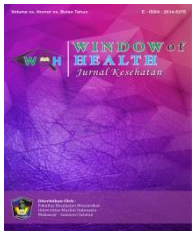
Window of Health Jurnal Kesehatan
journal homepage : www.jurnal.fkmumi.ac.id



ARTICLE RESEARCH
URL Article: http://jurnal.fkmumi.ac.id/index.php/woh/article/view/woh9101

The Role of Wearable Technology in Enhancing Public Health and Lifestyle Improvement in South Korea

[C]Mira Sapriyawati[1], Shannaz Mutiara Deniar[2], Gonda Yumitro[3], Gautam Kumar Jha[4]
[1,2,3]Department of International Relations, Faculty of Social and Political Sciences, University of Muhammadiyah Malang, East Java, Indonesia
[4]Jawaharlal Nehru University, New Delhi, India
Email Corresponding Author ([C]): mirasapriyawati@webmail.umm.ac.id
[1]mirasapriyawati@webmail.umm.ac.id, [2]shannazdeniar@umm.ac.id, [3]gonda@umm.ac.id, [4]gautamkjha@mail.jnu.ac.in

ABSTRACT

Wearable technology is an emerging innovation in the digital era that refers to electronic sensor devices commonly used in daily life to support health monitoring and lifestyle management. This study examines the role of wearable technology in enhancing public health and promoting a healthier lifestyle in South Korean society. Using a qualitative descriptive approach, this research analyzes secondary data from previous studies and user experiences with wearable devices, including smartwatches, smart bands, and fitness trackers. The findings show that wearable technology significantly increases health awareness through continuous monitoring and feedback, particularly in physical activity, sleep quality, and stress management. This study contributes to existing literature by conceptualizing wearable technology not merely as an individual health tool, but as a strategic digital health instrument embedded within South Korea's technological infrastructure and public health ecosystem. Overall, wearable technology demonstrates strong potential in supporting preventive healthcare and sustainable public well-being.

Keywords: Healthcare; wearable technology; health improvement; lifestyle; South Korea; digital innovation

PUBLISHED BY :
Faculty of Public Health
Universitas Muslim Indonesia
Address :
Jl. Urip Sumohardjo Km. 5 (Kampus II UMI)
Makassar, Sulawesi Selatan.
Email :
jurnalwoh.fkm@umi.ac.id
Phone :
+62 82188474722

Article history
Received 13 October 2025
Received in revised form 19 January 2026
Accepted 24 January 2026
Available online 25 January 2026

INTRODUCTION

South Korea stands as one of the nations that places a strong emphasis on technological advancement and innovation, with information technology serving as a major pillar of its economic and social strength. Between 2022 and 2023, South Korea was ranked by Global Finance [1] as one of the most technologically advanced nations in the world. This technological progress has significantly contributed to the nation's economic growth, supported by highly skilled human resources and well-formulated government policies. This technological progress not only drives economic growth but also shapes various aspects of daily life, including healthcare systems and public health management.

The country's focus on technological development encompasses both tangible and intangible form of information technologies essential for information systems[2], such as management innovation, administrative renewal, computer systems, software, the Internet, multimedia, and communication devices. Within this technological ecosystem, wearable technology has emerged as a practical application that bridges digital innovation and everyday health practices. Its growing utilization reflects South Korea's broader commitment to integrating technology into health promotion, disease prevention, and lifestyle management.

Wearable technology represents a new phase in the digital era, referring to electronic sensor-based devices that can be worn daily like an accessory[3]. These devices incorporate sensor technologies embedded in smartwatches and smart bands, with one of their most notable developments being in the healthcare sector[4]. These devices can track and record bodily information, allowing users to monitor calorie intake, sleep quality, posture correction, blood pressure, and heart rate. Currently, the most common applications in wearable technology[5]. Through continuous monitoring, these devices support individuals in becoming more aware of their health conditions and lifestyle behaviours. Beyond basic monitoring functions, wearable technology enhances mobility, connectivity, and accessibility by enabling users to access health-related information and digital services efficiently.

Its lightweight, portable, and user-friendly design offers advantages over conventional computing devices, making it particularly suitable for continuous health engagement. Moreover, wearable technology plays an important role in supporting individuals with disabilities, improving safety for children and the elderly, and expanding access to preventive healthcare services. As such, wearable technology should be understood not merely as a standalone innovation, but as an integrated digital system embedded within broader technological and social infrastructures.

