretation, such as clickbait usage, are qualitative. Content analysis was used to compare the sample from this perspective. Content analysis is defined as a systematic, methodological, and objective method used to identify, classify, and interpret the essential components of text content (Alanka, 2024, p. 69). The primary objectives of the study were to demonstrate the relationship between all measurable parameters of the sample and the number of visits. However, considering the population differences of the countries in the sample, the "per capita visita" feature was used.

Table 1. The Most Visited Online Journals of the OECD Founder Countries that Constitute the Sample of the Research

No	Country	Population	Web Site	Monthly Visits	Per Capita Visit Rate
1	U.S.A.	346,063,239	nytimes.com	131.0M	%38
2	Germany	84,387,056	bild.de	19.0M	%23
3	Austria	9,118,313	orf.at	3.0M	%33
4	Belgium	11,745,606	hln.be	4.3M	%37
5	U.K.	69,280,387	bbc.co.uk	103M	%149
6	Denmark	5,939,695	tv2.dk	7.7M	%130
7	France	66,583,529	ouest-france.fr	23M	%35
8	Netherlands	18,228,742	ad.nl	6.2M	%34
9	Ireland	5,273,084	rte.ie	2.4M	%46
10	Spain	48,797,875	elmundo.es	12M	%25
11	Sweden	10,673,669	aftonbladet.se	9.1M	%85
12	Switzerland	8,937,623	blick.ch	2.4M	%27
13	Italy	58,697,744	corriere.it	16M	%27
14	Iceland	395,054	visir.is	74K	%19
15	Canada	36,991,981	ctvnews.ca	4.1M	%11
16	Luxembourg	675,522	lessentiel.lu	100K	%15
17	Norway	5,434,319	vg.no	6.5M	%120
18	Portugal	10,420,680	iol.pt	3.3M	%32
19	Turkiye	87,473,805	hurriyet.com.tr	61M	%70
20	Greece	10,445,365	protothema.gr	8.5M	%81

In the rest of the article, the internet journalism sites that make up the sample will be referred to with the equivalent in the "No" column in Table 1. According to the total number of visits, site 1 is the most visited. According to the per capita visit rate, sites 5, 6, and 17 are the most visited of their countries. In some countries, it is clear that society doesn't visit online journalism sites very much. For example, Canada's most visited news site was visited by only 11% of society. However, this statistic alone doesn't refer to the fact that those people aren't interested in social affairs. The ratings of some other news platforms should also be examined in detail.

The research examines the sample in 3 sections: content, design and performance. In the content section, the sample's news content, use of media elements such as photos and videos, search engine trickery, violations of journalistic ethics and advertising data use are examined. In the design section, design elements such as color, texture and lines, menu types, and fonts used in the sample are examined and analyzed in the context of universal design principles. In the performance section, some benchmark tests that use universal metrics are performed to evaluate the site's loading time. All data collected in the study were interpreted by drawing graphs with Matlab software after being stored in spreadsheet software.

2. Findings

2.1. Findings in Terms of Content

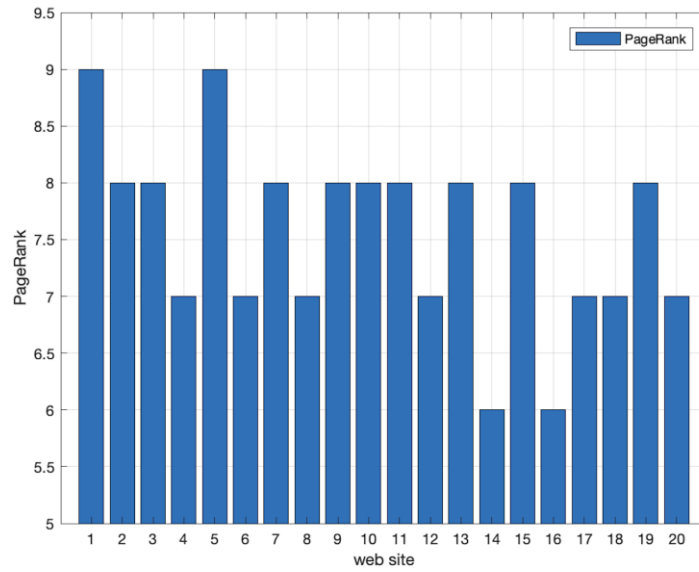
Website content is a general definition used for all text, audio and visual products that web pages include. A good content creation strategy plays a critical role in increasing the number of visitors to the website. The number of visitors to an online journalism site is significant, because the circulation figures in printed newspapers and the rating figures on television channels are the equivalent of the visitor counts on news sites (Dağtaş & Belikara, 2023, p. 5). Thanks to the surveillance technologies offered by the internet, feedback such as the number of views of a page, a news item or a comment can be obtained by the site administrator (Alemdar & Uzun, 2013, p. 222). In addition, by using Google Analytics services, they can access a lot of data, such as the number of users visiting the site at a certain period of time, the duration of users' visiting the page, the number of times ads are seen and clicked, viewed content

type, the age and gender distribution of visitors, and their interests, the search engine that referred to the site, visitor's geographic location, the type of computer used to access the site, and its language settings, the type and version of the web browser (Dağtaş & Belikara, 2023, p. 7). Visit statistics are classified as direct traffic, indirect traffic and organic traffic. Direct traffic refers to the visitors who type the site's domain name in the address bar. Indirect traffic refers to visitors who come by clicking hyperlinks on any other sites. Organic traffic refers to reaching the site with "keywords" searched in search engines (Işık & Koz, 2014, p. 33). The number of visits is an important concept for the journalist, but not for the reader. The reader is only interested in importance of the page, which is a subjective value, but can be partially measured. Google PageRank is an analysis algorithm developed by Sergey Brin and Larry Page in 1998, which is used to determine how important a page is (Page et al., 1999). The assumption of the algorithm is that more important websites are more likely to receive more links from other websites. Three main factors affect a site's PageRank score: the number of pages that link back to it, the PageRank of the pages that link back to it, and the number of outgoing links on each page that links back to it (Prajwal, 2023, p. 1935). PageRank can be calculated as in equation 1:

$$PR_{pi} = \frac{1-d}{N} + d \sum_{p_j \in M_{pi}} \frac{PR_{pj}}{L_{pj}} \quad (1)$$

Where, d is a damping factor having value between 0~1, N is total number of pages, p_1, p_2, \dots, p_N are the pages under construction, M_{pi} is the set of pages that link to pi , and L_{pj} is the number of outbound links on p_j . The biggest source of visitors to a site is search engines. A site with a high PageRank value is displayed higher in search results. The sample's PageRank score graph for January 2025 is shown in Figure 2. According to PageRank scores, the most reliable online journalism sites for search engines are 1 and 5, while the most insecure are 14 and 16. The sample's average PageRank score is 7.1.

