Era of the Industrial Revolution 4.0: Analysis of Infographics Visual Text as a Communication Media During the Covid-19 Pandemic in Bali

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Abstract. The era of the industrial revolution 4.0 and the outbreak of Covid 19 at the same time has affected to the loss of many lives. The need of proper media is necessary due to the socialization of the pandemic within the community. The media which mostly used by the government is website provided with infographic visual text because it helps people to understand the information referred by the Government. Therefore, this research urgently needed to find out the role of infographic visual text as communication media during pandemic Covid 19 in Bali. This study uses a qualitative descriptive method with the approach of Charles Sander Pierce's semiotic theory of signs and meanings in infographic visual texts made by the government in Bali. It analyzed with three concepts namely icons, indexes, and symbols. In the era of the industrial revolution, these three concepts are still relevant with the use of infographic visual text design, so that people will easily interpret the information conveyed through the infographic visual text.

Keywords: Infographics, Covid-19, Industrial Revolution, Communication Media

1 Introduction

The invention of the steam engine and equipment was the first time the industrial revolution began. In the current era, namely the era of the industrial revolution 4.0, where system connectivity is in the form of internet networks and artificial intelligence, it can minimize work previously done by human labor. Through digital technology, work innovations can be carried out more quickly, efficiently, easily and accurately. Along with the development of digital technology in the current industrial era 4.0, a new communication model has emerged, namely infographics. The infographics referred to in this paper are information in the form of illustrations in the form of dots, lines, or areas which visually mainly present the results of calculations and are conveyed to the broader community in this industrial era 4.0 using digital technology.

Infographics are a solution for the ease of conveying information quickly, efficiently, accurately and clearly. Infographics are a current trend in society because they

have attractive visuals to increase reading interest for people who need information. Interestingly, the visualization of infographics presented in the industrial era 4.0 is inseparable from the aesthetic touch in delivering data using visual text. Piliang [1, p. 347] explains that visible text includes graphical elements, such as pictures, photo illustrations, paintings or computer-generated images. Budiman in Sobur [2, p. 53] also explains that text can be interpreted as "a set of signs transmitted from a sender to a receiver through a certain medium and with certain codes." In visual communication design, the text is inseparable from conveying visual messages to the broader community so that the public can find out the information obtained through infographic visible text. During the current industrial era 4.0, Indonesia was also hit by an outbreak of the Coronavirus, which was first discovered in Wuhan,Hubei Province, China. In early March 2020, the President announced the first cases found in Indonesia were 2 two people from Depok, West Java. After the first case, the following circumstances began to appear and spread to several regions in Indonesia, including Bali. In giving these data, the infographics also pay attention to aesthetic elements so that the information delivery to the public can attract attention, be transparent, and be easily understood.

Therefore, this infographic visual text is essential to study because it creates many meaningful signs of information you want to communicate to the public. Eriyanto [3] explains that text is all forms of language, not just words printed on sheets of paper, but also all kinds of communication expressions, speech, music, pictures, sound effects, images, and so on. So that the text can be said as an image that can be a medium of visual communication; communication media that are displayed in the form of infographics and visible text in digital technology on the internet are made for a specific purpose; this is very interesting to study the message and its meaning. The signs and meanings of the infographic visual text are a force in communicating messages from the government regarding COVID-19 to the public. This study aims to examine this as well. This study seeks to explore and interpret infographic visual texts as part of visual communication media, which always present signs and meanings contained in digital internet technology during a pandemic. Based on the background above, it can be formulated that the problem in this study is how can visual infographic texts displayed in communication media via digital internet technology be studied and interpreted in complementing visual communication design studies during the Covid-19 pandemic.

2   Method

This study uses a qualitative descriptive methodology with the semiotic approach of Charles Sander Pierce (1839-1914) to examine the signs and meanings of infographic visual texts on digital internet media by conducting observations, interviews, and documentation. The qualitative descriptive analysis method aims to explain the interrelationships of signs and meanings, whether in the form of icons, indexes or symbols, and the presence of visual elements of visual communication design, such as illustrations, text and colors. Charles Sanders Pierce's concept of semiotics is based on the relationship between signs and objects. Pierce divides characters into three, namely icons, in-

dexes, and symbols. A hero functions as a ground-based on its resemblance to something else, for example, a photograph. An index is a sign that, in terms of the pattern of the movement, depends on the existence of an object, for example, a weather vane and a footprint. A symbol is a sign whose relationship between the character, and the thing is determined by a generally accepted rule (Zoest in Sumartono [4, pp. 154–155]). Udayana [5], says The semiotic method is interpretive qualitative, focusing on signs and text as the object of study and how researchers interpret and understand the code (decoding) behind the symbols and text. The object of this research is the visual infographic text in Internet technology media created by the provincial and regency governments in Bali during the 2020-2021 co-19 pandemic. This research wants to examine the signs and meanings in the form of icons, indices, and symbols, regarding the display of infographic visual text contained on the provincial and district government websites that inform about Covid-19 in Bali. Visual infographic data created by the local government of Bali and communities in Bali can be captured through their respective web pages, becoming a component to be researched and studied. The analysis used in this study is content analysis and visual analysis to find out and examine the messages in the graphical data in the form of infographic visible text.

