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A study on Metaverse Consumer perception survey before and after Covid-19 using CONCOR analysis on BIG Data

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Abstract

Many parts of life have been changed due to the unprecedented coronavirus outbreak, and Noncontact has now become a general culture of society around the world. Also, many years later, after the Fourth Industrial Revolution, it is now deeply embedded in the human lifestyle. The purpose of this paper's research is to investigate the metaverse perception before and after Corona. It was confirmed that the number of metaverse, the central keyword, was 70971 before Corona, but 261767 after Corona, which was more than three times the frequency. In addition, it was confirmed that the number of COVID-19, the reference point of this study, increased significantly to 1,9236 during the pre-COVID-19 period. Through this, it can be inferred that the metaverse accelerated and developed significantly after the corona. Metaverse about Keywords such as cryptocurrency, cryptocurrency, coin, and exchange appeared before Corona, and the word frequency ranking for blockchain, which is an underlying technology, was high, but after Corona, the word frequency ranking fell significantly as mentioned above. As such, it was confirmed that keywords for metaverse were changing before and after Corona, and as such, Consumers' perceptions were also changing.

Keywords: *Pharmaceutical, Consumer perception, COVID--19, Keyword analysis, Big data*

1. Introduction

In the 21st century, many parts of life have been changed due to the unprecedented coronavirus outbreak, and Noncontact has now become a general culture of society around the world [7]. Also, many years later, after the Fourth Industrial Revolution, it is now deeply embedded in the human lifestyle [1]. The convergence of IT-oriented digital technology and cultural content has already been developed in various ways for years. The development of digital technologies that break the boundaries between real-world space and virtual space has the potential to escape from physical time and space constraints [2]. In particular, Meta-verse, which can overcome limitations of experience and understanding with documents or phrases, can be applied interchangeably to cultural content through four representative elements: Virtual reality (VR) Augmented reality (AR) Mirror world [3]. Therefore, this paper proposes a metaverse-like cultural content matching platform where you can experience cultural content using avatars in metaverse that can be combined with

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cultural content. The cultural content matching platform designs a platform system that provides, recommends, and matches cultural content information to users who want to experience cultural content directly or indirectly by referring to Platform as a service (PaaS) of cloud computing. Users who use the cultural content matching platform can receive cultural content information according to their set search conditions. The data of cultural contents collect information from museums and exhibitions with various cultural contents. Information from the collected tourist attractions is kept as data and cultural content information is transmitted to the matching management system as needed. The cultural content matching management system provides and matches sent cultural content data to users who meet conditions. Each user's data and cultural content data is kept using a DBMS using the MY SQL command [4]. Through this series of processes, we can expect to fully address the ever-increasing demand for cultural content. Chapter 2 describes related research such as cultural content, matching platform system, mobile clouding, and Chapter 3 describes the specific design of Metaverse cultural content matching platform and concludes in Chapter 4.

2. Experiments

2.1 Metaverse

Metaverse is a combination of meta, which means transcendence and universe, which is a combination of reality and vitality, and is derived from Metaverse, a virtual world name in Snorcrash, which was published in 1992 [4]. Metaverse is a 3D-based virtual world where everyday life and economic activities can be carried out through virtual avatars that replace me in reality. In other words, it is a transition to another world that breaks the boundaries between real and virtual space Metaverse contain four representative elements: virtual reality (VR), augmented reality (AR), life logging, and mirror world. These four Metaverse elements are applicable to historical experience content.

2.2 Cultural Content Services Process

Previous cultural content services were mainly developed around historical museums. In addition, there are many restrictions on experiencing cultural contents because they are limited to places to view cultural contents[5]. However, through the distribution of smartphones and many programs that do not use 3D machines, users can enjoy the cultural content that they want without being restricted in space.

3. Results

We looked at the word frequency and word centrality of big data on metaverse. This method has difficulty in forming clusters between words. The clustering of words will help determine the image of the metaverse shown in big data by clustering them in consideration of the similarities between the words that are refined and selected. Therefore, in this study, a CONCOR analysis was conducted to understand what consumers perceive about metaverse. A 1-mode matrix was extracted and used from the text storm using the top 100 word frequencies, and CONCOR analysis was performed on UCINET. The figure below is a dendrogram of 100 metaverse words.

CONCOR analysis was performed based on centrality analysis to create a dendrogram as shown in the above figure. The metaverse dendrogram was clustered at level 3, and clustered to be grouped into a total of eight clusters.

Figure 1. Metavers before covid-19 CONCOR ANALYSIS

For the pre-COVID-19 period, a CONCOR analysis (groupization) was performed based on the dendrogram for the initiation of connection centrality.In the case of Cluster 1, keywords such as cryptocurrency, cryptocurrency, coin, and exchange appeared as images perceived by consumers before COVID-19, and blockchain, which is an underlying technology, also appeared. In the case of cluster 1, it has the most keywords, and metaverse appears as the central keyword. Consumer awareness of metaverse is the biggest part. In the case of Cluster 1, as a singularity, it is mainly related to money, which is the economic and management base within Metabus, such as cryptocurrency, blockchain, real estate, currency, coin, and exchange.mIn the case of Cluster 2, Cluster 4, and Cluster 6, overall keywords for Metabus's underlying technologies and fields and contents appeared, and in services that require face-to-face contact such as art, service, and education. Cluster 2 is the largest among cluster 2, cluster 4, and cluster 6, and it is the part that occupies the most keywords after cluster 1. In the case of Cluster 4, keywords such as programs and art that students do not go directly, but can feel art and content appear. In the case of Cluster 3 and Cluster 7, keywords for the metaverse platform and technology-based industrial field and linked technologies appeared. In the case of Cluster 5, it was confirmed that social media platforms such as Kakao Talk, Facebook, and Twitter were mentioned. Judging from this, it has been confirmed that consumer awareness is still concentrated in the life logging field among the four metaverse. As mentioned above, when checking the original data, it was confirmed that Kakao Talk, Facebook, and Twitter were the main contents, and moreover, text data, that is, the life logging of metaverse, was the main focus before the metaverse trend appeared.

