South Korea and the EU battling COVID-19: shared contribution to global health governance and human security

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Abstract

Commemorating the 60th anniversary of diplomatic ties, the article analyzes public health governance during the COVID-19 pandemic in the EU and South Korea. Shifting focus from traditional national security to a more people-centered understanding, the article employs the human security framework to examine nuances of the global health crisis. Through this theoretical lens, the research empirically compares and contrasts the EU's and South Korea's differing strategies battling COVID-19 from the pandemic's inception to the mass vaccination rollouts. While the EU's early approach was initially marked by slower responsiveness and border closures, South Korea stood out for its swift counter-epidemic measures, leveraging technological innovations and public–private partnerships. Yet once vaccination campaigns started, South Korea had to catch up with Europe. The article chronologically presents its findings, identifying a mutual convergence in approaches with the Omicron's emergence. In conclusion, the article distills seven key lessons from the pandemic management: the significance of independent public health institutions, the role of digitalization and transparency in fostering public trust, the shared responsibility to bridge the vaccination gap and invest in robust public health systems, and the paradigm shift towards human security combined with the resurgence of state which has to be balanced with safeguarding individual liberties and a collective global action. In addition, the article underscores potential avenues for a strengthened EU-South Korea collaboration to enhance global health governance beyond the confines of major geopolitical rivalries.

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Introduction: the COVID-19 pandemic and human security policies in South Korea and Europe

The COVID-19 pandemic, a health crisis of momentous proportions, ravaged the world with millions of lives and economies shattered. On 5 May 2023, a turning point was finally achieved: Dr Tedros, Director-General of the World Health Organization (WHO), confirmed (WHO 2023) that COVID-19 no longer constituted a public health emergency of international concern. On that day, it has been more than 3 years since the COVID-19 emergency was announced on 31 January 2020 and a worldwide pandemic declared on 12 March 2020. During this period, an estimated 765 million people were infected and 6.9 million individuals died (United Nations News 2023). Advancements in vaccine distribution and the development of effective treatments have, along with a progressively immune global population and the emergence of less deadly variants, contributed to the transformation of the global pandemic into an endemic. This evolution has allowed for SARS-CoV-2's controlled circulation without inflicting the previous levels of damage.

As a follow-up to WHO's statement, the South Korean government lowered its infectious disease crisis alert from caution to interest, effectively ending COVID-19 in the country since its first confirmed infection on 20 January 2020. During this period of raised alert level, South Korea, a country with nearly 52 million inhabitants, registered 31 million cases and 34,000 deaths, yielding a fatality rate of 0.11% which is remarkably ten times lower than the global average that stands at 1%. This achievement underscores the effectiveness of Seoul's "3Ts" (i.e., "test, trace, and treat") strategy which will be elaborated on in the latter sections of this article. Here it suffices to say that at the age of mounting geopolitical tensions, the Korean approach exemplifies the core aspect of human security policies that seek to shield citizens from sudden disruptions, while simultaneously provoking reflection on civil liberties and democracy during the time of duress.

In the European Union (EU), COVID-19 has steadily declined by 2023 albeit out of larger proportions than in Korea. As of July 2023, over 230 million cases and 1.5 million deaths have been recorded among around 448 million of EU citizens, making the European mortality stand at 0.65% which is nearly six times higher than in South Korea. The EU's vaccination drive played a pivotal role in the EU's downward caseload with over 73% of the European population fully vaccinated and over 76% receiving at least one dose.[1] Consequently, the Swedish EU Council Presidency could deactivate the EU's integrated political crisis response for COVID-19 around the date of the WHO's announcement (Swedish Presidency of the Council of the European Union 2023). When welcoming the WHO's decision, European Commission President Ursula von der Leyen highlighted that the pandemic has shown the power of unity and solidarity, leading to the formation of a European Health Union, which makes the EU now better-equipped to swiftly respond to any future health crises (European Commission 2023).

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[1] See ECDC's vaccine tracker for EU vaccine statistics: https://vaccinetracker.ecdc.europa.eu/public/extensions/COVID-19/vaccine-tracker.html#uptake-tab

As we mark the 60th anniversary of EU-Korea diplomatic relations in 2023, this milestone presents an apt moment to examine the ways in which both entities battled COVID-19. Comparing and contrasting how South Korea and EU approached the pandemic and public health more broadly offer instructive insights into different methods of public health management. Such an analysis is, of course, valuable from a scientific point of view. Nonetheless, at a time when the global stage is increasingly divided between two camps with the USA on one side and China on the other, a shared understanding and mutual lessons from handling the COVID-19 crisis could also prepare us for future health emergencies and other disasters that surpass national borders. An improved cooperation among different actors across the world that could lead to a keener attention to human security is therefore a broader goal to which we would like to contribute in this article.

Despite a recent shift towards hard security, we argue that human security as a paradigm that prioritizes people's wellbeing and safety must not be relegated to the sidelines. Moreover, cooperation in different areas of human security policies takes on an added importance precisely because of these intensifying conflicts such as the US-China standoff, the Russian aggression against Ukraine, and the Israeli-Hamas war. From a theoretical perspective, our article adopts this lens, stressing the relevance of the framework of human security amidst heightened geopolitical tensions.