Previous studies have extensively discussed the role of wearable technology in healthcare. Research by Ka Yin Chau, Dongko Kim, Han-Young Ryoo, and Byeong-Seok Shin[6], titled *Smart technology for healthcare: Exploring the antecedents of Adoption intention of healthcare wearable technology*, highlight that wearable technology is a sustainable tool that facilitates human tracking of their body health. Furthermore, wearable technology has a positive impact on improving the quality of life and lifestyle of the South Korean community. This technology also significantly impacts social aspects and public interest

This finding is consistent with the research conducted by Nam Soon Kim and Wol Hee Do[7], titled "Research Trends on Healthcare Wearables Published in Korean Journals, the research highlights the increasing necessity of wearable technology among South Korean citizens, particularly in response to the country's aging population and the rising cost of medical care. Therefore, the innovation of wearable technology contributes to the enhancement of public well-being, especially by promoting health awareness[8] and encouraging preventive healthcare behaviors.

However, most existing studies primarily focus on individual adoption intention, technological acceptance, or clinical functionality of wearable devices. There remains a limited discussion on how wearable technology functions at a broader public health level as part of South Korea's digital health ecosystem. Addressing this gap, the present study contributes by analyzing wearable technology not only as an individual health-support tool but as a strategic digital health instrument that supports public health enhancement and lifestyle improvement. Accordingly, this study seeks to answer the research question: How do the implementation and role of wearable technology contribute to enhancing public health and improving lifestyle patterns in South Korea?

METHOD

This study applies a descriptive qualitative approach to analyze the implementation and role of wearable technology in contributing to public health enhancement and lifestyle improvement in South Korean society. The study is based on secondary data, including market trend reports, demographic statistics, and relevant literature related to wearable technology and digital health, like JMIR.

The analytical process was conducted through three interrelated stages. First, data concerning market trends and the wearable medical device industry were examined to identify patterns of technological development, diffusion, and institutional adoption in South Korea's healthcare and digital infrastructure. Second, data on user adoption and demographic information were analyzed to understand how wearable technology is utilized in everyday health-related practices across different population groups. This analysis focused on patterns of health monitoring behaviour, preventive health engagement, and lifestyle management, as reflected in documented usage trends and prior empirical findings.

Third, the findings from market and user-level analyses were contextualized through a review of relevant literature in public health, digital health, and behavioral studies. Throughout the analysis, numerical data were treated as descriptive indicators and examined within a qualitative analytical framework to identify patterns, meanings, and implications. This approach enables the study to conceptually position wearable technology as a strategic digital health instrument within South Korea's Public health ecosystem, rather than merely as an individual consumer device.

RESULTS

The development of wearable technology in South Korea reflects not only the advancement of digital innovation but also a strategic alignment with public health policy and national health service

frameworks aimed at improving the population-level quality of health living. *The integration of wearable technology within South Korea's digital infrastructure has enabled these devices to function as interconnected health systems rather than standalone consumer products. With the advancement of the Internet of Things (IoT), wearable devices are increasingly capable of exchanging health-related data across wireless networks*[9], *thereby supporting continuous health monitoring and data-driven lifestyle management*[10]

Although the concept of wearable technology was initially conceptualized by researchers at the Massachusetts Institute of Technology (MIT) in the 1950s and developed into early experimental forms during the 1960s, its relevance in the South Korean context emerges more clearly through its systematic institutional adoption rather than its historical origins. Wearable technology was first introduced in South Korea in the early 2000s, primally focused on smartwatches with limited functions. Subsequently, this technology evolved into advanced smartwatches equipped with comprehensive health[11] and fitness features.

The rapid development of wearable technology in South Korea has been strongly driven by the synergy between startup ecosystems, major domestic technology corporations, and active government involvement. During the 2010-2025 period, leading companies such as Samsung introduced innovations that integrated wearable technology with IoT systems, enabling wearable devices to collect, process, and generate various types of personal health data through sensor and biometric[12] *, thereby enhancing their capacity to support preventive health practices and individualized health awareness.*

The products released include health monitoring devices, GPS trackers, and Lifeband Touch, which are used for fitness and body health tracking[13]*. The advancement of wearable technology has increasingly become a trend and lifestyle due to its effectiveness, convenience, and stylish appeal. Between 2016 and 2020, innovations in wearable technology became more sophisticated, featuring devices capable of analyzing sleep quality, supporting wireless payment systems, and AI-based health monitoring. This trend has continued beyond 2021, and the focus of innovation has shifted toward public health and individual wellness*[14]*. Highlighting the role of wearable technology in supporting preventive healthcare, sustained health awareness, and long-term lifestyle improvement within South Korean society.*

The advancement of wearable technology in South Korea is on the rise, as depicted in Figure 1, which already shows consistent growth from 2017 to 2028. Based on historical data, the market trend increased from USD 148.7 million in 2017 to USD 220.9 million in 2024. The figures for 2025 to 2028 are based on market projections that forecast continued growth to reach USD 255.8 million by 2028. This trend indicates an increasing potential for the adoption of wearable technology within South Korean society, driven by growing health awareness. By product category, smartwatches dominate the market in terms of value, followed by smart bands and smart scales.

