



Digital Distribution in Preparation for the 4th Industrial Revolution: Focused on the Beauty Industry

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Abstract

Purpose: After using the Internet, the world is changing through several paradigms, and the retail industry, which is essential to living in the world, is also changing rapidly. In this review paper, the requirements that the retail industry should consider and prepare in accordance with the rapidly changing paradigm were reviewed according to the current situation of the times. **Research design, data, and methodology:** It is a review of technological development using PRISMA flow diagram, retail change, and necessity in April 2022, and a review of the digital environment to be applied to the retail industry in the future. **Results** As the current situation and changes of retail, and the development of IT technology, reviews on the retail business applying the 4th Industrial Revolution, the Internet of Things and artificial intelligence were collected, and the direction of the retail industry was suggested. **Conclusions:** The direction for the retail industry in preparation for developing technologies was presented. In addition, this study is a review paper that suggests the need for research on active introduction of new technologies to the beauty market that is very close to human life and economically helpful as IT technology for the 4th industrial revolution develops rapidly.

Keywords : Beauty Retail Industry, Digital Retail, 4th Industrial Revolution, IoT (internet of things), Virtual Reality, Artificial Intelligence

JEL Classification Code : L16, L21, L66, L80

1. Introduction^a

The development of digital technology can be expressed as a large paradigm that has changed the retail industry (Toscani & Colaizzi, 2020). The era has come when products such as medicines that can be purchased only by visiting in person can be purchased on the Internet. Even hospital treatment and school classes, which have traditionally been possible only by visiting, are accelerating technology development as tele-medicine and remote

classes are activated due to coronavirus disease-19 (COVID-19) (Shappell et al., 2017). After using the Internet, the world is changing through several paradigms, and the retail industry, which is essential to living in the world, is also changing rapidly (Khandpur et al., 2020). In this narrative review article, the requirements that the retail industry should consider and prepare in accordance with the rapidly changing paradigm were reviewed according to the current situation of the times. The development of the retail industry is closely connected to the economy and has created

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a novel economic paradigm called blockchain (Alladi et al., 2019), whereas new concept retail business models are emerging according to consumers' needs by introducing technical parts to consumer goods that are essential in daily life. Therefore, it should be recognized that retails and science that combine cutting-edge elements should be applied to the present, where the beauty industry has become an essential distribution factor (Liang, 2021).

Recently, as COVID-19 has continued for years, the retail environment is also changing significantly. The rapidly changing social phenomenon is linked to the retail environment and economic phenomenon, is also emerging as a global economic problem (Mofijur et al., 2020). The retail industry should immediately respond to the situation through rapid awareness and information acquisition and delivery of social phenomena that are changed and shared in the future (Kuss & Griffiths, 2011). Instead of sticking to the existing traditional retail industry, it is necessary to be able to communicate in two directions using the future retail method in the future. Additionally, each company or individual will have to constantly develop internally and externally in order to adapt to the changing retail as a technology development. The development of technology today presents the future direction of the beauty industry as well as the overall retail industry and is changing the sales method and retail structure of future beauty products (Khandpur et al., 2020).

It would not be an exaggeration to say that the first paradigm that brought about a change in the retail market was the beginning of the internet (Gandolfi et al., 2021). The second paradigm is the development of wireless mobile. With the acceleration of wireless mobile development, "digital nomads" have increased, and wireless mobile has become an indispensable means of everyday life. The third paradigm will be AI and big data, metaverse and internet of things (IoT) internet (Huang et al., 2018). The number of smartphone users around the world continues to increase. In order to respond to the rapidly changing retail technology

development and consumer needs, retail companies dealing with the beauty industry must prepare preemptively. In addition, it is necessary to think about allowing consumers to take a non-different approach (Niyazbekova et al., 2022). Therefore, this paper summarizes social changes in which digital technology is incorporated in various fields and improvements in retails. It is a review paper that can be referenced so that the beauty industry can set a direction on what to prepare to accept changes in retail according to the changes and development of retail. I hope that it will be a paper that can be of technical help to the beauty industry seeking social and economic development by applying new and various technical paradigms reviewed for the development of retail industries in each field in the future. Also, we hope it will be a pivotal data and strategy that can respond pro-actively in a rapidly changing modern society.