This article proceeds in three parts: firstly, we start with an examination of the human security concept concerning COVID-19, deviating from the traditional national security discourse. The second part delves into the early stages of health emergency, looking at measures taken in South Korea and Europe. The third section focuses on the changes in the anti-epidemic action since the inception of mass vaccinations in Europe around the turn of 2020/2021 and ends with the arrival of the Omicron variant. Considering that the Omicron strain is less lethal but more transmissible than previous COVID-19 variants and demands unique response measures compared to the initial stages, our empirical analysis stops with the onset of Omicron.

Going back to the 60th anniversary of EU-Korea relations and looking into the future, our article concludes with seven lessons learned from the pandemic: the significance of independent public health institutions, the role of digitalization and transparency in fostering public trust, the shared responsibility to bridge the vaccination gap and invest in robust public health systems. We shed light on the paradigm shift towards human security combined with the resurgence of state which has to be balanced with safeguarding individual liberties and a collective global action. In addition, we suggest areas for enhanced EU-Korea collaboration in global public health, underlining a potential for convergence between the two regions that had initially represented different modes of public health governance. Finally, our research results reinforce the transformed concept of human security in the wake of the COVID-19 crisis and the US-China competition.

COVID-19 and challenges to human security

As we explore the examples of South Korea and the EU fighting the COVID-19 pandemic in the following sections of this article, we will see that the establishment of a broad public health system and a transparent administrative service are important components of human security. Moreover, the existing concept of security needs to be depoliticized from the traditional concept of sovereignty. During the pandemic, we have all experienced that the threat posed by a virus can be more serious than any military threat that we are accustomed to. If national security refers to maintaining territorial integrity and political independence by military means, human security signifies protection of individuals from famine, disease, oppression, and, most of all, from suffering and dangers of the sudden disruptions in daily life (UN 2003).

While the existing concept of national security prioritizes the protection of a political community centered on sovereignty, the concept of human security highlights the protection of daily lives of individuals and promotion of their freedoms within the state. Thus, the shift from national security to human security is premised on two transitions. The first transition goes from the protection of a territory to the protection of people, while the second transition switches from security by military means to security through the safety net and continuous development of an individual. In other words, the risks from environmental pollution, infectious diseases, and human rights violations affect the security of the community in the same way if not more seriously than any military threats.

The concept of human security emerged in the 1990s and has since then continuously challenged the conventional security paradigm although with deviations from region to region. The 2016 EU "Global Strategy" sets human security at its heart by stipulating that the pursuit of peace, prosperity, democracy, and values-based international order is the EU's main strategic goal (EU 2016). During the drafting of the Global Strategy (Novotná 2017), the European Parliament (EP) suggested that human security should be recognized as a core principle of the EU. Similarly, member states who are a part of the EU human security network, including Austria, Finland, Greece, Ireland, the Netherlands, Slovenia, and Sweden, maintain that more attention is needed for issues such as conflict resolution, peacebuilding, and gender equality (Marczuk 2007). In contrast, France, Hungary, Poland, and (now "brexited") UK criticize the concept of human security as being too vague and leading to unpredictable outcomes in practice (Christou 2014).

In East Asia, the sovereignty-centered national security is the dominant model and, consequently, human security is in a potential conflict with this paradigm. Instead of employing the notion of human security, China mainly uses expressions such as "non-traditional security," claiming that this concept has already been included in its "people-centered" ideology. Even during the earthquake in Sichuan (2008) and the COVID-19 crisis (2020–23), China sought to prevent any external humanitarian aid from coming in so that it does not cause a domestic political instability.

Japan, on the other hand, has developed the concept of human security relatively early because of its vulnerability towards natural disasters like earthquakes

and tsunamis. However, Japan's human security focuses more on freedom from want than on freedom from fear, as described in Table 2, primarily for two reasons. Firstly, because of the unique status of the Japanese Self-Defense Forces, protecting individuals rather than protecting the state was a compelling logic how to justify possession of a military force. Secondly, since Japan emphasized freedom from want, it hoped not to be entangled in historical issues such as comfort women and forced labor. In contrast, South Korea mainly applies the concept of human security to its official development assistance, but appears to be using it more often in its security discourse since the COVID-19 pandemic (Harnisch and Kim 2020).

The comparison between national and human security is summarized in Table 1, illustrating their differences in terms of target, scope, actors, and means. In particular, as regards the actors, states are the main reference objects in national security, while in human security, various other actors appear not only at the governmental but also at the regional, national, and international levels. In terms of means, national security is strengthened through arms race, alliances, and deterrence strategies which are centered on political, economic, and military power, while human security is enhanced through the improvement of human rights and continuous personal development.