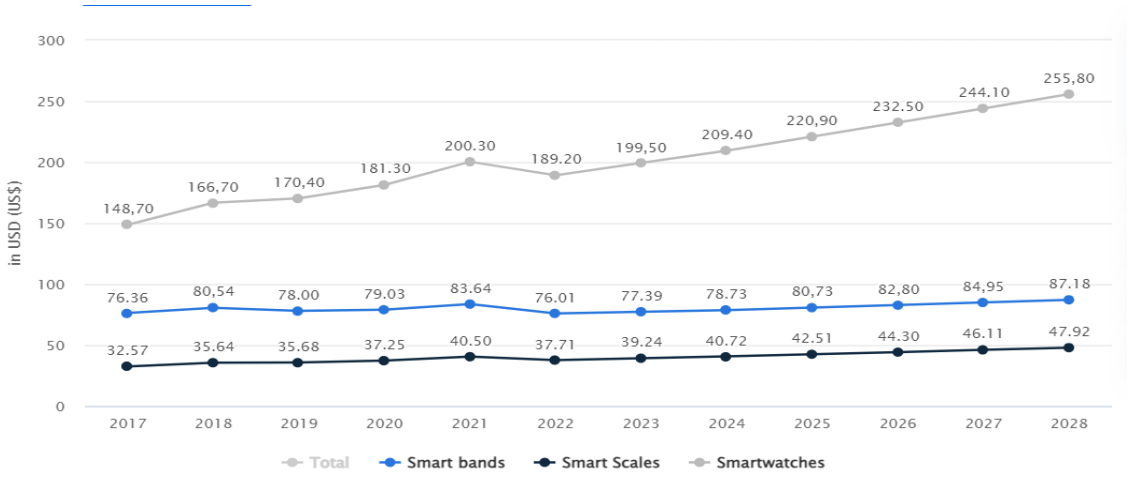


Figure 1 Market trend og wearable technology in South Korea 2017-2028. Source Statista Market Insight 2024

Smartwatches have shown consistent growth, although they experienced a temporary fluctuation from USD 200.3 million in 2021 to USD 189.2 million in 2022, attributable to post-pandemic market adjustments, supply chain realignments, and shifts in consumer behavior[15]. However, the wearable market subsequently underwent a consistent recovery. This growth reflects a strong consumer demand for devices that offer advanced health functionalities[16] and high connectivity features. The expansion of the wearable market in South Korea is driven by several key factors. First, the increasing public awareness of health and active lifestyles has made wearable devices an integral part of daily routines. This phenomenon is substantiated by surveys and empirical studies in Korea that demonstrate a heightened sense of concern regarding personal health conditions, which serves as a potent motivation for adopting wearable technology[17].

Second, the advancements in the integration of biometric sensors, artificial intelligence (AI), and the Internet of Things (IoT) in wearable devices have significantly improved the accuracy and speed of real-time health monitoring[18]. These innovations have transformed wearable devices from mere fitness trackers into preventive tools that enable individuals to monitor their physical condition and detect potential health risks more efficiently.

Third, industrial initiatives and national policies in South Korea have played a crucial role in accelerating the adoption of health-oriented wearable devices. Regulatory frameworks, such as the expedited approval pathway for innovative medical technologies (e.g., the “Immediate Market Entry” system in Korea), have facilitated market access for AI- and IoT-based wearable devices.

Adoption of Wearable Technology in Enhancing Public Health and Lifestyle in the South Korean Population

South Korea is known as one of the most technologically advanced and innovative countries in the world. One notable advancement is the development and adoption of wearable technology in the fields of health and fitness. The primary purpose of this innovation is to enable individuals to monitor

their health conditions, improve physical well-being, and access real-time health information without the need for direct medical consultation[19]. The rapid advancement of wearable technology in South Korea is further supported by the society's openness to innovation and the adoption of emerging technologies 20Click or tap here to enter text..

