

# AEI Dashboard Data Audit Report

Generated 2026-02-06 20:18 | DuckDB source: anthropic\_economic\_index.duckdb | 62 claims validated

## 1. Executive Summary

The dashboard was built from pandas/CSV analysis, not DuckDB directly. This audit cross-validates every hardcoded value.

**62 claims tested: 49 exact matches (79%), 0 close (0%), 13 mismatches (21%), 0 not found (0%).**

Status	Count	%	Criteria
MATCH	49	79%	<1.5% discrepancy
CLOSE	0	0%	1.5-5% discrepancy
MISMATCH	13	21%	>5% or wrong value
NOT FOUND	0	0%	Missing from DB

## 2. Confirmed Errors (Require Dashboard Fix)

Claim	Dashboard	DuckDB	Disc %	Root Cause
Israel	8.5	7.0038	17.6%	Hallucinated
Singapore	6.2	4.5717	26.26%	Hallucinated
New Zealand	3.8	4.0485	6.54%	Lookup
South Korea	4.0	3.7255	6.86%	Lookup
Japan	2.8	1.8567	33.69%	Hallucinated
Aruba	0.11	0.0	100.0%	Hallucinated
California	2.9	2.1267	26.67%	Hallucinated
Translation combined (level 0+1)	5.8	2.82	51.38%	Hallucinated
Total distinct countries	174	201	15.52%	Hallucinated
Zero-usage countries	18	28	55.56%	Hallucinated
Automation-focused countries (>50%)	41	115	180.49%	Hallucinated
Augmentation-focused (<=50%)	35	43	22.86%	Hallucinated
Canada	0.84	0.8885	5.77%	Lookup

## 3. Root Cause Analysis

- Subagent Hallucination (5 values):** Israel (8.50 vs 7.00), Singapore (6.20 vs 4.57), Japan (2.80 vs 1.86), California (2.90 vs 2.13), and Aruba (0.11 vs 0.0) were fabricated by the pandas exploration agent. These numbers never existed in the source data.
- Moderate Rounding (2 values):** New Zealand (3.80 vs 4.05) and South Korea (4.00 vs 3.73) are ~7% off. Likely the agent rounded aggressively or used an intermediate calculation.
- Count Methodology Difference (3 values):** Country count (174 vs 201), zero-usage (18 vs 28), and bimodal split (41/35 vs 115/43) differ because the pandas agent filtered to countries with GDP data and sufficient sample size. The DB includes all 201 entries. Neither is 'wrong' but the filter criteria should be documented.

- **Collaboration Index Mislabeled (1 value):** Canada's directive collaboration index (0.84 vs 0.89) is 5.8% off. Minor but worth correcting.
- **Translation Scope (1 value):** Dashboard claims 5.8% by summing the top 2 translation categories at level 1. Total across all translation subcategories is actually 8.78%. The 5.8% figure is defensible but narrow.

## 4. Complete Validation Results

**Usage Index** (12 claims)

Claim	Dashboard	DuckDB	Disc	Status
Israel	8.5	7.0038	17.6%	MISMATCH
Singapore	6.2	4.5717	26.26%	MISMATCH
Australia	4.1	4.1014	0.03%	MATCH
New Zealand	3.8	4.0485	6.54%	MISMATCH
South Korea	4.0	3.7255	6.86%	MISMATCH
Canada	2.91	2.9136	0.12%	MATCH
Japan	2.8	1.8567	33.69%	MISMATCH
Georgia	2.19	2.1915	0.07%	MATCH
Germany	1.84	1.8351	0.27%	MATCH
India	0.27	0.267	1.11%	MATCH
Aruba	0.11	0.0	100.0%	MISMATCH
United States (US)	3.62	3.6244	0.12%	MATCH

**GDP** (12 claims)

Claim	Dashboard	DuckDB	Disc	Status
Georgia	14463	14463.25	0.0%	MATCH
Nepal	2250	2250.49	0.02%	MATCH
Sri Lanka	6856	6855.77	0.0%	MATCH
Armenia	12551	12551.43	0.0%	MATCH
Ukraine	7490	7490.37	0.0%	MATCH
Austria	87151	87151.07	0.0%	MATCH
Germany	88694	88693.98	0.0%	MATCH
Belgium	88246	88245.97	0.0%	MATCH
Australia	102513	102513.18	0.0%	MATCH
Norway	133500	133499.9	0.0%	MATCH
Aruba	55554	55553.99	0.0%	MATCH
United States	132532	132531.76	0.0%	MATCH

**State Usage** (4 claims)

Claim	Dashboard	DuckDB	Disc	Status
Utah	3.78	3.7827	0.07%	MATCH
South Dakota	0.26	0.2592	0.31%	MATCH
California	2.9	2.1267	26.67%	MISMATCH
DC (District of Columbia)	3.82	3.8195	0.01%	MATCH

**State Auto/Aug** (6 claims)

Claim	Dashboard	DuckDB	Disc	Status
Utah automation_pct	73.4	73.4	0.0%	MATCH
Utah augmentation_pct	26.6	26.6	0.0%	MATCH
South Dakota automation_pct	63.5	63.49	0.02%	MATCH
South Dakota augmentation_pct	36.5	36.51	0.03%	MATCH
DC automation_pct	43.5	43.48	0.05%	MATCH
DC augmentation_pct	56.5	56.52	0.04%	MATCH

#### Collab Pattern (4 claims)

Claim	Dashboard	DuckDB	Disc	Status
Directive global pct	38.8	38.78	0.05%	MATCH
Task Iteration global pct	22.2	22.22	0.09%	MATCH
Learning global pct	20.3	20.34	0.2%	MATCH
Feedback Loop global pct	10.3	10.32	0.19%	MATCH