Table 2 summarizes elements and implications of human security. While freedom from fear which signifies developing the governance of an individual physical integrity has been the traditional component of human security, human security has expanded its components to incorporate freedom from want which means providing for the needs of an individual sustainable wellbeing. The approach to human security thus includes two dimensions: a government-led social safety net from the top but also a continuous development through strengthening of individual capabilities from the bottom.

Given its unique nature which is different from climate change and natural disasters in the traditional sense of human security, the COVID-19 pandemic has caused a significant change in the concept of human security. The health crisis has affected every corner of the world and lasted over 3 years. The EU and South Korea struggled to prevent a sudden collapse of individual life which includes the survival of people at the medical as well as economic level caused by an infectious disease. When we evaluate the EU's and Seoul's efforts to battle COVID-19, we need to keep in mind two components of human security: firstly, personal safety and protection from direct and indirect threats caused by the virus and, secondly, the level of services that meet people's needs for sustainable wellbeing. The following section will therefore examine the two empirical case studies while linking them to the human security framework above.

South Korea and the EU between mass testing and mass lockdowns

In the wake of the SARS-CoV-2 virus's emergence in China, South Korea was among the first nations to be affected. A resident of Wuhan who had visited Incheon was identified as patient zero, with the COVID-19 diagnosis confirmed on 20

Table 1 Comparison of national and human security

Classification	National security	Human security
Target	Protecting borders, people, institutions, and values with the goal of maximizing national interests	Protecting individuals from famine, disease, and oppression with prioritization of individual freedom and self-realization
Scope	Defending the country from external aggression with a focus on political independence and territorial defense	Protecting individuals from a wide range of threats, including pollution, epidemics, and poverty
Actor	State is the main actor responsible for its own survival in an anarchic international politics while policymaking is concentrated at the governmental level	Various actors such as governments but also regional and international organizations, NGOs, and local communities
Means	Depending on political, economic and military power, arms competition, alliances, deterrence strategies, etc	Pursuing the resolution of security matters through citizen participation

Table 2 Elements and implications of human security

	Element	Implications
Component	Freedom from fear	Efforts to address the causes of conflicts and develop the governance of a physical integrity
	Freedom from want	Efforts to provide basic services and needs for a sustainable wellbeing
Approach	Protection	Development of social safety net
	Empowerment	Strengthening of the capacity of individuals

January 2020 (Cha and Kim, 2020). Notably, this was a day before the first reported case in Seattle, USA (Gilbert and Gutman 2020), and a full week before the occurrence of the COVID-19 spread at a company near Munich, Germany (Grundner 2020). Moreover, South Korea witnessed one of the first "super-spreader" events in the country's fourth-largest city of Daegu (Hancocks 2020). Despite its large population of 2.5 million, Daegu experienced a rapid surge in cases by the end of February 2020. Europe, however, largely overlooked the impending danger, only realizing the gravity of the situation after a significant wave of infections in Northern Italy in March 2020.

South Korea's prompt response to the initial positive cases of SARS-CoV-2 was characterized by precision and rapid action (MOFA 2020). Seoul immediately raised the national infectious disease risk alert to "Level 2" and established a central command for disease control within the Korea Center for Disease Control (KCDC). Subsequently, the KCDC evolved into an independent agency, now called KDCA, indicating its increased autonomy and authority. Furthermore, the South Korean government collaborated closely with private manufacturing firms, successfully developing real-time RT-PCR testing methods and kits within the first month of the outbreak which proved to be crucial for detecting and managing the virus's spread.

Meanwhile, Europe found itself in a very different scenario. As the virus silently made its way across the continent, political leadership was more focused on addressing a potential migration crisis at the Turkish border rather than responding to the unfolding health catastrophe (Herszenhorn and Wheaton, 2020). It was only when Northern Italy morphed into a major infection hotspot, becoming Europe's equivalent of Daegu, that Rome responded by imposing a semi-lockdown on Lombardy on 23 February and then, unable to contain the virus, extended a national country-wide quarantine by 10 March. With the worsening situation and people moving south, Italy activated the EU civil protection mechanism, requesting face masks and other personal protective equipment (PPE). However, the request went unanswered with no voluntary contributions from other member states for several weeks (Brooks and Geyer 2020). Meanwhile, France took control (Braun 2020) of its PPE production, face masks, and the prices of hand sanitizers and Germany imposed an outright export ban while Czechia (Klícha 2020) seized a shipment of PPE supplies destined for Italy. By the end of March, all EU member states were grappling with the pandemic, scrambling for PPE, ventilators, testing supplies, and ICU beds while being under some form of lockdown.

When confronted with the looming pandemic, several EU member states rushed to close their borders, a decision that jeopardized the long-established principles of the Schengen agreement which allows for free intra-EU movement. In an even more restrictive move, Czechia not only prevented foreign nationals from entering but it also, controversially, barred its own citizens from leaving the country (Novinky.cz, 2020). South Korea, on the other hand, crafted a more nuanced strategy. It enforced strict monitoring measures for returnees, especially from regions hit hardest by the virus, through a mandatory two-week "K-quarantine" and mobile app. To dissuade short-term visitors, foreigners were placed in specially designated "COVID hotels" that were eventually at their own expense.