By utilizing a variety of advanced sensors, wearable technology can accurately collect user data and monitor physical activities, including measurements and physiological changes through sensing systems and movement tracking[21]. Not only that, wearable technology makes its users stylish because it is designed according to their needs, such as accessories, clothing, and others. The adoption of wearable technology itself is increasing and has become a trend among the South Korean[22] public due to the public's interest and awareness regarding body health conditions

The Implementation of Wearable Technology in South Korea

As one of the countries with the highest level of advancement in information and communication technology (ICT), South Korea possesses a highly developed digital infrastructure[23], with an average internet speed of 112.77 Mbps, far exceeding the global average of 30.02 Mbps. This condition creates an ideal ecosystem for the development and implementation of wearable technology[24]. Strong support from major corporations such as Samsung Electronics, LG Electronics, SK Hynix, and Naver plays a crucial role in driving innovation in emerging technologies, including wearable devices. The synergy between the industrial sector and the government has further accelerated the diffusion of innovation across various sectors, particularly healthcare, education, and lifestyle.

Wearable technology has been extensively adopted in South Korea, particularly in the fields of healthcare and fitness. Devices such as smartwatches, fitness trackers, smart garments, and health patches enable users to monitor[25] vital signs: including heart rate, blood oxygen levels, physical activity, and sleep patterns in real time. Recent scholarly evidence indicates that the integration of wearable technology significantly enhances health-conscious behaviors and facilitates the early detection of chronic diseases, thereby contributing to improved public health outcomes[26].

In the context of public health, this technology has become an integral part of the Korea National Health Insurance Service (NHIS) programs. It supports the prevention of non-communicable diseases (NCDs) through the systematic collection of biometric[27] Beyond health-related aspects, the adoption of wearable devices is also influenced by social and cultural factors. Korean society is widely recognized for its strong awareness of health-conscious and fashionable lifestyle trends. Consequently, wearable devices not only serve a functional purpose but also act as an element of lifestyle identity. This confluence of medical function and aesthetics is what drives widespread adoption among adolescents and young adults[28].

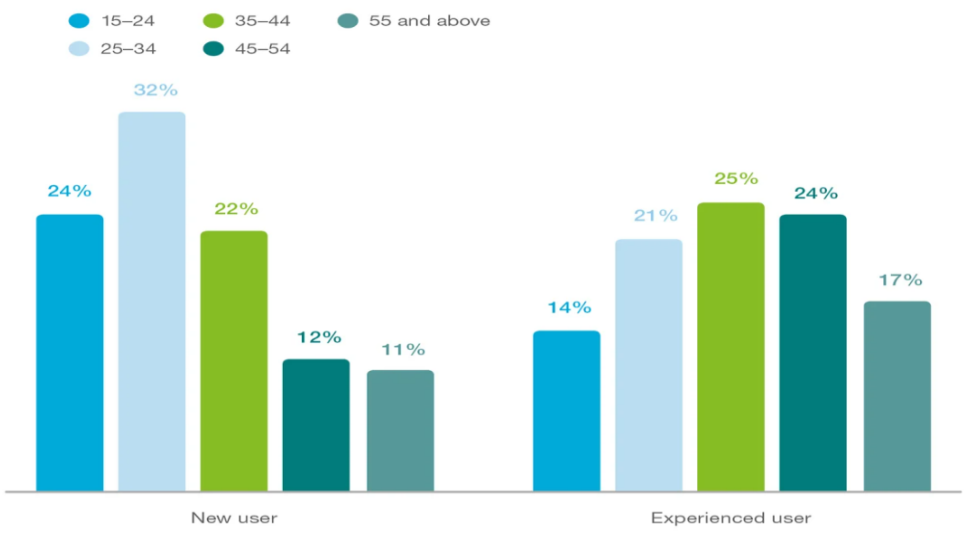


Figure 2. Wearable Technology and IoT Users by Age (Ericsson Consumer, 2023)

Based on the data from Ericsson Consumer Survey (2023), the use of wearable devices in South Korea has increased significantly across various age groups. The data indicates that new users are predominantly in the 25–34 age group (32%), followed by the 15–24 age group (24%). Conversely, experienced users are dominated by the 35–44 (25%) and 45–54 (24%) age groups. This trend suggests that the adoption of wearable technology in South Korea is not only popular among the younger generation but is also becoming a necessity for the productive and older age groups, aligning with a growing awareness of long-term health[29].

