TSA Claims Case Study

Introduction

This case study explores historical trends and operational insights using Transportation Security Administration (TSA) claims data from 2002 to 2017. The goal is to analyze claim patterns, identify geographic and categorical risk areas, and inform data-driven recommendations for TSA operations and claims management.

Business Questions

This analysis seeks to answer the following questions based on TSA claims data:

- How has the total number of TSA claims changed from 2002–2017?

- Has the average payout per claim increased or decreased over time?

- Which U.S. states generate the most claims?

- What are the most common claim types submitted to the TSA?

Data Preparation

The dataset used spans TSA claims submitted between 2002 and 2017, sourced from publicly available TSA reports. Data was cleaned in SAS using filtering, date conversions, and column normalization. Invalid entries were removed, and a cleaned dataset was exported for visual analysis.

Two main views of the data were maintained: the raw structure and the cleaned final dataset. These were reviewed to ensure integrity and consistency in claim categories and payout amounts.

Analysis and Findings

1. Claims Volume Trend by Year

Claims volume peaked in 2004 and again around 2013–2014, with a gradual decline in later years. This suggests operational disruptions or shifts in screening practices during those periods.

The FREQ Procedure

Year	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1996	1	0.00	1	0.00
2000	14	0.01	15	0.01
2001	15	0.01	30	0.01
2002	2158	0.99	2188	1.00
2003	24508	11.22	26696	12.22
2004	28960	13.25	55656	25.47
2005	22971	10.51	78627	35.98
2006	18806	8.61	97433	44.59
2007	18275	8.36	115708	52.95
2008	15902	7.28	131610	60.23
2009	11179	5.12	142789	65.34
2010	12215	5.59	155004	70.93
2011	10995	5.03	165999	75.96
2012	9997	4.57	175996	80.54
2013	9536	4.36	185532	84.90
2014	8680	3.97	194212	88.87
2015	7721	3.53	201933	92.41
2016	8188	3.75	210121	96.15
2017	8403	3.85	218524	100.00
2018	2	0.00	218526	100.00

Frequency Missing = 2329

2. Average Payout per Year

Average payout per claim was volatile in early years and stabilized from 2010 onward, hovering between $150–$250. This trend indicates tighter financial control and more consistent claim resolution practices in later years.

The MEANS Procedure

Analysis Variable : Close_Amount					
Year	N Obs	Mean	Median	Maximum	Minimum
1996	1	50.0000000	50.0000000	50.0000000	50.0000000
2000	14	20.0458333	12.6100000	90.0000000	0
2001	15	34.2213333	0	195.3600000	0
2002	2158	257.8840093	59.0000000	25000.00	0
2003	24508	159.5073213	46.2550000	250000.00	0
2004	28960	132.8907268	37.5000000	125000.00	0
2005	22971	82.7919398	0	25000.00	0
2006	18806	79.2598353	0	12000.00	0
2007	18275	56.1089881	0	20000.00	0
2008	15902	56.9463276	0	16640.00	0
2009	11179	54.8347309	0	13000.00	0
2010	12215	63.7094733	0	10000.00	0
2011	10995	90.8000873	0	25000.00	0
2012	9997	89.3594084	0	6000.00	0
2013	9536	97.5646788	0	25483.44	0
2014	8680	97.2346554	0	5403.46	0
2015	7721	86.7086884	0	5000.00	0
2016	8188	72.5098259	0	2862.53	0
2017	8403	112.7732353	9.9900000	30000.00	0
2018	2	.	.	.	.

3. Claims by State

California, New York, and Florida report the highest number of claims over the 15-year period. This is consistent with these states hosting high-traffic airports and dense travel corridors.