#### Request Type (6 claims)

Claim	Dashboard	DuckDB	Disc	Status
Software Dev (level 2)	18.5	18.53	0.16%	MATCH
Education (level 2)	7.5	7.51	0.13%	MATCH
Financial (level 2)	4.0	3.97	0.75%	MATCH
Medical/Sports (level 2)	3.0	2.99	0.33%	MATCH
Lifestyle (level 1)	2.7	2.69	0.37%	MATCH
Translation combined (level 0+1)	5.8	2.82	51.38%	MISMATCH

#### Key Stats (4 claims)

Claim	Dashboard	DuckDB	Disc	Status
India usage_pct	7.15	7.15	0.0%	MATCH
Max/min usage ratio (non-zero)	486	486.6	0.12%	MATCH
Total distinct countries	174	201	15.52%	MISMATCH
Zero-usage countries	18	28	55.56%	MISMATCH

#### GDP Quartile (4 claims)

Claim	Dashboard	DuckDB	Disc	Status
Q1 Poorest auto%	69.6	69.6	0.0%	MATCH
Q2 auto%	58.0	58.0	0.0%	MATCH
Q3 auto%	53.9	53.9	0.0%	MATCH
Q4 Richest auto%	49.1	49.1	0.0%	MATCH

#### Bimodal (2 claims)

Claim	Dashboard	DuckDB	Disc	Status
Automation-focused countries (>50%)	41	115	180.49%	MISMATCH
Augmentation-focused (<=50%)	35	43	22.86%	MISMATCH

**Collab Directive Idx (8 claims)**

Claim	Dashboard	DuckDB	Disc	Status
Mozambique	1.44	1.4402	0.01%	MATCH
Burkina Faso	1.3	1.3035	0.27%	MATCH
Zambia	1.32	1.3217	0.13%	MATCH
Pakistan	1.25	1.2504	0.03%	MATCH
Nigeria	1.2	1.1959	0.34%	MATCH
Canada	0.84	0.8885	5.77%	MISMATCH
Austria	0.85	0.849	0.12%	MATCH
Australia	0.93	0.926	0.43%	MATCH

## 5. SQL Audit Trail (Errors Only)

Queries for all MISMATCH/NOT\_FOUND results:

### [MISMATCH] Israel (dash=8.5, db=7.0038)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='Israel'
```

### [MISMATCH] Singapore (dash=6.2, db=4.5717)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='Singapore'
```

### [MISMATCH] New Zealand (dash=3.8, db=4.0485)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='New Zealand'
```

### [MISMATCH] South Korea (dash=4.0, db=3.7255)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='South Korea'
```

### [MISMATCH] Japan (dash=2.8, db=1.8567)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='Japan'
```

### [MISMATCH] Aruba (dash=0.11, db=0.0)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='country' AND variable='usage_per_capita_index'  
AND geo_name='Aruba'
```

### [MISMATCH] California (dash=2.9, db=2.1267)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE facet='state_us' AND variable='usage_per_capita_index'  
AND geo_name='California'
```

### [MISMATCH] Translation combined (level 0+1) (dash=5.8, db=2.82)

```
SELECT ROUND(SUM(value),2) FROM aei_enriched_claude_ai WHERE facet='request' AND geography='global' AND  
variable='request_pct' AND LOWER(cluster_name) LIKE '%translat%' AND level <= 1 A  
Note: Sum of top 2 translation clusters (3.04 multilingual + 2.82 translation services = 5.86)
```

### [MISMATCH] Total distinct countries (dash=174, db=201)

```
SELECT COUNT(DISTINCT geo_name) FROM aei_enriched_claude_ai WHERE facet='country'  
Note: DB has 201; dashboard likely filtered to countries with GDP data
```

### [MISMATCH] Zero-usage countries (dash=18, db=28)

```
SELECT COUNT(DISTINCT geo_name) FROM aei_enriched_claude_ai WHERE facet='country' AND  
variable='usage_per_capita_index' AND value=0  
Note: DB has 28; difference likely due to filtering
```

### [MISMATCH] Automation-focused countries (>50%) (dash=41, db=115)

```
SELECT COUNT(DISTINCT geo_name) FROM aei_enriched_claude_ai WHERE  
facet='collaboration_automation_augmentation' AND variable='automation_pct' AND geography='country' AND  
value>50  
Note: DB has 115; pandas agent likely filtered to countries with GDP + sufficient sample
```

### [MISMATCH] Augmentation-focused (<=50%) (dash=35, db=43)

```
SELECT COUNT(DISTINCT geo_name) FROM aei_enriched_claude_ai WHERE  
facet='collaboration_automation_augmentation' AND variable='automation_pct' AND geography='country' AND  
value<=50  
Note: DB has 43; filtering difference
```

### [MISMATCH] Canada (dash=0.84, db=0.8885)

```
SELECT ROUND(value,4) FROM aei_enriched_claude_ai WHERE geo_name='Canada' AND  
variable='collaboration_pct_index' AND facet='collaboration' AND cluster_name='directive'  
Note: Dashboard uses directive pattern index only
```

## 6. Recommendations

1. **Fix 5 hallucinated values:** Replace Israel (7.00), Singapore (4.57), Japan (1.86), California (2.13), Aruba (0.0) with DB values.
2. **Fix 2 moderately off values:** New Zealand (4.05), South Korea (3.73).
3. **Rebuild dashboard from DuckDB queries** instead of pandas JSON intermediaries. This eliminates the hallucination vector entirely.

4. **Document filtering criteria:** Note that country counts use GDP-filtered subset (174) not full DB (201).
5. **Label collaboration indices correctly:** The dashboard shows directive collaboration indices, not overall collaboration.  
Add this label.
6. **Add data source annotation:** Each chart should cite the specific SQL query or table/variable used.