The Power of Images in Mass Communication: Visual Analysis of "Wear Mask, Social Distance and Cleaning" Announcements during the Covid-19 Pandemic

Kitle İletişiminde İmgelerin Gücü: Covid-19 Pandemisi Döneminde "Maske Tak, Sosyal Mesafe ve Temizlik" Duyurularının Görsel Analizi

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Abstract: During social crises like the COVID-19 pandemic, the impact of messages aimed at protecting public health on society is shaped not only by the textual content but also by the images that accompany these messages. Design elements such as color, typography, shape, and cohesion are key factors determining the level of perception and attention-grabbing of a message. Studies examining the impact of visuals used in mass communication during the pandemic on socio-demographic variables are limited in the literature. This research aims to address this gap and reveal the unique role of visual communication design in mass communication during crisis periods by analyzing the visual impact of the images in the "Wear a Mask, Social Distancing, and Cleaning" announcements widely used in public spaces in Turkey during the COVID-19 period. In this study, conducted using a case study method, the images in these announcements were identified and a survey was prepared. A survey, approved by the Istanbul Gedik University Ethics Committee (09.11.2022, E-56365223-050.01.04-2022.137548.13-387), examined the visual impact of images on individuals in terms of design elements based on socio-demographic variables. The 627 participants, selected through a convenience sampling method, consisted of students and staff at universities on the Anatolian side of Istanbul. Universities were chosen because they bring together individuals from different segments of society and are easy for researchers to access. Data were analyzed using Mann-Whitney U and Kruskal-Wallis tests in SPSS. The findings showed a significant difference ($p<0.05$) between the visual impact and attention-grabbing images in the announcements and the gender of the participants. In conclusion, the obtained data revealed that effective visual communication design is a distinguishing factor in mass communication during times of crisis.

Structured Abstract: The mass media used to direct viewers to an action regarding the changes and transformations in the world broadcast thousands of images every day in a way that the masses cannot resist. A large portion of these images consist of images that carry cognitive, attitudinal and behavioral effects. The

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message aspect of these images, which accompany protection and precautions in situations that deeply affect society such as education, health, economy and law, plays a major role in mass communication. Therefore, while taking responsibility for the effects that the images used or shared may create, it is necessary to read, interpret and decode them as well as to create and use them consciously. Therefore, the effectiveness of images in mass communication should be revealed by associating them with design elements such as color, typography, shape and integrity in the right context. In the study aiming to determine the importance of images in mass communication, the COVID-19 pandemic in Türkiye was selected using the case study method. In the study, the most commonly used "Wear a Mask, Social Distancing and Cleaning" announcements in public spaces have become the most frequently repeated announcements in the world and in Türkiye, and physical distance, wearing a mask and washing hands frequently have gained more critical importance than ever. Since images used in mass interaction announcements during the COVID-19 pandemic are the most important visual tools that provide qualified feedback, the importance of investigating the factors underlying the effectiveness of images and the correct selection of design elements such as color, typography, shape and integrity surrounding them has emerged. For this reason, a survey was prepared in order to determine the level of effectiveness of design elements such as color, typography, shape and integrity of images used in "Wear a Mask, Social Distancing and Cleaning" announcements during the COVID-19 pandemic on the masses depending on socio-demographic variables. The sample of the study, in which convenience sampling was used, consisted of 627 individuals working and studying at universities on the Anatolian side of Istanbul. The reason for choosing university employees and students as a sample is that universities are institutions that bring together individuals with different levels of consciousness and different socio-demographic characteristics from various segments of society and are easy to reach for researchers.

In this study, the question of whether the effects of the images in the "Wear a Mask, Social Distance and Cleaning" announcements in mass communication differ in terms of warning messages and awareness-raising in terms of socio-demographic variables was investigated and hypotheses were proposed.

The analyses of the study, in which descriptive and relational screening methods were used, were conducted using the Mann-Whitney U test and Kruskal-Wallis tests in SPSS software. According to the analysis results, it was determined that the visual impact of the images in the "Wear Masks, Social Distancing and Cleaning" announcements in terms of color, typography, form and integrity principle differed from each other according to the gender (male and female participants) variable ($p<0.05$). Therefore, H1, which was stated according to the findings obtained from the research, was accepted. Based on the accepted Hypothesis 1, it was observed that women and men tend to perceive color tones and variations in images differently, they see the font, size and legibility in typography as functionally different, their aesthetic preferences differ in formal situations and they attach different importance to visual hierarchy in terms of integrity. Therefore, choosing the color, typography, form and integrity principle of the images on the announcements by considering the gender of the audiences they address will both create a strong impact on the audiences and be a correct decision in terms of design. It is known that women prefer more pastel tones in terms of color, and men prefer more saturated and distinct colors, especially in announcements and in the designs of many mass media (brochures, posters, billboards, etc.), and that women pay attention to more elegant and aesthetically harmonious fonts in terms of typography, while men find angular and rigid typography more functional. In addition, women generally find detailed and regular compositions impressive in terms of form and integrity, while men find visuals with simpler and more direct messages impressive. Considering Hypothesis 1, images should be selected more carefully in all visuals prepared for mass communication, since women's reactions will be different than men's. According to the findings, it was determined that the visual effect of the images in the "Wear a Mask, Social Distancing and Cleaning" announcements in terms of color, typography, form and integrity principle did not have a significant effect according to the participants' age, education level, type of education and occupation variables, and therefore hypotheses H2, H3, H4 and H5 were rejected. As a result, it can be said that visual communication design elements such as color, typography, shape and integrity in the images in the "Wear a Mask, Social Distancing and Cleaning" announcements have the same importance for individuals of all ages, education levels, types of education and professions.

