

## THE IMPORTANCE AND USE OF TYPOGRAPHY IN PRINT AND DIGITAL DESIGN



### BASILI VE DİJİTAL TASARIMDA TİPOGRAFİNİN ÖNEMİ VE KULLANIMI

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**ABSTRACT:** The main element of design in printed and digital platforms is typography. Typography is the initial specification of features such as font, point value, color, and spacing shapes to be used in designs. A good design is attractive, memorable, and understandable through the use of correct typography in all printed and digital designs. Typography emerged with the letterpress printing applied by Gutenberg in the 1440s, and was initially accepted as book writing. With the industrial revolution, competition increased, recognition gained importance and the invention of photography, it became a part of visual design. Today, it is not only encountered in printed communication tools but also in digital media that affect all areas of our lives. Typography application for digital environments; font selection, readability of the text and the best communication to the target audience, functionality and aesthetics are very important. The right font selection directly affects the user experience in a positive way. In this study, the usage situations of serif and sans serif fonts, which are one of the typographic elements, were compared using qualitative research techniques on printed materials and examples in digital environments, and the fonts that were preferred more in designs were determined. In the qualitative research; newspapers, magazines, brochures, books, catalogs and packaging prints were examined as printed materials, and websites, social media, e-book platforms and mobile applications were examined as digital materials. As a result, it was determined that in the use of typography in printed material designs, serif fonts such as Times New Roman, Garamond, Cambria, Georgia, which do not tire the eye and provide faster perception and comprehensibility, are used. In digital platforms, as supported by some studies, it was qualitatively determined that serif fonts make reading difficult due to their serifs, and for this reason, serif-free fonts such as Arial, Helvetica, Verdana, Open Sans, Montserrat are preferred more in all digital platforms examined.

**Keywords:** Typography, Printed Typography, Digital Typography, Serif and Sans Serif Fonts

**ÖZ:** Basılı ve dijital platformlarda tasarımın ana ögesi tipografidir. Tipografi, tasarımlarda; kullanılacak olan yazı fontu, punto değeri, rengi, espas boşlukları gibi özelliklerin belirlendiği ve uygulandığı süreçtir. İyi bir tasarımın ilgi çekici, akılda kalıcı ve anlaşılır olması, tüm basılı ve dijital tasarımlarda doğru tipografinin kullanımı ile gerçekleşir. Tipografi, Gutenberg'in 1440 yıllarda uyguladığı Tipo baskı ile ortaya çıkmış, ilk yıllarda kitap yazısı olarak kabul görmüştür. Sanayi devrimiyle birlikte rekabetin artması, tanınırlığın önem kazanması ve fotoğrafın icadı ile birlikte görsel tasarımın bir parçası haline gelmiştir. Günümüzde ise, sadece basılı iletişim araçlarında değil hayatımızın tüm alanlarını etkileyen dijital mecralarda da karşımıza çıkmaktadır. Dijital ortamlar için tipografi uygulandığı; yazı tipi seçimi, metnin

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okunabilirliđi ve hedef kitleye en iyi şekilde iletilmesi, işlevselliđi ve estetiđi için oldukça önemlidir. Doğru yazı tipi seçimi, kullanıcı deneyimini doğrudan olumlu yönde etkiler. Bu çalışmada, basılı materyaller ve dijital ortamlardaki tipografik öğeler, örnekler üzerinde karşılaştırılarak, tasarımlardaki daha çok tercih edilen yazı fontları tespit edilmiştir. Basılı materyal olarak; gazete, dergi, broşür, kitap, katalog ve ambalaj baskıları, dijital olarak; web siteleri, sosyal medya ve e-kitap platformları ve mobil uygulamalar incelenmiş olup, tipografik uygulamaları karşılaştırılmıştır. Sonuç olarak, basılı materyal tasarımlarındaki tipografi kullanımında; gözü yormayan, algılamının ve anlaşılabilirliđin daha hızlı sağlandığı Times New Roman, Garamond, Cambria, Georgia gibi serifli (tırnaklı) fontların, dijital platformlarda ise, serifli fontların, tam aksine okumayı güçleştirdiđi, bu sebeple, incelenen tüm dijital platformlarda Arial, Helvetica, Open Sans, Montserrat gibi serifsiz yazıların daha çok tercih edildiđi tespit edilmiştir.

