No doubt today is the era of big data. Under such circumstances, people would resort to big data as a pool of information to gain useful insights. They use innovative methods of big data to analyze the status quo of the global population aging and convert it into outcome-focused information and knowledge, helping the UN engineer the Convention of the Rights of the Elderly (CRE). The big data shows that the population ageing has been a very clear trend in most parts of the world, causing challenges for nearly all sectors of society, including labor and financial markets, the demand for goods and services. Confronted with these challenges, the international community is asked to protect the rights of the elderly, especially through international law and the framework of the UN. Although there are many international treaties and conventions offering protection for generic human rights that implicitly refer to older persons, these relevant provisions are scattered, porous and lack of practical operability, which fail to provide explicit, tailored, comprehensive and binding protection to older persons. Although there are some soft law provisions that guide the application of law for the overall protection of older people, no definite documents contains legally binding obligations. The above assessment shows that there are “normative gaps” and “enforcement gaps” on the protection of the rights of the elderly under the framework of the UN. Therefore, the protection of the rights of the elderly must be formulated as “hard law” which defines the responsibilities of the state and clarifies the implementation mechanism at the international and domestic level. In other words, a legal system ought to be established to comprehensively protect the rights of the elderly, which is just the CRE.