The findings obtained from the use of quantitative research method and its analysis in the study provided information about how visual communication design elements such as color, typography, shape and integrity on images greatly affect mass communication.

Keywords: Mass Communication, Imagery, Announcement Signs, Pandemic, Visual Communication Design.

Öz: COVID-19 pandemisi gibi toplumsal krizlerde, kamu sağlığını korumaya yönelik iletilerin topluma etkisi yalnızca metinsel içerikle değil, bu mesajlara eşlik eden imgelerle de şekillenmektedir. Renk, tipografi, şekil ve bütünlük gibi tasarım unsurları, iletinin algılanma düzeyini ve dikkat çekiciliğini belirleyen temel faktörlerdir. Literatürde, pandemi sürecinde kitle iletişiminde kullanılan görsellerin sosyo-demografik değişkenler bağlamındaki etkilerini inceleyen çalışmalar sınırlıdır. Bu araştırma, söz konusu boşluğu gidermeyi ve Türkiye'de COVID-19 döneminde kamusal alanlarda yaygın olarak kullanılan "Maske Tak, Sosyal Mesafe ve Temizlik" duyurularındaki imgelerin görsel etkisini analiz ederek, kriz dönemlerinde görsel iletişim tasarımının kitle iletişimindeki özgün rolünü ortaya koymayı amaçlamaktadır. Örnek olay yöntemiyle yürütülen çalışmada, söz konusu duyurularda yer alan imgeler belirlenmiş ve bunlara ilişkin bir anket hazırlanmıştır. İstanbul Gedik Üniversitesi Etik Kurulundan (09.11.2022, E-56365223-050.01.04-2022.137548.13-387) onay alınarak uygulanan ankette, imgelerin sosyo-demografik değişkenlere bağlı olarak tasarım unsurları açısından bireyler üzerindeki görsel etkisi incelenmiştir. Kolayda örnekleme yöntemiyle seçilen 627 katılımcı, İstanbul Anadolu yakasındaki üniversitelerde okuyan öğrenciler ve çalışanlardan oluşmaktadır. Üniversiteler, toplumun farklı kesimlerinden bireyleri bir araya getiren ve araştırmacılar için erişimi kolay kurumlar olmaları nedeniyle tercih edilmiştir. Veriler, SPSS yazılımında Mann-Whitney U ve Kruskal-Wallis testleriyle analiz edilmiştir. Bulgular, duyurulardaki imgelerin görsel etkisi ve dikkat çekiciliği ile katılımcıların cinsiyeti arasında anlamlı bir farklılık (p<0,05) olduğunu göstermiştir. Sonuç olarak, elde edilen veriler, kriz dönemlerinde etkili görsel iletişim tasarımının kitle iletişiminde fark yaratan bir unsur olduğunu ortaya koymuştur.

Anahtar Kelimeler: Kitle iletişimi, İmge, Duyuru işaretleri, Pandemi, Görsel İletişim Tasarımı.

Introduction

Image, derived from the Latin word imagos, is defined in Turkish as something conceived in the mind and longed to be realised, dream, imagination, general appearance, impression, image (www.tdk.gov.tr, 2023). The journey of images, which started by being fixed on cave walls, continued on different surfaces in the Middle Ages (Freedberg, 1991, p. 12). In the eighteenth century, with the transformation of society by the age of enlightenment following the Renaissance, the chains of the visual image were broken (Barthes, 2012, p. 30). In this age where visuals are on a rapid rise, understanding visual messages is a necessity. As well as consciously creating and using a visual image, it is necessary to take responsibility for the effects that may be caused by the image used or shared, to read, interpret, and decode an image faced.

Images have a transdisciplinary function. For this reason, they are handled in different ways in different disciplines. Phenomena are visualised in many fields of science such as mathematics, medicine, psychology, meteorology, etc. (Onursoy, 2019, p. 12). Therefore, the flexibility of the image is provided by its quality. Images have more approaches and dimensions than words (Navazo et al., 2023, p. 43).

