



## POLICY EVALUATION ON IMMIGRATION ELECTRONIC STAMP, BIOMETRIC DATA, AND AUTOGATE MACHINES IN THE CONTEXT OF GEOPOLITICS

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### ABSTRACT

Immigration Border Control (TPI) at Bali Ngurah Rai Airport adopts electronic entry sticker, biometric data collection, and autogate machines called the Immigration Movement Application System (APK). The system is equipped with a scanner that records facial biometric data and fingerprints of foreigners upon arrival. However, there are problems in implementing this system at the related TPI. This study evaluates immigration inspection policies, especially the process of taking biometric data, giving electronic entry stamps, and autogate machines at TPI Ngurah Rai Airport. This research uses qualitative research method with a public policy evaluation approach based on observations and document analysis. The results of this research show that the concept of biometric border control at TPI is not fully relevant to the concepts in the international provisions of ICAO Doc 9303 and ICAO TRIP Guide 2018. The Ministerial Regulation Number 28 of 2018 on Immigration Stamp and Circular Letter No. IMI.1-UM.01.01-5.7755 needs to be evaluated and revised to include four stages of checking with electronic stamps and system synchronization with autogate machines. This immigration clearance model at TPI applies a geopolitical concept that focuses on territorial/regional borders rather than a biopolitical concept that focuses on security risks for individuals.

**Keywords:** electronic stamp; autogate machine; biometric data; geopolitics; biopolitics

### INTRODUCTION

#### Background

The travel document inspection process, interview process, visa checking, travel document scanning, biometric data collection, and verification on the movement alert list are a series of immigration clearance carried out on foreigners (OA) crossing the Indonesia's border.<sup>1</sup> Every traveller is required to comply with immigration clearance process in immigration border controls (TPI) at airports,

seaports, and border crossing stations. Valid travel documents, visa, and entry stamps will be respectively given to every passenger if the person is eligible to enter Indonesian territory. In achieving an effective immigration inspection process at TPI, several supporting aspects are necessary such as analysis and process of making border control policy on the targets, objects, strategy, facilitation, planning, programs, adaptation, communication and information, and human resource development.<sup>2</sup> Traditionally, a border

1 Menteri Hukum dan HAM RI, *Peraturan Menteri Hukum Dan HAM RI No. 44 Tahun 2015 Tentang Tata Cara Pemeriksaan Masuk Dan Keluar Wilayah Indonesia*, 2015.

2 Ridwan Arifin, Intan Nurkumalawati, and Bobby Briando, "The Theoretical Perspectives of Immigration Controls: Immigration Clearance Process, Selective Policy and Security Approach

is defined as a visible line that represents the jurisdiction and territorial sovereignty of a country.<sup>3</sup> The border is an imaginary physical line where there is mobility of people who are mainly in border crossing stations, border crossing seaports and airports.<sup>4</sup> By an information system-based inspection, an immigration clearance at borders strengthens the function of national security in selecting people who are eligible to enter a jurisdiction. As such, immigration inspections in border areas are the strategic clearance process to maintain the territorial integrity of a state.<sup>5</sup> In addition, immigration inspections indicate one of the comprehensive efforts in implementing the selective principle across Indonesia's border.<sup>6</sup>

The Border Control Management (BCM) system is a component of the immigration management information system or shortly called SIMKIM. This system runs based on the adoption of information and communication technology developed by the Directorate General of Immigration (DGI).<sup>7</sup> The application of BCM is a part of public service at TPI which focuses on immigration clearance and border law enforcement.<sup>8</sup> The BCM system at TPI

has now been replaced with a new one called the immigration border-crossing application system or APK. The new application is an information and communication technology system for border risk management that plays an important role in recording all activities and data on people's crossings. Border control management is a crucial thing to prevent and deter any immigration violations that may happen in Indonesia.<sup>9</sup> This application system is equipped with a biometric scanner to record OA's biometric data when entering Indonesia's territory. Biometric data collection is undertaken by taking and recording fingerprints and facial photos. This process is applied to passengers who have never had their biometric data collected before.<sup>10</sup> It indicates the biometric data is taken when the OA (foreigner) first arrives at the TPI.

After taking the OA's biometric data, if the data are matched with the requirements in the regulation, the immigration officers at TPI will approve an entry stamp for them. The entry stamp is given by the officers at TPI either electronically or manually.<sup>11</sup> Based on this regulation, Indonesian citizens (WNI), a child with dual nationality, holders of diplomatic or official residence permits, crew members, holders of the cross-border pass, holders of temporary residence permits (Itas), and permanent residence permits (Itap) with

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At Airports in Indonesia," in *2nd International Conference on Multidisciplinary Academic Research*, vol. 251, 2019, 251–260, [www.apiar.org.au](http://www.apiar.org.au).

- 3 Beth A Simmons, "Border Rules," *Faculty Scholarship at Penn Law*, no. 2045 (2019): 1–46, [https://scholarship.law.upenn.edu/faculty\\_scholarship/2045](https://scholarship.law.upenn.edu/faculty_scholarship/2045).
- 4 Anna Krasteva, *SPACES, LINES, BORDERS: Imaginaries and Images*, Routledge, 2016.
- 5 Insan Firdaus, "Optimalisasi Pos Lintas Batas Tradisional Dalam Pelaksanaan Fungsi Keimigrasian Studi Kasus Imigrasi Entikong," *Jurnal Ilmiah Kebijakan Hukum* 12, no. 1 (2018): 57–71.
- 6 Ahmad Jazuli, "Eksistensi Tenaga Kerja Asing Di Indonesia Dalam Perspektif Hukum Keimigrasian," *JIKH* 12, no. 1 (2018): 89–105.
- 7 Direktorat Jenderal Imigrasi, *Peraturan Direktur Jenderal Imigrasi Nomor IMI.459.GR.01.02 Tahun 2011 Tentang Standar Operasional Prosedur Border Control Management* (Indonesia, 2011).
- 8 Intan Arifin, Ridwan ; Nurkumalawati, "KEBIJAKAN PEMERIKSAAN KEIMIGRASIAN

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DI INDONESIA: BENTUK PELAYANAN PUBLIK DAN PROFESIONALISME PETUGAS IMIGRASI (Immigration Control Policy in Indonesia: Public Service Delivery and Professionalism of Immigration Officers)," *Jurnal Ilmiah Kebijakan Hukum* 14, no. 2 (2020): 1–209.

- 9 Trisapto Wahyu Agung Nugroho, "Optimalisasi Peran Timpora Pasca Berlakunya Peraturan Presiden Nomor 21 Tahun 2016 Tentang Bebas Visa Kunjungan," *Jurnal Ilmiah Kebijakan Hukum* 11, no. 3 (2017): 263–285.
- 10 Menteri Hukum dan HAM RI, *Peraturan Menteri Hukum Dan HAM RI No. 44 Tahun 2015 Tentang Tata Cara Pemeriksaan Masuk Dan Keluar Wilayah Indonesia*.
- 11 Kemenkumham, *Peraturan Menteri Hukum Dan HAM No. 28 Tahun 2018 Tentang Cap Keimigrasian, Meneteri Hukum Dan HAM, 2018*.

