



# PROCUREMENT PERFORMANCE ANALYSIS

BY HILDA HAMDAH HUSNIYYAH



# OBJECTIVE

To evaluate the procurement process performance within PT Infomedia Nusantara by analyzing procurement timelines and cost-saving performance across various vendors and procurement categories.

*Note: This project uses dummy data for analytical and portfolio demonstration purposes.*

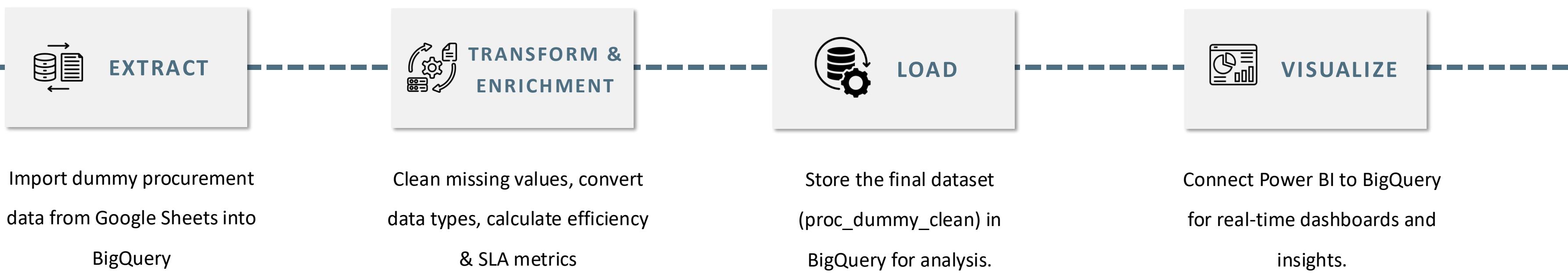


# DATA OVERVIEW

- Source: Simulated procurement data (dummy)
- Dataset Size: 2,000+ rows

# ETL WORKFLOW OVERVIEW

A semi-automated pipeline was designed to simulate real-time data processing:



## TOOLS :



# DATA PREPARATION AND ANALYSIS

Cleaned and transformed dummy procurement data to generate insights on efficiency and SLA performance.

01

## DATA CLEANING

Removed null or inconsistent records, standardized date and numeric formats, and ensured all procurement IDs were valid for further analysis.

02

## TRANSFORMATION & ENRICHMENT

Added calculated fields such as SLA working days, SLA standard, SLA percentage, and efficiency metrics to enrich the dataset and enable performance tracking.

03

## DATA ANALYSIS

Performed SLA achievement evaluation, procurement volume analysis, and efficiency measurement to identify cost savings, over-budget cases, and overall procurement performance.

# ■ DATA PREPARATION AND ANALYSIS

## DATA CLEANING

### 1. Check total rows and NULL values

Check the total number of rows and identify any rows with empty or NULL procurement\_id\_number.

The screenshot shows a database query interface with the following details:

- Query name: proc\_analyst
- Script content:

```
7 -- DATA CLEANING
8 -----
9
10 -- 1. Check total rows and NULL values --
11 SELECT
12   COUNT(*) AS total_rows,
13   COUNTIF(procurement_id_number IS NULL OR TRIM(procurement_id_number) = '') AS null_or_empty_count
14 FROM `procurement-analyst.procurement.proc_dummy`;
```
- Message: "This script will process 3.31 MB when run."
- Results tab selected in the navigation bar.
- Data table:

Row	no	procurement_id_number	form_date	form_year	modin_number	gpl_number
1		null	null		null	
2		null	null		null	
3		null	null		null	
4		null	null		null	
-		" "	" "		" "	

Results: The dataset contains 10,096 rows, of which 8,251 have empty or NULL procurement\_id\_number.  
These rows need to be removed to ensure clean and reliable data for analysis.

### Check rows with NULL procurement\_id\_number

Summary: Display all rows where procurement\_id\_number is empty or NULL to identify data that needs cleaning.