Visual images have important roles in message transmission (Tarlakazan & Tarlakazan, 2023, p. 1687). One of the most important ones is that it gives concrete meanings to messages and ideas. Visual messages are constructed with images. It is important to reduce complexity in message formation and this is the key to a strong message. Images convey informative, explanatory, stimulating and directive messages. Visual imagery mediates information, meaning, beliefs, behaviour and ideas in mass media (televisions, printed newspapers/magazines, posters, billboards, infographics, brochures, booklets, websites, social media, etc.) (Söğüt & Öngel, 2022, p. 214). For this reason, mass media in the field of visual communication are highly adaptable in turning the phenomenon of communication into a conceptual phenomenon.

The mass media, which are used to direct the audience to an action regarding the changes and transformations in the world, broadcast thousands of images every day in a way that the masses cannot resist. A large part of these images are composed of images that carry cognitive, attitudinal and behavioural effects. The role of mass media in the use of images in communication with

commercial, political, economic, health and spiritual concerns, and in conveying the power of images to the masses, is very important and influential. There are many striking examples in the world of the role played by mass media in social change, development and crisis processes (Ornell et al., 2020, p. 233). One of these examples is undoubtedly the COVID-19 pandemic, which has deeply affected all sectors such as economy, politics, education and health in the world (Lai et al.,2020, p. 2).

With the COVID-19 pandemic that emerged in Wuhan, China at the end of 2019, the world has once again questioned its readiness against deadly viruses (Atasoy, 2021, p. 54). In this context, mass media have been the most effective tools to act together as the world against the threat of COVID-19 pandemic and to meet the need for a healthy and understandable communication at the international level on how to deal with all problems. The issue of creating awareness in people about public health for this fatal global health problem that has dragged the world into a new order has brought different responsibilities for many professional groups (Alıcılar, 2020, p. 4). In particular, visual communication specialists have prepared announcements to announce the precautions to be taken and at the same time to prevent information confusion that may occur in the society about how to protect against the virüs. Among these announcements, "Wear a Mask, Social Distancing and Cleanliness" announcements have become the most frequently repeated announcements in the world and in Turkey, as physical distancing, wearing a mask and washing hands frequently have become more critical than ever. It is a fact that the images in the announcements stand out as meaning carriers in the rapid transmission of the message to the society (Cordis EU, 2021). Because, as Weill (2004) said, images have the ability to convey topics that may take a very long time to be explained in a very short, concise but deep meaning dimension (Weill, 2004, p.12). Therefore, during the COVID-19 pandemic process, they have become the most important visual tools that provide qualified feedback in mass interaction. The underlying reason why images are so effective on the masses is that the design elements surrounding them such as color, typography, shape and completeness are chosen correctly when creating images (Ambrose & Haris, 2003, p. 36).

The aim of the study is to consider the "Wear Mask, Social Distance and Cleaning" announcement images in the COVID-19 pandemic process, selected as a case study, in terms of design elements such as color, typography, shape and completeness, and to determine the level of effectiveness on the masses depending on socio-demographic variables. A "questionnaire" was used in the study within the scope of descriptive and correlational screening method. The study will reveal that influencing the masses in many problems that concern society, such as the COVID 19 pandemic process, is possible thanks to images presented with visually correct color, typography, shape and completeness. Therefore, since visual elements affect correct use, memorability, persuasiveness mass communication, it is aimed to contribute to those who will do research on this subject in the future.

Conceptual Background

Imagery is the most important universal element of visual communication language that facilitates communication, life and information exchange, is easily understood and memorable. The type, style, quality and presentation of images can add new layers to the design and give new meanings to the context in which it is located (Birol, 2022, p. 228). Images show a feature that points to different reflections gained by cultural and personal experiences and allows interpretation in thinking (Akil, 2022, p. 42). Freedberg (2000), in his book "The Power of Images", states that images detected on various surfaces are feared because they are treated as if they were real, and explains how the image establishes its sovereignty with its resemblance to the original (Parsa, 2004, s. 63). Lester (2000), in the preface of his book "Visual Communication: Images With Messages", states that reading has lost power to "listening and watching" (Lester, 2022, p. 54). Leppert, (2002), in his book "The Image of Meaning in Art - The Social Function of Images" says that images do not show people the real world; He states that it shows a world of worlds and that images are not the things shown but their representation, that is, their "re-presentation" (Leppert, 1996, s. 124). Mitchell