Furthermore, alongside user adoption, the market for wearable medical devices in South Korea has also experienced rapid growth in recent years. Based on the data from the South Korea wearable medical devices market, 2018-2030 (US$M), the market value of wearable medical devices in South Korea was USD 519.9 million in 2023 and is projected to increase significantly to USD 3.12 billion by 2030.

This indicates that the market value of wearable medical devices in South Korea is projected to sharply increase from USD 519.9 million in 2023 to USD 3.12 billion in 2030, with a compound annual growth rate (CAGR) of 28.5%. This significant growth reflects the increasing adoption of wearable technology in the healthcare[30], particularly after the COVID-19 pandemic, which accelerated the digital transformation of the medical sector. The surge is driven not only by innovation by major companies such as Samsung Health and LG U+, but also by the South Korean government's strategy through the digital healthcare innovation plant project, which aims to expand Internet of Medical Things (IoMT)-based services across hospital and community health facilities[31].

This market growth demonstrates how the implementations of wearable technology in South Korea have evolved systematically through three major stages. The findings indicate that integration of sensor and AI technology in personal health devices enhances the accuracy of biometric monitoring and

enables real-time population health analysis assessment. Furthermore, the adoption of cloud-based and big data systems has facilitated large-scale, real-time population health analysis and data-driven healthcare solutions.

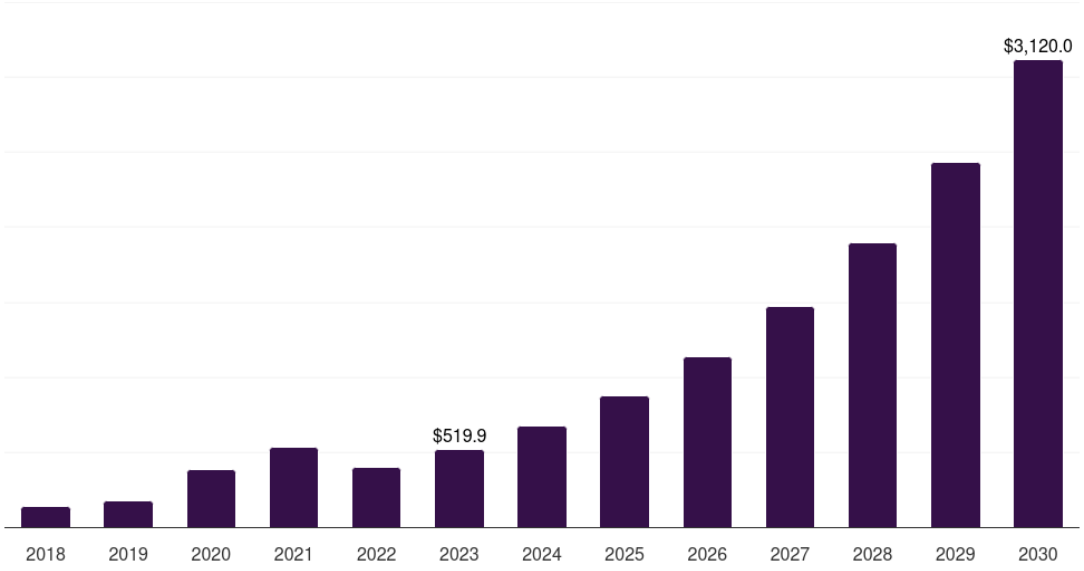


Figure 3: South Korea Wearable Medical Devices Market, 2018-2030

In addition, cross-sector collaboration among industries, startups, and healthcare institutions has strengthened the national innovation ecosystem and increased public engagement with wearable health technologies. This trend confirms that the implementation of wearable technology in South Korea is not just a lifestyle phenomenon but an important part of the national strategy for a sustainable, disease-prevention-oriented smart healthcare ecosystem.

DISCUSSION

The findings of this study indicate that the rapid adoption of wearable technology in South Korea cannot be understood merely as a technological trend or an individual lifestyle choice. Rather, it reflects the outcome of a structurally supported digital health ecosystem in which technological innovation is closely embedded within national policy frameworks, institutional arrangements, and market-driven initiatives[32]. The integration of wearable technology with the Internet of Things (IoT), artificial intelligence (AI), and cloud-based systems has significantly expanded its role beyond personal fitness monitoring toward population-level health surveillance and preventive healthcare support[33].