2. Materials and Methods

It is a review of technological development, retail change, and necessity in April 2022, and a review of the digital environment to be applied to the retail industry in the future. It was written by referring to the keyword as follows: retail industry, digital retail, 4th industrial revolution, IoT (internet of things), virtual reality, and artificial intelligence. This review study was conducted by searching on PubMed, Google Scholar, Scopus, Riss, DBPia and ResearchGate. A total of 1,280 papers were searched, of which 52 articles were finally included in this study for PRISMA flow diagram as shown Figure 1. It reviewed the current situation and changes of retail, the reason and importance of beauty retail to respond quickly to the development of consumer needs and technologies, the 4th industrial revolution, the retail business using IoT and artificial intelligence, and suggested the direction of development of the beauty retail industry.

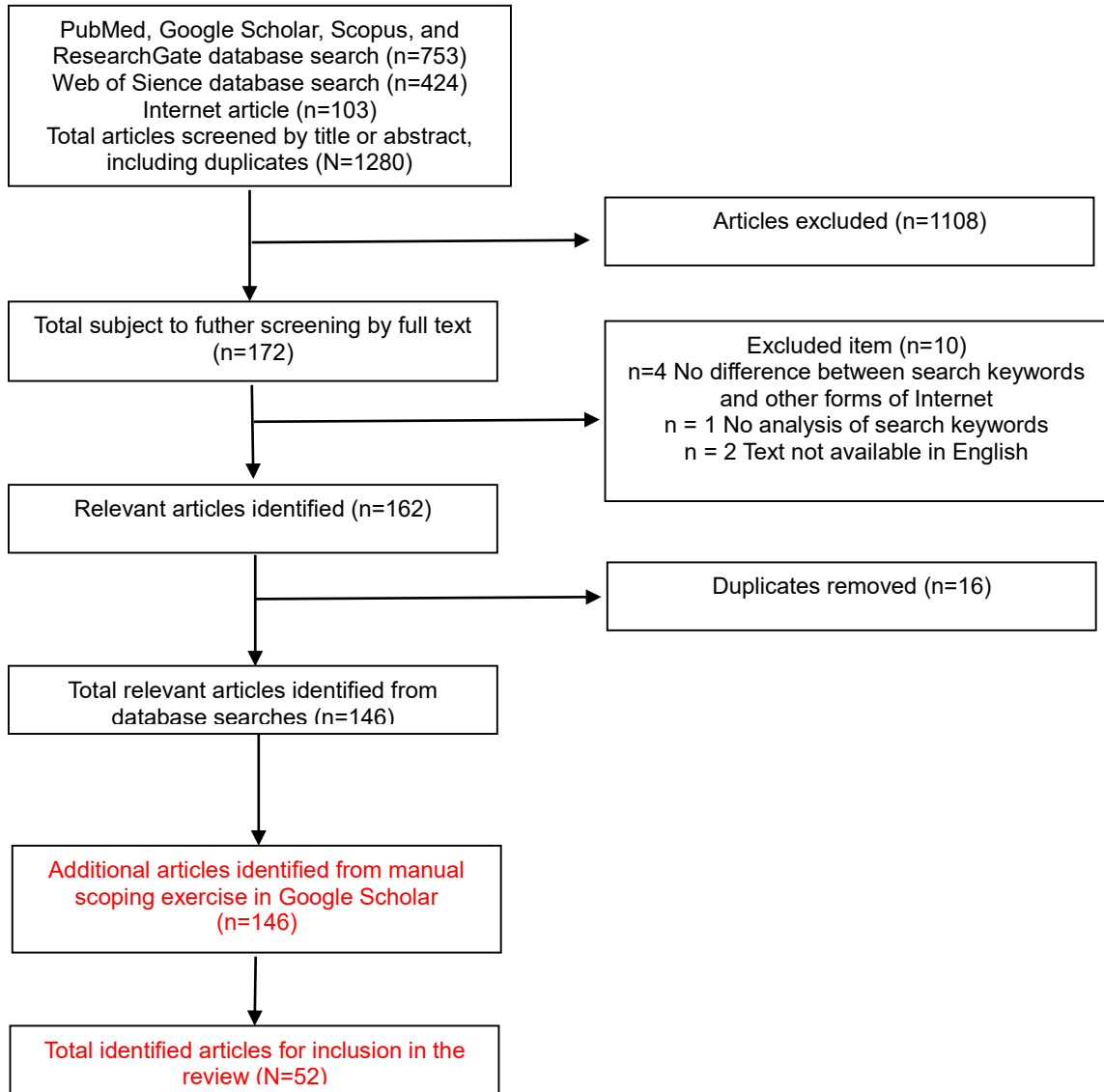


Figure 1: Flowchart of search and inclusion/ exclusion process.

Table 1: Current Situation and Changes in Retail

NO	Journal name	Author	Year	Discussion
1	International Scientific and Practical Conference Springer	Niyazbekova S. U et al.	2020	Prospects for the Development of Mobile Technology in the Global Market in the Digital Age. International Scientific and Practical Conference Springer.
2	Procedia Computer Science	Wiścicka-Fernando M	2021	The use of mobile technologies in online shopping during the Covid-19 pandemic-An empirical study.
3	International Journal of Environmental Research and Public Health	Donati S. et al.	2021	Not All Remote Workers Are Similar: Technology Acceptance Remote Work Beliefs and Wellbeing of Remote Workers during the Second Wave of the COVID-19 Pandemic International Journal of Environmental Research and Public Health.
4	Child development	Gelman S. A. et al.	2018	Developing digital privacy: Children's moral judgments concerning mobile GPS devices." Child development.