Europe's fragmented, uncoordinated, and seemingly self-centered approach which "betrayed the ideal of European solidarity" (Auer and Scicluna 2021) starkly contrasted with South Korea's unified and measured response. Seoul's preparedness can be partly attributed to its experience with the MERS outbreak in 2015 which saw 186 Koreans infected and 38 succumb to the disease (WHO 2015). Subsequent legislative changes allowing authorities to access vital data during public health emergencies such as mobile phone GPS signals, credit card transactions, and CCTV surveillance without any prior judicial mandate (Tan 2021) paved the way for the swift and effective rollout of South Korea's "3 Ts"—test, trace, and treat (Bicker 2020)—program when the COVID-19 pandemic unfolded.

Europe's historical and institutional context played a crucial role in its pandemic response, too. Despite a distant past marked by the Spanish flu, Europe's primary health body, the European Centre for Disease Prevention and Control (ECDC), was a relatively recent construct, modeled post the 2003 SARS outbreak. However, unlike its South Korean counterpart, the ECDC operated with limited autonomy, its advisory role often overshadowed by national public health structures (Renda and Castro 2020). While it did sound early warnings in March 2020, its voice lacked decisive impact.

The ECDC's constrained influence epitomizes EU's model of health governance at the onset of the pandemic (Goniewicz et al. 2020). Given that health primarily remains a national responsibility, it leaves EU institutions like the European Commission to merely recommend unified actions. However, after the initial shock, on 23 March 2020, the Commission did orchestrate a significant change, introducing "green lanes" (European Commission 2020a) to ensure the fluidity of essential supplies like food and medicines across internal borders. This act, driven by both shared competence over transport and its staunch commitment to the EU's single market, signaled that Brussels "took back" a part of control. As the pandemic continued, Commission's President von der Leyen emerged as a central coordinator (Brooks and Geyer 2020), underscoring that, as in South Korea (Park et al. 2020), capable institutions were pivotal in COVID-19 battle.

Navigating the pandemic, South Korea employed a dual strategy of mass testing and assertive contact tracing. Confronted with serious outbreaks, firstly in Daegu and later within Seoul's call centers, gay clubs, and anti-governmental demonstrations, South Korea resisted resorting to the kind of sweeping lockdowns embraced by other nations from Europe through China and Iran up to South Africa. Seoul's perspective was not fixated on absolute "zero COVID," but rather on pragmatic

prevention, mitigating large outbreaks and maintaining a livable balance with the virus—all the while upholding Korea's reputation for creativity, technological innovation, and transparent governance.

Mass gatherings led to COVID outbreaks in Europe, too. Holidaymakers at Austria's famed Ischgl ski resort and carnival attendees in Heinsberg, Germany, unknowingly carried the virus home. In Spain, the Woman's Day marches in Madrid became particularly notable, with infections reaching as high as the wife of Prime Minister Sanchez and two of his female ministers (Rodriguez 2020). Unlike in South Korea (and other Asian countries), European authorities primarily prioritized "forward tracing" (Tufekci 2020) to prevent future transmissions rather than identifying a "patient zero" responsible for the major primary "super-spread."

South Korea's success in curbing clusters lies in its "backward tracing," i.e., locating primary cases like "Patient 31" in Daegu's Shincheonji church (Hancocks 2020). Japan and many Southeast Asian countries also employed this strategy, effectively curtailing extensive clusters. Though Europe did trace the Ischgl outbreak to a staff member of the ski resort (Bell 2020), the slow reaction by Austrian state led to a court case in September 2021, seeking accountability and victim compensation (Zeit Online 2023).

While South Korea and other Asian nations hailed electronic contact tracing as vital in fighting the pandemic (Kim and Park 2022), Europeans and Americans denounced it as overly invasive, questioning its role in anti-epidemic strategies. Two factors therefore warrant attention: firstly, KCDC's approach in South Korea incorporated innovative AI tools to optimize contact tracing. By ensuring that all collected data was anonymized and subsequently destroyed within 2 weeks or after contact tracing was completed, it mirrored data protection seen in Europe. However, what differentiated Seoul was the scale and efficiency driven by technology in contrast to Europe's "phoning up" the ill patients and their contacts.

Secondly, even when Seoul faced some security concerns, such as data encryption issues (Tan 2021) and instances where patient movements were disclosed in too great detail, the Korean public's overwhelming support, recorded at 80.2% (Umeda 2020), highlighted there was broad-based trust in the system. Thirdly, in balancing personal liberties with public health, South Korean government was committed to preserving everyday freedoms while opting for nuanced restrictions rather than sweeping lockdowns. Even though there was an acceptance of diminished data privacy, Koreans retained their right to free movement. Contingent on varying alert levels, Seoul introduced targeted and localized measures (WHO 2020), such as home-schooling, modified business hours, and limited gathering sizes. Yet unlike its European counterparts such as France and Germany where stringent lockdowns were imposed, Seoul never completely shut down its economy or confined its citizens to their homes.