**Anahtar Kelimeler:** Tipografi, Basılı Tipografi, Dijital Tipografi, Serif ve Sans Serif Yazı Tipleri

## Introduction

The term “typography” refers to the mechanical composition of letters, words, and typesetting in texts (McCarthy, 2020). Today, typography is an applied art form that is concentrated within graphic arts, a technical subject directly related to printing and typesetting (Strizver, 2013). It is a visual phenomenon that all people are constantly faced with. Magazines, newspapers, advertisements, announcements, books, calendars, business cards, catalogs, posters, and all kinds of communication information in digital media are the product of typographic design. Today, we see its use not only in printing but also in all areas of life and many sectors. Typography is the art of placing text on screens or for printing for aesthetic and readability purposes (Kelly, et al., 2011; Van Leeuwen, 2005; Moholy-Nagy, 2001).

Letterpress printing is the name of the raised printing technique that Gutenberg managed to develop between 1450-1455. The concept of typography was also formed with letterpress printing. Typography is formed by combining the Greek words “typos” and “graphein”. Typos means “form, shape, type, trace, stamp, example, type, model, something unique”, while Graphein means “to write, to draw”. In short, it is accepted that it is rooted in the Greek word “a typical shape is to strike (typtein)”. As a result, when these two words are combined, the expansion of typography is determined as “writing with printed letters”. More broadly, typography is an applied art form such as the selection of typefaces, their arrangement for a purpose, and the determination of their position on the page. Since the 17th century, the art of book printing in a broad sense has been more of an artistic shaping of a work today. The selection of letter characters and sizes, the determination of the typesetting area and their position on the page, typeface and size, punctuation marks, separator marks and special symbols, letter, word and margins, line length, heading and subheading selection, color, page appearance and message efficiency are the features of typography. In addition, the consistent structuring of the information

planned to be conveyed with the message to strengthen the message and the necessity of the message to be given attracting the attention and interest of the reader, as well as being easy to read are the features expected from typography (Dursun, 2023; Aksaray, et al., 2024).

Gutenberg and his contemporaries took as models the handwritten characters that were suitable for the letterpress technique and that they were well acquainted with for the letters to be used in printing. They prepared the molds, cast them, and did the typesetting and printing themselves. In other words, all typographic production was carried out by a single source. With this technical process, the problem of design also came to the fore. The printer had to carry out mental activities such as determining the fonts and their size, typesetting width and their location on the page. Undoubtedly, in handwritten books, the artist was designing for a certain order in advance, but according to the new situation, the design activity in question had to be carried out in parallel with the conditions of the typographic technique, and with technical development, the concept of typographic design gradually became established (Mohd Rezan, 2020).

From the beginning of the 16th century, printing types were designed and produced in independent type foundries outside of the printing workplace, and this is considered the beginning of specialization in printing. In the 1900s, the increasing need for competition parallel to industrialization brought advertising to the agenda. The most effective announcement tools of those days were printed products such as newspapers, posters, catalogs, and packaging. However, designs for advertising purposes must first have qualities such as attention-grabbing, memorability, and rapid transmission of the message, and this could be achieved by people with good graphic education. In parallel with this need, schools providing education especially in applied arts were opened.

In the Bauhaus school, established in Germany between 1919-1933, the importance of written communication was understood and the subject of typographic design was given importance within the graphic branch. Artists such as László Moholy Nagy, Herbert Bayer, J. Tschichold have shaped our era's typography with both the contemporary typographic designs and print fonts they have produced and the new ideas they have conveyed in various magazines and books (Rössler, 2022; Toschi, 2020). After World War II, technical developments in photography, reproduction, typesetting and printing facilitated the production of written communication tools, while also increasing the need for typographic design, and in parallel, graphics and typography education has gained importance. The principles that the Bauhaus school brought to typography at the beginning of our era have developed and continued to develop with the acceptance and additions of new designers until today, and education has also been in this direction.

The most important features of typography are considered to be

"experimental and creative work in education and real applications, asymmetrical design suitable for the era and content, priority in readability function and providing fast communication, and benefiting from traditional rules".

### 1. Print Text Features

The most important feature of printed fonts is their immutability. In order to be able to call a printed font character, all the elements that make up an alphabet must be structured with similar features and have a typical feature that spreads throughout the entire alphabet, making it different from others (Yıldız, et.al., 2017; Kaya, 2024). A printed font can be designed by preserving the similarities in wall thickness, serifs, letter proportions, and characters inside and outside the letter, and the image they reflect on the entire alphabet determines its written character (Kesgin, 2021). Almost all of the facts used in the design of the characters have emerged in the historical development process, and printed fonts with similar features have been grouped and classified based on these (İgit, 2022). From the past to the present, standard fonts are divided into two categories: Serif and Sans Serif. Today, ancient serif and sans serif characters constitute the most used group compared to others. Gothic fonts are used very little (Erlhoff, 2008). This situation is primarily due to the fact that the readability feature of ancient characters is superior to the decorative Gothic characters and therefore spreads internationally (Özmutlu, 2020).