The screenshot shows a database query interface with the following details:

- Query name: proc\_analyst
- Script content:

```
16 -- Check which rows have NULL id_number --
17 SELECT *
18 FROM `procurement-analyst.procurement.proc_dummy`
19 WHERE procurement_id_number IS NULL
20   OR TRIM(procurement_id_number) = '';
```
- Message: "This script will process 3.31 MB when run."
- Results tab selected in the navigation bar.
- Data table:

Row	no	procurement_id_number	form_date	form_year	modin_number	gpl_number
1		null	null		null	
2		null	null		null	
3		null	null		null	
4		null	null		null	
-		" "	" "		" "	

Results: All 8,251 rows with NULL procurement\_id\_number also have all other columns empty.  
These rows provide no usable data and should be removed

# ■ DATA PREPARATION AND ANALYSIS

## DATA CLEANING

### 2. Remove rows with NULL procurement\_id\_number

Remove rows without procurement\_id\_number to clean the dataset and prepare it for further analysis.

The screenshot shows a database query editor with the following details:

- Query name: proc\_analyst
- Toolbar buttons: Run, Save query, Download, Share, Schedule, Open in, More.
- Script content (lines 22-34):

```
-- 2. Remove rows with NULL procurement_id_number --
CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
SELECT *
FROM `procurement-analyst.procurement.proc_dummy`
WHERE procurement_id_number IS NOT NULL
AND TRIM(procurement_id_number) != '';
-- Recheck after cleaning --
SELECT
COUNT(*) AS total_rows,
COUNTIF(procurement_id_number IS NULL OR TRIM(procurement_id_number) = '') AS null_or_empty_count
FROM `procurement-analyst.procurement.proc_dummy_clean`;
```
- Message at bottom: "This script will process 3.31 MB when run."
- Results tab: "Query results" is selected. A red box highlights the "Results" tab. The table shows:

Row	total_rows	null_or_empty_count
1	1845	0

Results: After removing rows with NULL or empty procurement\_id\_number, the cleaned dataset contains 1,845 rows with no missing IDs

### 3. Check for duplicate procurement IDs

Identify duplicate procurement\_id\_number entries to ensure each ID is unique and avoid redundancy in analysis.

The screenshot shows a database query editor with the following details:

- Query name: proc\_analyst
- Toolbar buttons: Run, Save query, Download, Share, Schedule, Open in, More.
- Script content (lines 34-43):

```
-- 3. Check for duplicate procurement IDs --
SELECT
procurement_id_number,
COUNT(*) AS duplicates
FROM `procurement-analyst.procurement.proc_dummy_clean`
GROUP BY procurement_id_number
HAVING COUNT(*) > 1
ORDER BY duplicates DESC;
```
- Message at bottom: "This script will process 3.31 MB when run."
- Results tab: "Query results" is selected. A red box highlights the "Results" tab. The message in the results area says: "There is no data to display."

Results: All procurement\_id\_number are unique; no duplicates found.