As Table 3 shows, V-Dem Institute at Sweden's Gothenburg University evaluated South Korea as having no violations of democratic standards during the pandemic based on its index score. The index assesses whether any of the following happened: physical violence committed by police, military involvement, WHO misinterpretation by the government, limitations on media reporting, and harassment of journalists and legal instruments of emergency measures. Even though

Table 3 Pandemic violations of democratic standards index score

Countries	Score (ranking)	Level
Rep. of Korea	0 (142/144)	No violations
Japan	0.1 (125/144)	Minor violations
Singapore	0.3 (59/144)	Moderate violations
Taiwan	0 (144/144)	No violations
Germany	0 (138/144)	No violations
France	0.1 (123/144)	Minor violations
UK	0.15 (118/144)	Moderate violations
USA	0.2 (101/144)	Moderate violations
China	0.75 (1/144)	Major violations

Source: V-Dem Institute, 2022. Pandemic Backsliding Project

Table 4 Types of personal information released by governments about coronavirus patients

Information disclosed	Korea	Singapore	Hong Kong	UK	Germany	USA (N.Y.)
Age and gender	○	○	○	×	○	○
Travel history	○	○	○	○	×	○
Workplace address	○	○	×	×	×	×
Home address (area)	○	○	○	×	×	×
Link to previous case	×	○	○	×	○	×
Nationality if case imported	○	○	×	×	×	×
Treatment location	○	○	○	○	×	×
Places visited prior	○	○	×	×	×	×
Identified contact persons	○	×	○	×	×	×
How case confirmed	○	×	×	×	×	×
Geographic breakdown of patients	×	×	○	×	○	○

Source: The Wall Street Journal, April 15, 2020

according to the constitution South Korea's president has the authority to declare a state of emergency, this provision has not been invoked throughout the pandemic. The primary legislation guiding its COVID-19 response was the above-mentioned Infectious Disease Control and Prevention Act (IDCPA) that equipped the government with specific tools to allocate resources and engage various societal stakeholders in curbing the spread of COVID-19.

Contrary to Europe, without resorting to extensive lockdowns, South Korea utilized its digital prowess and balanced freedom of movement with robust test, trace, and treat methods, all underpinned by IDCPA's legal safeguards ensuring patient privacy. However, as highlighted in Table 4, Korea's approach risked compromising individual physical integrity which has been the traditional component of human security given its extensive data disclosure compared to other countries. Although data is shared anonymously for short durations, the relatively

homogeneous and well-digitalized nature of Korean society often leads to swift identification, potentially subjecting patients to stigmatization.

Although many Europeans were initially skeptical about mobile contact tracing, with Germany seeing a 41.9% adoption rate (Corona-Warn-App 2021) for its CoronaWarn app and Czechia only 18.4% for its eRouska app, digital solutions eventually paved the way back to European normalcy. In a bid to restart cross-European summer holidays, the European Commission introduced the EU Digital COVID Certificate in July 2021, enabling travel across member states for those who were tested, vaccinated, or recovered (European Commission 2021a). Commission President von der Leyen praised the COVID pass as the key milestone in her September 2021 State of the Union address (European Commission 2021b), but its subsequent recognition and adoption by non-EU countries from Switzerland through Israel and Turkey up to Panama underscore its global appeal and success.

The EU and South Korea's exit strategy: boosting vaccination rates and bridging the vaccine divide

Although the EU COVID Certificate promoted mobility for tested individuals, its prime asset was its use as a vaccination passport. While Seoul leaned heavily on expansive testing to navigate the health crisis, Europe pivoted towards vaccination as its primary exit route. To prevent competition among member states—where wealthier countries could outbid their poorer counterparts, driving up vaccine prices and disrupting European solidarity—a unified procurement strategy (European Commission 2020b) was adopted. The European Commission, spearheading this initiative, led negotiations with pharmaceutical companies and ensured equitable vaccine allocation based on each member state's population.

Under the EU's vaccine strategy (European Commission 2020c), the European Commission procured nearly 2 billion doses from multiple drug makers. With an initial 2.7 billion euro down payment, later reimbursed by the member states for their vaccine shares, the Commission negotiated contracts with pharma producers for specified quantities at a set price over a defined period. The challenge was picking the right manufacturers and preorder the right volumes of doses. The Commission's gamble was successful only partly. An early agreement with BioNTech/Pfizer (European Commission 2020d) ensured 200 million jabs with an option to add another 100 million (Guarascio 2020). Thankfully, BioNTech/Pfizer gained a fast-tracked conditional market authorization from the European Medicine Agency (EMA), the EU's regulator, enabling Europeans to commence their vaccine rollout on 21 December 2020 (Deutsch 2020).

Due to member states' concerns about the novel mRNA vaccines' effectiveness and their steeper prices (Deutsch and Gijs 2020) relative to conventional vector-based jabs, the Commission primarily preordered the Oxford/AstraZeneca (AZ) vaccine. This turned out to be a choice fraught with challenges as the British-Swedish consortium began delaying deliveries, citing production difficulties and a prior commitment to prioritize the UK market—even from production sites within Europe. In response, the Commission took legal action against AZ. Moreover, it established an

export authorization mechanism for vaccines produced within EU borders, noting that the UK had, reciprocally, been receiving Pfizer vaccines manufactured within the EU.