(1986), in his book "Iconology: Image, Text, Ideology", seeks answers to two questions: "What is an image and what is the difference between images and words?" When asked what an image is, Mitchell said; It answers "being similar, imitating, resembling" and deals with and classifies images comprehensively with the "image family tree" it determines (Mitchell, 1986, p. 211). Melot (2007), in his book "Une Breve histore de I'image", argues that the image has the feature of self-production, that is, the image is a correlation, not a copy of the entity (Valderrama, 2011, p. 254). Burnett (2007), in his book "How Images Think", argues that images are at the center of many enigmas encountered in understanding the mind and body. Burnett also argues that images play a fundamental role in the formation of human consciousness and that it would be fruitful to take into account the role of images in a discussion about human culture and nature (Burnett, 2023, p. 29). Berger (2016), in his book "Ways of Seeing", says that there is a way of seeing in every image and that people's perception or evaluation of the image affects their own way of seeing (Berger, 2016, p.8). Rose (2001), in his book "On the relationship between visual research methods and contemporary visual culture", states that visual images should be evaluated in three positions in order to be interpreted critically within a methodological framework and to analyze their meaning (Rose, 2001, 6. 10). These; The production process of the image is the image itself and the process of perception of the image by different readers. Rose argued that an image should be arranged in the light of this information during the production process.

The compositionality of an image has certain components. These components are visual elements such as color, typography, shape and completeness that reveal the first stage of understanding the image and a way to define the visual impact of the image (Donia & Abeer, 2022, p. 115). All elements that make up the design have a two-way structure that is communicative and presented together with the sign (Kum, 2022, p. 615). In the design process of images; Color features, content, typography are determined in connection with the message intended to be given to the target audience (Bedir Erişti, 2019, p. 21). The strength of the messages that designers give with these components determines the power of images in persuading the masses (Tepecik, 2015, p. 80). With the method he uses and the visual language he chooses, the designer plays an important role in mass communication (Karaahmet Balcı, 2017, s. 154).

In mass communication, both traditional media and digital media tools play an important role in visual communication while providing individuals with access to the information they need (Tanhann et al., 2023, p. 44). Today, the images published by mass media in terms of speed, sharing and interaction both attract people and provide eye witnessing by visualizing the news or event under all circumstances. The absolute dominance of the image has never been seen to surround our environment so intensely in any period of history (Sütcü, et al, 2014, p. 890). Especially countries have used the power of images to inform the public about problems that concern society and in times of serious crisis, to raise their awareness about precautions and to fulfill their responsibilities. Because images are elements that have a great visual impact in terms of stimulating messages and raising awareness. We can give the COVID-19 pandemic as an example of this situation. During the COVID-19 pandemic, which has recently become a major global crisis, the health ministries and centers of the countries have published presentations about the coronavirus through mass media and announcements about the measures to be followed, such as "Wear a Mask, Social Distance and Cleaning" (Baygül ve Aydın, 2020, p. 244).

In times like the COVID-19 pandemic, the most effective method that authorities can use to guide the public in the right direction or to ensure that they avoid wrong action is an open and empathetic communication style that ensures people's trust. Empathy, honesty, openness, trust demonstrated through dedication and commitment are essential elements of persuasive communication (Longstaff & Sung-un, 2008, p. 3). For this reason, in serious global crises such as the COVID-19 pandemic, the importance of mass communication tools is understood better every day. In addition, visual announcements made with images presented through mass media for

informative and warning purposes have a great impact on the target audience. Creating these images in the right color, typography, shape and completeness adds an emotional-activating functionality to the images, making it easier to access the existence of the reality they represent.

COVID-19 is known as a dangerous and deadly virus that infects many people in the world. The main precautions taken for this virus are wearing a mask, social distance and cleaning (Boran, 2021, p.35). In order to reduce the current danger of the COVID-19 pandemic even to a minimum level, every individual, society and professional must know and fulfill their responsibilities. Giving thoughts, experiences and the importance of acting together through common messages through the "Wear Mask, Social Distance and Cleaning" announcements published in this process is possible by presenting images in terms of mass communication. For this reason, it is important to produce images with elements that are both educational, awareness-raising and stimulating.

Methodology

Mann-Whitney U test and Kruskal-Wallis test were used in SPSS software to analyze the data of the study. For the study, the necessary permission was obtained from the Istanbul Gedik University Ethics Committee dated 09.11.2022 and numbered E-56365223-050.01.04-2022.137548.13-387, and research and publication ethics were complied with.

"Descriptive" and "relational" scanning methods were used in the study. Descriptive screening is a research method that enables valid and reliable predictions about the demographic characteristics, attitudes and behaviors of the people participating in the research (Yaşin, 2014, p. 51). Relational scanning is the method used to examine whether there is a relationship between two or more variables (Hinkle & Wiersma, 2013, p. 161).

Research Questions and Hypotheses

The COVID-19 pandemic was chosen as a case study in order to determine the power of images in mass communication and in this process, "Wear a Mask, Social Distance and Cleaning" announcements were discussed to determine the visual impact and attention-grabbing of the images published in terms of design elements such as color, typography, shape and completeness. In order to determine the significance of the images used in the announcements in terms of socio-demographic variables, the research questions and hypotheses of the study were determined as follows.

Research Question 1: According to the demographic characteristics of the research participants, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; Does the level of effectiveness differ in terms of color, typography, shape and completeness principle?

