Biometric Technology in Airports: A Case Study Report

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Abstract

In an airport setting, biometrics provides a contactless method of identity verification. The programme uses the Traveller Verification System (TVS) to biometrically validate the traveler's identity and admission or exit, giving it a better chance of detecting counterfeit documents and visa overstays. The purpose of this paper is to evaluate the Biometric Exit Program in order to examine the usage of biometrics at airports and to identify the obstacles that have been encountered. The Entry Exit Program at different airport, which includes facial recognition boarding gates, is being investigated. To identify issues, pilot test findings from airport and other airports are used. A lack of stakeholder support, a poor biometric matching rate, infrastructure and network connectivity challenges, traveller privacy concerns, and a high reliance on airlines were among them. Advancement recommendations and solutions are presented.

Keywords

Biometric, AI, TVS, Study

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1. Introduction

Every day, thousands of aircraft take off with millions of passengers, making aviation a key component of local and national economies around the world. It has been one of the most rapidly expanding economic sectors in recent years. After 10 years, the demand for air travel is expected to have doubled, resulting in a greater risk of attack and a greater need for enhanced security [1].

With the arrival and departure of various types of people, such as travellers, greeters, working personnel, and the general public, airports play an important role as ports of travel. Airports are seen as extensions of national authority and status, and hence have symbolic value. Airports are vulnerable and exposed to attacks due to their public accessibility, high-profile character, and large crowding, necessitating continual security improvements. Processing passengers through airport terminals and national borders in an acceptable timescale has gotten increasingly difficult as passenger numbers have increased and border staff resources have sometimes been insufficient [2].

With so much emphasis on security these days, such mishaps highlight the current level of security threat. Biometrics is currently being used in a variety of industries. For example, the Chinese government's use of ‚gait technology' is becoming more common, allowing individuals to be identified based on their body type and walking style. Biometrics such as fingerprints has long been utilized for re-entry to amusement parks including such Disney World and Universal Studios. Biometric use in air travel has the potential to provide faster and more accurate identity verification for passengers, as well as the incorporation of artificial intelligence (AI) to result in enhanced detection and imaging [3].

In the aftermath of a pandemic, biometric scans may be useful. Because biometric scans take less time, they reduce the danger of disease transmission and allow travellers to pass through checkpoints faster. Biometrics is extremely important in the event of a pandemic. The technology delivers a touch less experience and enhances passenger throughput through a checkpoint by taking less time to process, which is especially beneficial to CBP, which sees a large number of passengers every day.

Passengers, airports, and airlines all benefit from touch less identity verification because it reduces the risk of disease transmission and long lines and crowds. In the aviation business, biometric controls have been adopted, and they are constantly being tested and enhanced around the world. The study's goal is to determine the role of biometric technology at airport border controls, to determine whether biometric technology can provide benefits as well as accuracy in ID processing, to identify and evaluate the challenges associated with the biometric entry-exit programme at airport border controls and preclearance facilities, and to investigate biometric concepts such as privacy impact, use of multimodal biometrics, artificial intelligence, and linkages to COVID-19 [4].

Biometrics can be used to confirm or identify the person based on „who they are" rather than „what they own" or „what they remember." Furthermore, AI can help with ‚who they are' by detecting faces and analysing photographs.

A biometric system is an advanced process that captures biometric identifiers using an electronic device, extracts biometric data from the submitted identifier, relates the identifier to previously captured data, matches the captured identifier to a template, and determines whether the provided identity is genuine. To put it another way, a biometric system collects biometric data from a person and compares it to a template to establish who they are. The use of AI in biometric identity networks through face detection can be beneficial, but it also poses a number of obstacles in terms of knowledge training, decision-making, and security concerns [5].

2. Conclusion

In the literature study, the idea and need for biometric at airport borders were reviewed, brief overview of biometric traits and the elements critical for a functional biometric system. Waiting lists at ports of entry were excessive, indicating that there was a gap in operational excellence. It was evident that a biometric system was required, in addition to the legal prerequisites for biometric implementation. Long lines and congested spaces are not desirable in a pandemic situation. As a result, we recognize the value of biometrics at border crossings and airport security checkpoints, where they are touch less and shorten response time, avoiding long lines and crowds. The results indicated that the overall rate remained high even as the number of riders increased. The results of a biometric e-gate testing conducted in partnership with American Airlines revealed that using facial recognition boarding cut the time it took to board passengers into the plane in half. Issues with network connectivity and infrastructure were among the difficulties encountered. However, similar problems were discovered during pilot tests at some other airports.

3. References

1. Bogicevic V, Bujisic M, Bilgihan A, Yang W, Cobanoglu C. The impact of traveler-focused airport technology on traveler satisfaction. Tech Fore Soc Change. 2017;123:351-361.
2. Brown MM. Technology diffusion and the “knowledge barrier” the dilemma of stakeholder participation. Pub Perf Man Rev. 2003;26(4):345-59.
3. Caldwell T. Market report: border biometrics. Biomet Tech Today. 2015;2015(5):5-11.
4. Carpenter D, Maasberg M, Hicks C, Chen X. A multicultural study of biometric privacy concerns in a fire ground accountability crisis response system. Int J Info Man. 2016;36(5):735-47.
5. Gamassi M, Lazzaroni M, Misino M, Piuri V, Sana D, Scotti F. Quality assessment of biometric systems: a comprehensive perspective based on accuracy and performance measurement. IEEE Tran Instrum Meas. 2005;54(4):1489-96.