3   Result and Discussion

Infographics stand for information, and graphics are visual representations of information, data or knowledge. Infographics can be interpreted as visualization of data, ideas of information or knowledge through graphical charts, schedules and others so that the data has a relatively strong visual impact and is more attractive [6, p. 459]. Infographics connect complex data with design into one, enabling audiences to remember information better and more efficiently. Infographics are visualization of data to convey complex concepts or ideas to be simpler and easier to understand. Based on this definition, it can be concluded that infographics are a form of data visualization to convey complex information that is informative to readers so that it can be understood quickly and easily. So that infographics are considered visual media for sharing information and data. Infographics that are known to the public today are more focused on the form of conveying information presented through graphics or statistical data. However, infographics, in this case, also include several fundamental components generally found in design work, including images, color selection, and selection of symbols used. It also shows the composition of colors and shapes used so that the information presented can look attractive and meet standard visualization criteria. What society needs [7].

3.1   Result

Infographic Important Points introductory provisions in verbal or visual communication methods that can be used as guidelines for determining visualization values and dividing categories in an infographic. According to Lankow et al. [8, p. 40] are divided

into three points, namely: 1) Allure, an infographic must have an allure so that communication with the audience is established voluntarily. 2) Comprehensive, intended communication, must effectively provide knowledge that allows a clear understanding of the information. 3) Retention, visuals capable of the audience remembering precisely the information conveyed. As a media design, infographics must be attractive in terms of color and message content. Based on Dunlap and Lowenthal [9], there are five situations related to the context to make exciting infographics: 1) Immediacy includes the structure and layout of infographics so that they can support through emotional and sensual closeness. 2) Malleability is the flexibility of infographics to trigger experiences and actions based on infographic influences. 3) Compellingness serves to attract interest, attention and admiration from readers. 4) Resonance, this is intended to help the audience find relationships between the information conveyed. 5) Coherence can be interpreted as a credible and trustworthy message.

Lankow [8], in his book Infographics: The Awesomeness of Visual Storytelling, reveals three types of infographics, namely: 1) Static Infographics are infographics that display data in a static visual form, in the sense that they only display information with visual aids without audio concepts or animation concepts. This infographic is the simplest and is often used for various needs. 2) Animated infographics are infographics that visualize data through animation in two-dimensional and three-dimensional forms. This infographic connects animation with a sound background that can reinforce the message you want to convey 3) Interactive infographics are the most complex infographics compared to static infographics and animated infographics. This infographic allows the audience to interact with the infographics presented. Charles Sanders Pierce's concept of semiotics is based on the relationship between signs and objects. Pierce divides characters into three, namely icons, indexes, and symbols. An icon functions as land based on its resemblance to something else, for example, a photo, map or something else. An index is a sign of a pattern depending on the existence of an object. For example, a weather vane and a footprint. A symbol is a sign whose relationship between the sign, and the object is determined by a generally accepted rule (Zoest in Sumartono [4, pp. 154–155]). The same thing was conveyed by Tinarbuko [10, p. 40], who said that in an icon, you could be sure that a sign that resembles the object will appear. Characterized by the character that looks or sounds like the object. The index has a direct relationship between the sign and the thing. This means that the two are interrelated. In symbols, there is no relationship or resemblance between the character and the object. In short, a symbol is communicated only because humans agree that the symbol shows something. So the concept of semiotics in Charles Sanders Pierce's theory of icons can be in the form of a map of an area, cloudy is an index of rain, and an image or word is a symbol.