Re-Entry Permit (IMK), and OA who enter Indonesia under emergency circumstances will be stamped manually on their passport. Meanwhile, holders of visit visas on arrival, holders of the visa-free facility (BVK), visitor visa (VK), temporary residence visa (Vitas), Asia Pacific business travel cards (ABTC), Vitas on arrival, Vitas on arrival for foreign workers, Vitas on arrival which is also valid as a re-entry permit, visa-free facility for diplomatic or service passport holders, ease of working while on vacation, official or diplomatic visa, are the subject of an electronic entry stamp.

The electronic immigration stamp is approved by attaching a stamp in the form of a sticker to the OA's travel document. This process is regulated under the Minister of Law and Human Rights regulation (Permenkumham) No. 28 of 2018 about the Immigration Stamp which replaces Permenkumham No. 42 of 2015. This regulation explains that electronic stamps are only given to OA who meets the conditions for entering Indonesia's territory upon arrival. In a book entitled *Migration and Pandemic*, border technologies for automated decision-making, biometric data, and drones are increasingly adopted to manage migration and govern the global mobility of people.<sup>12</sup>

Biometric data collection with the APK system has some challenges. Based on research, one of the obstacles happens to some TPI in Indonesia that have not implemented biometric data collection and are not integrated with the system even though they are equipped with biometric devices.<sup>13</sup> In addition, the research mentions that another obstacle is the absence of procedures for

using biometric data collection devices due to the absence of standard operating procedures that formally regulate the process. This problem is one of the factors that interrupt every process of immigration inspection which aim is to obtain correct and accurate OA data. In doing so, the activity of checking, verifying, and validating the biometric and passport chip data with the OA's data as the passport holder must be undertaken by immigration officers.

Apart from biometric constraints, based on initial observations and research results,<sup>14</sup> other issues are found, namely the weakness of security features on the electronic immigration stamp, ambiguities in using the electronic immigration stamp, and the lack of adjustment to the APK system. All problems that arise in securing the immigration entry stamp in OA's travel documents can result in forgery of entry stamps. Furthermore, it might cause the potential for other transnational crimes. The lack of systemic cooperation between authorized agencies at the border is a significant problem. The problem of migration between countries which includes people or goods that often occurs in developing countries is caused by poor border management, especially in the aspect of coordination and cooperation among border management agencies.<sup>15</sup>

These phenomena show the dynamics of change and the development of global trends that also affect the management of territorial borders in each country and the strength of their sovereignty. The concept of sovereignty that will be represented at the border can be determined from the state's authority in implementing policies at the border. The political and economic dimensions are the most important aspects which should be taken into account in upholding the sovereignty

12 A. Triandafyllidou, *Migration and Pandemics: Spaces of Solidarity and Spaces of Exception*, IMISCOE Research Series, 2022.

13 Ridwan Arifin and Intan Nurkumalawati, "Kebijakan Pemeriksaan Keimigrasian Di Indonesia: Bentuk Pelayanan Publik Dan Profesionalisme Petugas Imigrasi," *Jurnal Ilmiah Kebijakan Hukum* 14, no. 2 (2020): 243.

14 Nilam Rizky Anugerah and Anindito R Wiraputra, "KONTRADIKTIF IMPLEMENTASI AUTOGATE TERHADAP CAP KEIMIGRASIAN," *Journal of Law and Border Protection* 2, no. 2 (2020): 63–75.

15 World Bank, *Doing Business*, vol. 6, 2020.

of a country. In Bossong and Carrapico's book, the traditional understanding of the border is defined as a clear boundary, which physically separates two territorial entities, and emphasizes quantity and dialectics in the practice of borders.<sup>16</sup>

In response to those circumstances, the evaluation in this research includes the policy of immigration clearance in terms of biometric data collection and the adoption of electronic immigration stamps at TPI Bali Ngurah Rai Airport. Previous research on the immigration clearance at TPI,<sup>17</sup> as well as about immigration e-stamp,<sup>18</sup> have not discussed the process of collecting the biometric data based on the ICAO TRIP GUIDE 2018. In addition, they also have not evaluated the use of electronic stamps according to the immigration clearance model by Gorodnichy.<sup>19</sup> Another work has investigated the absolute sovereignty at TPI in terms of entry refusal for foreigners based on ICAO Annex 9 of 2017.<sup>20</sup> This study will relate to the evaluation of immigration clearance at TPI with ICAO TRIP GUIDE 2018 as the

latest version and focus on coordination and collaboration. The study of geopolitics at the Indonesian border through a multidisciplinary approach<sup>21</sup> is limited to the discussion of territorial border issues about information systems and technology. However, it has not comprehensively analysed geopolitics in terms of immigration and an integrated border information system. The study will be related to the expansion of geopolitical discussions through a biometric system and modeling of immigration clearance at the border in overcoming problems at the Indonesian border. Thus, to fill the gaps in previous research, the immigration clearance process at TPI in collecting biometric data of OA is the primary focus of this research. Meanwhile, the electronic immigration stamp at TPI becomes the sub-focus.

## Research Questions

In relation to the account of the above conditions, this paper comes with two following questions:

1. How is the implementation of immigration clearance management with biometric data and electronic stamps at TPI Bali Ngurah Rai Airport?
2. What is the model of immigration clearance model at TPI Ngurah Rai Airport Bali viewed based on Gorodnichy's model?

## Research Methodology

### 1. Approaches

The qualitative method was applied in this study. It is done by reviewing the series of immigration clearance such as collecting the biometric data and approving the immigration entry stamps or stickers at TPI Ngurah Rai.<sup>22</sup> This research is a public policy evaluation by reviewing the stages of biometric data

16 Raphael Bossong and Helena Carrapico, *EU Borders and Shifting Internal Security, Technology*, Springer, vol. 72 (Springer, 2016).  
17 Arifin and Nurkumalawati, "Kebijakan Pemeriksaan Keimigrasian Di Indonesia: Bentuk Pelayanan Publik Dan Profesionalisme Petugas Imigrasi."  
18 Anugerah and Wiraputra, "KONTRADIKTIF IMPLEMENTASI AUTOGATE TERHADAP CAP KEIMIGRASIAN."  
19 Dmitry O. Gorodnichy, "Multi-Order Biometric Score Analysis Framework and Its Application to Designing and Evaluating Biometric Systems for Access and Border Control," *IEEE SSC/ 2011 - Symposium Series on Computational Intelligence - CIBIM 2011: 2011 IEEE Workshop on Computational Intelligence in Biometrics and Identity Management* (2011): 44–53.  
20 Ridwan Arifin, "Penolakan Orang Asing Ke Indonesia Melalui Tempat Pemeriksaan Imigrasi Di Bandara Internasional: Sebuah Kedaulatan Absolut (Refused Entry Persons to Indonesia through Immigration Border Controls at International Airports: Absolute Sovereignty)," *Jurnal Kajian Keimigrasian* 1, no. 1 (2018): 151–165, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3329046](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3329046).