# ■ DATA PREPARATION AND ANALYSIS

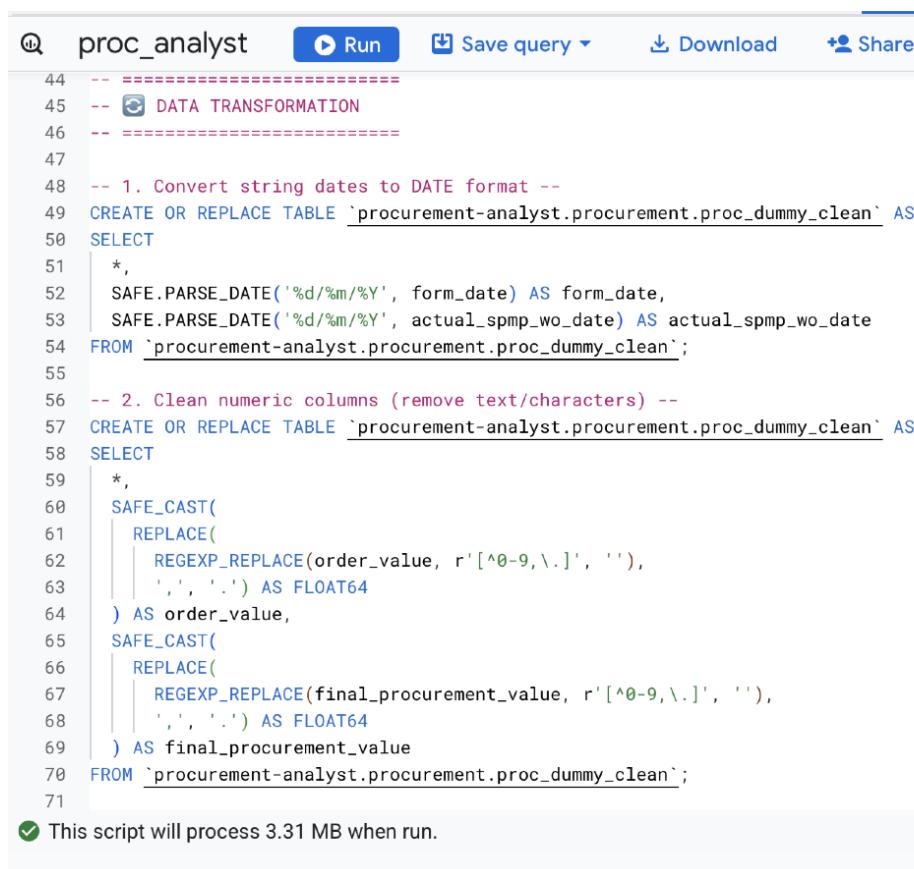
## TRANSFORMATION & ENRICHMENT

### 1. Convert string dates to DATE format

Convert form\_date and actual\_spmp\_wo\_date from string to proper DATE format to enable accurate date calculations and comparisons.

### 2. Clean numeric columns (remove text/characters)

Remove any non-numeric characters from order\_value and final\_procurement\_value and convert them to numeric type (FLOAT64) for reliable calculations and analysis.



```
44 --- =====
45 -- DATA TRANSFORMATION
46 --- =====
47
48 -- 1. Convert string dates to DATE format --
49 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
50 SELECT
51   *,
52   SAFEPARSE_DATE('%d/%m/%Y', form_date) AS form_date,
53   SAFEPARSE_DATE('%d/%m/%Y', actual_spmp_wo_date) AS actual_spmp_wo_date
54 FROM `procurement-analyst.procurement.proc_dummy_clean`;
55
56 -- 2. Clean numeric columns (remove text/characters) --
57 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
58 SELECT
59   *,
60   CAST(
61     REPLACE(
62       REGEXP_REPLACE(order_value, r'^[^\d,\.]+', ''),
63       ',') AS FLOAT64
64   ) AS order_value,
65   CAST(
66     REPLACE(
67       REGEXP_REPLACE(final_procurement_value, r'^[^\d,\.]+', ''),
68       ',') AS FLOAT64
69   ) AS final_procurement_value
70 FROM `procurement-analyst.procurement.proc_dummy_clean`;
71
```

