

# Testing & validation Checklist

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## **1. Data Integrity & Model Validation**

### **1.2 Table & Relationship Checks**

- All required tables are loaded (jobs, invoices, payments, job\_costs, dimensions).
- Primary–foreign key relationships are correctly defined (1:Many).
- No circular or ambiguous relationships exist in the model.
- Only one active relationship exists between the same two tables.
- Date fields are properly typed as Date (not Text).

### **1.2 Table & Relationship Checks**

- Total Jobs = 1,500
  - Completed Jobs = 1,037
  - Invoiced Jobs  $\leq$  Completed Jobs
  - Payments exist only for invoiced records
  - No orphan records (e.g., invoice without customer, job without status)
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## **2. KPI Calculation Validation**

### **KPI 1: Invoice Handoff Delay (Completed Jobs)**

- Completed-but-not-invoiced count = **73**
- All jobs counted have job status = **COMPLETED**
- None of the counted jobs appear in invoice line items
- Pending days calculation uses CURRENT() - completed\_date
- Oldest pending job = **344 days**

## **KPI 2: Days Sales Outstanding (DSO)**

- DSO calculated only on fully paid invoices
- Partial or unpaid invoices are excluded
- Average DSO ≈ **29 days**
- KPI aligns with AR aging visuals
- DSO decreases/increases logically with date filters

## **KPI 3: Job Cost Variance**

- Actual cost = **SUM(job\_costs.actual\_amount)**
- Estimated cost > **0** for all included jobs
- **Variance = Actual – Estimated**
- Jobs with no cost records are excluded
- Highest variance ≈ **\$23,670.31**
- Cost overrun job count = **817**

## **KPI 4: Unbilled Revenue Exposure**

- Only completed jobs are included
- Invoiced jobs are excluded
- Revenue uses estimated revenue consistently
- Total unbilled revenue ≈ **\$563.21K**
- KPI responds correctly to Region and Service Type filters

## **KPI 5: Job Cycle Time**

- Calculated only for completed jobs
  - **Cycle time = completed\_date – scheduled\_date**
  - Average cycle time ≈ **61 days**
  - Longest cycle time ≈ **63 days**
  - Central region shows highest average cycle time
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### **3. Cross-Page Consistency Checks**

- Completed Jobs count is consistent across all pages
  - Unbilled Job count matches between KPI cards and exception tables
  - Filters affect all visuals consistently
  - No KPI shows contradictory values across pages
  - Totals in tables reconcile with KPI cards
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### **4. Filter & Interaction Validation**

- Region slicer filters all visuals correctly
  - Service Type slicer filters all visuals correctly
  - Multiple slicers applied together behave as expected
  - No KPI breaks or shows blank unexpectedly
  - Drilldowns show correct underlying records
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### **5. Exception & Edge Case Validation**

- No negative values shown for count-based KPIs
  - Null dates do not break visuals
  - Cancelled jobs are excluded where defined
  - Overdue invoices correctly identified using due date logic
  - Overdue invoice count ≈ **290**
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## **6. Performance & Usability Checks**

- Dashboards load without errors
  - KPI cards render within acceptable time
  - Visuals are readable without hover where possible
  - Titles and labels clearly describe the metric
  - No unexplained abbreviations or technical jargon visible to users
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## **7. Business ValidationAction**

- Numbers “make sense” from a business perspective
  - KPIs align with stated business problems
  - Insights can be explained without referring to SQL
  - Results are defensible in an interview setting
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