5	Asia Pacific Business Review	Oh I. et al.	2022	A new global division of labour in venture capital flows: Coupang's IPO success at the New York Stock Exchange.
6	Sustainability	Wang O.	2020	Consumers' Continuous Use Intention of O2O E-Commerce Platform on Community: A Value Co-Creation Perspective
7	Advances in Digital Marketing and eCommerce	Zhu Y. et al.	2022	Consumer adoption of online-to-offline food delivery services: a conceptual model. Advances in Digital Marketing and eCommerce
8	SAGE Open Medicine	Renu N.	2021	Technological advancement in the era of COVID-19

Table 2: Why and why retail needs to respond quickly as IT technology evolves

NO	Journal name	Author	Year	Discussion
1	SAGE Open Medicine	Renu N.	2021	Technological advancement in the era of COVID-19
2	The journal of individual Psychology	Turner A.	2015	Generation Z: Technology and Social Interest
3	International Journal of Social Sciences	Cilliers E. J.	2017	The challenge of teaching generation Z
4	Cross-Cultural Management Journal	Iorgulescu M.-C.	2016	Generation Z and its perception of work
5	Marketing Education Review	Wajda T. et al	2022	Giving Generation "Z" Marketing Students A "voice"
6	Asian Journal of Beauty and Cosmetology	Koo H. J. et al	2021	Skin Improvement Effect of Tencel Sheet Mask Pack Using Selfluminous LED Light Source
7	Sustainability	Pokojski Z. et al	2022	Remote Work Efficiency from the Employers' Perspective—What's Next?
8	Aging clinical and experimental research	Tun S. Y. Y. et al.	2021	Internet of things (IoT) applications for elderly care: a reflective review
9	Computers in Industry	Corallo A. et al.	2022	Cybersecurity awareness in the context of the Industrial Internet of Things: A systematic literature review
10	Journal of Retailing and Consumer Services	Yang L. et al.	2022	Exploring the core factors of online purchase decisions by building an E-Commerce network evolution model
11	BMJ global health	Li H. O.-Y. et al.	2022	Youtube as a source of misinformation on COVID-19 vaccination: a systematic analysis
12	IT Professional	Park A. et al.	2022	The Evolution of Nonfungible Tokens: Complexity and Novelty of NFT Use-Cases