21 Margaretha Hanita, "Geopolitik Dan Isu Perbatasan Dalam Pendekatan Multidisiplin," *Jurnal Kajian Strategik Ketahanan Nasional* 1, no. 1 (2018): 62–71.  
22 Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, Dan Tindakan*, 2013.

collection and the electronic immigration stamps.

## 2. Data Collection

The data collection technique applied in this research was direct observation and document review.<sup>23</sup> Participatory observations were carried out in this study by examining the process of the biometric data collection and the use of electronic immigration stamps at TPI Ngurah Rai. In addition, this observation examines the available facilities and infrastructure, the mechanisms, and procedures at TPI Ngurah Rai.

In addition to observations, other data collection was documentation studies by reviewing Permenkumham No. 44 of 2015 on Immigration Clearance Procedures of Entry and Exit of Indonesia's Territory at TPI, Doc. 9303 ICAO, the Minister of Law and Human Rights Regulation Number 28 of 2018 on Immigration Stamps, and the Circular Letter No. IMI.1-UM.01.01-5.7755 about the Implementation of Immigration Stamp in the TPI.

## 3. Data Analysis

Data analysis is the process of evaluating, interpreting, analysing, and reviewing the results of observations and literature studies. This process is done based on theories, concepts, and regulations related to the management of the immigration clearance process at TPI and borders about electronic stamping, biometric systems, and geopolitical concepts.

# RESULTS AND DISCUSSIONS

## Implementation of Immigration Clearance Management with Biometric Data and Electronic Stamp

One of the main representations of national sovereignty at the border is

immigration clearance as a step of preventing OA who may violate the law from entering Indonesia's territory and to facilitate a state human rights law.<sup>24</sup> Indonesian law has regulated the eligibility of OA to enter Indonesia's border after completing several existing requirements. Under the Articles 8 and 9 of Immigration Law No. 6 of 2011 and Article 22 of the Minister of Law and Human Rights No. 44 of 2015, OA is required to have a lawful and valid visa, a travel document valid for at least six months and not registered on the movement alert list.

The Minister of Law and Human Rights also explains the seven stages of the immigration clearance process at TPI. This stage begins with examining travel documents on the aspects of security features, validity, and validity period, and the identity on the biodata page. Furthermore, the officers will match the identity of passengers as recorded on their travel documents. After that, the third inspection process is an examination of the visa to determine whether a visa issued overseas or issued upon arrival by using a Visa on Arrival (VOA). In terms of verifying visas, officers must consider the type of visa index, visa security features, conformity of visa identity with travel document data owned by the holder, and visa validity period. For the VOA application, an inspection includes the validity of visa payment proof, visa index, including country subject, return ticket, accommodation, or any recommendation letters from the Director-General of Immigration if issued based on approval. In contrast, the policy of granting visas to OA by the DGI needs to be evaluated regularly. It needs to be done as a proper respond to the dynamics of the current issues that support the seven immigration policies, as it is a

23 Catherine Marshall and Gretchen B. Rossman, *Designing Qualitative Research* (SAGE Publications, 2015).

24 Lisa Seghetti, "Border Security: Immigration Inspections at Port of Entry," *Immigration Inspections and Enforcement at and Between Ports of Entry* (2014): 1–48.

part of an immigration clearance and border control in Europe in the context of migration and border reform.<sup>25</sup>

The fourth stage is the travel document scanning process. It aims to read and save the identity of the travel document holder, record the travel history data, verify the holder's data listed on the immigration database system, and verify whether the data of travel document holder are found on the movement alert list. The fifth stage is the process of taking biometric data by recording facial photos using a camera and taking fingerprint biometric data. In case the biometric data of OA has not been recorded, the collection of biometric data for travel document holders is done by officers. The final step is to confirm the name of the travel document holder on the movement alert list.

In the fifth stage, the process of collecting biometric data for travel document holders done by immigration officers on duty at TPI is a mandatory procedure. This provision is regulated under Article 28 of the Minister of Law and Human Rights No. 28 of 2018 about the Immigration Stamp. In the stage of collecting biometric data at the border, the international convention of ICAO Doc 9303 and the 2018 ICAO TRIP Guide regulate procedures and standards that must be accepted by the state members. This standard and procedure consists of the process of record, verification, validation, and repository.<sup>26</sup>

Potzsch's theory supports the policy of taking biometric data in the process of immigration clearance. This theory shows that in the new trends of people movement across borders, officers no longer examine

every person based on country of origin or destination country collectively, but officers will individually focus on the identity of every person's background.<sup>27</sup> With technological advances, it explains how an algorithmic system is created to help determining or estimating the possibilities and threats of every person entering or leaving a country. As a result, the existence of technology can provide recommendations for officers in making decisions during the examination process. Furthermore, in this era of electronic borders, a shift of humans will not become a cyborg at the border, but it turns into a technological device to identify, manage, and control an unprecedented framework of border restrictions and inspections.

Management of border inspections can be defined as a form of cooperation among relevant public authorities. These authorities have their respective roles that have impact on achieving a seamless border control process effectively and efficiently. There are several agencies involved in this border activity and they have duties and responsibilities in managing borders. Referring to the Migration Policy book, the process of refusal of entry, removal order, deportation, and detention are the primary roles of border officers as sovereign decision-makers to all passengers or OA who have been proven to have violated the law both when crossing the border and while inside the jurisdiction.<sup>28</sup> Actions among border authorities such as immigration, customs, police, and health quarantine can be initiated through strategic cooperation, a joint task force, training of officers, and the exchange of information. This activity is to determine which people have met the legal criteria and

25 Claudia Finotelli and Giuseppe Sciortino, "Through the Gates of the Fortress: European Visa Policies and the Limits of Immigration Control," *Perspectives on European Politics and Society* 14, no. 1 (2013): 80–101.

26 ICAO, "ICAO TRIP Guide on BORDER CONTROL MANAGEMENT" (Canada: International Civil Aviation Organization, 2018).

27 Holger Pötzsch, "The Emergence of IBorder: Bordering Bodies, Networks, and Machines," *Environment and Planning D: Society and Space* 33, no. 1 (2015): 101–118.

28 Nancy Plankey-Videla, "Immigration Policy in the Age of Punishment: Detention, Deportation, and Border Control," *Contemporary Sociology: A Journal of Reviews* 49, no. 3 (2020): 246–248.

