

Privacy Issues Management Tactics Related To The COVID-19 Virus In Morocco And China

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Abstract

In this document, we are going to cover the privacy issues that were addressed towards dealing with data management operations in regard to the COVID-19 virus. The focus of this paper is to provide statistics and information related to those issues in two countries, naming Morocco and China, the legal background of each country, personal data handling during the pandemic, and the publication policy variations during the different stages of the pandemic in both countries.

1 Countries Overview

In this section, we will make an individual review of each country, regarding their legal background, as well as how they faced the pandemic and the methods they took to overcome the difficulties

1.1 Morocco

1.1.1 Legal Background

Morocco is a unitary semi-constitutional monarchy with an elected parliament. The executive branch is led by the King of Morocco and the prime minister, while legislative power is vested in the two chambers of parliament: the House of Representatives and the House of Councillors. Judicial power rests with the Constitutional Court, which may review the validity of laws, elections, and referendums.[\[oJ18\]](#) The king holds vast executive and legislative powers, especially over the military, foreign policy and religious affairs; he can issue decrees called dahirs, which have the force of law, and can also dissolve the parliament after consulting the prime minister and the president of the constitutional court.

When it comes to taking health-related decisions, an array of scrutinizing bodies are collaborating together around health-related decision-making, regardless if it pertains to fighting against extreme diseases like COVID-19; these agencies include:

- Ministry of Health: this main governmental organization takes on a variety of responsibilities tied to crafting policies concerning public wellness despite any nationwide emergencies; participation during one such emergency event means this group is tasked with organizing appropriate responses needed in order to take control back from an unforgiving virus like COVID-19.
- The High Commission for Planning: high-level statistical experts who analyze data sets surrounding many key health indicators including effects & outcomes brought about by important pandemics. Their current role consists primarily of monitoring various metrics related specifically to COVID-19 transmission rates and infections.
- National Scientific and Technical Committee for COVID-19: Contributing their expert insight so far; they conduct research reviews and then proceed to advise principles designed to help the Moroccan government mitigate the infection's spread more successfully.
- Higher Council of Oulemas: It connects religious practices with public health matters; currently, their guidance ranges from helpful requests on what prevention can look like across Morocco to providing formal religious advice via fatwas that can involve ways to worship during the pandemic while staying healthy.
- Interministerial Committee for Monitoring the COVID-19 Pandemic: Lastly, government sector representative coalitions like the Interministerial Committee for Monitoring the Covid-19 Pandemic from various power sectors cooperate day-to-day collating cohesive strategies for Covid-19 pandemic response and implementation across institutional networks in Morocco.

1.1.2 Publication policies of personal data

Morocco constitutes many laws related to personal information handling in regard to multimedia communication and processing. The most important one of them is Law No. 09-08 on the Protection of Individuals with Regard to the Processing of Personal Data, also known as Law No. 09-08 for short, which is a data protection law that was passed in 2009. [Cas21]

When it comes to processing personal data, this Law gives an outline of the legal framework that data controllers in Morocco must abide by, on the other hand, the country was always trying hard to provide its citizens with a higher level of privacy and data protection as is afforded to residents of EU members states under the General Data Protection Regulation or GDPR. The mentioned Law defines the following; *"the 'natural or legal person, public authority, service or any other body which, alone or jointly with others, determines the purposes and means of the processing of personal data.'"*, which is almost identical to the GDPR definition of data possession.

The Law also defines that the entity/establishment considered as a data controller should abide by the rule of belonging to the Moroccan territory, in case of legal data handling.

In the scope of data handling in Morocco, the processing of the latter one is defined as follows *"any operation or set of operations which is performed upon personal data, whether or not by automatic means, such as collection, recording, organization, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, as well as blocking, erasure, or destruction"*.

As a responsible for overseeing personal data processing and privacy, the National Commission for the Control of Personal Data Protection (CNDP) is an independent administrative authority established by the discussed Law. The CNDP's role is to ensure compliance with data protection laws, supervise the processing of personal data, handle complaints, issue authorizations, and promote awareness about privacy rights and obligations. The CNDP plays a crucial role in protecting individuals' personal data and upholding privacy standards in Morocco.