Table 2 (continued)

NO	Journal name	Author	Year	Discussion
13	Institute of Electrical and Electronics Engineers	Mozumder M. A. I. et al.	2022	Overview: Technology Roadmap of the Future Trend of Metaverse based on IoT Blockchain AI Technique and Medical Domain Metaverse Activity
14	Engineering Science and Technology an International Journal	Yetis H. et al.	2022	Blockchain-based mass customization framework using optimized production management for industry 4.0 applications

Table 3: 4th Industrial Revolution Retail Business with Internet of Things and Artificial Intelligence

NO	Journal name	Author	Year	Discussion
1	Technological Forecasting and Social Change	Karim M. S. et al.	2022	Resource-Based Perspective on ICT Use and Firm Performance: A Meta-analysis Investigating the Moderating Role of Cross-Country ICT Development Status
2	Technological Forecasting and Social Change	Battisti. S. et al.	2022	Creating new tech entrepreneurs with digital platforms: Meta-organizations for shared value in data-driven retail ecosystems
3	The Kaohsiung journal of medical sciences	Huang T.-K. et al.	2018	Augmented reality (AR) and virtual reality (VR) applied in dentistry.
4	Journal of Business Research	Chopdar P. K. et al.	2018	Examining the role of consumer impulsiveness in multiple app usage behavior among mobile shoppers
5	Electronic Commerce Research and Applications	Gu J. et al.	2022	Private or not? The categorical differences in mobile users' privacy decision-making

Table 4: Retail industry to prepare for evolving technologies

NO	Journal name	Author	Year	Discussion
6	Big Data and Cognitive Computing	Lee I. and G. Mangalaraj	2022	Big Data Analytics in Supply Chain Management: A Systematic Literature Review and Research Directions
7	Journal of Channel and Retailing	Suh Y. et al.	2022	ESG Strategy and Cases in the Distribution Industry: Focusing on Walmart Amazon Emart and Coupang
8	International Scientific and Practical Conference Digital and Information Technologies in Economics and Management	Stamopoulos D. et al.	2022	New Trends and Digital Models of E-commerce in Era of COVID19: Case Study of Russian and Korean Retail Companies
9	Materials Today Proceedings	Rani S. et al.	2022	Security and Privacy Challenges in the Deployment of Cyber-Physical Systems in Smart City Applications: State-of-Artwork
10	Digital Transformation in the Nigerian Small Business Sector	Olayinka O. et al.	2022	Digital Transformation in the Nigerian Small Business Sector
11	Futures	Reuschke D. et al.	2022	Digital futures of small businesses and entrepreneurial opportunity
12	Blockchain and Deep Learning	Sarma A.	2022	Smart Contracts: A Way to Modern Digital World
13	Technological Forecasting and Social Change	Hajdas M. et al.	2022	The evolution of the digital service ecosystem and digital business model innovation in retail: The emergence of meta-ecosystems and the value of physical interactions
14	International Conference on Image Processing and Intelligent Control	Zhang K. et al.	2021	Research on the application of immersive media in new retail cyberspace