The main difference between serif and sans serif fonts is the font design (URL-5). Serif is the protrusion at the beginning, end and corners of letters in ancient characters, and small strokes (serifs) at the end of letters (Daxer, et al.,2022), (Figure 1). Serif fonts are the first fonts created before the age of metal type printing. Serifs, which appear roughly in stone-engraved structures in Greece, are believed to have originated from the Latin alphabet with words carved into stone during the Ancient Roman period. It is thought that the outlines of Roman letters were first painted on stone, and stone carvers created the serifs by following the widening brush strokes at the ends and corners. The serif formation that is fully accepted today is seen in Roman stone inscriptions, carefully crafted and seen on columns and architectural structures.



Figure 1: Serif Font Examples (URL-1)

Sans serif fonts do not have the protrusions, hooks, and notches at the ends of letters that are in serif fonts (Ali, et al., 2013; URL-5), (Figure 2). Sans is a French word meaning "without", so sans serif literally means "without serif" (URL-5). It usually expresses simplicity, modernity, or minimalism. It began to be used in printed media as early as 1805. It has become popular

due to its clarity and readability in advertising and display when printed very large or very small. While serif fonts are generally seen as more traditional and formal, they are generally used in formal works such as invitations, resumes, presentations, and other printed materials, and in printed materials such as books and magazines; sans serif fonts are considered more modern and casual than serif fonts, and are used in areas such as shorter text blocks such as slogans, digital projects, websites, and applications. Serif fonts and sans serif fonts are used for digital projects such as websites and applications (URL-5).



**Figure 2:** Sans Serif Fonts Examples

## **2. Typography in Printed Material**

The primary goal and most important feature of typography in printed materials is readability and accessibility (Uğur, 2019). Reading is a complex cognitive process that involves deciphering what meanings are represented by a series of symbols in a writing system such as the Latin alphabet. Readability refers to the qualities of a text that make it easier to read (Yıldız, et al., 2017). This includes content decisions or format decisions that help the reader easily understand and comprehend the author's intended message (Dikmen, 2013). It shows that the text is clearly visible. Making texts more readable makes it easier for a motivated person to read. The text should be legible, clear enough for people to see, and attractive (Hojjati, et al., 2014). Poor readability can cause the reader to never be interested in the author's message. Fonts, which are the most important criteria in readability, determine what the reader will feel and how it will affect them. When the reader first sees the text, they have an emotional response to the shape of the letterforms, which is a very personal experience. The choice of font in typography is very important for this (Ali, et al., 2013; Hojjati, et al., 2014).

When serif and sans serif fonts used in printed materials are examined; Serif fonts are thought to provide easier reading by acting as a horizontal guide for the eye to "connect" the letters of a word. Therefore, these characters are generally the most widely used printed font styles due to their perceived readability in long texts such as books, newspapers and most magazines (URL-2).

In a study conducted by Rajapakse & Beneragama (2014) with 102 graduate students, it was determined that serif fonts were preferred in printed documents because they were easier to read from a short distance. Upchurch, CE.'s (2017) study with 78 undergraduate students enrolled in an introductory psychology course at the University of Mississippi found that serif fonts increased the recall of the information read as a result of the

comparison of the texts on the website compared to sans serif fonts that were easier to read.

In a study conducted with 149 undergraduate students in the psychology department at a Midwestern public university, materials were given and read in four fonts in 12 point, two serif, and two sans serif. As a result of the study, it was determined that there was an increase in recall in readings using serif fonts. Serif fonts have markings that make lines of text appear to be placed on a single line. Familiarity with serif fonts is easier to read, allowing for deeper processing of the message. In any field that uses textbooks, instruction manuals, information sheets, or safety guides that present instructions or information in written form, it is useful to use a serif font that supports recall of what is read (Gasser, et al.; 2005). When lines of text are presented on a page, they can be perceptually separated and read more easily (Craig, et al., 1999). Lannon (2000) stated that serif fonts are beneficial in printed materials because serifs help to direct the reader's eye horizontally. Serifs, which are often hard to see, help us recognize characters and make it easier to read by moving our eyes around the page. For this reason, serif fonts are easier to read than sans serif fonts (Ambrose, et al., 2011).

In addition to serif fonts, sans serif fonts are also used in printed materials. They are usually used in main and subheadings, and their clean lines and lack of serifs can make them look more modern and readable at smaller sizes. The choice between serif and sans-serif fonts depends on the specific design context and desired aesthetic.