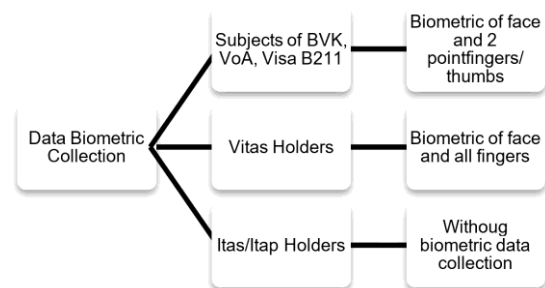
are eligible to cross into Indonesia's border through border inspections by air, land, and sea.<sup>29</sup> To analyse the immigration clearance process at TPI Ngurah Rai Airport Bali, the following points discuss the fifth stage in the collection of biometric data at the border based on ICAO Doc 9303 and the ICAO TRIP Guide 2018.

### 1. Record Phase

In the recording stage, biometric data retrieval has been initiated at TPI Ngurah Rai Airport with the standards set out in ICAO Doc 9303 and with Gorodnichy's concept of the Biometric Border Control system model. Based on our observations, we examined the process of recording biometric data on OA at the arrival terminal of TPI Ngurah Rai Airport.

Figure 1 shows that every OA that goes through the immigration clearance at TPI Ngurah Rai Airport must proceed to the biometric data recording stage conducted by the officers at the counter. Later, the officers also verify the type of visa upon their arrival. The process of recording biometric data on OA refers to what kind of visa owned by the document holders: Visa-Free, VOA, Visitor Visa, or Vitas. This data recording process for OA Vitas holders facilitates them because they must report their Vitas at the immigration office where they do not re-collect biometric data. In addition, OA holders of IMK/MREP and Itas/Itap are not required to record biometrics at the TPI to prevent duplication of stored data as shown in Figure 1.

**Figure 1. Biometric Data Collection Scheme at TPI Ngurah Rai Airport**



Source: Observation, data analysis 2021, Wilonotomo, et. al., 2020<sup>30</sup>

Based on our research findings during field observations, there are still complaints of OA upon arrival. Every time they arrive at the TPI of Ngurah Rai Airport, they require to record biometric data repeatedly. This process is only for recording their biometric data but the process of matching the data with the database has not been completed. In addition, elderly OA whose fingerprints are difficult to read is an obstacle in the process of retrieving biometric data. To overcome this, the officers at counters will use their other fingerprints that can possibly be read. This process is important because when they go through an inspection with the autogate machine at the departure terminal, they must use the same fingerprint as their data at the time of recording upon arrival.

In practice, the repeated process of recording biometric data is not in line with the standard operating procedures regulated in Permenkumham No. 44 of 2015 Article 28 section (2). This regulation states that biometric data is only collected once when

29 Rusdiyantara, "Collaborative Border Management as the Strategic Revitalization of State Border Management in Indonesia," *International Journal of Pure and Applied Mathematics* 116 (2018): 415–426.

30 Wilonotomo Wilonotomo, Bagas Hidayat Putra, and Ridwan Arifin, "Rancangan Sistem Pendeteksian Paspor Palsu: Solusi Pemeriksaan Keimigrasian Di Indonesia," *Jurnal Sistem dan Teknologi Informasi (Justin)* 8, no. 4 (2020): 409.

the OA biometric data has not been recorded. This process shows a contradiction with the theory and concept that the process of recording biometric data is useful in increasing efficiency at the border.<sup>31</sup> It means that the repeated process of recording biometric data upon arrival of OA will result in the inefficiency of the immigration clearance process. This situation indicates that the database system is only operated as a recording and temporary storage of incoming OA data rather than a verification and validation process as a border risk management.

## 2. Verification Phase

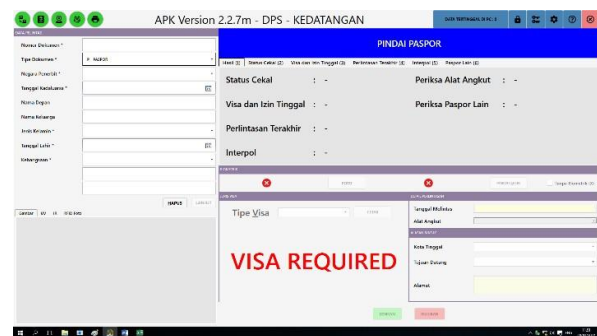
The provisions of ICAO Doc 9303 and ICAO TRIP Guide 2018 explain that the “verify” stage or verification through checking with biometric data is done by taking a new biometric photo of travellers, matching it with a photo that has been stored in the database.<sup>32</sup> This stage is a crucial process because it is used to determine the validity of data owned by the travel document holder and to match with the data stored in the database. In terms of the examination of biometric data at the Ngurah Rai Airport TPI, the verification stage through an integrated database system has not been achieved. It is because facial photo data stored in the travel document chip are the only available means for verification. The initial plan and purpose of the biometric data collection process are to be integrated into a database server. It means that until now the data verification stage has not been implemented optimally. This stage is only about biometric data collection process where the data are stored in the form of a Foreigner Identification Number (NIORA) of each OA.

31 Vanessa Diaz, “Legal Challenges of Biometric Immigration Control Systems,” *Mexican Law Review* 7, no. 1 (2014): 3–30.

32 ICAO, “Doc 9303 - Machine Readable Travel Documents - Part 09: Deployment of Biometric Identification and Electronic Storage of Data in MRTDs,” *Doc 9303, Machine Readable Travel Documents* (2015).

Based on our field observations, the process of recording OA biometric data at TPI Ngurah Rai Airport has not been implemented systematically, including the absence of integration between the database and data in passenger name records (PNR), advanced passenger information (API), or autogate machines. Figure 2 is a screenshot of the APK 2 system at the arrival counter of TPI Ngurah Rai International Airport Bali. It shows that PNR, API, and autogate machines have not been integrated with one another. Figure 2 reveals that the flight number must be manually filled in by the officers based on the information in the boarding pass owned by the passenger. Other information and data also must be filled in by the officers.

Figure 2. APK 2 System



Source: A screenshot of APK 2 system, 2021

This condition is quite challenging for counter officers in managing a risk assessment of each passenger. If the database in the APK system operates the data verification process automatically, the officers will receive more detailed information about the correct match between the recorded OA biometric data and the data in the passport chip, as well as the accurate match between the biometric data and the data in the database. This data-based inspection process will facilitate officers in doing an immigration clearance and identify risks to each arriving and departing passenger to prevent international crimes.