3.2   Discussion

In the current era of the industrial revolution 4.0, the internet is an essential information medium. Many people and the government use this media to convey information/messages to the broader community. This is in line with Sobur's opinion [2, p. 31], which

says that the media is a tool for conveying information, judgments, or general descriptions of many things. It can act as an institution that can shape public opinion, among other things, because the media also can develop into a pressure group on an idea or concept, and even an interest or image that it represents to be placed in a more empirical context of life. Sobur's opinion above emphasizes that the media, including the internet, can influence groups of people on the ideas or ideas that we want to convey to be able to change the attitudes, views, and behavior of those who receive information through the internet media, towards the information that we share. The same thing was said by Soewardikoen [11, pp. 42–43] that images or visual works communicate messages from producers to consumers to inform the existence and persuade consumer audiences to act according to the producers' wishes. So, the delivery of information, whether in the form of images/illustrations, text, or audio-visual through internet technology media, will be more effective, communicative, and informative to inform news related to Covid-19 in Bali. In other words, infographic visual text has a specific purpose, so researchers are interested in studying the message and its meaning. Submission of information through internet media can be in the form of pictures/illustrations, text or sound. In this case, the sender of the information/message and the recipient of the information/message can see the information/message as more informative, communicative, and dynamic than other media. According to Sharudin, Mustaffa, and Sannuasi [12, p. 358] Infographics have their standards and formats. There are various types of graphics to visualize data, from text to pie charts, bars, tables, and graphs, followed by iconic images and symbols. Thus the infographic visual text can be interpreted as a sign that can provide information from the sender of information to the recipient.

Icon of Bali Island. In providing a visual message to the public, the provincial government of Bali illustrates information about developments in cases of the spread of Covid-19 using the Bali Island icon in its infographic media display, as shown in Fig. 1.

A map of the island (Fig. 1) can be used to indicate that the information presented is representative of the area. Here the interpretant refers to the province of Bali as an island part of Indonesia in which there is one province, namely Bali. Map of the island of Bali displayed by the Provincial Government of Bali to provide information regarding the spread of Covid-19 cases in the area. This is a type of image sign that is classified in semiotics as an icon. An icon is a sign that is similar to the object it represents. It can also be said to be a sign with the same characteristics as what is meant. For example, the Yogyakarta map is an icon of the Yogyakarta area depicted on the map [10, p. 46]. So the hero of the island of Bali can be said as a semiotic sign that describes a form that has similarities to representing the Provincial Government of Bali. The same thing is also displayed by district governments in Bali, in their infographics showing part of the map of the island of Bali or only part of the regency area, or there is also a map that depicts the entire island of Bali. Still, it is made in a different color to represent the district. The markings arise from the differences in the map of the island of Bali. Black and white and the colored ones represent the districts in the province of Bali, as shown in Fig. 2. Semiotic signs in the form of icons are also shown in Figure 2 above; these icon signs represent districts in North Bali, namely the Buleleng Regency, which is part of the Province of Bali. The icon of the island of Bali can be seen on the map of

the island of Bali. However, it is visible in part but does not remove the sign that represents it because what is focused on is part of the Buleleng district, which is the icon of the island of Bali.
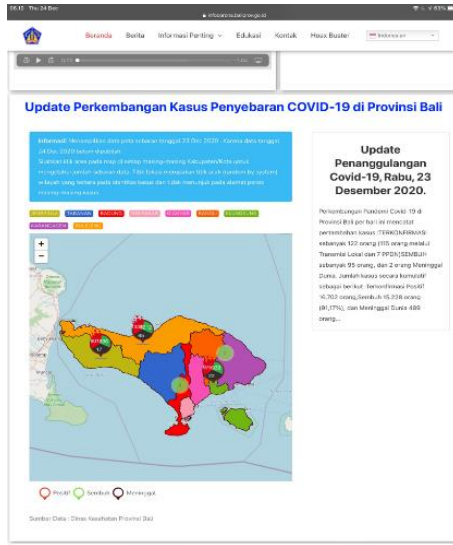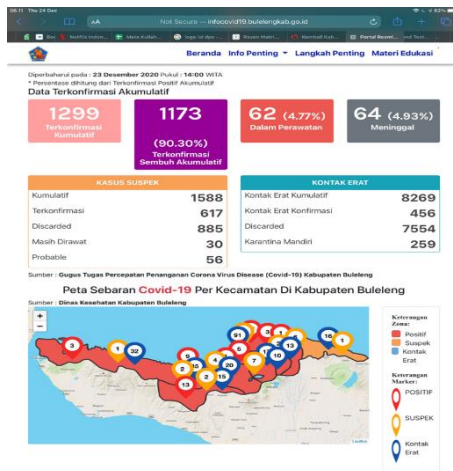

Fig. 1. Icon of Bali Island

Fig. 2. Icon of Bali Island: Regencies in North

Spread Index Affected by Covid-19. Information on the spread of Covid-19 in the Jembrana district is indicated by red, yellow, orange and green dots. The colors on the dots are explained as follows: 1) yellow = close contact, 2) orange = suspect, 3) red =

positive, and 4) green = cured. The colors displayed in the infographic on Jembrana Regency Web are an index of the spread of Covid-19 in the district. The color circles will change color depending on the information on the spread of the Covid-19 case day by day; this can be seen in Figures 3 and 4 below, where this image was taken on December 24, 2020 (Fig. 3), and on May 18, 2021 (Fig. 4).
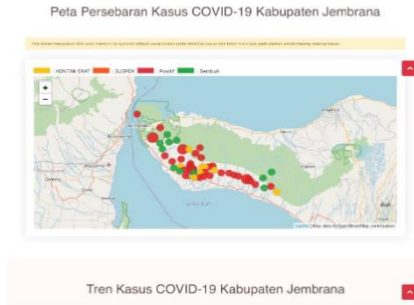
Fig. 3. Picture taken on December 24th, 2020