### **3. Typography in Digital Design**

The way writing and typography are used has changed rapidly with the development of printing techniques and the introduction of digital technology into our lives in the last thirty years. Today, with the developing technology, its areas of use and possibilities have also expanded considerably. In digital environments; It is used in many areas of our lives from web page design to posters, brochures, e-books. In fact, thanks to its experimentality in all these areas, it constantly maintains its relevance and shows itself more in these areas. While the role of typography, namely the art of writing, in human life cannot be denied, the introduction of computers into our lives and the fact that our age is the computer age have increased the importance of typography. While the dynamic development of information and communication technologies has caused changes in almost every area of social and economic life, the digitalization process that emerged as a result of these developments has become the determinant of both progress and modernity. Recent developments in web-based technologies have led to the production of a large amount of online data, from social media posts to digitized libraries (Dursun, 2023). The book industry, which has developed considerably since the invention of the printing press by Johann Gutenberg in the middle of the last century in the

1950s, is in a constant state of change parallel to communication and information technologies, creating electronic books that are revolutionary in the book industry and publishing sector (Pehlivan, 2015).

Once confined to our desks, low-resolution screens now provide high-resolution images and messages in our pockets, wrists, cars, and all digital spaces. This ubiquitous screen space has changed both user expectations and interaction. Elegant, intuitive interfaces that communicate clearly and quickly have become the gold standard for capturing customer attention and building market share. At the same time, users live in a world of gaze-filled, where information displays constantly compete for momentary attention (Beckers, et al., 2017). This can be seen from the perspective of changes in the tendency of readers to engage more with materials on the Internet than with printed media. Taking these developments into account, it is important for web-based instructional designers to select appropriate fonts, especially for long blocks of text, to increase readability. The readability of text on computer screens is essential for effective interaction with media. In computer-aided instructional design, selecting appropriate fonts is effective in terms of reading. Reading rapidly and understanding this ever-growing mass of information is an integral part of social interaction and personal progress. Through the purposeful use of layout and typography, the reader can be included as an active participant in a creative reading process, which also means using a typographic system designed to help the reader navigate the resource. When designing digital resources, attention should be paid to many components of the user interface design, such as color, typography, navigation and search, input controls, and information components, considering that a digital solution is used by an individual with certain characteristics in a specific context (Dursun, 2023; McCarthy, 2020).

More time than ever is spent on screens, trying to consume a rapidly increasing amount of information through digital devices. The time spent online has steadily increased in recent years, and users have become increasingly selective about their website activities. Statistics show that users spent an average of 6 hours and 58 minutes browsing the internet in the third quarter of 2021. This means that assuming that the average person sleeps about 7 to 8 hours a day, a typical internet user spends more than 40 percent of their waking life online (Vecino, et al., 2022; URL-4).

The fonts used are at the forefront of typographic features in digital designs. Many serif and non-serif fonts that have many features such as readability, understandability, and aesthetics are used in the digital environment.

Microsoft Office has changed the default font in Word from Times New Roman (serif) to Calibri (sans serif) since 2007. This change has also led to a growing debate in the literature about the readability and understandability of serif and sans serif fonts on printed and computer-based platforms (Bigelow, 2019; Ukonu, et al., 2021). In different studies, it

has been observed that sans serif fonts are especially preferred with the increase in digital resolutions. In a large-scale study conducted by Yücel (2022) very recently, it was determined that the most preferred font among a total of 26 serif and sans serif fonts in course presentations of 143 students out of 804 students was the sans serif font Arial with a rate of 17.8%. It was observed that students preferred fonts in the sans serif group for both headings and text in course presentations. As in the titles, students' font preferences for presentation text were primarily based on being easy and clearly readable. The aesthetics, familiarity, and popularity of the font were less influential in their preferences. The attractiveness of the font in the text was not a significant reason for preference (Table 1). Verdana, Corbel, Arial, Tahoma, Candara, Calibri, Univers, Baskerville Old Face, and Bahnschrift were the fonts that students wanted to see in the presentation texts, especially because they were easy and clearly readable (Yücel, 2022).

**Table 1:** Reasons for choosing fonts for texts for all fonts, sans-serif and serif fonts (Yücel, 2022).

Reason for selection	Frequency in all fonts (%)	Frequency in sans serif fonts (%)	Frequency in serif fonts (%)
<b>Easy and clear to read</b>	592 (%73,6)*	425 (%81)	146 (%52,3)
<b>Aesthetic</b>	130 (%16,2)	79 (%15)	84 (%30,1)
<b>Familiar / Popular</b>	121 (%15)	41 (%7,8)	49 (%17,6)
<b>Seemed more professional</b>	125 (%15,5)	65 (%12,4)	72 (%25,8)
<b>Looked interesting</b>	52 (%6,5)	40 (%7,6)	50 (%17,9)
<b>Other</b>	8 (%1)	3 (%0,6)	5 (%1,8)

\*There was a significant difference between the distributions of the reasons for choosing sans serif and serif fonts  $p < 0.00001$ .