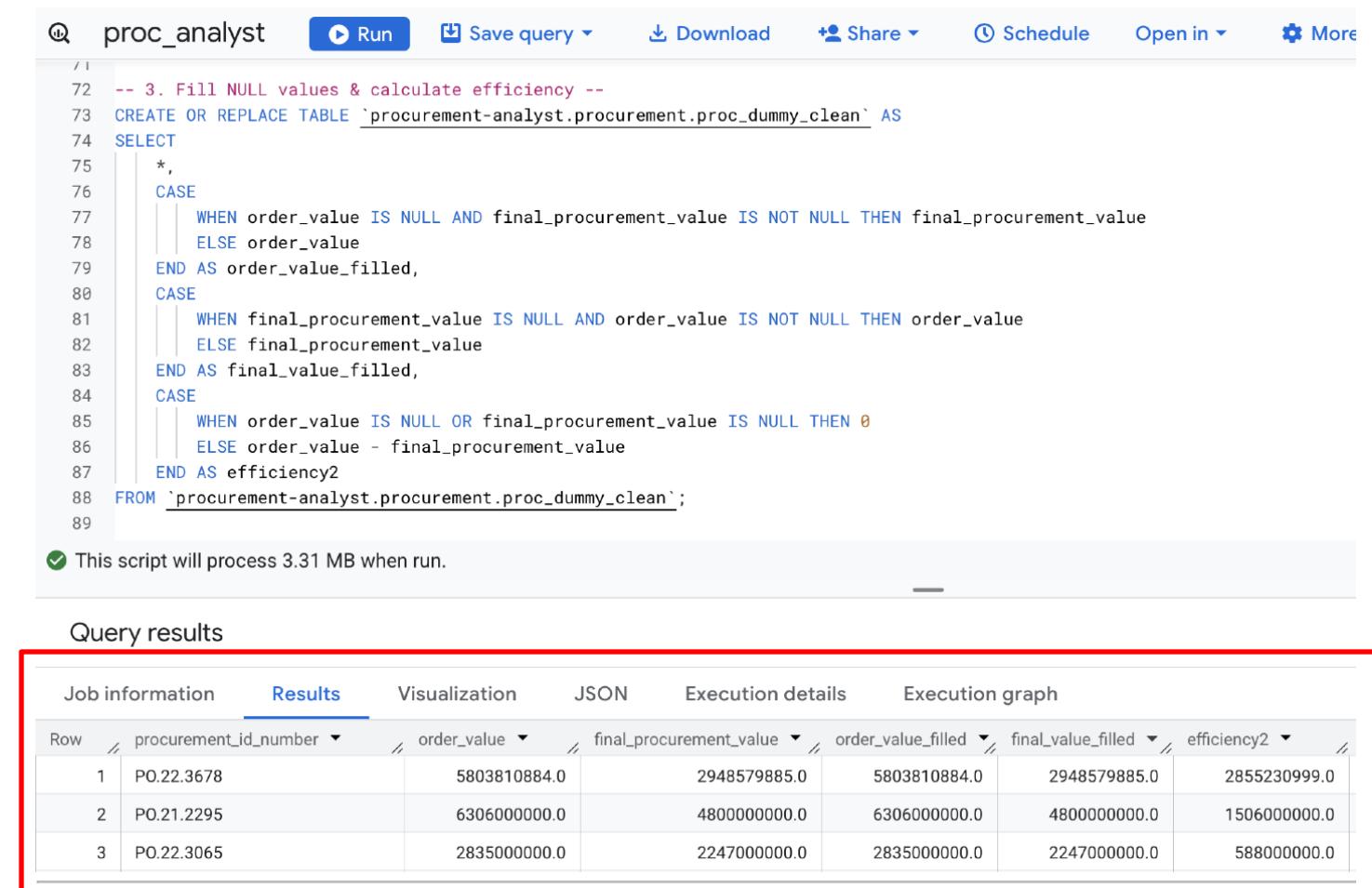
This script will process 3.31 MB when run.

Schema

Field name	Type
no	INTEGER
procurement_id_number	STRING
form_date	DATE
actual_spmp_wo_date	DATE
order_value	FLOAT
final_procurement_value	FLOAT

### 3. Fill NULL values & calculate efficiency

Fill missing values in order\_value and final\_procurement\_value using the available value from the other column. Calculate efficiency2 as the difference between order\_value and final\_procurement\_value



```
11
72 -- 3. Fill NULL values & calculate efficiency --
73 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
74 SELECT
75   *,
76   CASE
77     WHEN order_value IS NULL AND final_procurement_value IS NOT NULL THEN final_procurement_value
78     ELSE order_value
79   END AS order_value_filled,
80   CASE
81     WHEN final_procurement_value IS NULL AND order_value IS NOT NULL THEN order_value
82     ELSE final_procurement_value
83   END AS final_value_filled,
84   CASE
85     WHEN order_value IS NULL OR final_procurement_value IS NULL THEN 0
86     ELSE order_value - final_procurement_value
87   END AS efficiency2
88 FROM `procurement-analyst.procurement.proc_dummy_clean`;
89
```

This script will process 3.31 MB when run.

Query results

Job information	Results	Visualization	JSON	Execution details	Execution graph	
Row	procurement_id_number	order_value	final_procurement_value	order_value_filled	final_value_filled	efficiency2
1	P0.22.3678	5803810884.0	2948579885.0	5803810884.0	2948579885.0	2855230999.0
2	P0.21.2295	6306000000.0	4800000000.0	6306000000.0	4800000000.0	1506000000.0
3	P0.22.3065	2835000000.0	2247000000.0	2835000000.0	2247000000.0	588000000.0

Results: Missing numeric values are filled and efficiency is calculated as the difference between order and final procurement values.