The COVID-19 pandemic was a big circumstance in the Moroccan history of managing and handling private information, such as distribution of age, sex, residence, location patterns, ID numbers, vaccination dates/types, previous records and so on... More details about that in the following section.

1.1.3 The battle between COVID-19 and Morocco

Like the majority of other countries around the world, it was one of the biggest challenges that the country has faced in its history, in all ways; Economically, financially, educationally as well as public sectors such as health, industry, tourism and more.

The confirmation of Morocco's first COVID-19 positive case happened on March 2nd, 2020. The infected person was a Moroccan national who returned from Italy when there was an outbreak happening. In response, the Crisis Management Team initiated a prompt action plan that included imposter isolation and treatment for tracing respective contacts with preventive guidelines, which were integrated into standard procedures and aimed at containing the contagion by identifying clusters in critical areas, like markets or transportation systems mainly serving densely populated areas.

As additional cases emerged gradually in Morocco, government officials enforced strict measures like closing non-essential businesses and implementing a curfew to stop the contagion's rampant spread while keeping up with testing efforts nationwide for sufficient monitoring, with real-time updates on changes throughout different regions from relevant authorities.

The country quickly implemented border and legislative measures to control the spread of the virus within its national territory. These measures included declaring a state of health emergency across the entire

kingdom through decree-law 2.20.292 and implementing mandatory confinement through decree 2.20.293 to limit the movement of citizens and prevent the spread of the epidemic. The state of health emergency started on March 24th, 2020 and it finally came to an end on February 28th, 2023.[MC23] While these measures may conflict with the constitutional right to freedom of movement and establishment, the decrees provide exceptions to ensure respect for constitutionally guaranteed fundamental rights and freedoms during a state of health emergency.

Tracking the virus’s propagation was one of the ultimate challenges that the country has to overcome, and this is where the Law 09-08 came into place, because some concerns arose regarding the protection of personal data, which was guaranteed by the latter one. The problem itself was in collecting personal information to detect confirmed cases of contamination and stop the virus from spreading, some legal questions came into mind since it was a rule violation. But an exception was made in this situation because the scope of the Law isn’t only restricted to data protection and privacy. Still, to the protection of the citizens overall, which was the goal of preventing the virus spread, tracking its progress, and detecting the risky cases, everything goes towards one definition which is protecting the citizens’ health state.

The violation of the state of emergency amounts to a criminal offense, punished with detention of up to three months, and a fine of between MAD 300 and 1300 (\$32.45 and \$140.60).

According to the report, between March 24, 2020, and the end of December 2020, 36 500 faced the court for committing acts incriminated by the Moroccan Penal Code. 97% of people prosecuted are men, and 1% are minors (nearly 2 400). [Att21]

In such a context, data processing operations usually involve two major players, the individual whose data is being processed, referred to as ”data subject” or ”concerned person”, and the entity carrying out the processing of such data to prevent or control the spread of the virus, referred to as ”data controller”. The data controller can take various forms, for example, suppose an employer is using temperature checks on his employees accessing work premises, healthcare establishments processing patient data in the provision of healthcare services and contributing to the achievement of state objectives, or public authorities utilizing systems to track the evolution of the epidemic.

Regarding the pandemic’s statistics, the country suffered from 1 274 180 infection cases, 1 256 151 recovered, and 16 297 deaths. [Wor23] The cases graph wasn’t growing exponentially but there were some periods of the year when the new cases arose compared to others, and generally that was related to uplifting the sanctuary restrictions or opening the country’s borders. Some of those peaks were during the winter of 2020, the autumn of 2021, and a smaller peak during the summer of 2022. The highest record of new cases in one day was 12 039.