3. Results

3.1. Current Situation and Changes in Retail

As of 2022, if you look around, you can hardly see people using cell phones, not smartphones. Most people use smartphones, and online shopping, remote education, and a significant portion of workers are taking care of telecommuting tasks quickly (Wiścicka, 2021; Donati et al., 2021). In addition, when it is necessary to visit offline stores to purchase necessary beauty products, search and visit online maps rather than paper maps (Gelman et al., 2018), and after COVID-19, delivery and online stores are more used than offline stores. Food delivery is increasing, but there are few deliveries only for professional beauty products. But In Korea, the delivery culture such as Coupang's "Rocket Delivery" has been very developed, and the logistics system, which can be ordered online and received in one day, has also developed rapidly. Even after COVID-19, the delivery culture has developed and begun to be activated enough to receive products in various categories within an hour, and even when ordering within an hour, the delivery situation can be determined through APP's GPS (Oh et al., 2022). The current retail situation has developed to the point where consumers can receive the products they want with a few touches, and it is preferred overseas (Wang 2021). In addition, the shopping culture of purchasing online and picking up offline is increasing, and the distinction between offline and online areas is disappearing. Since the Internet has been activated, the concept of acting in physical space has begun to blur, and retail is also evolving according to the needs of consumers seeking convenience (Zhu et al., 2022). The reason why the rapid development of technology was able to enter people without feeling alienation can be seen after the COVID-19 pandemic that occurred two years ago. The COVID-19 pandemic has served as a catalyst for the economic development of the retail industry by bringing Internet technology and people closer and has opened the era of New Normal to establish the economic order of retail online as shown in Table 1. In other categories, it is necessary to incorporate the active smart delivery culture into beauty and focus the need. I would like to emphasize through this paper that if the fast delivery culture becomes a daily life for the beauty industry, it can be a satisfactory shopping for consumers as well as beauty companies.

3.2. Why and Why the Beauty Industry Needs to Respond Quickly to Evolving Retail as IT Technology

People born after 1982 are called millennials, generation M. These are the generation who used online shopping,

computers, the Internet, mobile phones, and online games whenever they needed, and learned online (Renu, 2021). Also known as the Google Generation or Millennial Generation, those born from 1993 to 2005 are called Generation Z and are digital natives who grew up in a digital environment (Turner, 2015). They are the most familiar generation of social networks and smartphone games, and education was naturally learned in an environment that combines new technologies (Cilliers, 2017). In addition, in terms of work, tasks that utilize IT technology can be caught faster than Generation X and Generation M and acquired (Iorgulescu, 2016). Generation Z is a generation that has quickly promoted the development of content retail, and all information is found online, so it should be recognized as the current major consumer. In addition, in line with the consumption tendency of Generation Z with a short concentration time, the retail market should mobilize digitized technology to recognize what retail consumers with purchasing power want. Therefore, the beauty industry should also focus on the current retail technology (Wajda et al., 2022).

Unexpectedly, the IT field and technical parts that felt difficult can be found easily and diversely around. For example, skin beauty is being applied to cosmetics by making and using mask packs, or (Koo & Kwon, 2021) working remotely and making video calls with people around the world through a network is becoming a daily routine (Pokojski et al., 2022). Not only the MZ generation but also the elderly use smartphones to search, face time, and Internet banking using smartphones (Tun et al., 2021). This is because parts that utilize technology in daily life or work environments are quickly becoming established, and products with IoT are easier to operate. This means that consumers who naturally accept technology or machines have expanded their purchasing range. As everyday life using technology becomes more natural, security awareness is also emerging (Corallo et al., 2022). It is expected that the more thorough security is, the higher the frequency of paying for expensive beauty devices and luxury cosmetics online.

The frequency of online purchases has increased without having to visit regardless of gender or age, and it has become possible to purchase only with touch or voice. As the ordering process became simpler, Internet ordering itself became easier, and the cycle of retail was inevitably developed. In this situation, wouldn't it be very helpful for the development of the beauty industry if a retail system for beauty was introduced professionally? (Yang et al., 2022) In addition, untouchable images and sounds are also used as means of sharing and consumption through YouTube. Even token systems such as NFT are applied by general companies, and retail is gradually evolving (Li et al., 2022). The beauty industry is also gradually introducing NFT.