Amidst a legal battle with AZ (European Commission 2021c), its reputation took a further hit when side effects were reported. Even after EMA declared it safe, EU member states like Spain, the Netherlands, and Germany restricted its use to the elderly. Given the delivery delays and dwindling public trust, AZ became one of the EU's least administered vaccines, including in less wealthy member states that had once championed it. Making a virtue out of this setback, EU member states donated their surplus AZ vaccines to neighboring and less developed countries.

In South Korea, vaccine acquisition differed significantly, with a notably slower speed. While the European Commission faced initial criticism, particularly from German media (Becker et al. 2021), for lagging behind Israel and the UK in procuring vaccines, it sealed deals with major pharmaceutical companies in summer 2020. In South Korea, effective virus containment perhaps diminished its perceived urgency and Seoul seemed in no hurry. In December 2020, as Korea began its initial preorders from major suppliers like AZ, Pfizer, Johnson & Johnson (J&J), and Moderna, South Korean health minister proposed (Korea Times 2020) starting inoculations in the latter half of 2021 to ensure thorough preparation and observe potential side effects elsewhere—a perspective that appears odd in hindsight.

Seoul's leisurely pace in vaccine procurement came at a cost: 1.3 trillion won (over 900 million euros) for 64 million doses (Korea Times 2020) which amounted to nearly triple price for less than a third of shots from the same drug makers than the European Commission had secured. South Korea also had to tap into the COVAX Facility, WHO-led but predominantly EU-funded scheme intended for low-income nations, to secure vaccines for additional 10 million of its citizens. Simultaneously, Seoul attempted to provide shots via COVAX to North Korea, but the northern neighbor rejected the offer.

A delayed vaccine rollout and rising COVID-19 cases impacted President Moon Jae-in's approval rating. Following a triumphant win in the April 2020 national elections (BBC 2020), largely credited to his successful disease management, Moon's approval ratings declined sharply from 70 to just 29% within a year (Kim 2021c). A lifeline came from US President Biden who committed to sending 500,000 vaccines for Korean soldiers that have been serving along the American forces on the peninsula. The US-ROK summit in June 2021 further saw the USA gifting millions of J&J doses to Seoul. This gesture of goodwill revived Moon's approval ratings which rebounded to 40% (Kim 2021c).

To counter vaccine shortages, South Korea made a series of exchanges and accepted donations to bridge the gap. It swapped 700,000 doses with Israel (Jaffe-Hoffman 2021), exchanging near-expiry Pfizer shots for future deliveries. A similar deal was struck with the UK (UK Government, 2021) for 1 million doses in October 2021. In an unexpected turn of events, wealthy South Korea received a donation of 450,000 Moderna shots from Romania, which labeled its contribution as "humanitarian aid," originally intended for countries like Moldova and Egypt. Seoul's vaccination drive launched on 26 February 2021 (Ko 2021), around 2 months after Europe's head-start. The campaign began by vaccinating nursing home residents

with the AZ vaccine, franchised by SK Bioscience. Frontline workers started receiving their Pfizer doses, procured via COVAX, the following day.

Seoul's stalling in initiating a comprehensive vaccine rollout mirrored Europe's early pandemic missteps: a mix of complacency, an over-reliance on domestic capabilities, and a dash of nationalism. Given its proficiency in medical engineering, Korea banked on developing local vaccines. Just as K-Pop, K-drama, and K-quarantine gained global traction, there were hopes for a homegrown K-vaccine (Fendos 2021) from companies like SK Bioscience, Celltrion, and Genexine. However, these unfulfilled aspirations were down to unforeseen hurdles, lack of good luck, and, paradoxically, too few local subjects for clinical trials. Yet Korean conglomerates have shown commendable dynamism in designing COVID-19 treatments. A continuing collaboration between European and Korean firms on the development of SARS-CoV-2 therapeutics (Lem, 2020) could not only be ground-breaking for global public health but also strengthen EU-Korea relations in the decades to come.

Once Korea addressed its vaccine scarcity, immunization gained a rapid momentum. By end-August 2021, 28.5% of Koreans were vaccinated, and by the Chuseok holiday, the Korean Thanksgiving, on 21 September 2021, 43.2% were fully vaccinated and 71% had at least one shot (Kim 2021a). Two years later, as of 26 May 2023,[2] Seoul inoculated 86% of its population. In comparison, Commission President von der Leyen praised Europe for reaching the 70% inoculation target by summer's end. By 17 September 2021, 71.7% of adult Europeans were fully vaccinated, using one of the four approved vaccines, with figures surpassing 80% for the elderly over 80, long-term care residents, and medical workers. As of mid-September 2023, the figure for the entire European population reached 73%, which is nonetheless lagging behind Korea's inoculation levels by 13%.