Figure 2. PageRank Scores Graph of the Sample



One of the most important factors affecting the number of visitors is the visibility of the website through searches made by search engines (Giomelakis & Veglis, 2015, p. 22). Therefore, internet journalism desires to be on top of search engine results (Duman, 2018, p. 259). The tendency of internet users to search for almost everything on Google is also clearly seen in news consumption habits. Instead of visiting newspaper websites, many visitors try to find news by searching on Google with keywords such as “breaking news”. This has made it necessary for newspapers to work on technics to highlight their websites on Google search engines (Deniz & Korap Özel, 2018, p. 79). The way to keep a site at the top of search results is to use Search Engine Optimization (SEO), which was developed against Google's search algorithm. In recent years, many leading online news organizations have employed SEO experts to move up in search results (Bulut, 2019, p. 1090). The concept of “SEO journalism” has emerged as news sites have started to use SEO. They try to get more clicks by creating pages that are relevant for non-news keywords that users search for in daily life (Dağtaş & Belikara, 2023, p. 16). This has caused news headlines to take on a more complex structure. Non-news headlines such as “exchange rates”, “how to lose weight”, “healthy foods” that people frequently search in daily life have been presented as they are truly news (Macit, 2023, p. 254). Figure 3 shows an example of SEO news taken from the homepage of site 5 in the sample.

Figure 3. An Up-to-date Example of SEO Journalism



How to transform your home with art

"It's about what speaks to you": Displaying paintings, prints, textiles and sculptures can all help create a fresh living space for the new year – here's how, according to the experts.

9 Jan 2025 | Culture

In randomly selected dates in January 2005, the number of SEO news (NSN), total news count (TNC), the percentage of SEO news, and an example of gathered SEO news headlines in their original language are given in table 2. Advertisements, product, music-film, podcast promotion and column links were not considered for the statistics in the table.

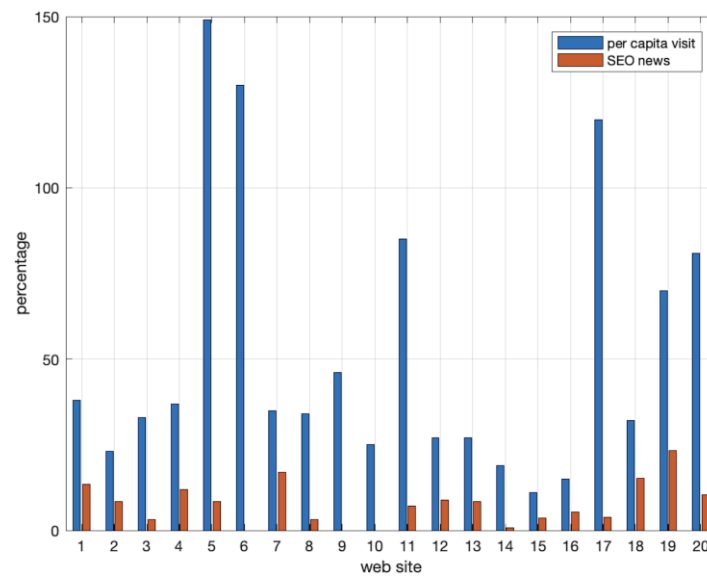
Table 2. Results Obtained from the Sample in the Context of SEO News

No	NSN	TNC	Percentage	Example
1	21	155	13.54%	What's the rule about looking at women in public?
2	13	149	8.44%	Verstehen Katzen ihren Namen?
3	2	62	3.23%	Die Geschichte des Dosenbieres
4	9	76	11.84%	Hoe pak je halsveroudering aan?
5	6	71	8.45%	Expert tips for staying active in cold weather
6	0	93	0.00%	-
7	28	164	17.07%	Mais pourquoi les chats ronronnent-ils?
8	3	94	3.19%	Fietskoerier een bullshitbaan?
9	0	59	0.00%	-
10	0	21	0.00%	-
11	7	98	7.14%	Fly vintermörkret – våra härligaste restips
12	10	112	8.92%	Warum man auch im Winter wandern sollte
13	12	144	8.33%	Docce e capelli: quante volte a settimana lavarsi e fare lo shampoo?
14	1	119	0.84%	Brilljant hug- myndir fyrir bóndadaginn
15	4	109	3.67%	16 sleep products that will help you get more rest
16	4	74	5.40%	Quel est votre jour le plus déprimant de l'année?
17	5	128	3.91%	Vinterdepresjon: Vær forsiktig med dette
18	10	66	15.15%	Pouco se fala nesta vitamina essencial à nossa vida. Em que alimentos existe?
19	23	99	23.23%	Kilometresi düşürülmüş araç nasıl anlaşılır?

20	13	126	10.32%	Βαρεθήκατε το κρέας; 18 απολαυστικά πιάτα με πρωταγωνιστή τα λαχανικά
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As it is clear, a few websites have avoided SEO journalism on their homepages. However, some sites have organized their homepages so that almost one in four news stories is SEO news. The graph in Figure 4 shows the per capita visit values and SEO news rates of the sample. As can be clearly seen, there is no significant relation between SEO journalism and the visit rates of the sample.