Inspired by a Singaporean application, a 100% Moroccan tool on which around 40 engineers have been working has been promoted by both the

Moroccan Ministry of Interior and the Ministry of Health. The mobile application was developed to perform "contact tracing" if there was a known case next to you in public. The application is called "Wiqaytna" which stands for "Our Cure" in the Arabic language. The application is downloaded onto mobile phones and uses GPS + Bluetooth technology, once a case is found, the application crosschecks the person's movements over the last 14 days. Users who have been in contact with someone who has tested positive are notified with a text message. The app was downloaded and used by more than 1 million citizens, and it was available on both Android and iOS mobile phones. [Org20]

The app was not a requirement to download and activate if you're going out for an urgent case, but using it was highly recommended to prevent the users from getting the risk of being infected.

From my personal experience of using it and after talking to my relatives who used it, turns out none of them got a notification of a nearby infection. This was not surprising to me because there were some inconveniences related to the application usage, the biggest one of them was the very excessive battery usage, and the main reason for that was the constant scanning using Bluetooth and GPS, which requires some energy to perform, and sometimes the users' phones have an automatic deactivation of those technologies which led the app not to track anymore who is around your area.

On the other hand, the user interface was a modern and simple one, which was understood by every user of the application. It was published in 2 languages; Arabic and French, that's because Morocco is a tourist country and at that time there were a lot of French foreigners who got stuck inside the country because of the traveling restrictions, there are also many Moroccan citizens who use French as their primary language when it comes to device usage.

Another good thing about this app is that it was open-sourced by the developers, in [this](#) GitHub Organization. In my opinion, it was a good initiative since many local talents would contribute to this project and make it more secure in regard to privacy and data handling.

A security testers group consisting of two Moroccans and a French guy did an amazing job by statically and dynamically testing the mobile application (android and iOS) for no return. A very detailed and thorough [report](#) was created as a result of this test.

1.1.4 Publication Policy Changes During the Pandemic

The access to private information during the pandemic knew different stages, but the privacy definition wasn't that precise especially when the vaccination period was introduced in Morocco. Besides wearing a facial mask and making all the preventions, having an injection against the COVID virus was a mandatory thing to perform day-to-day activities, such as making groceries, going to work and so on... And as proof of your vaccination, a certificate with a QR code was provided to the citi-

zens, which contained their private information (full name, date of birth, ID number, address, vaccination type, vaccination date). This asset introduced significant access to private information, which also helped local authorities and police personnel quickly identify people who were involved in criminal actions or illegal procedures.

The Ministry of Health introduced a [website](#) to view and download the vaccination certificate. This website asks you to fill out a form with one of your identification numbers (national ID card, Residence Permit Number, Passport number, Student ID, SSN), your birthday or birth year, then a captcha.

There is a single layer of security enforcing information leakage, which is when you demand a certificate after filling out the form, you will receive a confirmation on your phone number to proceed. This could have been a leak of private information since anyone can download the certificate of anybody, the only information they needed to perform this operation was the birth year + one of the aforementioned ID numbers, and you will receive a PDF file containing the other sensitive data, but after having a bypass of the OTP code since it's the only countermeasure for privacy reasons.

Since there's no public security test review on this website, no one can know whether it is secure against web application vulnerabilities, naming SQL injections, No rate limits (bruteforcing), Insecure Direct Object References, and OTP bypasses (only 4 digits, 10 000 possible combinations)...

The website is still running today and still provides the correct information.

1.2 China

1.2.1 Legal Background

People's Republic of China (PRC) is an authoritarian state lead by the CCP (Chinese Communist Party). In terms of legal system, the Constitution of PRC is nominally the fundamental or supreme law of China. However, according to Prof. Luo Xiang of China University of Political Science and Law, "Someone told me that the Constitution is the supreme law of China - how stupid! Everyone knows that the supreme law in China is your leader's view" [Luo21]. I totally agree with Prof. Luo, as China is still a rule-of-man country, rather than rule-of-law. Albeit nominal, laws in China are strictly enforced towards less privileged citizens (for controlling and punishing them), for example, citizens who rebel, who do not have friends/relatives in power, or who have no money to bribe. Laws are always interpreted freely, according to the needs of the ruling/rich class.

