**TSA PreCheck Program: Risk Management in Homeland Security**

**Group :**

Abdul Afridi Shaik

Brijeshkumar Hiteshkumar Patel

Vaishnavi Peddireddy

Victor Wea

Rowan University

**Course Name**

Cyber Security Risk Analysis Homeland Security (DPEM00531)

**Instructor**

Anthony Haddad

March 11, 2025

**Executive Summary**

This executive summary analyzes the TSA Precheck program and illustrates how risk management works in homeland security. It also explains risk management, focusing on assessment and mitigation strategies. The Precheck demonstrates successful risk management by speeding up screening for low-risk travelers and allows more resources to be focused on high-risk individuals. Moreover, the report also addresses the challenges of risk management, like limited data and evolving threats. In conclusion it offers recommendations for improvement, including better data collection and increased public-private collaboration.

**Introduction**

Following the 9/11 attacks on the United States, there was a need for stronger security, leading to a major national security overhaul and the creation of the Department of Homeland Security (DHS). DHS prioritized risk management, a process of identifying, assessing, and mitigating threats. It includes evaluating the probability and impact of potential dangers and implementing strategies to minimize risk and improve resilience. Most importantly, risk management is essential for homeland security, guiding resource allocation and policy decisions. This research report analyzes the TSA Precheck program as a successful example of risk management in action, while also examining the Precheck program’s strategies, challenges, and limitations, and provides recommendations for the improvement of risk management to strengthen national security.

**Literature Review**

According to Lundberg and Willis (2015), "Assessing Homeland Security Risks: A Comparative Assessment of Ten Hazards," Homeland Security Affairs, 11, Article 10, Risk management is crucial for homeland security, providing a framework to handle various threats. The DHS describes risk as the potential for negative outcomes, based on likelihood and impact. An effective risk management improves decision-making and helps achieve goals or outcomes. Knowing that risk can't be eliminated, it must be strategically managed and key principles are centered around collaboration, transparency, adaptability, practicality, and tailored solutions.

Interestingly, risk management relies on key strategies such as risk assessment and mitigation. Indeed, risk assessment identifies and evaluates threats, vulnerabilities, and potential consequences as well as includes analyzing threat capabilities, identifying weaknesses, and prioritizing critical assets. Strategies that involve mitigation aim to reduce the likelihood or impact of these risks through the utilization of measures such as enhanced security, cybersecurity, and emergency planning.

It is also discovered in our research that effective risk management requires a unified, organization-wide approach and should be integrated into decision-making and address all internal and external risks using a standardized process. The Department of Homeland Security has been recognized by the Government of Alberta (GAO) as a model for managing high-risk issues.

However, homeland security risk management faces challenges such as limited data, especially on terrorism, which hinder accurate assessments and evolving threats demand constant strategy adjustments, while political and economic factors can twist resource allocation. Effectively communicating risks to the public and policymakers is also difficult.

**Methodology**

As it relates the methodology, according to Cristina (2013), "The TSA's New Precheck Is Beginning to Look a lot like CAPPS II: The Privacy Implications of Reviving the Tenets of the Failed Predecessor," published in the Journal of Air Law and Commerce, 78, 617, we took into account qualitative research by analyzing government reports (DHS, GAO, FEMA), academic articles, and books. These sources provide information on homeland security risk management policies, theories, and practices. Additionally, data was collected from academic databases, government websites, and online sources using keywords like "risk management," "homeland security," and "TSA Precheck." Relevant sources were reviewed to identify key themes and findings, which were then analyzed to provide an overview of risk management, including successes, challenges, and potential improvements.

**Findings**

In our findings, we saw that the TSA Precheck program uses risk management by speeding up security for low-risk travelers. It assesses passengers before they reach the checkpoint, allowing the TSA to concentrate resources on high-risk individuals, thus improving security efficiency. Known and trusted travelers receive faster screening, while security focuses on higher-risk and unknown passengers. TSA Precheck is available to U.S. citizens, permanent residents, members of trusted traveler programs, military personnel, and select other groups. It aims to improve aviation security and travel experience. While Precheck expedites screening, it is not guaranteed due to unpredictable security measures. Participating airlines indicate Precheck eligibility on boarding passes.

The TSA employs a risk-based security strategy driven by intelligence. Beyond Precheck, TSA strengthens security through directives for surface transportation and partnerships for cybersecurity. The TSA uses a risk-based strategic planning process to set agency goals. After the uniform approach established post-9/11, the TSA now employs an intelligence-led, risk-based system, utilizing unpredictable security measures throughout airports.

While TSA Precheck has been successful, the program faces challenges such as potential exploitation by terrorists, reliance on imperfect data, and the need to adapt to evolving threats. Continuous monitoring and improvement of risk management practices are crucial. The GAO has also recommended cybersecurity enhancements for transportation systems to the DHS and TSA. Although TSA has improved cybersecurity, further actions are still required.

Again, an analysis report examined how agencies assess AI risks in critical infrastructure and develop mitigation plans. The Government of Alberta (GAO) recommends that DHS update its AI risk assessment guidance to close identified gaps, an initiative that DHS has agreed to undertake.