Hojjati et al. (2014); In their study, two fonts were selected for the participants: Times New Roman (serif) and Verdana (sans serif). Verdana is a font designed to be displayed only on computer screens. The computer screen readability test was conducted on 30 graduate students. Overall, the results showed that there was a significant difference between the readability of serif and sans serif font types in on-screen display. The research findings suggest that Verdana is a better choice for on-screen display of long texts. It has been reported that Verdana (sans serif) font has better readability on computer screens than Times New Roman (serif) font at 12 points. Verdana font was also in the top five in Yücel's (2022) study, as in Hojjati's study. User interface design is an important part of any software application. Accordingly, online exam is an equally important system in e-Learning. Karim et al. (2016) study, online exam design features are an important factor in exam efficiency as well as convenience for the exam takers. The most popular fonts for students in exams were Arial, which was 14 (49%) or 12 (26%) and used the normal font style, followed by Times New Roman. A survey conducted with 150 Malaysian Education Faculty



students showed that they preferred sans serif fonts in presentations in electronic media (Huang, 2008). In Mackiewicz's study, the fonts in the sans serif group were almost twice as preferred as those in the serif group for both headings and text. This showed that sans serif fonts were easier to read than serif fonts in digital media (Mackiewicz, 2006)

Ukonu et al. (2021) investigated the factors affecting the choice between Times New Roman (TNR) and Calibri fonts in reading speeds. A group of 315 students were made to read the same texts written in TNR and Calibri fonts on laptop screens and printed A4 papers. All texts in both environments were taken from the same book, written in black on a white background, 12 points, single-spaced. Reading speed was measured according to the number of words the participants could read in a minute. As a result, there was a significant difference in the preference of TNR and Calibri fonts in the screen and print areas. While TNR was preferred more in reading printed texts, there was a situation in favor of Calibri when reading on screen. Similarly, the average reading speed of TNR in printed media was higher than Calibri, and the difference in reading speed between Calibri and TNR was statistically significant in written form. As a result, reading on printed surfaces was faster for TNR than on screen, while screen reading was faster for Calibri than on print.

Today, with digitalization, typography applications appear on large and small screens, television, online, smartphones, e-books, tablets and iPads (Archer-Parré, 2019). In digital technologies, writing applications and font designs are mostly made through relevant programs developed in the digital environment instead of traditional methods (Yazar, 2020).

In choosing a font, characters that are appropriate for the subject as well as the target should be selected. Font selection is a process that should be carried out by considering many elements such as the purpose of the text, the structure of the text, the use of brackets and other alphabetic symbols, and the media in which the text will be published. While the entire body of the book is usually written in the same font, headings, subheadings, and the first letters of each section may contain one or two different fonts (Pehlivan, 2015).

Most of the fonts used on computer screens were actually designed for printed media. Serifless Arial and Serifed Times New Roman are both designed for printed materials, Microsoft technical documentation (URL-6; Garfield, 2012). When Arial and Times New Roman were compared in the digital environment, it was shown that Arial was easier to read (Hoffmeister, 2016). It has also been stated that Times New Roman's readability is lower than Arial, Georgia, and Verdana (Sheedy, et al., 2005). On web pages, Arial was preferred over Times New Roman in terms of speed reading (Kamollimsakul, 2014). It was found that Arial font was found to be more aesthetic than Times New Roman and Arial was preferred over Times New Roman, but no difference was found between the two fonts in terms of

remembering information (Ling, et al., 2006). Studies were also conducted on small-scale designs for readability on printed graphic products. In the study conducted, in line with the readability criterion, the structural features of a new design were examined by digitizing or reinterpreting fonts from the previous period while producing fonts in the 21st century. After the review, it was concluded that the anatomical structural features of screen and print fonts affected readability (Yıldız, et al., 2017).

#### **4. The Study**

Today, although it is difficult to obtain precise numerical data from studies conducted on font usage, many typography studies have qualitatively evaluated the effects of different fonts on readability. These studies have utilized methods such as eye tracking analyses, reading speed tests, and surveys.