Figure 2 demonstrates the APK system is not equipped with a full scan feature that is useful in reading passport chip data. Meanwhile, on the first generation of BCM system (before the APK system), there are two scan features: full scan and quick scan. When the officers click on the full scan feature, facial photos, and other data recorded in the OA's travel document passport chip will be read and appear on the monitor. This feature can be accessed when the officers log in into BCM system at the counters and supervisors. APK has not relied on algorithms as a logical, structured, and systematic system to read and verify biometric data. In addition to the rapid improvement of technology quality, officers must interpret the algorithms generated by biometrics to produce appropriate policies and decisions.<sup>33</sup> It implies that the differences in features between the APK and BCM system will affect the precision and accuracy of decisions made by the immigration officers in examining the results of OA's biometric data. In the APK system, when scanning travel documents, the result that appears on the system view is only the passport identity page. Meanwhile, the facial photo data contained in the passport chip cannot be retrieved, recorded, and analyzed. The verification or verifying stage in checking with biometric data has a significant role for the officer's performance. Through the verification process, officers can apply the pre-empting measures at the border. It makes the case findings and violations can be detected early before OA enters Indonesia's territory.

### 3. Validation Phase

After the data verification process, the next step is biometric data validation. At the data validation stage, the officers at TPI Ngurah Rai Airport compares the results of the face image stored in the passport chip

with the real face of the passenger's passport holder. After that, the officers conduct a brief interview to ensure the validity of the travel document, the validity of the data listed on the travel document with the data of the holder, and confirm the purpose of the OA's arrival to Indonesia. This biometric data validation stage can only be undertaken manually and cannot be completed through the APK system. This stage aims to confirm the validity of the data contained in the travel document and the data from the holder himself. In the absence of this validation process, the inspection only relies on the capacities and capabilities of officers in profiling passengers and selecting eligible OA. However, training to increase the competence and capability of officers is not yet available on a regular and comprehensive basis.

The targets that must be considered are the analysis and process of policy making, strategy, programming, planning, facilitation, communication and information, adaptation, and training programs. Those targets are needed for the effectiveness of immigration checks at Indonesian Airport TPI.<sup>34</sup> In addition, increasing human resources through special training programs for officers is necessary to maintain and improve self-capability and competence in order to achieve an effective immigration clearance process. This condition shows that one of the criteria for the geopolitical border doctrine, in particular, the main inspection tool in the form of experience, expertise, and officer's decisions is still employed in the immigration inspection process in Indonesia.<sup>35</sup>

### 4. Repository Phase

33 Perle Møhl, "Biometric Technologies, Data and the Sensory Work of Border Control," *Ethnos* 0, no. 0 (2019): 1–16.

34 Arifin, Nurkumalawati, and Briando, "The Theoretical Perspectives of Immigration Controls: Immigration Clearance Process, Selective Policy and Security Approach At Airports in Indonesia."

35 Holger Pötzsch, "The Emergence of IBorder: Bordering Bodies, Networks, and Machines," *Environment and Planning D: Society and Space* 33, no. 1 (2015): 101–118.

OA biometric data recorded at the arrival terminal of Ngurah Rai Airport TPI are stored in a repository or storage space. The biometric data collection is used to match and verify passenger data and travel documents when the passengers pass through the autogate machine at the departure terminal. OA biometric data stored in the database will be utilized to detect when they are about to leave Indonesian territory via the autogate machine. If the autogate machine reads and detects a match to the stored data, the front door of the autogate machine will open, and vice versa.

From our findings, passenger movement data at every TPI in Indonesia are collected and integrated into a single unit. These data will automatically be collected on the server of the Directorate of Immigration Information Technology and Systems. The Directorate has a role in maintenance, installation, data transmission, and data processing. TPI at the airport currently does not have access to check and maintain data in the database. They can only conduct data retrieval activities. This biometric data retrieval process is only in the form of reports that are available in the database. This retrieval process is conducted by officers for the accessibility and effectiveness of immigration clearance. The process itself is likely to be relevant with Gorodnichy's concept. The relevancy is basically about two goals in biometric border inspections, namely to facilitate the entry of people who have been registered, and to strengthen access for people who have not been registered.<sup>36</sup>

Up to now, there has not been any

<sup>36</sup> Gorodnichy, "Multi-Order Biometric Score Analysis Framework and Its Application to Designing and Evaluating Biometric Systems for Access and Border Control." *IEEE SSCI 2011 - Symposium Series on Computational Intelligence - CIBIM 2011: 2011 IEEE Workshop on Computational Intelligence in Biometrics and Identity Management* (2011): 44–53.

integration of biometric data recording databases among TPI in Indonesia. In addition, there has not been any data integration between immigration offices and TPI. This situation makes OA only able to use the autogate at the TPI when they arrive and their biometric data are recorded. OA is unable to use an autogate as they arrive at other TPI than TPI Ngurah Rai Airport Bali. This condition causes complexities for border officer to exchange data internally, coordinate with other agencies, and facilitate the passenger. According to Polner, several institutions are urged to immediately make coordinations related to their duties and functions to facilitate and to provide mobility, cross border facilities for people, and trade developments in the context of national security.<sup>37</sup> Therefore, data integration can improve the quality of storage or repositories that have a variety of data structures from various data sources.

As we observed, there is weakness in the border system and movement data at TPI. This weakness include the absence of data integration in the online repository at every TPI in Indonesia. This absence makes it difficult for immigration officers to retrieve the OA's data, and track records of entering and leaving Indonesia's territory. So far, there is no integrated system at TPI that can detect arrival and departure travel data among TPI in real-time. If there are undecided indications to the incoming OA, the officer must coordinate with the supervisor in the office or the interview room by re-checking the data in the passport: identity, passport number, verification of travel history data at other TPI when entering the territory of Indonesia.

The Directorate of Immigration Information Systems and Technology stores and automatically receives all travel history

<sup>37</sup> Mariya Polner, "Coordinated Border Management: From Theory to Practice," *World Customs Journal* 5, no. 2 (2011): 49–64.

data that has been recorded in the database by immigration officers from the TPI in Indonesia. However, officers at a TPI could not see the travel history record of OA movement data from other TPI. For example, the Soekarno-Hatta Airport TPI officers cannot trace data on the OA crossing at TPI Ngurah Rai Airport Bali. This causes gaps in coordination and inspection at TPI which may be less effective. The problem of limited data access coverage and technological constraints can lead to inefficiency and ineffectiveness in the border management process. According to Rizqi, the efficiency in border control management is supported by two factors, namely cooperation in border management and technology-information (IT) support.<sup>38</sup>

### **Immigration Clearance Models at TPI Ngurah Rai Airport Bali**

Facilitating the entry of people who have been registered and strengthening the access of people who have not been registered are the two main goals of biometric border control. The examination system with biometrics is divided into two models as revealed by Gorodnichy, the investigation mode model or semi-automated model, which leads to a system that presents data for analysis by officers.<sup>39</sup> The purpose of this border control is to allow every lawful and eligible person who is permitted to enter the territory of a country through an effective border inspection process.<sup>40</sup> However, the decision-making process requires a specified time depending on the subject's data. Another model is the access/ border control or fully

automated model, as a quick and accurate decision based on the processing system and the biometric results of every passenger detail. The following analysis is the adoption of immigration clearance at TPI Ngurah Rai Airport Bali that is based on two models:

#### **1. Fully Automated Model**

According to our observations at Bali Ngurah Rai Airport TPI, an autogate machine is used for the OA immigration clearance process. The use of this machine is categorized into a biometric border control with a fully automated model. Autogate machines can be operated by OA from selected countries upon departure, as well as by all Indonesian citizens upon arrival and departure. To enter Indonesian territory using an autogate machine, the requirements for Indonesian citizens are holders of regular Indonesian passports issued in 2019 and issued above 2019 (according to SIMKIM 2.0), holders of electronic Indonesian passports, holders of travel documents not issued at Indonesian representatives overseas (KBRI/KJRI). Consequently, a machine-readable zone (MRZ) column in the Indonesian Passport biodata page published by the Indonesian Embassy or Consulate-General is not compatible with the reader machine.

A fully automated model at TPI Ngurah Rai airport with autogate machines has been integrated with the movement alert list or Enhanced Cekal System (ECS). As seen in Figure 3, this integration helps immigration officers to conduct a risk analysis of each passenger. The autogate machine has one front door and one rear door. The front door will open after the passenger scans a verified passport and the rear door will open after they scan a verified face and fingerprint. In order to verifying the biometric data of the passenger, autogate has an indicator light shown in different colors according to the type of risk. Risk management in border inspection is the implementation of the new biopolitical

<sup>38</sup> Mochamad Rizqi, Erza Lasoturia, and Gede Maha, "BORDER MANAGEMENT: CHALLENGES AND ISSUES AT THE BORDER IN INDONESIA," *Customs Research and Application Journal* 2, no. 2 (2020): 121–140.

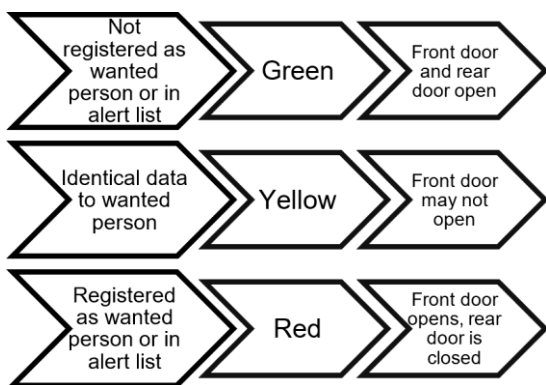
<sup>39</sup> Gorodnichy, "Multi-Order Biometric Score Analysis Framework and Its Application to Designing and Evaluating Biometric Systems for Access and Border Control."

<sup>40</sup> Edward Alden, "Immigration and Border Control," *Cato Journal* 32, no. 1 (2012): 107–124.

doctrine. In immigration clearance, the tools utilized under this biopolitical doctrine are a system designed with risk management and risk analysis without human intervention. Currently, the application of databases and information and communication technology is undergoing rapid development. This kind of application is considered as the primary tool in selecting all passengers, both eligible and not eligible to enter the country through the border.<sup>41</sup>

There are not any regulations found related to OA handling in immigration clearance through the autogate machine. We observed that the immigration clearance policy through autogate is limited to OA from selected countries upon departure and passengers must be 14 years old or older. OA must have a residence permit with a validity period of not more than or equal to 30 days. If the OA overstays the residence permit validity, the autogate machine will detect the overstayed status. Thus, the front gate remains closed.

**Figure 3. Autogate Machine Structure in Border Risk Management**



Source: Observation, data analysis 2021, Putra & Arifin 2020<sup>42</sup>

Several foreign passport holders can go through autogate for an immigration clearance process at departure terminal. They are citizens from Brunei Darussalam, Vietnam, Australia, New Zealand, South Korea, Cambodia, Timor Leste, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Japan, India, People's Republic of China, and Taiwan. The benefit of using this autogate is to minimize the direct contact between officers and passengers. This autogate machine is the breakthrough of the DGI policy towards the principle of accountability. The machine also makes the immigration clearance process to be effective, fast, accurate, and simple. This concept relates with the theory stated by Anderson. He argues that along with the increasing number of people mobility, to prevent interference and threats to sovereignty, immigration policy arrangements and process simplification are urgently required to be applied by a country.<sup>43</sup> It may explain that the adoption of autogate by the DGI contributes to a positive response to the increasing number of a passenger entering Indonesia's territory as well as an effort to prevent violations and international crimes.

The immigration clearance process at autogate machine is the completion of a fully automated model at TPI the Ngurah Rai Airport. The autogate machine, however, belongs to PT Angkasa Pura I, so the travel history data will be stored on the servers of the DGI and PT Angkasa Pura I. The autogate system is part of the Transborder Biometric Information Flow (TBIF) or cross-border biometric information flow. According to Diaz, TBIF must also be seen as an important means to protect the state and public safety. The TBIF contains information and biometric data

41 Paul Trauttmansdorff, "Border Politics," *Border Politics* (2017): 107–126.

42 Bagas Hidayat Putra and Ridwan Arifin, "The Adoption of Border Technology of Immigration Control and Autogates in Indonesia," *SINTECH (Science and Information Technology) Journal* 3,

no. 2 (2020): 137–148.

43 Bridget Anderson, "Us and Them," *Journal of Chemical Information and Modeling* 53, no. 9 (2013): 1689–1699.

of traveller that are sensitive and private or confidential. So, a data protection mechanism and responsibility for border management in implementing national policies must be considered.<sup>44</sup> Related to this, it implies that passenger data recorded at the autogate system at TPI Ngurah Rai Airport tends to be risky because it is stored on servers other than those of the DGI as the border authority.

Putra and Arifin have explained the challenges in using the autogate machine and the comparison of the Indonesian migration system with other countries. Several obstacles in the application of the autogate machine system and border technology in Indonesia are the absence of provisions, regulations, and procedures about the border technology framework in the immigration inspection system and the adoption of autogate machines in Indonesia. The APK and autogate systems have not been able to interpret and record boarding passes owned by passengers and crew members. However, it is not connected to other external applications (interoperability), except for the Interpol I-24/7 system.