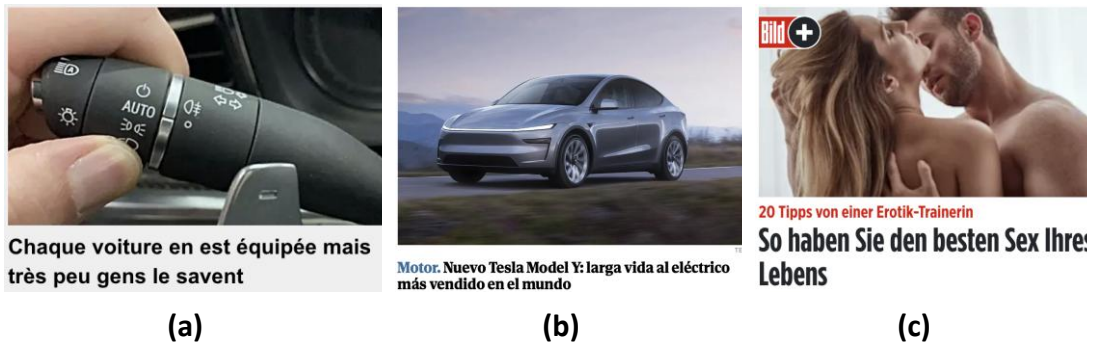
Figure 4. Per Capita Visit-SEO News Percentage Graph



SEO journalism is not the only ethical problem of online journalism. Many ethical problems have emerged, such as manipulation of images, illusion of information, use of social media sites for unintended purposes, use of content without copyright owner's permission or without citing the source, loss of the distinction between advertising and true news (Zinderen, 2020, p. 142), copy-paste journalism, circulation of unverified content, intense advertising, hate speech, digital manipulation (Kalender, 2019, p. 8), photo galleries, and images containing sexuality, eroticism, or violence (Işık & Koz, 2014, p. 28). Practices that are against traditional ethical and journalistic merits are frequently encountered on online journalism. One of those is the clickbait, which takes advantage of the reader's curiosity gap and makes them click on the news (Bronakowski et al., 2023, p. 3). Clickbait can be done with words, as well

as a photo or other visuals (Kalender, 2019, p. 9). The main purpose is to get the reader to click on more links and thus generate more advertising revenue (Dağtaş & Belikara, 2023, p. 13). Some of the examples of journalism ethics problems identified in the sample are shown in Figure 5. According to the 3-day scans conducted on the sample, the highest clickbait news headline was detected on site 18 with 7.58%, the highest sponsored content rate was detected on site 10 with 14.29%, and the highest sexual/violent news headline rate was detected on site 17 with 9.38%.

Figure 5. Examples of (a) Clickbait (b) Sponsored Content (c) Violent or Sexually Explicit Content



Sources: ((a) Site-6 retrieved on Jan, 28 (b) Site-10 retrieved on Jan, 29 (c) Site-2 on Jan, 28, 2025)

In traditional journalism, the largest income is obtained from newspaper sales, while the largest source of income in internet journalism is advertising (Macit, 2023, p. 253). Today, Google has a monopoly in the field of internet advertising. Internet journalism generally uses the Google Ads platform to advertise (Dağtaş & Belikara, 2023, p. 11) which offers various advertising services. The most common types for online journals are search network ads, Google Display Network (GDN), and video ads. Search network ads are for the website to be displayed on top in search results with a searched keyword (Ištvanic et al., 2017, p. 69). GDN is usually in visual form and is an advertisement displayed within the content of websites. GDN is frequently used on websites and exposes the user to advertisement even when visiting an ordinary website. Advertisers on GDN can reach their target audience directly. The advertisement to be displayed varies according to the content of the site visited, the demographic characteristics of the visitor, type of the connected device, and even the day and time. Today, the technology that advertisements rely on for personalization

and targeting purposes is cookies. Cookies track the visitor's internet usage data and profile them (Ghosh et al., 2015, p. 741). The sample's cookie analysis is carried out in the next heading of this paper. Video ads are video type ads that are shown before, after or at certain intervals of videos, especially on sites that offer video content such as YouTube. Online journalism frequently uses video ads in news videos. Despite the appeal of advertising revenue, some news sites aim to make money directly from the news itself. This model is called "paywall". Although at least two-thirds of consumers are against paying for content (Monsalve-Alama et al., 2024), many websites today implement the paywall method with names such as "Premium" membership. News sites usually apply the metered paywall method, which offers limited content to not paid subscribers. The sample was examined in the context of advertising display, paid subscription and journalistic ethics, and the results are presented in table 3.

Table 3. Statistics Obtained from the Sample Regarding Content

No	Paywall (Lowest Offered Price)	Video Ads	Pop- up Ads	Clickbait Percentage	Sponsored Content Rate	Sexual, Erotic, or Violent Content Rate
1	\$1 monthly	-	-	0.00%	0.00%	0.00%
2	€1.99 monthly	✓	-	7.38%	2.01%	6.71%
3	-	-	-	0.00%	0.00%	0.00%
4	€7.96 monthly (including printed newspaper)	-	-	0.00%	1.31%	0.00%
5	-	✓	-	0.00%	0.00%	1.41%
6	-	✓	-	3.23%	1.08%	3.23%
7	€6.99 monthly	-	-	3.01%	2.44%	0.00%
8	€7.2 monthly	-	-	1.06%	0.00%	0.00%
9	-	-	-	0.00%	1.70%	0.00%
10	€1 monthly	✓	✓	0.00%	14.29%	4.76%
11	KR1490 annual	✓	✓	0.00%	8.16%	3.06%
12	CHF9.90 monthly	-	-	3.57%	5.36%	0.89%
13	€12 annual	✓	✓	0.00%	4.86%	0.00%
14	-	-	-	1.68%	1.68%	0.00%
15	-	-	-	0.00%	1.83%	0.00%
16	-	-	-	1.35%	2.70%	2.70%
17	NOK99 monthly	✓	-	5.47%	0.78%	9.38%
18	-	✓	-	7.58%	9.09%	1.51%
19	-	✓	✓	6.06%	0.00%	1.01%

20	-	-	-	0.00%	0.79%	3.97%
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50% of the sample offers the paywall. Some have multiple subscription options. For example, a cheaper subscription offers to read full articles, while an expensive one also removes the ads. In Table 3, the price information of the lowest subscription offered to readers is given in the currency of their own country. Nine of the sites in the sample display video ads before video news for not subscribed visitors. Four sites display pop-up ads on the homepage or in news content that are large enough to block the whole page.

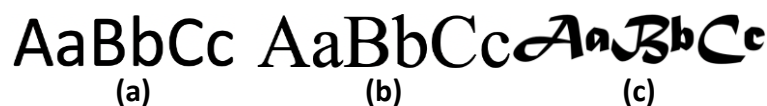
One of the advantages of the paywall system is that the reader can interact with the website and other readers. The user's interaction with the media is referred to "participatory media" (Yılmaz & Taylan, 2015, p. 206). This interaction can be in the form of rating the news, leaving an expression such as an emoji, easily sharing the news on social media, or writing comments below the news. Although all the sample offers subscription for the readership, only sites 4, 16, and 17 allow readers to write comments.