# ■ DATA PREPARATION AND ANALYSIS

## TRANSFORMATION & ENRICHMENT

### 4.1. Calculate Working Days SLA (excluding weekends & holidays)

Calculate the number of working days between form\_date and actual\_spmp\_wo\_date, excluding weekends and predefined holidays. The sla\_working\_days column shows the effective days taken for each procurement process.

```
proc_analyst Run Save query Download Share
94 --- =====
95 -- ① SLA CALCULATION
96 --- =====
97
98 -- 4.1 Working Days SLA (excluding weekends & holidays)
99 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
100 WITH holidays AS (
101   SELECT DATE '2021-01-01' AS holiday UNION ALL
102   SELECT DATE '2021-02-12' UNION ALL
103   SELECT DATE '2021-03-11' UNION ALL
104   SELECT DATE '2021-03-14' UNION ALL
105   SELECT DATE '2021-04-02' UNION ALL
106   SELECT DATE '2021-05-01' UNION ALL
107   SELECT DATE '2021-05-13' UNION ALL
108   SELECT DATE '2021-05-14' UNION ALL
109   SELECT DATE '2021-05-26' UNION ALL
110   SELECT DATE '2021-06-01' UNION ALL
111   SELECT DATE '2021-07-20' UNION ALL
112   SELECT DATE '2021-08-10' UNION ALL
113   SELECT DATE '2021-08-17' UNION ALL
114   SELECT DATE '2021-10-19' UNION ALL
115   SELECT DATE '2021-12-24' UNION ALL
116   SELECT DATE '2021-12-25' UNION ALL
117   SELECT DATE '2021-12-27' UNION ALL
118   SELECT DATE '2022-01-01' UNION ALL
119   SELECT DATE '2022-02-01' UNION ALL
120   SELECT DATE '2022-02-28' UNION ALL
121   SELECT DATE '2022-03-03' UNION ALL
122   SELECT DATE '2022-04-15' UNION ALL
123   SELECT DATE '2022-04-29' UNION ALL
```

```
proc_analyst Run Save query Download Share
137 | SELECT DATE '2022-12-25'
138 | ),
139 | data_sla AS (
140 |   SELECT *
141 |   FROM `procurement-analyst.procurement.proc_dummy_clean`
142 |   WHERE form_date IS NOT NULL
143 |     AND actual_spmp_wo_date IS NOT NULL
144 |     AND actual_spmp_wo_date > form_date
145 |
146 |   SELECT
147 |     *,
148 |     ARRAY_LENGTH(
149 |       ARRAY(
150 |         SELECT dt
151 |         FROM UNNEST(GENERATE_DATE_ARRAY(form_date, actual_spmp_wo_date)) AS dt
152 |         WHERE EXTRACT(DAYOFWEEK FROM dt) NOT IN (1,7)
153 |           AND dt NOT IN (SELECT holiday FROM holidays)
154 |
155 |       ) - IFNULL(SAFE_CAST(waiting_time_workdays AS INT64), 0) AS sla_working_days
156 |     FROM data_sla;
```

Query completed

procurement_id_number	form_date	actual_spmp_wo...	sla_working_days
P0.21.2552	2021-12-03	2021-12-17	11
P0.21.2583	2021-12-08	2021-12-14	5
P0.21.2602	2021-12-12	2021-12-20	6

Results Example: Dec 3 → Dec 17 results in 11 working days SLA, excluding weekends and holidays.