This transformation is closely aligned with South Korea's national health, advanced digital infrastructure, and the active institutional involvement of both public and private actors[34]. From a public health perspective, wearable technology supports preventive health practices by enabling continuous self-monitoring of physiological indicators, such as sleep quality, heart rate, and physical activity. These features support early risk detection and increase individual awareness of health-related behaviour[35]. However, an assessment of wearable technology should extend beyond the functional benefits to

critically examine the broader social, behavioural, and policy conditions that shape its effectiveness in improving health outcomes.

The empirical findings of this study suggest that the effectiveness of wearable technology is highly contingent upon users, digital literacy, sustained engagement, and the surrounding policy environment, while real-time feedback mechanisms may enhance short-term health awareness. Previous studies indicate that long-term behavioural change is not automatically sustained and may decline due to data fatigue or over-reliance on automated feedback systems[36]. This highlights the limitations of technology-centered interventions when they are not accompanied by continuous health education, behavioural support, and policy-driven engagement strategies.

At the systemic level, the integration of wearable devices into South Korea's healthcare infrastructure, particularly through NHIS-supported programs and IoMT initiatives, represents a significant shift toward data-driven health governance. While this approach enhances early disease detection and population health monitoring, it also introduces critical challenges related to personal data protection, algorithmic transparency, and the ethical use of biometric data. The increasing reliance on large-scale health data analytics raises questions regarding data ownership, consent, and the potential commercialization of sensitive health information, which remain insufficiently addressed within current regulatory frameworks. Furthermore, wearable technology is often promoted as a means of democratizing access to health monitoring and preventive care, the results of this study raise important concerns regarding digital health[37] inequalities.

Beyond policy frameworks and digital infrastructure, the widespread adoption of wearable technology in South Korea also reflects broader socio-contextual dynamics related to health consciousness, technological modernity, and productivity-oriented lifestyles[38]. Wearable device function is not only as tools for health monitoring but also as elements embedded within everyday practices shaped by national discourses on efficiency, self-optimization, and technological innovation[39]. However, this socio-contextual framing may contribute to the normalization of continuous self-monitoring and performance-driven health behaviours, where individuals are encouraged to align their bodily practices with algorithmic standards rather than holistic well-being.

Taken together, these findings suggest that the public health impact of wearable technology in South Korea is neither universally positive nor inherently transformative. Its effectiveness depends on coordinated governance, inclusive policy design, and critical awareness of its social and ethical implications. Without clear regulatory oversight and public education, wearable technology risks remaining a technologically advanced yet socially selective innovation. Therefore, cross-sector collaboration among government agencies, healthcare institutions, technology industries, and educational sectors is essential to ensure that wearable technology evolves as a sustainable public health instrument rather than a market-driven lifestyle commodity.

In this context, the implementation and utilization of wearable technology in South Korea cannot be separated from strong support of the national government, alongside the active participants of major

corporations and local startups that consistently contribute and innovate in developing more advanced and affordable technologies to meet the needs of South Korean society, particularly in the health sector, through collaborative programs.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the adoption of wearable technology in South Korea is driven by a structurally supported digital health ecosystem shaped by national policy frameworks, advanced digital infrastructure, and coordinated public-private collaboration. While wearable technology has expanded from personal monitoring to preventive healthcare and population-level health surveillance through integration with IoT, artificial intelligence, and cloud-based systems, its public health effectiveness remains uneven. The findings indicate that long-term health benefits depend not only on technological capability but also on users' digital literacy, sustained engagement, and supportive policy environments. Moreover, persistent challenges related to data protection, ethical governance, and unequal access suggest that wearable technology may reinforce digital health inequalities if left solely to market mechanisms. Therefore, policymakers, particularly the Ministry of Health and Welfare and the National Health Insurance Service, should strengthen regulatory oversight of health data governance, integrate wearable devices into structured preventive health programs, and implement targeted interventions, such as device subsidies and digital literacy initiatives, for vulnerable populations. Without such coordinated and inclusive policy actions, wearable technology risks remaining a technologically advanced yet socially selective innovation rather than a sustainable public health instrument.

ACKNOWLEDGEMENT

This research was funded by the Seed Program for Korean Studies of the Ministry of Education of the Republic of Korea and the Korean Studies Promotion Service at the Academy of Korean Studies (AKS-2023-INC-2230009) and supported by the University of Muhammadiyah Malang.