Time New Roman serif fonts are specifically designed for printed media and not for display on a computer screen. However, some sans serif fonts, such as Verdana, are designed to fit on a computer screen. These fonts are fonts with high text readability, clearer, simpler, high x-height, and a width setting of the right dimensions to support the advancement of text readability on the screen. (Peck, 2003).

In today's world where digitality has entered our lives very quickly, effective communication in areas such as social media, company web pages, and mobile applications can only be achieved through the correct use of digital literacy. Digital literacy includes individuals' awareness, attitudes, and abilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, and to use digital tools and opportunities appropriately to create new knowledge (Whiteside, 2022). Common purposes of use are one of the most important similarities in both print and digital use. The increasingly widespread use of digital media today is an important area where printed media and digital platforms intersect for readers. The digital platform, which has entered the lives of designers interested in printing and publishing, along with readers, creates a new design medium; however, although the typographic design elements that designers can use in this new medium are based on those in traditional printing and publishing organs, their use is more restrictive. Readability in both media depends on typographic features such as font features, point values, color, and spacing.

As the research model in this article; the qualitative research method, which is a process in which techniques such as observation, interview and document analysis are used to reveal events in a realistic and holistic way (Baltacı, 2019; Karataş, 2015), was preferred. Within the scope of the research; In the process of examining typographic designs, the "document analysis" method, one of the qualitative research methods, was used. In the study; the most recognized and used printed materials and digital platforms in daily life were examined. As printed materials, twenty samples from

newspapers, sectoral magazines, brochures, books, catalogs and packaging prints were examined. As digital media, fifteen platforms, including widely used and known websites, social media, e-book platforms and mobile applications, a total of 35 samples were examined. The typographic features in these examples were compared and interpreted. In the evaluation, the use of serified and non-serified fonts, which are the most important factors in readability, especially in typographic use, were analyzed.

## 5. Findings

The text should be easily read with minimal effort. In both printed and digital environments, 83% of the information learned is realized through the sense of sight. Therefore, in order to convey the content to the target audience in a healthy and effective way, visual usage and appropriate typographic elements should be preferred (Dursun, 2023).

For this purpose, in this article; the most well-known printed materials and digital platforms were examined and information was given about the most preferred fonts. In the study; the fonts of the printed samples in twenty different fields and designs in fifteen different digital platforms were examined and evaluated. The focus was on the "understanding" step of printed and digital resources and information was shared about the use of typographic elements that will support this concept.

When printed materials, especially daily newspapers, were examined, it was seen that serif and sans serif fonts were used together in logos, headlines and subheadlines at a rate of nearly 50%. It was determined that serif fonts were preferred in newspaper internal texts and explanations and long texts (Figure 3). This finding is consistent with and supports the findings of Rajapakse et al. (2014) and Gasser et al. (2005) that the use of serif fonts, especially in long texts, facilitates reading and understanding by making serif fonts in close proximity easier to read.



# Cumhuriyet Hürriyet Milliyet HABER T U R K

Figure 3: Newspaper Examples Using Serif and Sans Serif Fonts

In the magazines from different sectors that were examined, it was seen that more elegant serif fonts (Didot, etc.) were preferred especially in cover names and magazine name logos. It was seen that serif and sans serif fonts were preferred in the main and subheadings on the cover in similar proportions (Figure 4). It was also seen that in the inner pages of the magazines, serif and sans serif fonts were mostly used in the headings, and serif fonts were used in the long explanatory texts. In brochure designs; it was seen that sans serif fonts, where emphasis was perceived more, were used in the main headings, but serif fonts were used in the explanations and details throughout the brochure.



Figure 4: Magazine Cover Examples Using Serif Fonts

When both novels and scientific printed books are examined, it is seen that different fonts are used on the cover according to the subject of the book or novel and the audience it addresses (mostly serified, a few sans serified), but serified fonts are definitely used in long texts on the inner pages (Figure 5). In catalogs, sans serif fonts are generally used in titles, and sans serif fonts are used in short and long text descriptions. In packaging samples, it has been determined that serified and sans serif font groups are used in logos and descriptions according to the packaging type.



**Figure 5:** Book Cover and Packaging Examples Using Serif Fonts (URL-3)

When we examine the sample printed materials discussed in this study, it is seen that in general, serif and sans serif fonts are preferred both in cover design typography and in the inner page descriptions, but when compared, serif fonts are used more. It was determined that serif fonts are used in long texts on inner pages. These findings are also consistent with the findings of the literature reviews explained and provided under the title “Typography in Printed Materials” above.

When we look at television news programs from digital examples, it is seen that sans serif fonts are used in almost all of them (Figure 6-a). It was seen that only in a few news programs, serif fonts with emphasis were preferred to provide more emphasis and attention and to ensure that they are remembered (Figure 6-b).