Fig. 4. Picture taken on May 18th, 2021

The index presented in the Jembrana Regency infographic shows the spread of Covid-19, using red, orange, yellow and green circles. Figure 3 shows that Covid-19 in the district can be seen with more confirmed positives than suspects and those who have recovered from Covid-19. In the following five months, in Figure 4, the infographic shows that the red circle has decreased compared to Figure 3, and there are more green ones; this provides information that the distribution of Covid-19 in Jembrana Regency has more patients recovering from Covid-19. from the positive. The use of color in infographic visual text indexically refers to information/messages related to the development of the spread of Covid-19. The interpretation that is formed is as follows: red indicates a person who is positive for Covid-19; orange color indicates close contact with a person who is positive for Covid-19; and green color indicates a person who has recovered from Covid-19. It can be seen in Fig. 5.

Fig. 5. Color Index on the information

Fig. 6. Icon of Bali Island: Regencies in East of Covid-19 Spreading Bali (Karangasem Regency)

Fig. 6 depicts a map of the Karangasem district, a regency in the eastern part of the province of Bali. This image shows different colors according to the region. The marks from the map's differences indicate each sub-district in the Karangasem district. The distribution index affected by Covid-19 in each sub-district is marked with white, green, yellow and red boxes. The following explanations are given: 1) green = ODP (People Under Surveillance), 2) yellow = PDP (Patients Under Monitoring), 3) red = OTG (People Without Symptoms) 4) white = Healed. The colors displayed in the infographic on

the Karangasem Regency website are an index of the spread of Covid-19 in the Regency with colors that distinguish terms related to Covid-19.

Symbols represent Government. From the identification of the visual text of the Covid-19 infographic, several signs in the form of symbols were found. The characters contained in the websites of the provincial government of Bali and city districts in Bali are in the form of logos or marks of each community, city or province. This logo shows the identity or represents the government agency. Headline symbols are also displayed throughout the Covid-19 information web in Bali and districts/cities, such as headline writing on the Bali Province website "Update on the Development of Cases of the Spread of Covid -19 in the Province of Bali". It provides information regarding the development of the Covid-19 virus and its spread, the latest in the province of Bali. The use of blue is a neutral color and is different from the use of color in information related to people infected with the Covid-19 virus, people who have recovered, and people who have died. The symbol in the infographic visual text in Badung Regency is in the form of a hand holding a mobile phone, as shown in Fig. 7.

Fig. 7. The Symbol of Hand's hold a handphone

The symbol in Figure 7 showed the interpretation of the public complaint service regarding Covid-19. The numbers on the cellphone show the number of the Covid-19 call center in Badung Regency. The services on covid-19 message in Badung Regency on infographic visual text providing information to the public related to the call center number. It is intended for people who need help or information related to covid-19; they can contact the call center number, which has a hand-drawn holding cell phone. Eriyanto states [3, p. 258] graphic elements provide cognitive effects in the sense that they control attention and interest intensively and indicate whether the information is essential and exciting so that it must be focused or focused. Images, such as tables, text placement, typefaces, and graphic elements, can indirectly manipulate emerging ideological opinions. Graphic elements can be photos, pictures or tables to support ideas or for parts you want to highlight. The infographic visual text in the form of a picture of a hand holding a cellphone uses red color. The infographic is intended in a cellphone as the central point in website media. The visual communication design website shows visible infographic text on red cellphone images so that it becomes the center of attention and is the first thing the public will see. So the visual communication design in the

form of visual text infographics in Figure 6 above wants to convey a message to the public regarding the presence of a COVID-19 call center in Badung Regency, Bali.

4   Conclusion

The results of the semiotic analysis of the infographic visual text displayed on the media website for the Province of Bali and the districts/cities can be concluded that the representation of digital technology users in the 4.0 era during the Covid-19 pandemic was beneficial for conveying information quickly, accurately and attractively. The infographic visual text used by the government contains various signs and meanings. It can be seen in the use of icons on a map of Bali Island. The implementation also can be seen as an index in using colors to distinguish the number of cases. Colors also show the number of those who have recovered from Covid-19 and symbols in Bali provincial's logos and district government in Bali.

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