REFERENCES

1. Marc Getzoff. Most Technologically Advanced Countries In The World. 2023.
2. Dehghani M, Abubakar AM, Pashna M. Market-driven management of start-ups: The case of wearable technology. Applied Computing and Informatics. 2022;18(1–2).
3. Godfrey A, Hetherington V, Shum H, Bonato P, Lovell NH, Stuart S. From A to Z: Wearable technology explained. Vol. 113, Maturitas. Elsevier Ireland Ltd; 2018. p. 40–7.
4. Smart Shirt untuk Mengukur Tingkat Kesehatan dengan Menggunakan Teknologi Sensor dan Fitur Digital.
5. Rha JY, Nam Y, Ahn SY, Kim J, Chang Y, Jang J, et al. What drives the use of wearable healthcare devices? A cross-country comparison between the US and Korea. Digit Health. 2022;8.

6. Chau KY, Lam MHS, Cheung ML, Tso EKH, Flint SW, Broom DR, et al. Smart technology for healthcare: Exploring the antecedents of adoption intention of healthcare wearable technology. Health Psychol Res. 2019 Mar 11;7(1).

7. Kim NS, Do WH. Research Trends on Healthcare Wearables Published in Korean Journals. Fashion & Textile Research Journal. 2020 Oct 30;22(5):607–16.

8. Shei RJ, Holder IG, Oumsang AS, Paris BA, Paris HL. Wearable activity trackers–advanced technology or advanced marketing? Vol. 122, European Journal of Applied Physiology. 2022.

9. Ometov A, Shubina V, Klus L, Skibińska J, Saafi S, Pascacio P, et al. A Survey on Wearable Technology: History, State-of-the-Art and Current Challenges. Vol. 193, Computer Networks. Elsevier B.V.; 2021.

10. Joung KI, An SH, Bang JS, Kim KJ. Comparative Effectiveness of Wearable Devices and Built-In Step Counters in Reducing Metabolic Syndrome Risk in South Korea: Population-Based Cohort Study. JMIR Mhealth Uhealth. 2025;13.

11. Oh J, Kim D. Workout with a Smartwatch: A Cross-Sectional Study of the Effects of Smartwatch Attributes on Flow Experience and Exercise Intentions Depending on Exercise Involvement. Healthcare (Switzerland). 2023 Dec 1;11(23).

12. Ali J, Jusoh A, Idris N, Airij AG, Chandio R. Wearable Devices in Healthcare Services. Bibliometrix Analysis by using R Package. International journal of online and biomedical engineering. 2022;18(8):61–86.

13. Sarhaddi F, Kazemi K, Azimi I, Cao R, Niela-Vilén H, Axelin A, et al. A comprehensive accuracy assessment of Samsung smartwatch heart rate and heart rate variability. PLoS One. 2022 Dec 1;17(12 December).

14. Huhn S, Axt M, Gunga HC, Maggioni MA, Munga S, Obor D, et al. The Impact of Wearable Technologies in Health Research: Scoping Review. Vol. 10, JMIR mHealth and uHealth. JMIR Publications Inc.; 2022.

15. Köhler C, Bartschke A, Fürstenau D, Schaaf T, Salgado-Baez E. The Value of Smartwatches in the Health Care Sector for Monitoring, Nudging, and Predicting: Viewpoint on 25 Years of Research. Vol. 26, Journal of Medical Internet Research. JMIR Publications Inc.; 2024.

16. Shajari S, Kuruvinashetti K, Komeili A, Sundararaj U. The Emergence of AI-Based Wearable Sensors for Digital Health Technology: A Review. Vol. 23, Sensors. Multidisciplinary Digital Publishing Institute (MDPI); 2023.

17. Kalantari M. Consumers adoption of wearable technologies: literature review, synthesis, and future research agenda. International Journal of Technology Marketing. 2017;12(1):1.

18. TIRPAN EC, SEMİZ T. Bibliometric Analysis of Wearable Technology Studies in The Healtcare Industry. AJIT-e: Academic Journal of Information Technology. 2022;13(50).

19. Kim DJ, Lee YS, Jeon ER, Kim KJ. Present and Future of AI-IoT-Based Healthcare Services for Senior Citizens in Local Communities: A Review of a South Korean Government Digital Healthcare Initiatives. Vol. 12, Healthcare (Switzerland). Multidisciplinary Digital Publishing Institute (MDPI); 2024.

20. Kim HJ, Lee KH, Lee JH, Youk H, Lee HY. The Effect of a Mobile and Wearable Device Intervention on Increased Physical Activity to Prevent Metabolic Syndrome: Observational Study. JMIR Mhealth Uhealth. 2022;10(2).