Global companies L'Oreal and LG have also issued NFTs for beauty, making it an issue. The NFT market is also an essential part of the beauty industry for the development of beauty.

With the onset of COVID-19 and the rise of Metaverse, consumers are expected to connect to all other technology industries, including IoT, blockchain, artificial intelligence, and healthcare. The beauty field is also expected to be applied one day (Mozumde et al., 2022). As they learn a variety of technology information, they will increase their shopping needs and pursue customized consumption trends. Accordingly, logistics systems for retail and the direction of retail are also developing at the cutting edge, and IT technology should be further expanded to logistics or retail to respond to consumers' speed (Table 2) (Yetis et al., 2022). Beauty products are items that are perishable, fragile, and have to be sensitive, so they should be recognized more importantly.

3.3. 4th Industrial Revolution, Retail Business with Internet of Things and Artificial Intelligence

The aforementioned Internet of Things is the third stage of digital development and is an information technology in which individual objects exchange information through the Internet after collecting information in real time by attaching sensors to objects (home appliances). In other words, it refers to connecting smart devices to make decisions on their own, collect data, and make decisions on their own even if they are not adjusted by humans (Khanh et al., 2021). The Internet of Things revolutionizes consumer and purchasing behavior in the digital realm, and retailers create opportunities to reach consumers in new ways (Panarello et al., 2021). The development of the Internet of Things accelerates; various papers have begun to be written extensively that make human life easier. Various cases have emerged, ranging from technology, engineering, economy, business, strategy, industry, and management to which the Internet of Things is applied. However, there are not only positive aspects. There is also a negative aspect that technological advances threaten human jobs and personal information security problems can arise. In addition, there are quite few studies on the areas that the Internet of Things can use in relation to beauty (Dachyar et al., 2019). Since the spread of the Internet, it has been having a positive and positive impact at work. Research has shown that digital automation may eliminate hard work and improve quality of life, but may have negative consequences for unemployment, interpersonal and mental health (Coldwell, 2019), (SASI, 2018). The beauty industry should raise awareness of customized cosmetics and come up with measures to improve the quality of life for consumers who are struggling to buy cosmetics as a negative result of the current era.

As a case in which IoT was applied, face-to-face activities became difficult after the COVID-19 pandemic, and it began to be activated in the medical field and various fields (Singh et al., 2020). For some applications, wearable technology to provide services and improve quality of life for the elderly has become a hot topic, and even adults and infants, including the elderly, are using wearable devices well. 25 Fitness systems for home training have also been developed for health (Masuki et al., 2011). In addition to the medical field, various programs for non-face-to-face education are being developed in terms of education. 39 It can be seen that the Internet of Things is also applied to transportation that is essential in life. New technologies such as the Internet of Things and artificial intelligence have been introduced and distributed in electric vehicles and autonomous vehicles as shown Table 3 (Nittari et al., 2020). In this case alone, the introduction of new technologies in objects promotes economic development and the growth of the beauty industry and is a necessary means in daily life. In order to smoothly supply the necessary beauty consumer goods, it is essential to focus on the development of retail, and in a society that uses beauty products, the development of technology and retail will inevitably be interrelated.:

3.4. Retail Industry to Prepare for Evolving Technologies

The present is called the 4th Industrial Revolution. The core technology that leads the 4th Industrial Revolution is ICT-based intelligent information technology, which creates productivity and efficiency, preoccupies the industry and economy, and is necessary to achieve business performance. In other words, ICT is a combination of Information & Communication Technology) Information Technology and Communication Technology, which means all methods of collecting, producing, processing, preserving, and utilizing software technologies and information necessary for the operation and information management of information devices. ICT can be said to be the basis of the creative economy (Karim et al., 2022). ICT develops existing products and services as an infrastructure for all industries and retail and creates new products and services (Battisti et al., 2022).