## 2. Semi-automated Model

The non-autogate immigration clearance counter is the form of a semi-automated biometric clearance process at TPI Ngurah Rai Airport. The semi-automated biometric clearance model relies on the officer's role during the biometric data collection process. As we examined, at the arrival terminal, the immigration counter is divided into four lanes according to the passport, visa, and residence permit of the passenger. Lanes are dedicated to the inspection counter for Indonesian citizens and Itas/Itap holders, foreign visitors, crew members, and diplomatic and official

passports. During the immigration clearance, the primary tool used in the counter is a set of computers equipped with an APK system, a passport scanner, and biometric devices. This process also relies on the officer's competence which includes their experience, expertise, and instincts that affect officer's decision in making inclusion or exclusion. The inspection model with this approach exposes a geopolitical doctrine that focuses on immigration clearance processes at territorial borders. It has character of physical inspections such as borderline components, regions, and officers. The results of the decision-making in this inspection will be reactive because the officers will make decisions directly at the inspection counter according to the condition of the passengers at the time of the inspection.<sup>45</sup> Referring to the Mitsilegas book, the manual border clearance model at the counter by officers signifies a traditional territorial immigration inspection procedure at physical borders by checking travel documents or passports and other identity documents as a form of controlling the mobility of people.<sup>46</sup>

At TPI Ngurah Rai Airport, we found that the workload between the number of passengers and the number of officers at the counter was sensible and could be well-managed. However, the main problem lies in the capability and ability of the officers at busy times, considering the number of passenger queues is very high during the holiday season than during normal times (before the pandemic). The inadmissibility of the OA rate is considered proportional to the OA's arrival rate. The main reasons for OA's refusal of entry to Indonesia through Bali Airport consist of inappropriate visas, invalid

44 Vanessa Díaz Rodríguez, "Transborder Biometric Information Flow: Legal Challenges To Personal Privacy and the Need for Public Debate Statement Regarding Published Work Contained in Thesis," no. May (2014).

45 Pötzsch, "The Emergence of IBorder: Bordering Bodies, Networks, and Machines."

46 V Mitsilegas, "Rethinking Border Control for a Globalizing World: A Preferred Future," *Rethinking Border Control for a Globalizing World: A Preferred Future* (2015): 1–203.

travel documents, and travelers who are not cooperative during immigration inspections. In addition, another reason for the refusal of entry is when the counter officers find the problem of document fraud, such as mismatches between the recorded biometric data and the biometric data stored in the passenger’s travel documents.

The immigration clearance process with the biometric data is applied differently in semi-automated and fully automated models.

**Table 1. Comparison of Fully Automated and Semi-Automated Model in Immigration Clearance Process**

Indicators	Fully Automated	Semi-Automated
Designs	Autogate Machine Counters	
Types	Automatic	Manual
Process	System. Without Officers	With Officers
Stamping	Without Stamps	With Stamps (electronic or ink)
Verification	Biometric Matching	Manual, Paper
Storage/ Repository	Angkasa Pura I and DGI	DGI

Source: Data analysis, 2021 and Gorodnichy, 2011

Table 1 illustrates the comparison of the immigration clearance process between semi-automatic and fully automated models at TPI Ngurah Rai Airport based on the Gorodnichy concept. The two models in Table 1 provide both positive and negative sides, depending on the need for border controls. The form of immigration inspection with a fully automated model is the use of an autogate machine where data verification is automatic and operated by a machine without an officer. This model does not require an immigration stamp both when entering and leaving Indonesia’s territory. This autogate machine is provided by PT Angkasa Pura I and is managed by the DGI.

In contrast to the fully automated model, semi-automated model is performed with a manual inspection at counters by officers and approving the immigration stamp, both electronically and manually with ink. Officers also conduct manual verification and validation by matching the data with the holders.

### 3. Challenges and Constraints of the Autogate System and Electronic Immigration Stamp

The implementation of electronic stamps at TPI Ngurah Rai Airport is facing obstacles that need to be overcome as national and global challenges. Our observations found that the procedure for printing the entry sticker (electronic stamp) done by the counter officers can only be done once and cannot be repeated. In fact, the steps are quite complex which include passport scanning, biometric data collection, manual data entry for the type of visa used by OA, and printing of electronic stamps. Each step cannot be skipped because stickers cannot be printed again if there is a missed procedure. Consequently, it makes the officers are exceptionally needed to have high accuracy and precision. These steps cause the counter officers who are not accustomed to working on this process will find it difficult to complete. However, for officers who are familiar and experienced, this process runs smoothly and effectively. However, the counter officer does not prioritize immigration clearance based on risk analysis and comparative biometric data, but only focuses on the process of how to provide immigration services at TPI such as passport scanning, passport data recording, entering flight numbers, printing entry stickers, and pasting stickers on passports.

The impact of changes in immigration clearance can affect demographics, economies, nationalities and territories, and social dynamics that shape the borders of

national sovereignty.<sup>47</sup> These changes can be in the form of improving the immigration clearance system at the border. One of these improvements is the electronic entry stickers as an entry stamp. By doing this, the TPI Ngurah Rai Airport reflects a geopolitical doctrine that relies on the capabilities and skills of officers in terms of immigration clearance at the border.<sup>48</sup> This electronic stamp will increase the credibility of the DGI in managing and protecting the national borders, although immigration agencies in several developed countries no longer apply the entry and exit stamps on traveller's passports.

Despite these advantages, electronic stamps require significant development. Firstly, the implementation of electronic stamps and the management model of biometric data verification and validation are not relevant to the international convention ICAO Doc 9303 and the ICAO TRIP Guide in 2018. As a matter of fact, TPI the Ngurah Rai Airport is not equipped with any devices or system for verifying the validity of the electronic stamp in the application system managed by the DGI. Secondly, this e-stamp is not designed with high-security features. Thus, the potential for counterfeiting or falsifications is likely to occur. In addition, Minister of Law and Human Rights Regulation Number 28 of 2018 on Immigration Stamp and Circular Letter No. IMI.1-UM.01.01-5.7755 have not comprehensively regulated the electronic stamp in the form of a sticker. It is because the two regulations have not adopted international regulations and does not contain the words "Indonesia" as the country identity of the stamp. The electronic stamp used at this TPI has the same form and features as the electronic stamp issued as a residence permit. This sticker stamp does not yet contain

information about the type of visa or residence permit granted to foreigners. Therefore, it lacks the principles of transparency and accountability in public services. This stamp policy ignores the principle of clarity on the technical and administrative requirements of public services in the immigration sector.<sup>49</sup>

In addition to problems in the implementation of electronic stamps, the performance of the autogate machine at TPI Ngurah Rai Airport needs to be evaluated and improved based on the international provisions and applicable laws and regulations. This evaluation is needed due to the autogate machine is unable to read and record the departure boarding pass of passengers. Passengers do not scan their boarding pass at the front door of this machine for verification and validation but only scan their passports. It denotes that the semi-automatic immigration clearance model with the electronic stamps and autogate machines at the TPI Ngurah Rai Airport can reduce the risk of transnational crimes and fake passengers (impostors), although there has been no integration and systematic synchronization between the two inspection models.