2.2. Findings in Terms of Design

Design is the process of creating technical or pattern drawings of a structure, product or object in the formation process (Dilay, 2023, p. 185). If a website is not designed well in terms of form, visitors can't use it effectively. In this case, they may leave the website and not visit it again (Oğuz, 2019, p. 24). Text and graphics in web design should create a consistent rhythm and unity. When the elements used in web design are arranged from an artistic perspective, it makes it easier to convey the content to the readers (Somuncu & Aydın, 2024, p. 189). The right-left alignment of the text, the harmony of the background color and text color, the font style and its size, the search engine of the site, the amount and placement of white space are important in website design (Ergün & Ergün, 2008, p. 10). Left-aligning text ensures smoother letter spacing and prevents unnecessary white space. Right or center-aligning text may cause eye tracking problems. Placing an excessive number of photos on homepages increases the design length of mobile news sites, and causes readers to make extra effort to see the end of the page (Somuncu & Aydın, 2024, p. 204). In fact, a carefully

designed home page does not make the website successful. Subpages should also be in harmony, using a common design language. Continuity in common font, color tones and design language between the homepage and subpages is important. Computer screens are read 25% slower than paper. For this reason, individuals generally do not prefer to read long texts on the screen (Onursoy, 2001, p. 41). To increase readability on the internet, it is necessary to use a plain color on the background, to use large enough font, to avoid moving and animated content, and to choose a text color that contrasts with the background color (Onursoy, 2001, p. 72). If the page is large, the text is long and different emphasis is required, having variety in the text will enrich the page. However, too many fonts are always a risk. Since each character will convey different messages, it can confuse the reader. To increase readability on the internet, it is necessary to use a plain color on the background, to use large enough font, to avoid moving and animated content, and to use a text color that contrasts with the background color (Onursoy, 2001, p. 72). If the page is large, the text is long and different emphasis is required, having variety in the text will enrich the page. However, too many fonts are always a risk. Since each character will convey different messages, it can confuse the reader. Script fonts are friendly and sympathetic with their handwritten appearance. However, Calligraphic and Gothic texts written in capital letters are difficult to read. Decorative texts are quite illegible with their very ornate structures (Dingil, 2014, p. 64). Standard fonts are of two types as seen in figure 6; serif and sans serif. Serif font has a small line or stroke regularly attached to the end of a larger stroke in a letter or symbol within a particular font or family of fonts.

Figure 6. (a) Sans Serif (b) Serif (c) Script fonts



Serif fonts are read faster than sans serif fonts (Bernard et al., 2001, p. 176). However, there is no single font and font size that is suitable for all users. A user who uses a large-screen computer may prefer small sized font, while a user who uses a small screen or is visually impaired may prefer large sized font. When small font is used, especially when it is bold or italic, readability and accessibility decreases (Oğuz,

2019, p. 24). An accessible website allows all users, regardless of their abilities, to perceive, understand, navigate, and interact with the page. According to the World Wide Web Consortium (W3C), an accessible website should provide sufficient contrast between the foreground and background, avoid colors that color-blind people cannot perceive, use interactive elements such as high-lit buttons, place labels and titles on the left, group content, and use visual elements. The basic design principles of a web page, other than typography and visual elements, are line, texture, color and white space (Yüzer, 2017, p. 4). Lines are generally used horizontally or vertically to separate elements from each other (Somuncu & Aydın, 2024, p. 193). In design, horizontal lines mean stillness, vertical lines mean dignity, diagonal lines mean vibrance and curved lines mean elegance (Becer, 2011). Balanced white spaces between elements allow users to perceive content more quickly and easily (Somuncu & Aydın, 2024, p. 193). If there is no space, it is difficult to perceive the design (Ambrose & Paul, 2014, p. 144). Texture adds reality to two-dimensional images. Since texture generally appeals to the sense of touch, it is widely used on websites today. Texture generally appeals more to the sense of touch and is widely used on websites today. It has been proven that colors in design affect human psychology (Faver, 2000). Color creates an internal universe that feeds on perceptions. Color harmony makes the user feel happy and calm, while disharmony and chaos move the user away from the design. According to eye track researches, color is effective in the perception of the news site reader (Onursoy, 2001, p. 58). Yellow generally stimulates mental creativity, but excessive use causes anxiety, especially in the elderly. People do not want to stay in places where yellow is used very intensely. Although red is a stimulating color, it is eye-tiring when used too much. Blue is a symbol of reliability and calm. Risky businesses such as technology stores and airlines often use blue. Green represents naturalness and is often used in environmentally friendly products. Purple represents wealth and extravagance. It is usually used for fantastic and imaginary things, so it is not suitable for use on news sites (Ozdemir, 2005, p. 393). Orange is not very popular in the Western world. It is often used in restaurants and travel companies, because it encourages spending money and stimulates appetite. Black is often associated with luxury (Singh & Srivastava, 2011, p. 202). Black is often used with a second color in products and services aimed at young people. White and

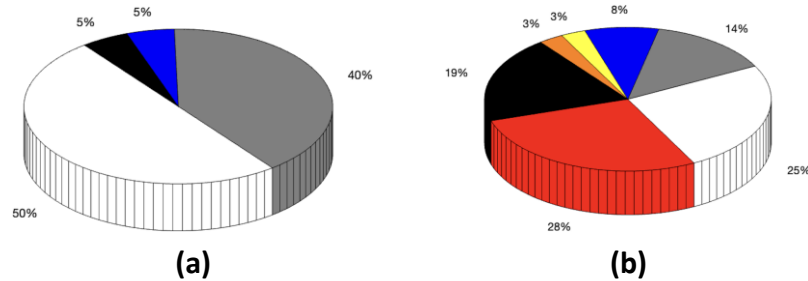
gray are suitable background colors for websites. They allow all other colors to stand out. Using intense white is not preferred because it evokes coldness, but using intense gray is a good option (Cerrato, 2012, p. 20). Web designers have more freedom in color selection than physical print designers. Because they do not have to worry about ink consumption. In addition, while the web designer can see the result of the color selection on the screen immediately, the printer can see it after the print is made. The evaluation of the sample in terms of general design and accessibility is shown in table 4.