H1: According to the gender of the research participants, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The effectiveness level varies significantly in terms of color, typography, shape and completeness principle.

H2: According to the ages of the research participants, the images in the "Wear a Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The effectiveness level varies significantly in terms of color, typography, shape and completeness principle.

H3: According to the education levels of the research participants, the images in the "Wear a Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The effectiveness level varies significantly in terms of color, typography, shape and completeness principle.

H4: According to the education type of the research participants, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The effectiveness level varies significantly in terms of color, typography, shape and completeness principle.

H5: According to the professions of the research participants, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The effectiveness level varies significantly in terms of color, typography, shape and completeness principle.

Research Sample and Model

The main population of the study consists of administrative and academic staff working at universities in Istanbul and students studying at universities in Istanbul. However, since it would be difficult to reach all universities in Istanbul in terms of time and cost, the "Convenience Sampling" model, one of the "non-random sampling" models, was preferred in determining the sample of the study. Convenience sampling; It is a non-random sampling method in which the sample to be selected from the population is determined according to the researcher's ideas. In convenience sampling, data is collected from the population in the fastest, most economical and easy way (Haşıloğlu et al., 2015, p. 20). The researcher includes units that are close to him and that he can easily reach, in the sample. Units do not know their probability of being selected when sampling (Baltacı, 2018, p. 235). In this context, the sample of the study consists of administrative and academic staff and students working at universities on the Anatolian side of Istanbul. The fact that the study was conducted in Istanbul and only represents the sample constitutes the limitations of the study.

Glass and Hopkins' (1996), survey confidence interval test was used to calculate the sample of the study. The term "r" in the test is the reliability value of the questionnaire and this value is desired to be 0.90 and above (Glass & Hopkins, 1996, p. 357). The way Test is expressed "in four steps" is as follows.

1. Convert "r" to "Zr

2. Calculate "σz": $\sigma z = 1 / \sqrt{n-3}$ (n: subject)

3. Obtain "CI" for "$Z\rho$": $Zr \pm 1.96\ \sigma z$ (CI for 95%)

4. Convert the lower and upper bounds back to "r" (Popham & Sirotnik, 1992).

Cronbache's alpha value was calculated in SPSS for the "r" value of the survey to be used in the study and was determined as ".769".

Table1: Survey Reliability Analysis

Cronbach's Alpha	N of Items
,769	20

Since the questionnaire was conducted online, the population was expanded. Since the exact number of the population could not be determined, according to the sample calculation test by Bademci (2005) with the 95% reliability level and the heterogeneous assumption of the population, the sample size of the test with a "confidence interval width" of 0.0374 was accepted as 400 (Bademci, 2005, p. 38). It was aimed to increase the validity of the sample by trying to reach and exceed this number with the questionnaire. In order for the results to be more stable, the sample size was 627 people.

Within the scope of the study, the demographic characteristics of the participants were determined as a result of the online questionnaire applied to students studying at 6 universities on the Anatolian side of Istanbul, academic staff and administrative staff.

Collection Tool and Features

In order to achieve the aim of the study, a questionnaire was used as a data collection tool. Question form; It was designed in an original way based on the information obtained through literature review. Validity of the questionnaire; While its face validity was ensured, its reliability was also proven through the calculation of Cronbach Alpha (Alpha = .769). In order to ensure the face validity of the questionnaire, opinions and approval were received from academicians who are experts in the field of Visual Communication Design at Istanbul Gedik University and Marmara University. In line with the opinions of experts, necessary corrections were made to the questionnaire in accordance with the purpose of the study. The original questionnaire was developed in three parts. In the questionnaire, images from the "Wear Mask, Social Distance and Cleaning" announcements, which the masses in Turkey encounter most in public areas, were used. During the preparation phase of the questions, in order to eliminate problems in perception of the questions, each question was tested face to face, first on different individuals, and then on different groups of 10 people; Questions and options that could cause a shift in meaning were eliminated. In order for the questions to be understandable, the questionnaire was tested with 30 people and was finalized. The 30 participants in the pilot study were not included in the data obtained from the questionnaire.

In the first part of the two-part questionnaire; There were questions (5 questions) aimed at determining the socio-demographic characteristics of the participants. In the second part, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; There were questions (30 questions) to determine the level of effectiveness in terms of color, typography, shape and completeness principle. The questions in this section were created using the 5-point Likert technique ((1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, (5) strongly agree). In the second part of the survey, participants were shown 5 different "Wear a Mask" announcement visuals, 5 different "Social Distancing" announcement visuals, and 5 different "Cleaning" announcement visuals and were asked to answer the questions.

The images used in the "Wear Mask, Social Distance and Cleaning" announcements in the second sections of the questionnaire are shown in Figure 1.