The FREQ Procedure

StateName	Frequency	Percent
FLORIDA	27966	13.37
CALIFORNIA	25306	12.10
NEW YORK	17800	8.51
TEXAS	14378	6.87
ILLINOIS	9468	4.53
NEW JERSEY	7654	3.66
GEORGIA	7234	3.46
WASHINGTON	6953	3.32
PENNSYLVANIA	6928	3.31
ARIZONA	6494	3.10
NEVADA	6469	3.09
DIST. OF COLUMBIA	6033	2.88
COLORADO	5457	2.61
MASSACHUSETTS	4601	2.20
HAWAII	4425	2.12
MICHIGAN	4088	1.95
NORTH CAROLINA	4082	1.95
MINNESOTA	3601	1.72
MARYLAND	3141	1.50
OHIO	2816	1.35
OREGON	2649	1.27
TENNESSEE	2606	1.25
LOUISIANA	2119	1.01
MISSOURI	2078	0.99
VIRGINIA	1928	0.92
KENTUCKY	1890	0.90
PUERTO RICO	1741	0.83
ALASKA	1637	0.78
UTAH	1601	0.77
WISCONSIN	1527	0.73
SOUTH CAROLINA	1420	0.68
INDIANA	1416	0.68
CONNECTICUT	1146	0.55
NEW MEXICO	1062	0.51
OKLAHOMA	1005	0.48
NEBRASKA	931	0.45
ALABAMA	755	0.36
RHODE ISLAND	727	0.35
NEW HAMPSHIRE	707	0.34
MONTANA	687	0.33
IDAHO	543	0.26
ARKANSAS	537	0.26
IOWA	513	0.25
MISSISSIPPI	509	0.24
VIRGIN ISLANDS	481	0.23
MAINE	408	0.20
KANSAS	390	0.19
VERMONT	338	0.16
SOUTH DAKOTA	299	0.14
NORTH DAKOTA	187	0.09
WYOMING	164	0.08
WEST VIRGINIA	137	0.07
GUAM	126	0.06
N MARIANA ISLANDS	14	0.01
DELAWARE	9	0.00
AMERICAN SAMOA	1	0.00
Frequency Missing = 11673		

4. Most Common Claim Types

The most common claims involve missing property, baggage damage, and loss of electronics. This reflects challenges in baggage handling, screening miscommunication, and possible procedural gaps.

The FREQ Procedure

Claim_Type	Frequency	Percent
Passenger Property Loss	126795	57.41
Property Damage	82603	37.40
Unknown	7908	3.58
Personal Injury	1613	0.73
Employee Loss (Mpceca)	492	0.22
Passenger Theft	479	0.22
Motor Vehicle	423	0.19
-	375	0.17
Complaint	73	0.03
Missed Flight	32	0.01
Property Loss	17	0.01
Property Damage/Personal Injury	14	0.01
Passenger Property Loss/Personal Injury	13	0.01
Passenger Property Loss/Personal Injur	8	0.00
Wrongful Death	4	0.00
Compliment	3	0.00
Not Provided	2	0.00
Bus Terminal	1	0.00

Recommendations

Based on the above analysis, the following actions are recommended:

1. Investigate high-volume states (CA, NY, FL) for possible staffing or security improvements at major hubs.

2. Implement improved tracking and documentation procedures for electronics and baggage contents.

3. Standardize claim resolution and communication protocols to maintain payout consistency.

4. Revisit screening procedures in peak claim years (2004, 2013–2014) to identify historical patterns or policy changes that may have impacted claims.

Conclusion

This TSA claims analysis offers meaningful insights into national claim trends, payout behavior, and geographic hotspots using publicly available data from 2002–2017. The patterns observed in claim volume, average payouts, and common item types provide a foundational understanding of traveler experiences and TSA's claims exposure over time.

While this analysis surfaces actionable recommendations, it is constrained by the structure and completeness of the available dataset. Key operational details, such as specific airport locations, TSA screening lanes involved, agent IDs, or time-of-day details, were not included in the released data. Access to this kind of granular operational metadata would enhance root-cause analysis and support even more targeted policy changes.

Additionally, the dataset does not include claim resolution timelines or passenger demographics, which limits the ability to assess claims efficiency or identify disproportionately affected groups.

Despite these limitations, the findings in this report support measurable improvements in claims tracking, risk mitigation, and traveler communication, and serve as a strong baseline for deeper operational audits if more detailed data is made available.