Table 4. General Design and Accessibility Values of the Sample

No	Site Length (Pixels)	Background Texture	Horizontal Lines	Vertical Lines	Sans Serif Font	Serif Font	Maximum Font Size	Minimum Font Size	Interactive Buttons or Menus	Avoid Contrasting Colors	Background Color	Other Frequently Used Color(s)
1	11887	-	✓	✓	✓	✓	24	10	✓	✓	white	black
2	32369	-	✓	-	✓	-	112	8.5	✓	✓	white	red
3	3311	-	-	-	✓	-	18	13.5	✓	✓	blue	white, gray
4	15754	-	✓	-	✓	✓	21	7.5	✓	✓	gray	white, red
5	7395	-	✓	-	✓	✓	21	9	✓	✓	white	black
6	27680	-	-	-	✓	-	18	11	✓	✓	black	gray, red
7	18285	-	✓	-	✓	-	12	9	✓	✓	white	red, gray
8	14850	-	-	-	✓	-	15	9	✓	✓	gray	white, red
9	7833	-	-	-	✓	-	22.5	10.5	✓	✓	gray	white, black
10	5827	-	✓	✓	✓	✓	16	12	-	✓	white	black
11	32369	-	✓	-	✓	-	45	10.5	✓	✓	gray	white, red, yellow
12	27623	-	✓	-	✓	-	44	10.5	✓	✓	white	red, black
13	32368	-	✓	✓	✓	✓	20.5	8	-	✓	white	blue
14	20206	-	-	-	✓	-	25.5	12	✓	✓	gray	white, blue
15	13160	-	✓	-	✓	-	18	7.5	✓	✓	white	blue, black
16	16313	-	✓	✓	✓	-	21	10.5	✓	✓	gray	white, blue
17	32369	-	-	-	✓	✓	62.5	7.5	-	✓	gray	white, red
18	10441	-	-	-	✓	-	11.5	7	✓	✓	white	gray, red
19	13806	-	✓	-	✓	-	48	10	-	✓	gray	white, red
20	23796	-	✓	-	✓	-	13.5	9	✓	✓	white	black, gray, orange

Although a long website allows a lot of content to appear on a single page, loading performance is low (Mai et al., 2014, p. 103). The shortest website in the sample is site 3 with a length of vertically 3311 pixels. The longest sites are sites 2, 11 and 17 with vertically 32369 pixels. The average news site length is vertically ~ 18382 pixels. Sans serif font has seen in the entire sample, and serif font was also seen in 30% of the sample. Horizontal or vertical lines are used to distinguish news from each other in 70% of the sample. The maximum font size is 112 points on site 2, while the minimum is 7 points on site 18. The site with the highest font size contrast is site 2, while the site with the lowest is site 7. 75% of the sample has interactive buttons and menus. Contrasting colors are avoided in the design throughout the sample. 75% of the sample has interactive buttons and menus. Designers avoided contrasting colors in the entire sample. Background colors in the design are mostly selected in white and gray tones, as seen in figure 7. The preferred colors except background and fonts are red, white, black and gray, as also shown.

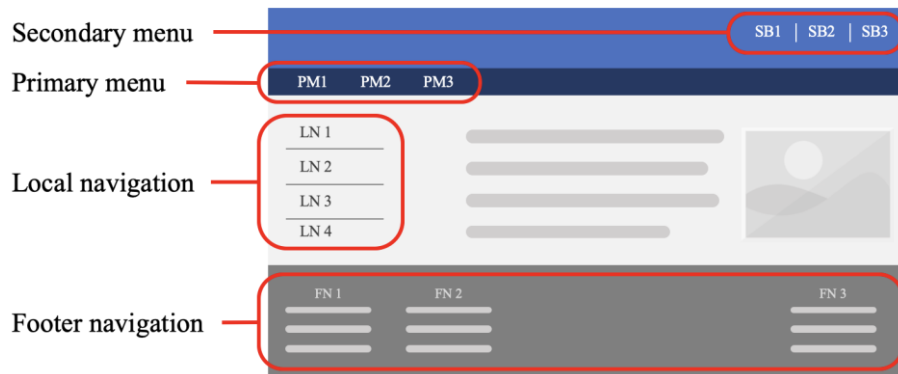
Figure 7. (a) Background Colors (b) Other Frequently Used Colors of the Sample



One of the basic components of a website is the menu. As shown in figure 8, there are usually 4 types of menus on websites. The primary menu is usually located at the top, rarely on the left. It is the website title or main menu. The secondary menu is usually located on the right, just above the primary menu. It contains buttons such as search and redirect. Local navigation, which is a submenu, is usually located on the left on desktop websites. The footer navigation is located at the bottom of the page. It contains buttons such as external links, about the site, etc. This area usually contains elements that are of no interest to most visitors. On some sites, a sitemap is integrated

into the footer navigation area, which simply shows the hierarchical structure of the website (Oğuz, 2019, p. 30).

Figure 8. Common Menu Types



An online journalism website is basically a group of information. Another evaluation criterion for the grouped expression of information is the Gestalt Principles. Gestalt means "form" in German. Gestalt psychology is a psychological theory focused on perception and perceptual organization (Olson & Olson, 2003, p. 492). Gestalt is a branch of Human Computer Interaction (HCI) and uses the principles of proximity, similarity, symmetry, continuity, and common fate to describe how information is grouped. The principle of proximity states that objects that are close to each other are perceived as similar. According to this principle, similar elements on a website, such as buttons, must be positioned side by side or one below the other. According to the principle of similarity, objects that share the same characteristics such as shape, color, and texture are perceived as part of the same cluster (Graham, 2008, p. 9). According to the principle of symmetry, a website should be arranged in an orderly manner. According to the principle of continuity, even if some objects are hidden, they are easily understood to be there. According to the principle of common fate, objects that tend to move in the same direction are perceived as being in a common group. The results of sample according to Gestalt principles and menu preferences are given in table 5.