**Discussion**

Furthermore, according to Lowell (2023), "Unchecked Checkpoints: Why TSA's Facial Recognition Plan May Need Congressional Approval," published in the Vanderbilt Journal of Entertainment and Technology Law, 26, 833, the TSA Precheck program demonstrates risk management benefits, but its success relies on overcoming key challenges. First, data accuracy is crucial; the TSA should improve data collection and analysis using intelligence, law enforcement databases, and travel history. Second, evolving threats require constant adaptation, necessitating TSA's investment in innovative security solutions. Third, public-private partnerships are vital; the TSA should enhance collaboration with airlines, airports, and technology companies. Lastly, effective risk communication builds public trust; the TSA must improve transparency and dialogue to educate the public and garner support for security measures.

**Case Study: Risk Management in the TSA PreCheck Program**

**Introduction:**

The TSA PreCheck program is a great example of how security measures can be both effective and efficient. Instead of treating all travelers the same, TSA PreCheck identifies low-risk passengers and allows them to move through security checkpoints faster. This not only makes travel more convenient but also helps security officials focus their attention where it's needed most. This case study explores how TSA PreCheck manages risk, the challenges it faces, and the impact it has on both security and the traveler experience.

**Background on TSA PreCheck and Risk Management:**

After the 9/11 attacks, airport security became much stricter, leading to longer wait times and more thorough screenings for all travelers. While these measures were necessary, they also created frustration for frequent travelers who posed little to no risk. To address this, TSA introduced PreCheck in 2011, allowing pre-approved passengers to go through a more streamlined security process. By using background checks, travel history, and biometric data, TSA PreCheck identifies passengers who are unlikely to be a threat, freeing up resources to focus on higher-risk individuals.

**Challenges Faced:**

**Keeping Data Accurate and Reliable:** TSA PreCheck depends on background checks and intelligence analysis. If the data is outdated or incorrect, it could lead to security risks.

**Adapting to New Threats:** Security risks constantly evolve, requiring TSA to update its strategies and technology.

**Privacy Concerns:** Some travelers worry about how their biometric data (fingerprints and facial recognition) is stored and used.

**Balancing Security with Staffing Needs:** While PreCheck makes screening faster for approved travelers, TSA still needs enough staff to manage both PreCheck and regular security lines.

**How TSA PreCheck Manages Risk:**

To stay ahead of security threats while making travel easier, TSA uses several strategies: **Thorough Pre-Screening:** Before being approved for TSA PreCheck, travelers undergo background checks using law enforcement databases and travel records.

**Random Screening Measures:** To prevent the system from being predictable, TSA still includes some random security checks.

**Technology Integration:** TSA uses biometrics like fingerprints and facial recognition to verify identities quickly and accurately.

**Collaboration with Airlines and Other Programs:** TSA partners with Global Entry, NEXUS, and SENTRI, making it easier for international travelers to benefit from expedited security.

**Impact and Benefits of TSA PreCheck:**

**Faster Airport Experience:** More than 90% of TSA PreCheck passengers get through security in under five minutes.

**Better Security Focus:** TSA can concentrate its efforts on screening travelers who haven’t been pre-vetted, improving overall security.

**Lower Operational Costs:** Automating parts of the screening process helps reduce staffing costs while maintaining efficiency.

**Growing Popularity:** Over 15 million travelers are enrolled in TSA PreCheck, and the program continues to expand with new technology and partnerships.

**Conclusion**

Consequently, risk management is essential for homeland security, guiding decisions and resource allocation. The TSA Precheck program demonstrates effective risk management; however, to maximize its benefits, challenges like data limitations, evolving threats, and communication gaps must be addressed.

* To improve homeland security risk management, we recommend:
* Improving data collection and analysis for accurate risk assessments.
* Investing in research to counter evolving threats.
* Strengthening public-private partnerships for better information sharing.
* Enhancing risk communication to build public trust.
* Promoting continuous evaluation and improvement of risk management strategies.
* Implementing these recommendations will bolster homeland security agencies' risk management capabilities, enhancing their ability to protect the nation from evolving threats and fostering a safer, more resilient homeland.

**References**

<https://www.hsaj.org/articles> Lundberg, Russell, and Henry Willis.“Assessing Homeland Security Risks: A Comparative Assessment of Ten Hazards.” *Homeland Security Affairs* 11, Article 10 (December 2015).

<https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/jalc78&section=26> Cristina, K. (2013). The TSA's New Precheck Is Beginning to Look a lot like CAPPS II: The Privacy Implications of Reviving the Tenets of the Failed Predecessor. *J. Air L. & Com.*, *78*, 617.

<https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/vanep26&section=29> Lowell, R. T. (2023). Unchecked Checkpoints: Why TSA's Facial Recognition Plan May Need Congressional Approval. *Vand. J. Ent. & Tech. L.*, *26*, 833.

<https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/1v53k4259> Olsen, A. G. (2020). Understanding Passenger Perception of Air Travel Safety Through Advanced Econometric Modeling.

<https://www.globalsecurity.org/> Why, G. A. O. (2010). Department of homeland security.

<https://www.jstor.org/stable/pdf/resrep20741.pdf> *Accept Terms and Conditions on JSTOR*. (n.d.). Www.jstor.org.

<https://www.tsa.gov> Transportation Security Administration. (2024). TSA PreCheck: Risk-based security strategy. Retrieved from