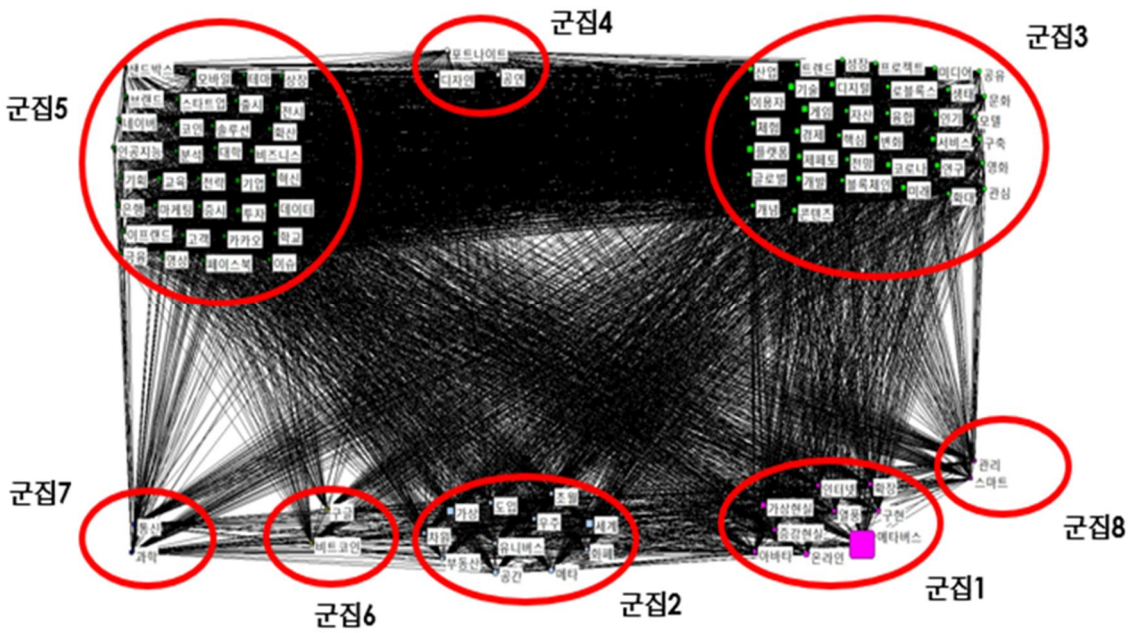

Figure 2. Metavers after covid-19 CONCOR ANALYSIS

For the metaverse data after Corona, a CONCOR analysis (clusterization) was performed based on the dendrogram for the initiation of connection centrality. In the case of cluster 1 and cluster 2, a perceived image of the metaverse after COVID-19 is formed. As metaverse was recognized as a virtual world, keywords such as universe, space, meta, and world were derived. In addition, as it changed into virtual reality and augmented reality, it began to pay attention to new virtual spaces. In the case of Cluster 3, Cluster 4, and Cluster 7, keywords from the Mevaverse virtual reality-based platforms Roblox, Fortnite, and Geppetto are appearing, and as a result, industries in the design and media fields began to grow together. In the case of Cluster 5, Cluster 6, and Cluster 8, the overall keywords for economic activities within the metaverse platform are predominant, and as a result, words such as cryptocurrency-coin have begun to emerge.

4. CONCLUSION

The purpose of this paper's research is to investigate the metaverse perception before and after Corona. First, it was confirmed that the number of metaverse, the central keyword, was 70971 before Corona, but 261767 after Corona, which was more than three times the frequency. In addition, it was confirmed that the number of COVID-19, the reference point of this study, increased significantly to 1,9236 during the pre-COVID-19 period. Through this, it can be inferred that the metaverse accelerated and developed significantly after the corona. Second, before Corona, it was confirmed that social media platforms such as Kakao Talk, Facebook, and Twitter were mentioned, and among the four metaverse, consumer awareness was still concentrated in the field of life logging. However, after Corona, keywords from Roblox, Fortnite, and Geppetto appeared, and keywords such as Universe, Space, Meta, and the world appeared, so Metaverse was recognized as a virtual world. As a result, it was confirmed that consumer perception changed from the life logging of Metaverse to the mirror world. Third, keywords such as cryptocurrency, cryptocurrency, coin, and exchange appeared before Corona, and the word frequency ranking for blockchain, which is an underlying technology, was high, but after Corona, the word frequency ranking fell significantly as mentioned above. As such, it was confirmed that

keywords for metaverse were changing before and after Corona, and as such, consumers' perceptions were also changing.

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