21. Newswire PR. The Wearable Technology Ecosystem: 2016 - 2030 - Opportunities, Challenges, Strategies, Industry Verticals and Forecasts. PR Newswire US. 2016.

22. Blazquez M, Alexander B, Fung K. Exploring Millennial's perceptions towards luxury fashion wearable technology. Journal of Fashion Marketing and Management. 2020;24(3).

23. Invest Korea. World's Best Digital Infrastructure. 2024.

24. Jeon H, Lee C. Internet of Things Technology: Balancing privacy concerns with convenience. Telematics and Informatics. 2022;70.

25. Lou Z, Wang L, Jiang K, Wei Z, Shen G. Reviews of wearable healthcare systems: Materials, devices and system integration. Materials Science and Engineering R: Reports. 2020;140.

26. Yoon NY. Long-term Trends in Wearable Device Usage for Health and Their Impact on the Change in Physical Activity Frequency.

27. Lee J, Kim D, Ryoo HY, Shin BS. Sustainable wearables: Wearable technology for enhancing the quality of human life. Sustainability (Switzerland). 2016;8(5).

28. Ha J, Park J, Lee S, Lee J, Choi JY, Kim J, et al. Predicting Habitual Use of Wearable Health Devices Among Middle-aged Individuals With Metabolic Syndrome Risk Factors in South Korea: Cross-sectional Study. JMIR Form Res. 2023;7.

29. Kwon H, & IJH. Trend analysis of next-generation wearable devices and strategic recommendation for domestic SMEs – Focus on Pitbit business model canvas. The Journal of Humanities and Social Science. 2019;10.

30. Bianchi C, Tuzovic S, Kuppelwieser VG. Investigating the drivers of wearable technology adoption for healthcare in South America. Information Technology and People. 2023 Mar 21;36(2):916–39.

31. Kwon A, Lee HY, Shin SY, Yang K, Sung Y, Lee K, et al. Current Health Data Standardization Project and Future Directions to Ensure Interoperability in Korea. Vol. 30, Healthcare Informatics Research. Korean Society of Medical Informatics; 2024. p. 93–102.

32. Faizan M, Han C, Lee SW. Policy-Driven Digital Health Interventions for Health Promotion and Disease Prevention: A Systematic Review of Clinical and Environmental Outcomes. Vol. 13, Healthcare (Switzerland). Multidisciplinary Digital Publishing Institute (MDPI); 2025.

33. Kim DJ, Lee YS, Jeon ER, Kim KJ. Present and Future of AI-IoT-Based Healthcare Services for Senior Citizens in Local Communities: A Review of a South Korean Government Digital Healthcare Initiatives. Vol. 12, Healthcare (Switzerland). Multidisciplinary Digital Publishing Institute (MDPI); 2024.

34. Lee K, Seo L, Yoon D, Yang K, Yi JE, Kim Y, et al. Digital Health Profile of South Korea: A Cross Sectional Study. Int J Environ Res Public Health. 2022 May 1;19(10).

35. Lu L, Zhang J, Xie Y, Gao F, Xu S, Wu X, et al. Wearable health devices in health care: Narrative systematic review. Vol. 8, JMIR mHealth and uHealth. JMIR Publications Inc.; 2020.

36. Liang J, Xian D, Liu X, Fu J, Zhang X, Tang B, et al. Usability study of mainstream wearable fitness devices: Feature analysis and system usability scale evaluation. JMIR Mhealth Uhealth. 2018;6(11).

37. Feng H, Niwa M, Cao J, Kurata K, Zhang S, Lim Y, et al. Promoting the social implementation of digital and mobile health: effects of regulation on user and non-user behavior in East Asia. Vol. 29, Drug Discovery Today. Elsevier Ltd; 2024.

38. 산업공학과아주대학교, Lee G, Kim T, Lee J, Yun J. 스마트웨어 및 스마트의류에 대한 국내 미디어의 인식 분석 : 가능성과 한계점을 중심으로 Discourse on Smart Wear and Smart Clothing in the Korean Media : Possibilities and Limitations. 48 시스템엔지니어링 Journal of KOSSE [Internet]. 2024;12(2):48–62. Available from: www.kosse.or.kr1

39. Kim DJ, Lee YS, Jeon ER, Kim KJ. Present and Future of AI-IoT-Based Healthcare Services for Senior Citizens in Local Communities: A Review of a South Korean Government Digital Healthcare Initiatives. Vol. 12, Healthcare (Switzerland). Multidisciplinary Digital Publishing Institute (MDPI); 2024.