Mobile, big data, and wearables are constantly emerging. The development of mobile has become a means to connect, communicate, and purchase anytime, anywhere beyond time and space (Huang et al., 2018). As a result, various application-based shopping apps have been created, and the number is increasing worldwide. As mobile shopping is being developed easily and shopping has become easier with a few touches, the number of users using mobile shopping has increased (Chopdar et al., 2018). Professional apps for beauty are also being continuously developed, but the

number is small. As the number of users using shopping apps has increased a lot, numerous personal information and privacy data have begun to be stored, and voices of concern about privacy are also growing (Gu et al., 2022). The collected data was analyzed as big data and used for business functions such as marketing, accounting, and operation, and (Lee & Mangalaraj, 2022) was expanded to delivery services tailored to consumers' needs. Delivery services such as Coupang's "Rocket Delivery" have begun to be introduced more quickly and accurately. In addition, data on clicks and purchases are reflected as individual tastes and are developing into an AI recommendation system. E-commerce such as "Abely" and "Coupang" in Korea also recommend cosmetics and styles that users are interested in through AI systems. In addition, a system in which computers automatically answer repeated customer's expected questions in shopping has been introduced, allowing them to respond quickly at the customer management level. Through AI technology, it is possible to quickly and accurately process parts that require manpower resources such as customer service, marketing, delivery service, order processing, and analysis service (Suh et al., 2022).

This flow leads to the result that ICT is developing industry and retail, spreading new services, and becomes the basis for the creative economy, as mentioned above. Using big data as a link between these technologies and retails, beauty retail is a retail that combines technologies, and it must be advanced by applying advanced technologies to respond quickly to consumers' needs (Stamopoulos et al., 2022). Advances in technology do not have only positive effects. Of course, the retail industry will be aware of the need to introduce high-tech technologies. In the case of large companies, they dominate the market by preemptively introducing high-tech technologies, but there are limitations in using big data as the parts of personal information protection and privacy infringement are obstacles (Rani et al., 2022). In general, small, and medium-sized companies other than large companies, there are limitations in that they cannot easily approach high-tech in terms of the cost of technology introduction, developer manpower problems, and education on technology understanding (Olayinka & Wynn, 2022; Reuschke et al., 2021). It is a limitation that must be solved technically for the development of beauty retail.

Moreover, the retail industry is also changing in line with rapidly evolving technologies. With the development of technology, retail and technology are combined with beauty to provide convenience to consumers, and consumers are naturally acquiring the technology by experiencing it. Although it is not popularly applied to retail yet, there are areas that are being studied steadily. It is the NFT and Metaverse.48 NFT started with art and art, but L'Oreal, a

global beauty company, also entered the NFT market. The beauty market is also gradually interested in NFT. Due to the impact of technological advances and the COVID-19 pandemic, everything began to be solved online, and the NFT and metaverse markets began to emerge rapidly (Sarma, 2022). Fast delivery, which was previously unimaginable, has become a step closer to connecting online and offline with technological advances in retail, and consumers are looking at a virtual space called metaverse. In other words, I dream of moving without any restrictions on time or coming to me as soon as I purchase something (Hajdas et al., 2022). Many studies on virtual reality and augmented reality are being conducted to cope with increasingly smart consumers (Zhang et al., 2021). Numerous companies are constantly thinking about how to naturally accept the metaverse world to consumers without distinction, rejection, and discomfort, and how to carry out retailing to create consumption (Table 4). The beauty industry should study how to naturally approach consumers in a metaverse world without distinction. Also, many companies must constantly think about how they can generate consumption (Tan et al., 2022). In other words, IT technology development, supply, and demand must match. Even if either one is fast or slow, ideal retail cannot proceed. Therefore, the retail should prepare for the next step in preparation for the technology that develops as quickly as the technology develops and the consumer becomes smart.