(a) "Wear Mask" Images

(b) "Social Distance" Images

(c) "Cleaning" Images

Figure 1: (a) "Wear Mask" Images (www. shutterstock.com.tr, 2020). (b) "Social Distance" Images (www.istockphoto.com.tr, 2020). (c) "Cleaning" Images (www.freepik.com, 2020).

Data Analysis

The data obtained from the questionnaire was entered with the IBM SPSS 20 statistical program, where statistical analysis was performed. Mann-Whitney U test was used to determine the relationship between the gender of the participants and the color, typography, shape and completeness principle of the images in the "Wear a Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic. Mann-Whitney U is a powerful tool to assess whether the difference between two independent groups is statistically significant (Gibbons & Chakraborti, 2003). The Kruskal-Wallis test, a non-parametric test, was used to determine the relationship between the participants' age, education level, type of education, profession and the color, typography, shape, completeness of the images in the "Wear a Mask, Social Distance and Cleaning" announcements. The Kruskal-Wallis test is a statistical test similar to single-factor analysis of variance (ANOVA), but used in the analysis of a dependent variable that is not equivalent (ordinal or continuous) between independent groups (Gibbons & Chakraborti, 2003).

0.05 was used as the significance level in statistical analyses, and it was stated that if $p<0.05$ there was a significant difference between the groups, and if $p>0.05$ there was no significant difference between the groups.
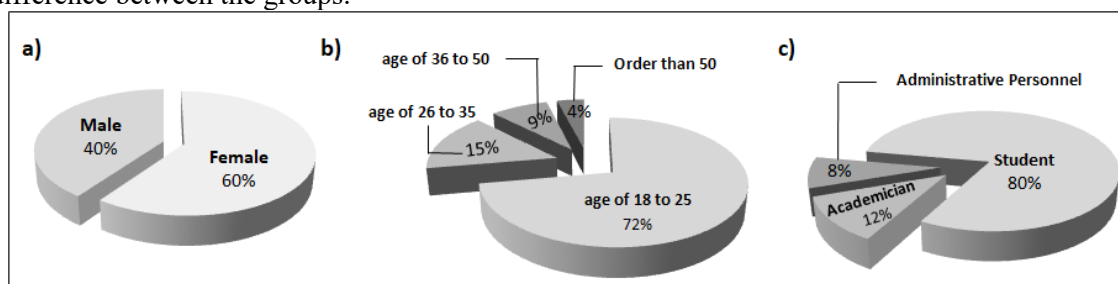
Figure 2: Demographic Profile of The Participants considering a) Gender b) Age c) Profession

According to the distribution in Figure 2a, 60% of the research participants who answered the gender question were women and 40% were men. According to the analysis in Figure 2b, 15% of the participants are between the ages of 26-35; 9% are between the ages of 36-50; While 4% of them were found to be 50 years or older, it was concluded that 72% were between the ages of 18-25. In Figure 2c, it was determined that 80% of the participants who answered the question about their profession were students.
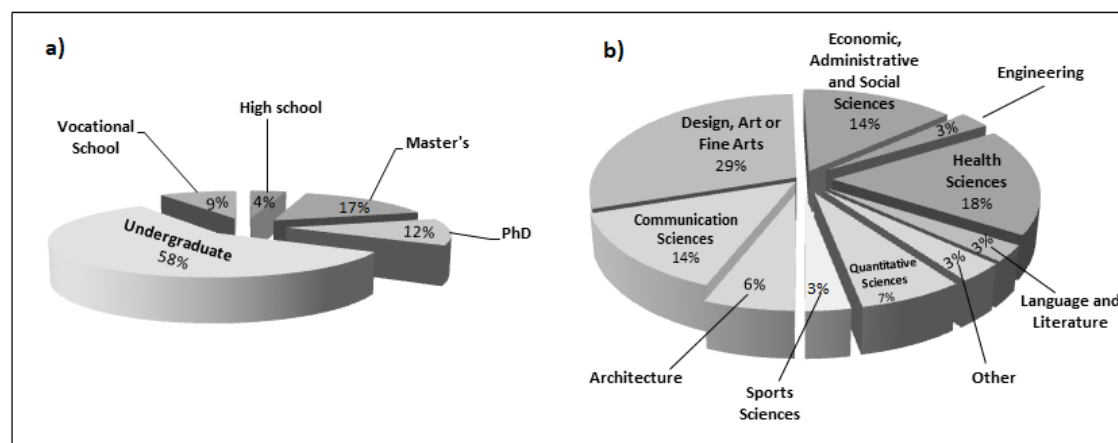
Figure 3: Demographic Profile of The Participants, Considering a) Education Level b) Department in which They Studied

Figure 3a shows that the highest education level of the participants is bachelor's degree (58%); In Figure 2b, 29% of the departments in which they studied were "design, art or fine arts", respectively; "health sciences" 18%; "communication sciences" 14%; "economic, administrative and social sciences" 14%; "quantitative sciences" 7%; "architecture" 6%; It has been determined that . According to the distribution, it was found that 3% of the other participants were educated in departments such as "engineering, sports sciences, language-literature and other".