Although South Korea and Europe have both achieved herd immunity against SARS-CoV-2, vaccination rates across EU member states vary widely from nearing around 90% in Portugal and Malta to just 42.5% in Romania and 30.1% in Bulgaria as of mid-September 2023.[3] To boost vaccination rates, it is essential to encourage voluntary participation and collaboration from the public. South Korea's approach, which involves a partnership between the public and private sectors, has earned the trust of its citizens. This trust has been built on ensuring efficient, transparent, and fair vaccine distribution and administration.

Certain areas of Europe have struggled to establish the same degree of public trust. This may be due to factors such as fragmented communication and misinformation, perceived political influences, or past missteps in public health policymaking. To ensure widespread vaccination in the future, European governments could collaborate with South Korean authorities, learning from their political communication and effective public–private sector partnerships. This would not only solidify Europe's vaccination efforts but also fortify EU-Korea ties in public health. Building

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[2] The figure is based on Our World in Data (https://ourworldindata.org/covid-vaccinations?country= ~KOR) which stopped tracking the vaccination rates as of 26 May 2023.

[3] See ECDC's European vaccine tracker for up-to-date data: https://vaccinetracker.ecdc.europa.eu/public/extensions/COVID-19/vaccine-tracker.html#summary-tab

public trust goes beyond just vaccine availability; it is about fostering an environment where citizens are well-informed and confident that their health is paramount. This principle also aligns with the core tenets of the human security framework as discussed earlier in this article. Without this trust, Europe may be vulnerable, especially if a virulent COVID-19 variant emerges, due to its vaccination hesitancy (Karafillakis et al. 2022) seen in several EU member states rather than from a lack of available jabs.

Conclusion: navigating EU-Korea collaboration in global human security governance beyond major power rivalries

Since early in the pandemic, Brussels has admired Seoul's effective efforts to "flatten the COVID-19 curve." In recognition, South Koreans were granted access to the EU without any mandatory quarantines (Council of the EU, 2020). With South Korea's endorsement of overseas vaccination certificates, particularly the EU's COVID pass, Europeans gained quarantine-free entry to South Korea, too. While these steps were well-received by citizens of both regions, the true potential of EU-Korea collaboration, in the past 60 years and in the future, extends beyond travel protocols. Currently, about 40 political and sectoral dialogues exist between Seoul and Brussels. Yet none focuses on health (Pacheco Pardo and Esteban 2021). Given the importance of global public health governance, especially due to renewed major power rivalries that may be disruptive in this regard, creating a dedicated dialogue is imperative. Moreover, health cooperation has been a prominent topic during all EU-Korea summits under both the Moon and Yoon administrations, starting from the 2020 virtual high-level meeting (Novotna 2020).

With deepening their partnership, including in public health, both the EU and South Korea need to critically evaluate their respective pandemic responses and mutually learn from one another. Drawing parallels and contrasts between distinct approaches of Seoul and European capitals to battling COVID-19, this article aimed to spotlight this very comparison. Through our comprehensive investigation, we have distilled seven key lessons, underscoring what worked and where improvements are necessary as well as by looking into a future.

Firstly, the battle against COVID-19 in both South Korea and the EU highlights the necessity of autonomous and robust public health institutions. While South Korea initially stood out in infection control, the EU emerged as a leader in the vaccine development, manufacturing, and distribution. Navigating effective pandemic management requires institutions led by knowledgeable experts over political expediency. Even when faced with political pressures, these bodies should be empowered to make choices that might be unpopular yet necessary. It is this display of competence that fosters public trust, ensuring citizens' adherence to safety protocols.

Specialized entities such as the KCDC/KDCA have showcased their indispensable role in health crises. In contrast, the ECDC's limited powers hindered a similar response in the EU. However, recognizing this gap, Commission President von der Leyen has initiated the establishment of the European Health Emergency

Preparedness and Response Authority, or HERA,[4] which was launched as a new Commission's Directorate-General on 16 September 2021. Tasked with foreseeing health emergencies and coordinating resources during crises, HERA is the EU's lesson learned towards a more integrated approach in public health. Whether or not HERA will evolve into a true "European Health Union" hinges on EU member states' willingness to share their competencies. Nonetheless, HERA's creation is a step in the right direction.

Secondly, while respecting its GDPR privacy rules, Europe might draw insights from South Korea's skillful leveraging of big data for swift contact tracing while providing clarity via open communication. In fact, Seoul's emphasis on transparency, from conducting elections amidst the pandemic to daily briefings led by the KCDC instead of politicians, have been instrumental in bolstering public trust. This sentiment was echoed elsewhere in Asia (Kim and Park 2022), including Taiwan, renowned for its transparency-based model for combatting COVID-19 (Ferenczy and Novotna 2022). While Europe has shown resolve in countering the "infodemic" (EEAS 2020) to dispel misinformation surrounding COVID-19, more needs to be done to demystify and highlight the pivotal role of digitalization in disease control, as witnessed in South Korea and broader Asia.