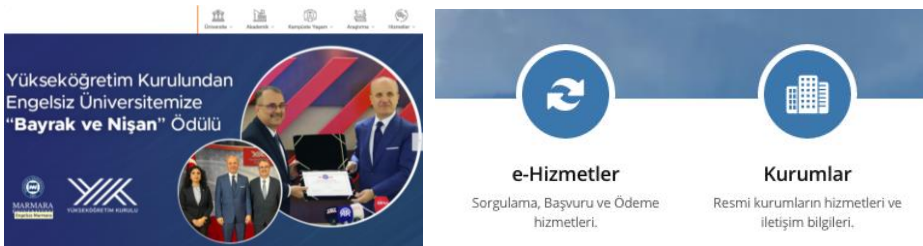
a)



b)

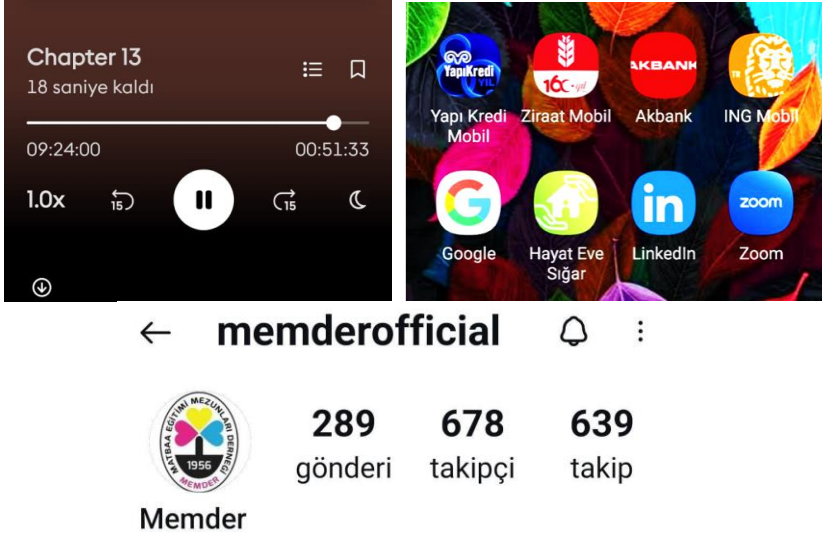
**Figure 6:** Typographic Use in Television News Headlines (Non-Serif-a and San Serif Examples-b)

When websites, social media and e-books, e-commerce platforms and mobile applications in digital environments are examined; it is seen that serif-free fonts are used very predominantly on the homepage and interfaces of all examples (Figure 7-8-9). Bernard et al. (2003), who compared serif and sans serif fonts regarding the use of serif fonts in digital environments, found that there was no objective difference between Times New Roman and Arial, but in user perception, Times New Roman, a serif font, was perceived as more difficult to read by the participants. They concluded that the participants read the sans serif font faster and more accurately (Bernard, et al., 2003). In a separate study, it was determined that the readability of the font they preferred in three mobile newspaper applications was found to be high by the participants (Dursun, 2018).

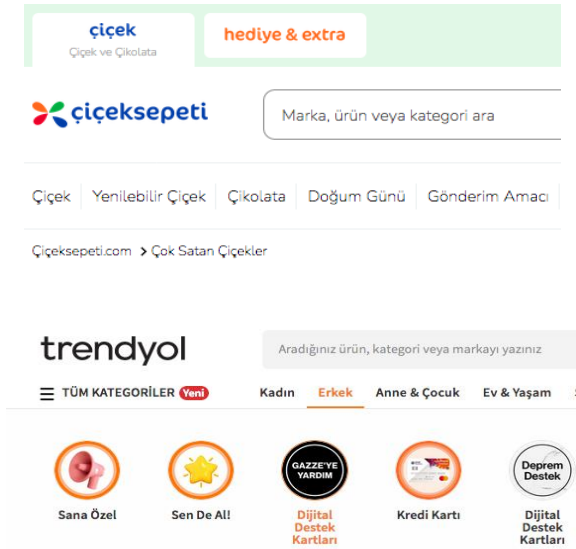


**Figure 7:** Sans Serif Typographic Examples Used in Web Pages





**Figure 8:** Sans Serif Typographic Examples Used in, e-book Platforms and Mobile Applications



**Figure 8:** Sans Serif Typographic Examples Used in E-commerce Sites

There have been studies conducted on font use in digital environments that support our findings. Peck, in his 2003 study, states that sans serif fonts such as Arial or Verdana have better screen readability than other serif fonts, especially in small sizes. Peck, (2003) and Josephson, (2008) stated that sans serif should be used when reading long texts on a computer screen in terms of readability. Zamzuri et al. (2013) similarly suggested in an experimental study that TNR has lower readability compared to other serif and sans serif fonts, and that TNR is more suitable

for printed media. Arditi et al. (2005) found that there was no major difference in readability and comprehensibility between serif or sans serif fonts in font sizes above 12 points, but serifs made reading difficult in font sizes below 12 points. For values of 12 points and below, the reading speed is slightly increased in sans serif characters, providing faster reading.