1.2.2 Publication Policies of Personal Data

Effective November 2021, the Personal Information Protection Law specifies the policies for publication of personal data. In particular, it prohibits disclosure of personal data without the person's consent.

Note that the law did have some positive influence on privacy protection, for example, the right to be forgotten is then implemented in most applications. However, it is still limited as

1. It is only available in mobile applications. One has to download the application in order to delete his or her account, even if the person only uses the Web application.
2. In practice, companies do not actually delete the data; instead they only deactivate the account and keep using the data shamelessly.

1.2.3 Chinese Privacy In Reality

Even before COVID-19, Chinese people suffer from massive surveillance and privacy abuse (unless being a high-ranking government officials of CCP). A few examples are

- Phone number is bound with its owner's real name and ID number (of Chinese ID card, a unique number assigned to all individuals in China), available to the police at all time. Family records are also digitalized and available to the police. Consequently, police could find and leak private data of any person, as well as private data of all family members of a certain person. Compromised policemen currently sell these data as a service on Telegram.
- It is required by law that, in order to register any account online (for social media, online services, etc), one has to provide a phone number, real name and ID number. Consequently, the aforementioned privacy-info-as-a-service also sells any social media account linked to a certain person.
- All social media has a backdoor to the police and national security department. The police can read any online activity of any person.
- Most Chinese-branded cell phone have digital forensics backdoor such that the police can decrypt the device without knowing the password of the device.
- Telecommunication and Internet service providers collaborate with the government such that any foreign social media account (such as Twitter, Telegram, Facebook, Instagram) registered with a Chinese phone number is monitored by the government (because the ISP tracks the verification OTP sent to the phone).
- No encrypted channel for communication is allowed. The last application supporting end-to-end encryption was iMessage, which became effectively plaintext after Apple transferred iCloud service provider to a CCP-controlled company called Guizhou-Cloud Big Data. The government is able to read all encryption keys from that iCloud service provider. [\[Inc\]](#)

- Some popular mobile applications constantly attempt to read the application list of a certain phone. They report to the police if any “risky” application (VPN client for circumventing the Great Fire Wall, end-to-end encrypted chat, foreign social media platform, etc) is found. The police is then able to find the actual person by matching the IMEI.
- Payment are usually done with two payment applications: Alipay or WechatPay, both closely monitored by the government. So the government knows when, where, and what you buy.
- AI-based facial recognition cameras cover all spots of a city. These cameras not only recognize faces, but also capture walking postures, walking speed, and other biometric data of each individual for mass surveillance and protester recognition. [Ng20]

During COVID-19, the notorious “Zero COVID Policy” in China becomes an excuse to the outrageous violation of citizen’s privacy by the Chinese government. The publication policy becomes even more adversarial for average citizens. In particular, Health QR Code, massive PCR screening, and epidemic investigation are the three most abusive components of the massive privacy manipulation and violation.

- Health QR Code: Health QR Code is a mobile application such that each citizen is assigned to a Health Status in their phone. It has three status: green, yellow, red. The color reflects not only if a person has COVID positive or not, but also reflects how much the person complies to the government’s policy. Usually a city has its mandatory COVID testing schedule, ranging from once per 24 hour to once per 72 hour. This means every single person in the city is required to get a PCR test according to the schedule. If a person follows the schedule strictly and fully complies with all policies, the person will get a green code. If a person refuses to test or does anything slightly deviant from the policy, the person will get a yellow code. If a person is tested COVID positive, the person will get a red status for sure. Then the person will be sent to a temporary quarantine camp and locked up. During 2022 Henan banks protests, Health QR Code is abused by automatically assigning red status to the protesters, even if they have fully complied with COVID-related policies.

The consequences of having a yellow or red code is being unable to go anywhere, even the grocery or market for buying absolute daily necessities like food or tissue. How is this enforced? Each entrance and exit of a building is assigned to a Location QR Code printed and stuck near the entrance. Each entrance and exit is guarded by at least two security person that asks everyone to scan the Location QR Code before entering the building. After scanning the Location QR Code, the person’s Health QR Code will appear in the application.