Table 5. Evaluation of the Sample According to Gestalt Principles and Menu Preferences

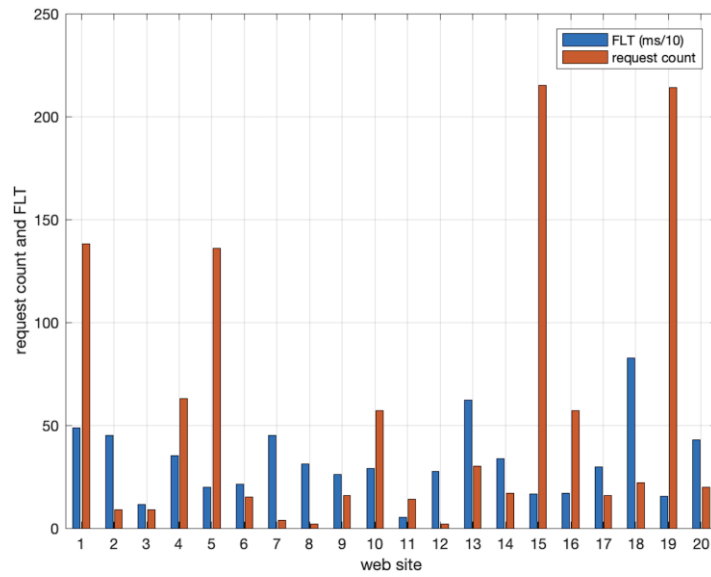
No	proximity	similarity	symmetry	continuity	Common Fate	Integrated Search Engine	Primary Menu	Secondary Menu	Local Navigation	Footer Menu	Sitemap
1	✓	✓	✓	-	✓	✓	✓	✓	-	✓	✓
2	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓
3	✓	✓	✓	✓	-	-	-	✓	-	✓	-
4	✓	✓	✓	-	-	✓	✓	✓	-	✓	-
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-
7	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	-	-	✓	✓	✓	-	✓	-
9	✓	✓	✓	✓	-	✓	✓	-	✓	✓	✓
10	✓	✓	✓	-	-	✓	✓	✓	✓	✓	-
11	✓	✓	✓	-	-	✓	✓	✓	✓	-	-
12	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓
13	✓	✓	✓	-	-	✓	-	✓	✓	✓	-
14	✓	✓	✓	-	-	✓	✓	✓	-	✓	✓
15	✓	✓	✓	-	-	✓	✓	-	✓	-	-
16	✓	✓	✓	✓	✓	✓	✓	-	✓	-	✓
17	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-
18	✓	✓	✓	-	-	✓	✓	✓	-	✓	-
19	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓
20	✓	✓	✓	✓	-	✓	✓	-	✓	✓	-

All sites in the sample are designed in accordance with the principles of proximity, similarity and symmetry. 50% of them do not comply with the principle of continuity. However, this does not indicate that the design is faulty. The news site may not need to comply with this principle in terms of content. Similarly, 70% of the sample do not comply with the common fate principle. However, no content that complies with the common fate principle is detected on these sites. 95% of the sample has a search engine link on the home page. The preferred menu types are primary and footer menus with a rate of 85%, secondary menu with a rate of 70%, and local navigation with a rate of 65%.

2.3. Findings in Terms of Performance

Website performance is an important factor. A website that loads slowly can cause visitors to leave the site. This reduces the number of visits (Dingil, 2014, p. 40). Optimizing loading speed is an important priority for developers (Sumakul, 2023, p. 1263). Web applications use the client-server architecture. The client sends http requests to the server to view the website and waits for responses. The number of requests/responses plays an important role in loading performance. The number of requests should be minimized for the web page to load quickly (Vesic & Kojic, 2020, p. 18). The time it takes for the entire web page to be visible on the screen, i.e. for all requests to be answered, is called Fully Load Time (FLT). Naturally, the FLT value may be high on sites containing scripts. This does not directly reflect the user experience. The FLT value of the sample was obtained by calculating the average of the results obtained from Gtmetrix and pingdom on three different days. For accurate results, the Google Chrome web browser was used, and all browsing history was cleared again in each reload. In addition, in each measurement, the request messages sent for the FLT value of news homepages were monitored, and the request messages were classified according to the type of request they contain. The sites with the highest total average number of request messages were site 19 with 624 request messages, site 15 with 537 request messages, and site 5 with 465 request messages. The lowest average request messages were measured at site 11 with 60 requests, site 6 with 65 requests, and site 3 with 81 requests. It is clearly seen in figure 9 that the number of request messages is not directly related to the FLT of the homepages of news sites.

Figure 9. Request Number-FLT Graph of the Sample



The main component of a website is the html file. However, for today's web pages, the html data size is well below the total size of the web page. Although the largest html file in the sample belongs to site 14 with an average of 457KB, this site was one of the sites that produced the fewest html requests on the network, with an average of 7 requests. Site 19, which generated the highest number of html requests, generated an average of 124 html requests, and had an average html file size of 88.4KB. According to the results obtained in the study, 39.15% of the total requests were image requests and 44.3% of the total network packets included image data. Script requests, which constitute 29.66% of the total packets, are 25.78% of total requests. Html data, which constitutes 8.27% of the total requests, was detected in only 3.01% of the packets. The request-traffic measurements showed that there was consistency in the amount of data carried in response to the requests in the sample.

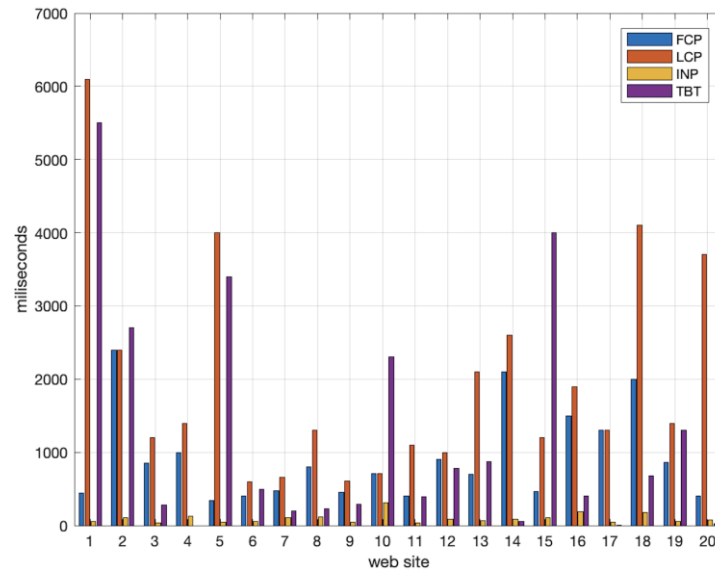
In order to evaluate website performance, the site must also be loaded more than once. Because there is a significant difference between the first and second loading times of the same web page with a standard web browser. The main reason for this is that in the second loading, the files left from the first loading on the client side are not requested from the server again. The name of these files is "internet cookies". Cookies are simply files created at the visitor's side. First party cookies store information such as the user's login information, language preferences, and shopping cart content. Third party cookies are also called "trackers" or "cross-site cookies", and