Difference Analysis of Research Question 1 According to Demographic Variables

Under this heading, the images in the "Wear Mask, Social Distance and Cleaning" announcements published through mass media during the COVID-19 pandemic; The difference in the visual effect in terms of color, typography, shape and completeness principle according to the gender variable of the participants was tested with hypothesis 1. In addition, the images in the "Wear Mask, Social Distance and Cleaning" announcements; The differences in the visual effect in terms of color, typography, shape and completeness principle according to the participants' age, education level, education type and profession variables were tested with hypothesis 2, hypothesis 3, hypothesis 4 and hypothesis 5, respectively.

Images in "Wear Mask, Social Distance and Cleaning" Announcements; The Relationship between the Visual Effect of Colour, Typography, Shape and Completeness Principles and the Gender Variable of the Participants

Based on the research question of the study, to test hypothesis number 1, the images in the "Wear Mask, Social Distance and Cleaning" announcements; Mann-Whitney U test was applied to test whether the visual effect in terms of color, typography, shape and completeness principle differs significantly according to gender.

Table 2: Mann-Whitney U Test Results on The Visual Expressiveness of Color, Typography, Shape and Completeness Principles of Images in "Wear Mask, Social Distancing and Cleaning" Announcements by Gender

Gender	In the "Wear a Mask" Images of announcements							
	Color effect		Typography effect		Shape effect		Completeness effect	
Mann-Whitney U test	4016,000		4355,500		4017,000		4958,000	
Wilcoxon W test	7757,000		8096,500		7758,000		8699,000	
Z test	-3,131		-2,173		-3,154		-,648	
Asymp. Sig. (2-tailed)	**,002**		**,030**		**,002**		**,017**	
Mean Rank	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**
	113,8	90,2	111,2	94,1	113,8	90,2	106,2	101,1
	Female N=376		*Male N=251*					

Gender	Images in "Social Distance" Images of announcements							
	Color effect		Typography effect		Shape effect		Completeness effect	
Mann-Whitney U test	4298,000		4597,000		4453,000		4837,000	
Wilcoxon W test	8039,000		8338,000		8194,000		8578,000	
Z test	-2,414		-1,611		-2,022		-,997	
Asymp. Sig. (2-tailed)	**,016**		**,007**		**,043**		**,041**	
Mean Rank	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**
	114,8	88,6	112,9	92,3	112,2	92,4	110,3	95,04

Female *N=376*   Male *N=251*

Gender	"Cleaning" Images of announcements			
	Color effect	Typography effect	Shape effect	Completeness effect
Mann-Whitney U test	3886,500	4200,000	4207,500	4432,500
Wilcoxon W test	7627,500	7941,000	7948,500	8173,500
Z test	-3,374	-2,572	-2,569	-2,003
Asymp. Sig. (2-tailed)	**,001**	**,010**	**,010**	**,045**
Mean Rank	**Female** **Male**	**Female** **Male**	**Female** **Male**	**Female** **Male**
	114,8 88,6	112,9 92,3	112,2 92,4	110,3 95,04

Female *N=376*   Male *N=251*

In Table 2, according to the gender variable, the effect of the images in the "Wear a Mask" announcements is as follows: color impact factor Asymp. Sig. value is .002; typography impact factor Asymp. Sig. value .030; shape impact factor Asymp. Sig. value .002 and completeness impact factor Asymp. Sig. value was determined as .017. Color impact factor of the "Social Distance" image is Asymp. Sig. value .016; typography impact factor Asymp. Sig. value .007; shape impact factor Asymp. Sig. value .043 and completeness impact factor is Asymp. Sig. the value was found to be .041. Likewise, the color impact factor of the image "Cleaning" is Asymp. Sig value is .001; typography impact factor Asymp. Sig value .010; shape impact factor Asymp. Sig value .010 and completeness impact factor Asymp. Sig value was determined as .045. The images in the "Wear Mask, Social Distance and Cleaning" announcements; It was determined that the visual effect (Asymp. Sig. values, p<0.05) in terms of color, typography, shape and completeness principle differ from each other according to the gender (male and female participants) variable. Table 2 shows the images in the female participants' "Wear Mask, Social Distance and Cleaning" announcements; It was revealed that the mean rank values of the visual effectiveness level in terms of color, typography, shape and completeness principle were significantly higher than those of male participants. Therefore, hypothesis number 1 in the study was accepted.

Images in "Wear Mask, Social Distance and Cleaning" Announcements; "The Relationship between the Visual Effect of Colour, Typography, Shape and Completeness Principles and Other Demographic Variables of the Participants (Age, Education Level, Education Type, Profession)

Based on the research question of the study, to test hypothesis 2, hypothesis 3, hypothesis 4 and hypothesis 5, the images in the "Wear Mask, Social Distance and Cleaning" announcements were; Kruskal Wallis test was applied to test whether the visual effect in terms of color, typography, shape and completeness principle differs significantly according to age, education level, type of education and profession.