4. Discussions

The development of digital technology has made human life convenient and prosperous. In order to live a rich life, a means of retail is needed to conveniently use and purchase the technology and retail technology must be more advanced and smarter to respond to purchase needs. The retail referred to in this review is written to mean the retail of all industries where the demand required by customers occurs, not the retail industry specified in only one category. Digital distribution technology, e-commerce, robot services, and smart logistics will become essential areas in retail in the future. The game or entertainment industry using AI and big data, VR, AR, MR, metaverse, and IoT object internet is naturally approaching consumers, and consumers are adapting in various fields such as education, medical care, and work (Mozumder et al., 2022; Singh et al., 2020). The retail industry should also establish a smart payment system and security system and introduce a more interesting Beauty-commerce platform (Corallo et al., 2022). If the existing e-commerce has been operated as an optional e-commerce to quickly purchase the desired product, it is expected that in the future, metaverse-based e-commerce will be developed to feel the same satisfaction as offline and communicate. Through the virtual reality of metaverse, the

retail industry will develop further, and the virtual currency market will significantly open (Mofijur et al., 2020). As ICT technology and the virtual currency market develop, the importance of personal information security will also increase due to the nature of everything being connected to software and online. If means to accurately solve personal information protection and privacy problems and secure the safety of virtual assets become popular, all payments as virtual currency will one day be possible (Corallo et al., 2022).

In particular, digitalization of retail has also changed the way offline stores operate. Digitalization in offline stores has become commonplace to place orders at franchise kiosks, and serving robots are often served in hotels and cafes where the routes are not complicated. In addition, supermarkets with a well-equipped store security system also operate without a cashier by applying an unmanned payment system. The common thing about digitalization of offline stores is that they are not operated by humans. Also, retail is an industry that requires people, so humanities are essential. As digital technology, which is designed to be more convenient, develops, it is a problem that a person should think deeply about his role in the retail industry. In the digital market's accelerating trend, only retail, which quickly identifies consumers' needs and social changes and responds smartly, will be the first to dominate the beauty market.

In the future, Beauty retailers should collaborate by thinking about what retail businesses will emerge and which companies will understand the 4th Industrial Revolution. It is also necessary to fully understand and calculate the cost aspect and efficiency before introducing advanced technology into the workplace. The logistics industry incorporating digital technology is part of a very big factor in the development of the retail industry. As the frequency of online purchases increased, the fulfilment system began to advance. The route was identified in advance and time-predicted delivery was started, and an automated ordering system was introduced through big data. If autonomous driving and unmanned delivery systems are introduced in the future, they will be able to purchase and use the desired items immediately at any time for 24 hours without human intervention. The introduction of such a system will create an environment that can be received immediately even in areas where delivery is difficult and will affect the spread of the retail market and consumption promotion. The development of science and technology will continue in the future. By applying advanced technologies, new industries will constantly emerge, and consumers' needs and knowledge will also grow. In order to respond to smart consumers, the retail industry must respond sensitively to the social environment and focus on consumer needs in detail.

5. Conclusions

This literature review is a narrative review of the technological development and the need for retail change that is spread throughout, and it is meaningful to collect reviews of the digital environment that will be incorporated into future beauty retail. Accordingly, the contents of the analysis of consumer behavior on the 4th Industrial Revolution need to be additionally supplemented, and further consideration of humanities research derived from the future industrial environment is suggested. This review summarizes that digital technology, which is not specific to one beauty retail industry but can be combined in a wide range of industries, has a complementary relationship with retail, and is expected to be used as a reference when researching new technologies for human life relating to lifestyle on health and sustainability (LOHAS) and essential retail industry for economic development. This study requires continuous research and technology application as IT technology to the 4th Industrial Revolution develops rapidly. In order to grow into a central industry of the distribution industry and the economic industry, the beauty industry must be close to digital technology and must constantly study complementary relationships.

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