are generally used for advertising. Because these cookies can provide personalized advertising by tracking the user's browsing history and activities (Munir et al., 2023, p. 3490). With this feature, they serve not only the website they are placed on, but also many service providers. Google Chrome allows these cookies, while browsers such as Safari and Firefox block them by default. In the study, in order to examine the third-party cookies' policy of news sites, first the entire browsing history in the Google Chrome web browser was cleared, and all add-ons such as ad blockers were disabled. News websites were opened once in order to ensure that each site was fully loaded. According to the data measured from Chrome, the news sites that placed the most third-party cookies were site 1 with 75.7MB, site 13 with 9.2MB, and site 7 with 5.4MB. The sites that placed the least third-party cookies were site 9 with 5.6KB, site 17 with 9KB, and site 11 with 18.5KB.

Nowadays, various tools have become standard for measuring website performance. For example, Google Web Vitals is a ranking factor consisting of stable metrics with a timeline (Amižić et al., 2023, p. 110). Pagespeed insights, one of the services used in this study, provides a comprehensive evaluation of web vitals metrics and various suggestions to improve the performance of the website. Another test tool used in the study is webpagetest, which includes detailed performance measurements, waterfall charts, resource loading and processing, and testing and optimization tools (Dobbala & Lingolu, 2022, p. 2). These tools use First Content Paint (FCP), First Input Delay (FID), Largest Contentful Paint (LCP), Cumulative Layout Shift (CLS), Interaction to Next Paint (INP), and Total Blocking Time (TBT) metrics that reflect the user experience in the field condition (Nichifor et al., 2021, p. 1380). FCP refers to the time it takes for the content area to be displayed while the content of the website has not yet loaded. According to Webvitals, an FCP value below 1.8 seconds is considered good, between 1.8 and 3 seconds is considered normal, and above 3 seconds is considered poor. LCP refers to the time it takes for the largest content of the website to become visible. This content can be an image, video, or text block (Dobbala & Lingolu, 2022, p. 2). The largest area on the page is the first part that catches the visitor's attention. LCP also gives an indication of how long it takes for the page to become available. According to Webvitals, an LCP value below 2.5 seconds

is considered good, between 2.5-4 seconds is medium, and above 4 seconds is considered poor. The most commonly used method for improving LCP value is code minification, which is the process of removing CSS that the browser does not need, minifying JavaScript files, and removing messy and complex html code without changing its functionality. Each code minification method has its own advantages and disadvantages. For example, removing spaces such as lines in the code can reduce the code size, but it makes the code harder to read (Cahyono et al., 2024, p. 11389). It was observed that all sites except 3, 7, 8, 9, 13, 14 and 20 of the sample used code minification techniques extensively. INP is a metric that evaluates the overall responsiveness of a page to user interactions by observing the latency of all clicks, taps and keyboard interactions that occur during the time a user visits a page. The interactions of INP are touching the touch screen, clicking the mouse button, and pressing a key on the keyboard. According to Webvitals, INP below 0.2 seconds is considered good, 0.2-0.5 seconds is moderate, and above 0.5 seconds is poor. TBT measures the total time a page is blocked from responding to user input. The total duration is calculated by adding the blocking part of all long tasks between FCP and Time to Interactive (TTI). All tasks that take longer than 50 milliseconds are considered long tasks. The time after 50 milliseconds is the blocking section. According to Google Lighthouse, a TBT value below 0.2 seconds is good, between 0.2-0.6 seconds needs improvement, and above 0.6 seconds is poor. Pagespeed Insights, Lighthouse, Pingdom over U.S.A. servers, Webpagetest, Google Chrome Developer Tools, and GTMetrix tools were used to measure the FCP, LCP, INP, and TBT values of the sample. The average results collected from all these tools over 3 days is shown in figure 10.

Figure 10. Mean of FCP, LCP, INP, and TBT Scores of the Sample



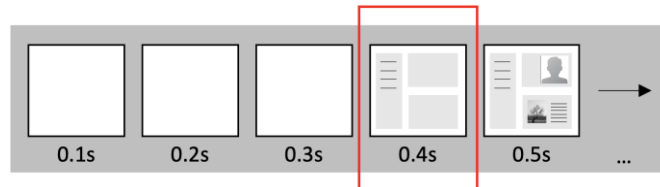
There was no site in the sample with a weak FCP value. However, sites 2, 14 and 17 were measured at a level that needs improvement. The only site with a weak LCP result was site number 1. Sites 5 and 17 were measured at needs improvement level. It was seen that the INP value is at a good level in all of the sample except site 10. It was observed that the sites with good TBT values were sites 4, 14, 17 and 20. The worst TBT value was measured at site 1 with an average of 5.5 seconds.

CLS measures unexpected layout shifts that occur during a reader's visit. For example, an ad that is loaded later pushes the page content down and disrupts the reading experience. This creates dissatisfaction in the visitor. Unlike previous measures, CLS evaluates the entire experience throughout the visit to the page (Vasiljević et al., 2020, p. 10). Also, factors such as cookies and ads affect the CLS value. According to Webvitals, a CLS score below 0.1 is considered good, a between 0.1-0.25 is considered needs improvement, and above 0.25 is considered poor. Average CLS value was measured at the needs-improvement level in sites 4, 8, 9, 12, 14 and 15, while good CLS scores were measured in other sites of the sample.