Serif fonts are said to be suitable for print media and sans serif fonts are suitable for computer screens because they are much easier and faster to read (Amdur, 2006). In the past, fine details such as serifs could be lost or appear too large on low-resolution digital screens. Today, sans serif fonts have become the most widely used fonts for displaying text on computer screens (URL-4).

In conclusion, although it is quite difficult to give a definitive comparison rate of fonts used in printed and digital media, knowing the general trends and important factors will help you make a more conscious font selection. Choosing the right font in these media is of great importance for the effectiveness of communication, making the text more readable, understandable and impressive.

### **Conclusion**

With digitalization, traditional material designs have also undergone a transformation and attempts have been made to reach an optimal result on designs with different experiments in order to reach information consumers via electronic devices. For six centuries, typographers have tried to protect the beautiful appearance and readability of books against all kinds of technological and industrial threats.

Typographic message is visual. Typographic elements are viewed, perceived visually, heard and interpreted auditorily while they are read and interpreted verbally. In typography, which is a dynamic communication tool with a multi-faceted structure, readability and perceptibility are very important in terms of providing correct communication.

In the study; the most preferred printed and digital platforms were examined and information was provided about the most preferred fonts. In the sample printed material designs examined; it was seen that serif (serrated) fonts such as Times Times New Roman, Garamond, Cambria, Georgia, which do not tire the eye and provide faster perception and understandability, were preferred. The reason for this is; This can be explained by the findings that these forms with serif structures provide ease of reading and do not tire the eyes when moving from one letter to another. This finding is also consistent with the studies of Rello and Baeza-Yates (2016) and Doğusoy (2016).

It has been observed that in all the largest and most used digital platform sites such as university web pages, government agency web pages (e-government, etc.), e-book platforms (Storytel, etc.), e-commerce sites (Amazon, Çiçek Sepeti, Trendyol, Ebay, etc.), sans serif fonts such as Arial, Helvetica, Open Sans, Lato, Roboto, Montserrat are preferred over serif



fonts. The reason for this is that in digital environments where readability is the most important priority, Sans-serif fonts appear clearer and more readable on screens. This finding is also supported by other academic studies. In the study conducted by Josephson (2008), it was determined that the sans-serif font Verdana performed better in digital page reading than Times New Romana with serif. It was stated that participants strongly preferred this font on computer screens because they could read faster and had fewer pauses while reading with fonts designed for digital platforms such as Verdana.

Contrary to the findings in our study, some studies have also found that serif and sans serif features do not have any effect on reading speed and user preference, and do not affect usability on the website. It has been stated that it is not clear whether serif or sans serif is more preferred, and that both types can vary depending on user preference, age range, etc., considering the characteristics of the font personality (Sasidharan and Dhanesh, 2008; Poulton, 1965; Vecino, et. al., 2022; Bernard et al., 2003; Vecino, et al., 2022).

All these developments show us that typography will be in a constant state of change and development today and tomorrow, just as it was yesterday. With the introduction of computer and digital technology into our lives, developments in the field of typography will continue. In support of this study, whether different font styles affect usability and readability, and the effects of other variables such as font size, line length, and screen resolution should also be examined.

While typography in printed areas emphasizes the readability and aesthetics of the text, in digital areas, a balance is tried to be established between the readability of the text and the aesthetics of the user interface. While there is more use in printed areas in terms of elements such as font and point size, in digital uses, fonts and point sizes are limited by screen resolution and other technological restrictions. Typography in printed areas is generally aimed at a specific target audience. In digital areas, it appeals to a wide audience using different devices and different screen sizes. Choosing a font that is suitable for the purpose of use of the text and the target audience also positively affects the user experience (Chatrangsan, et, al., 2019). When you are going for a cutting-edge, modern and contemporary design, choose a sans serif font. Sans serif fonts are simpler, cleaner and more accessible than serifs. Each has its own characteristics and purposes, so it is important to know when to use them. Serif fonts are more traditional and often used for print projects, while sans serif fonts are more contemporary and commonly used for digital projects.

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