Thirdly, the digital disparity between Europe and Asia suggests a certain presumption and overconfidence in Europe's "traditional" democracies that are perhaps underestimating the dynamic capabilities of newer Asian democratic states such as South Korea and Taiwan. These Asian countries have aptly transitioned into "digital democracies" by embracing smart technologies for diverse purposes, including disease control, without eroding personal liberties—as the human security framework suggests. Interestingly, Europe internally does not reflect a similar "East–West" divide. Except for Estonia, Central and Eastern European countries share the same digital reservations as their western counterparts. Yet as the EU strives to bolster its digital market and has to compete with tech-savvy nations like South Korea but also find its place within the US-China tech competition, embracing innovations like health apps might become indispensable. The introduction of the EU COVID Certificate has already hinted at this inevitability.

Fourthly, the COVID-19 inoculation progress in the EU and South Korea casts a spotlight on the glaring global vaccination gap (Brown 2021). While Europe set a precedent by exporting as many vaccines as it consumed, South Korea's involvement with COVAX leaned towards domestic needs over international contributions. While it is logical for nations to prioritize their own citizens, global health security—as much as any other kind of human security—can only be ensured by protecting everyone, including the most vulnerable. The equitable distribution of vaccines and medical supplies is therefore a crucial shared responsibility. Josep Borrell (EEAS 2021), the EU's foreign policy chief, echoed this moral, economic, and health obligation, emphasizing the geopolitical costs of failing to do so. Addressing this vaccine disparity, with EU and Korea leading the collective approach to closing

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[4] You can access HERA's website here: https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/health-emergency-preparedness-and-response-authority_en

the gap, would strengthen their mutual commitment to enhancing global health governance and expanding the EU-Korea partnership in the upcoming decades.

Fifthly, the COVID-19 pandemic has demonstrated a global paradigm transition from prioritizing national security to emphasizing human security. The conventional understanding of sovereignty, historically viewed as the "right to control," now embraces the "responsibility to protect" its people. The health crisis amplified the indispensability of human security, focusing on safeguarding individuals from unexpected threats like diseases and sudden interruptions of life, even surpassing the significance of traditional national defense. The magnitude of the health emergency has also reminded the governments that they should allocate more funds to building the public health system and invest more in transparent and efficient administrative services. South Korea's exemplary healthcare infrastructure, offering more hospital beds per capita than its European and American counterparts, showcases a positive effect of such budgetary priorities.

Global reactions to the pandemic have been varied, oscillating between authoritarian control through containment and democratic engagement via citizen participation, between isolationist nationalism and global solidarity (Kim and Park 2022). The Korean model accentuates the urgency for Europe and Asia to recalibrate their strategies and center them around human security, championing cohesion, cooperation, and a sense of community. In our article, we employed human security as our guiding theoretical framework, underscoring its growing relevance for both Europe and Asia during health crises and beyond.

Sixthly, the ramifications of climate change and natural disasters might be sweeping, but COVID-19 presented a distinct challenge to human security by directly targeting person's health and, by extension, altering human way of life and society. Navigating the health crisis has brought to light the return of prominence of the state that is in charge of systematic and effective quarantine policies. Yet herein lies an irony. The essence of human security, which typically broadens individual freedoms, finds itself at odds with countermeasures against the virus that, by design, inevitably curtail these very liberties. Hence, the pandemic starkly contests the two dimensions of human security: freedom from fear and freedom from want.

Seventhly, as the COVID-19 pandemic reinforced the resurgence of state, it has paradoxically ushered in a growth of isolationist tendencies in global affairs, manifested in the decreased number of foreigners crossing the international borders during 2020–2022. At the same time, the pandemic unveiled the importance of human security and mutual collaboration beyond national borders. However, the world's geopolitics seems to be pivoting in the opposite direction: towards a more insular national security agendas that are favoring isolationist sentiments and towards major power rivalries where traditional territoriality takes center stage. The Russian aggression against Ukraine, Israel-Hamas conflict, and the intensifying tensions between the USA and China are testament to this trend. Yet pressing global challenges—ranging from infectious disease prevention to climate mitigation and disaster management—necessitate a collective global action.

In the era of rising polarization between the US-led alliance and China, a greater international collaboration in human security, impacting all countries and people, is thus crucial. The battle against COVID-19, which we explored in this article, had

illustrated that the notion of security transcends hard security. As our article highlighted, security is not just about military power; it includes human security dimensions such as pandemic response against COVID-19, but also climate change and, increasingly so, energy and food crises.

As we have approached the 60th anniversary of EU-South Korea diplomatic relations, we contend that both entities can enhance their joint cooperation in human security areas. This will be possible if this collaboration remains pragmatic, functionally limited, and de-politicized and will address sovereignty concerns related to human security in both regions. The EU-South Korea collaboration in global health governance is thus just one contribution to these human security areas open for an enhanced cooperation.

Declarations

Ethics approval No ethics approval is required for this paper.

Consent for publication Both authors consent to the publication.

Competing interests The authors declare no competing interests.

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