The time it takes for a page to fully load on the client is the time it takes from the first byte to load until the entire page is loaded. The time it takes for the server to process a request and send the first byte to the client is called Time to First Byte (TTFB), which is a technical term and is not generally associated with user experience

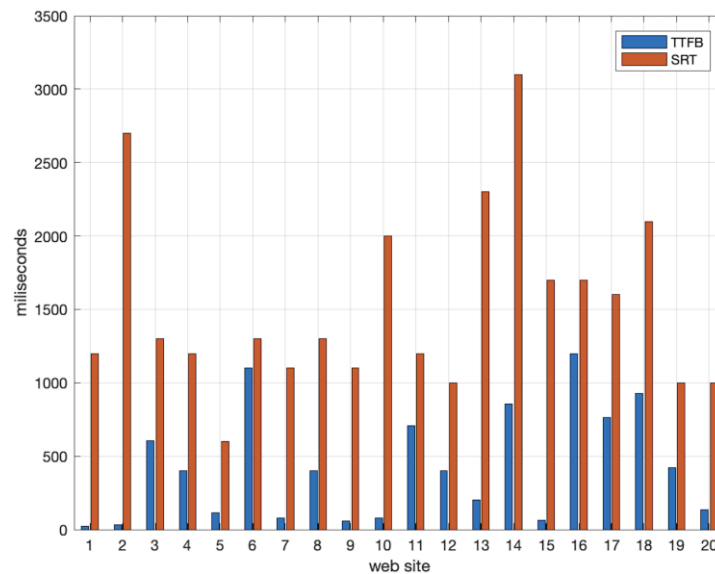
(Dobbala & Lingolu, 2022, p. 2). The minimum time it takes for the website to load enough to interact with the user is called Start Render Time (SRT), as shown in Figure 11.

Figure 11. SRT Description



TTFB values of the sample was monitored from Page Speed Insights, SRT values from Webpagetest, and FLT values from Pingdom and Gtmetrix for 3 days. The average of the results is shown in figure 12.

Figure 12. Average TTFB-SRT Scores Graph of the Sample



The lowest average TTFB value was measured at site 1 at 21 milliseconds, while the highest average TTFB value was measured at site 16. Sites 5, 13, 15 and 19, due to the intense use of visuals and scripts, provided an average FLT value of over 30 seconds. Site 5, despite its high FLT value, was the site with the most successful SRT measurement in the sample, with 0.6 seconds. After the first byte was received, site 6 was measured as the fastest to reach a user-readable state, while site 2 was measured as the slowest.

Nowadays, people connect to the internet not only from PCs but also from mobile phones and tablets. As the screen sizes of devices vary, websites are expected to work in different resolutions. Websites that can automatically adapt to all resolutions are called responsive sites. Websites that are not responsive carry the risk of losing potential users (Cahyono et al., 2024, p. 11389). When the sites in the sample were tested in different resolutions, it was seen that all of them were responsive.

RESULTS AND CONCLUSION

This study aimed to examine online journalism websites in developed countries in terms of both content and technique. The sample is the most visited news websites of the OECD founding countries. Universal metrics and measurement tools were used for the evaluation. When examined in the context of the parameters used for indexing by search engines, the average PageRank score of the sample is 7.1. While some news websites avoid SEO journalism on their homepages, some have organized their homepages in such a way that approximately one in every four news stories is a SEO news. No relationship was found between the SEO journalism tendency and the visit rates of the sample. In addition, no significant relationship was found between the number of SEO news on the site and the PageRank score.

When the sample was examined in terms of paywall and advertising, which are sources of financial gain, it was determined that 50% of the sample used the paywall system, and 50% of these sites showed pop-up and video ads to non-paying readers. 90% of the sample showed GoogleAds ads, while only 5% showed no ads at all. When examined in terms of reader interaction, it was seen that only 15% of the sample allowed reader comments. It's clear that the video ads or pop-up ads displayed on the site had no direct impact on the site's loading performance. There was also no significant correlation between ad type and visitor counts.

When the sample was examined in the context of journalism ethics, it was determined that a maximum of 7.58% clickbait news headlines were used, a maximum of 14.29% sponsored content was used, and a maximum of 9.38% sexual/violent news headlines were used. The average clickbait news headline was 2.02%, the average sponsored content rate was 2.9%, and the average sexual/violent news headline rate

was 1.93%. It is seen that 97.71% of the sample adhered to the principles of journalism ethics.

In the context of design, parameters such as site length, font, font size, design lines, interactive objects and color choices were examined. The sites in the sample had a vertical length between 3311 pixels and 32369 pixels. The average vertical site length was calculated as ~18382 pixels. When each site length was compared with its FCP, LCP, INP, and TBT values, no correlation was found between site performance and page length. While the entire sample used Sans Serif font, it was observed that 30% also used serif font. A wide range of font sizes from 7 to 112 points was measured in the sample. Large fonts were generally used in conjunction with news visuals. In the sample, background colors were mostly selected in white and gray shades. Apart from backgrounds and fonts, the most preferred colors were red, white, black and gray, respectively. It was seen that news sites frequently used the stimulating feature of the color red. Although they are cold colors, it was seen that white, gray and black colors increase readability. When the sample was examined in the context of Gestalt principles, it was seen that all sites were in accordance with the principles of proximity, similarity and symmetry.

The sample was examined with various parameters in terms of performance, and comparisons were made. When the FLT value of the home pages of the news sites was compared with the number of request messages, it was seen that there was no direct relationship between them. In addition, no relationship was found between the number of requests and the size of html because most of the data on the sample sites consisted of image files. According to the measurements, 39.15% of the total requests were image requests and 44.3% of the total network packets carried image data. The next largest number of requests and network traffic belonged to script data. There was a correlation between the requests sent, and the packets received of the same type. According to Google Web Vitals metrics, there were no sites with weak FCP values. Only 1 site had weak LCP values. When the sample average is considered, TBT and CLS values are at an average level. Due to the heavy use of visuals and integrated videos on news sites, page load times were quite long. The average load time of the sample was 3.23 seconds.

Naturally, news site content is constantly updated. The results obtained from this study are only for the days the measurements were made, and they may change slightly in new measurements. However, this study can be a source for determining the design preferences of these sites. In addition, the study aims to give the user an idea about the news site design and content by interpreting the site's performance on the user's side. It will contribute to the literature as it is the first interdisciplinary study comparing international news sites. The data obtained from this study can be used for future comparisons with new samples. For example, results from local journalism websites, or news sites from less developed countries can be compared with those from OECD countries to generate recommendations for cross-optimization. The performance data derived from the study, along with Gestalt Principles, can be used to optimize the site for the reader. This study shows that the measured quantitative and qualitative data do not have a direct impact on the per capita visit value. Differences in per capita visit values may stem from differences in society's perspective on social events. This study can be a helpful resource for future studies examining cross-cultural differences in news website visitation rates.

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