The guard then checks if the person has a green status, and only allows person with a green status to pass. These security guards are usually ex-mafia or ex-military who struggle to find a real job in the job market.

Note that some ethical developers have developed a fake Health QR Code application for fooling the security guards. However, the GitHub repo of the project was removed by GitHub official, possibly under pressure of Chinese government.

The privacy impact of the QR Code system allows the government to know wherever a person goes. Every time one scans a Location QR Code, the information is sent to some centralized server under the government's control. What makes the situation more chaotic is, each major city has developed its own Health QR Code system (because it is easier to involve corruption by choosing contractors themselves), and there exists a unified platform gathering all information from all cities around the whole country. Even for example, a progressive city like Wuxi claims to have deleted 1 billion Health QR Code data of Wuxi residents, it is unclear if the platform that gathers data from the whole country has deleted the same portion of data as well (in fact, highly unlikely).

- Massive PCR screening: the aforementioned PCR screening has lead to a massive compromise of genetic data of Chinese citizens. The PCR screening process involving DNA sequencing, which may provide an opportunity for the government to collect data that would otherwise be unavailable in ordinary situation. It is unclear if such data has been abused or leaked but the collection of such data is forceful in the sense that, the consequence of not being cooperative in the screening process is a yellow status of Health QR Code. Rumors spread that such data has been sold to medical and insurance companies, or even secretly used for organ transplantation pairing, which is unlikely but still not impossible.
- Epidemic investigation: once a person has tested positive, or once the government has a need to obtain the person's data, the authorities conduct a so-called "epidemic investigation". Such investigation recovers all spatial and temporal trajectories of the person's past few days or week. Then all the information will be released on online social media platforms. The released information include the person's last name, age, home address, occupation, company, and the spatial-temporal trajectory of the person during the past few days, as well as what the person did at such locations and times. The minimal anonymization effort when releasing such information will instantly make the person identifiable and impose strong social pressure on the individual. The person may even face trouble among his or her colleagues. In Chinese language we say such a person is "socially dead" after publication of the person's private information.

The epidemic investigation is more regarded as a deterrence, or threatening to people who do not care about the Zero COVID Policy. The message is clear: if you do not comply with the rules, be prepared to become socially dead.

2 Country Comparison

In terms of politics Morocco and China are quite different, say, monarchy and republic. In terms of law, their laws for privacy protection are similar. Moreover, both made some legislative attempt during the COVID-19 pandemic. Policy-wise, the strict, totally impractical “Zero COVID Policy” in China is considered as a humanitarian crisis, while the Moroccan epidemic policies are much realistic and practical.

The technological responses to the pandemic are very different in the two countries. For example, Moroccan developers have developed Wiqaytna, an mobile application just for tracking contact and is voluntary to use. On the contrast, the Chinese government has forced all citizen to use their application for tracking both locations and other private information. One noticeable difference is that: compared to the Wiqaytna, the Chinese applications are usually only used once when the person is entering or exiting a building. Thus the Chinese application uses less battery energy.

The Moroccan people also have not suffered from massive DNA sequencing screening, while the Chinese people are intensively screened and are associated to a chance such that their genetic information is compromised. There is also no public release of epidemic investigation in Morocco that will make someone socially dead.

There is also QR code involved in the daily life of Moroccan people under COVID-19, the but QR code is only a proof for vaccination. However the certificate and QR code do contain personal identifiable information, and the website’s security has not been thoroughly tested. In China, the QR code is strictly enforced to limit citizen’s mobility inside the country, essentially turning the country into a big prison. The security of such tools are also not thoroughly tested, but the awareness of vulnerability testing is low among the public in China. Most Chinese people do not care much about it because their private information is already terribly compromised. The CEO of Baidu, largest search engine in China, shamelessly says that “Chinese people are willing to give up their privacy in exchange of convenience”, which reflects exactly how abusive these companies in China are.

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