## SUMMARY

### Conclusions

The practices of the national sovereignty, security, and authority of a country are influenced by the role of the state's capability in performing the immigration clearance at borders. According to the international conventions of ICAO Doc 9303 and ICAO TRIP Guide 2018, the immigration clearance with the biometric data, electronic stamps, and autogate machines at TPI Ngurah Rai Airport based on the concept of biometric border

47 James P Walsh, "Watchful Citizens: Immigration Control, Surveillance and Societal Participation," *Social & Legal Studies* 23, no. 2 (2014): 237–259.

48 Pötzsch, "The Emergence of IBorder: Bordering Bodies, Networks, and Machines."

49 Ahmad Jazuli, "Penyelesaian Permohonan Pendaftaran Paten Dalam Rangka Peningkatan Pelayanan Publik," *Jurnal Ilmiah Kebijakan Hukum* 12, no. 3 (2018): 243–257.

control has not been fully implemented. In addition to the conventions, the Regulation of the Minister of Law and Human Rights of the Republic of Indonesia Number 28 of 2018 on Immigration Stamp and Circular Letter No. IMI.1-UM.01.01-5.7755 has not clearly regulated the four stages of the immigration clearance process by using the electronic stamps and system adjustments with autogate machines. Regarding the immigration clearance with the biometric data, it can be concluded that TPI Ngurah Rai Airport has not completely referred to the four stages. As the first stage, the data recording process has been operated optimally, although there is no additional data collection process like the iris biometric data. In the verification process as the second stage, TPI has not completed a matching process between the OA's biometric data in the passport chip displayed during the inspection and the biometric data in the database. The biometric data stored in the passport chip is primary data for the purpose of the immigration clearance process. As the third stage, the validation stage has not been entirely applied such as validating data through the system. The validation stage only relies on the conventional and manual procedures by immigration officers. The fourth stage is a repository or storage in the form of temporary recording of foreigner biometric data collected from the autogate machine. This repository stage is not yet applied when the OA's data are taken during biometric data verification process.

It can be concluded that there are two immigration clearance models applied at the TPI Ngurah Rai Airport: semi-automatic and fully automated models. The semi-automatic model is a system that allows the data to be analyzed manually by officers, while the fully automated model is a system that can automatically analyze the passengers, travel documents, visas, and passports. The fully automated model is operated by checking

through the autogate machine. There are limitations in the adoption of autogate, which can only be used by OA who is at least 14 years old at the time of departure, and only those from selected countries. Meanwhile, a semi-automatic model is undertaken without going through an autogate machine. Instead, passengers go through immigration clearance at counters to be examined by officers and some devices. In this process, the examination and collection of biometric data mainly depend on the roles, abilities, and instincts of the immigration officers at the counter. The two models of immigration clearance at TPI Ngurah Rai Airport have not been integrated with one another. It emphasizes that the immigration clearance model at TPI Ngurah Rai Airport is a geopolitical concept that focuses on territorial or regional borders by conducting the immigration clearance process that is done by immigration officer to OA upon their arrival in Indonesia.

### Recommendations

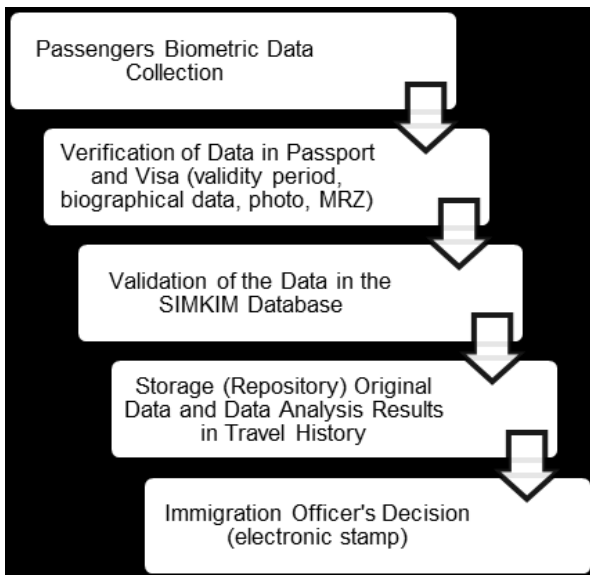
Referring to these conclusions, this study provides several recommendations for the DGI to redevelop the immigration clearance policies with electronic stamps on recording biometric data based on the guidelines in ICAO Doc 9303 and ICAO TRIP Guide 2018. These recommendations include a recording process (to record), verification (to verify), validation (to validate), and repository (to store). As a conceptual recommendation, the following Figure 4 is the construction of an immigration clearance model at TPI by recording biometric data and using an electronic stamp.

The APK system at the counter must be connected to other application systems, especially in each biometric data collection process. By doing so, it can assist officers in detecting incoming OA. In addition, the integration of this system can help officers conduct the immigration clearance at the



border effectively and efficiently based on data in real-time. Immigration officers can understand and follow up on the risks exposed by passengers to support the selective policy of the DGI.

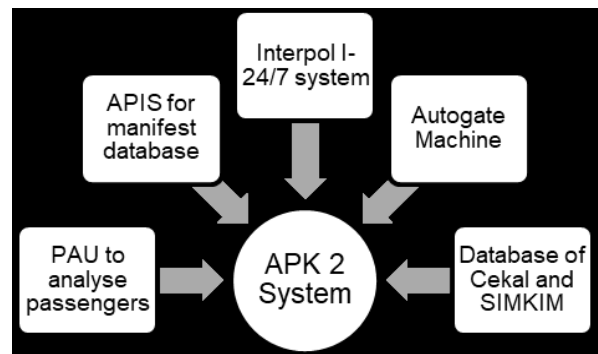
**Figure 4. Immigration Clearance Hierarchy with Biometric Data and Electronic Immigration Stamp**



Source: Data analysis, 2021 and ICAO TRIP GUIDE 2018

In addition to validation and storage issues, a systematic integration between semi-automatic and fully automated models with the autogate system should be developed. The autogate machine should be able to read the passenger's boarding pass for data validation and verification through the Passenger Analysis Unit (PAU) and the Advance Passenger Information System (APIS) as manifest databases. In the case of the passenger data repository in the autogate machine, DGI should design the restrictions on access and security of data stored on the PT Angkasa Pura I server.

The following Figure 5 is recommended prototype for the system integration model at TPI in the immigration clearance process:



Source: Data analysis, 2021 and the ICAO TRIP GUIDE 2018

Referring to the concept of a new doctrine on the border, the biopolitical doctrine will be achieved through policy recommendations for immigration clearance at the border. These policy recommendations include focusing on individual security, risk analysis, and pre-empting measures. Based on this doctrine, it suggests that regarding the implementation of the immigration clearance process, the DGI should not only focus on the territorial or regional borders but also focus on the characteristics of each individual and conducting the pre-arrival authorization or an extraterritorial border control.

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