Table 3: Kruskal Wallis Test Results on the Visual Effectiveness of the Color, Typography, Shape and Completeness Principles of the Images in the "Wear Mask, Social Distance and Cleaning" Announcements with the Variables of Age, Education Level, Education Type, Profession

Age	In the "Wear a Mask" Images of announcements			
	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	7,641	4,452	6,061	7,622
df	4	4	4	4
Chi-Square	,106	,348	,195	,106
Education level	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	3,409	4,090	4,509	8,521
df	5	5	5	5

Chi-Square	,637	,536	,479	,130
Education type	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	3,621	6,161	7,202	7,730
df	5	5	5	5
Chi-Square	,605	,291	,206	,172
Profession variables	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	7,233	5,005	5,737	6,956
df	2	2	2	2
Chi-Square	,067	,052	,057	,061

	Images in "Social Distance" Images of announcements			
Age	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	5,664	5,023	3,666	2,585
df	4	4	4	4
Chi-Square	,226	,285	,453	,629
Education level	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	3,739	3,932	5,224	7,237
df	5	5	5	5
Chi-Square	,588	,559	,389	,204
Education type	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	3,041	2,793	8,875	9,466
df	5	5	5	5
Chi-Square	,124	,098	,114	,092
Profession variables	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	9,476	9,689	8,564	9,102
df	2	2	2	2
Chi-Square	,062	,065	,055	,058

	"Cleaning" Images of announcements			
Age	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	7,509	4,651	4,145	6,213
df	4	4	4	4
Chi-Square	,111	,325	,387	,184
Education level	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	8,684	6,365	10,35	9,652
df	5	5	5	5
Chi-Square	**,040**	**,032**	**0,47**	**0,11**
Education type	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	9,251	7,919	6,762	8,870
df	5	5	5	5
Chi-Square	,099	,161	,239	,114
Profession variables	Color effect	Typography effect	Shape effect	Completeness effect
Chi-Square	8,587	5,659	8,408	6,807
df	2	2	2	2
Chi-Square	,064	,067	,065	,063

In Table 3, it was determined that the Asymp. Sig. impact factor values of the color, typography, shape, and completeness principles of the images in the "Wear Mask, Social Distance and Cleaning" announcements were $p > 0,05$ depending on the age, education level, type of education and profession of the participants in the research. For this reason, the images in the "Wear Mask, Social Distance and Cleaning" announcements; It has been determined that the effectiveness level in terms of color, typography, shape and integrity principle does not differ from each other according

to the participants' age, education level, type of education and profession. As a result, hypothesis 2, hypothesis 3, hypothesis 4 and hypothesis 5 were rejected in the study.

Conclusion and Recommendations

In this study, the impact of visual communication design elements—color, typography, form, and unity—on mass communication in "Wear a Mask, Keep Social Distance, and Maintain Hygiene" announcements during the pandemic period was examined through quantitative data, and statistically significant gender-based perceptual differences were identified (with women tending to prefer pastel tones and aesthetically detailed compositions, and men tending to prefer saturated colors and layouts with direct typographic emphasis) (H1 accepted). In contrast, no significant effects were found for age, educational level, type of education, or occupation (H2–H5 rejected). These results are consistent with previous analyses of pandemic-era visual campaigns that highlight the "message-conveying power" of design (Chen & Xie, 2023; Public Health Research Group, 2021), and align with literature indicating that women tend to adopt protective behaviors more readily (Yılmaz & Topçu, 2022; Arslan et al., 2021). Preferences in typography, with women responding more favorably to serif typefaces and gender-based differences in color tone perception, also parallel typographic perception studies (Demir & Kılıç, 2023; Öztürk, 2022). However, the number of studies that quantitatively analyze the visual elements of pandemic campaigns by gender is limited, and the quantitative evidence provided here helps to address this gap.

In light of the findings, gender-based targeting in the design of mass communication materials becomes critical; for female-oriented campaigns, pastel color palettes, aesthetic and detailed compositions can be prioritized, whereas for male-oriented campaigns, saturated colors and simpler, stronger typographic layouts may be more effective. In cases involving mixed target audiences, hybrid strategies—such as bold sans-serif fonts for headlines paired with more refined serif fonts for details, and striking colors for the main message combined with softer tones in warning or informational sections—can increase impact. Design decisions should be supported by field-based methods such as field experiments. Furthermore, given that the results are limited to a university sample from the Anatolian side of Istanbul, future studies should include larger and more diverse geographic and demographic samples, as well as experimental designs. This would contribute not only to the academic literature but also to the development of more effective, gender-sensitive visual strategies in public health communication.

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