### 4.2. Set SLA Standard by Procurement Method

Assign a standard SLA (sla\_standard) to each procurement based on its method. This serves as the benchmark to evaluate whether a procurement process is completed on time.

```
proc_analyst Run Save query Download Share Schedule Open in More
162 -- 4.2 SLA Standard by Procurement Method
163 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
164 SELECT
165   *,
166   CASE
167     WHEN procurement_method = "Penunjukan Langsung" THEN 10
168     WHEN procurement_method = "Work Order" THEN 3
169     WHEN procurement_method = "Pemilihan Langsung" THEN 15
170     WHEN procurement_method = "PADI UMKM" THEN 10
171     ELSE 0
172   END AS sla_standard
173 FROM `procurement-analyst.procurement.proc_dummy_clean`;
174
175 -- recheck to table --
176 SELECT procurement_id_number, procurement_method, form_date, actual_spmp_wo_date, sla_working_days, sla_standard
177 FROM `procurement-analyst.procurement.proc_dummy_clean` LIMIT 10;
178
```

This script will process 3.31 MB when run.

procurement_id_number	procurement_method	form_date	actual_spmp_wo...	sla_working_days	sla_standard
P0.21.1979	Penunjukan Langsung	2021-10-01	2021-10-14	10	10
P0.21.2124	Pemilihan Langsung	2021-10-19	2022-02-08	77	15
P0.21.2163	Penunjukan Langsung	2021-10-21	2021-12-31	50	10
P0.21.2552	Penunjukan Langsung	2021-12-03	2021-12-17	11	10

Results Example: Penunjukan Langsung = 10, Pemilihan Langsung = 15, used as SLA benchmark.

# ■ DATA PREPARATION AND ANALYSIS

## TRANSFORMATION & ENRICHMENT

### 4.3. SLA Achievement Percentage

Calculate sla\_percentage to show each procurement's SLA achievement as a percentage of the sla\_standard relative to the sla\_working\_days

```
proc_analyst Run Save query Download Share Schedule Open in More
-- 4.3 SLA Percentage
CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
SELECT
  *,
  CASE
    WHEN SAFE_CAST(sla_working_days AS FLOAT64) > 0 THEN
      ROUND((sla_standard / SAFE_CAST(sla_working_days AS FLOAT64)) * 100, 2)
    ELSE NULL
  END AS sla_percentage
FROM `procurement-analyst.procurement.proc_dummy_clean`;

-- recheck to table --
SELECT procurement_id_number,procurement_pic,procurement_method,form_date,actual_spmp_wo_date,sla_working_days, sla_standard,sla_percentage
FROM `procurement-analyst.procurement.proc_dummy_clean` LIMIT 10;

This script will process 3.31 MB when run.
```

Query results

Information	Results	Visualization	JSON	Execution details	Execution graph		
procurement_id_number	procurement_pic	procurement_method	form_date	actual_spmp_wo...	sla_working_days	sla_standard	sla_percentage
1 P0.21.1979	Aisha	Penunjukan Langsung	2021-10-01	2021-10-14	10	10	100.0
2 P0.21.1980	Aisha	Penunjukan Langsung	2021-10-01	2021-10-14	10	10	100.0
3 P0.21.2124	Aisha	Pemilihan Langsung	2021-10-19	2022-02-08	77	15	19.48
4 P0.21.2163	Aisha	Penunjukan Langsung	2021-10-21	2021-12-31	50	10	20.0

Results: Procurement SLA of 100% = Achieved; below 100% = delayed/target not achieved

### 4.4. SLA Flagging

Add a flag sla\_flagging to indicate whether each procurement meets the SLA: 100% or above is 'Achieved', below 100% is 'Not Achieved'.

```
proc_analyst Run Save query Download Share Schedule Open in More
194 -- 4.4 SLA Flagging
195 CREATE OR REPLACE TABLE `procurement-analyst.procurement.proc_dummy_clean` AS
196 SELECT
  *,
  CASE
    WHEN sla_percentage >= 100 THEN 'Achieved'
    WHEN sla_percentage < 100 THEN 'Not Achieved'
    ELSE NULL
  END AS sla_flagging
202 FROM `procurement-analyst.procurement.proc_dummy_clean`;
204
205 -- Preview SLA results
206 SELECT procurement_id_number,procurement_pic,procurement_method,form_date,actual_spmp_wo_date,sla_working_days,sla_standard,sla_percentage,sla_flagging
207 FROM `procurement-analyst.procurement.proc_dummy_clean`
208 LIMIT 10;
This script will process 3.31 MB when run.

Query results
```

Job information	Results	Visualization	JSON	Execution details	Execution graph				
Row	procurement_id_number	procurement_pic	procurement_method	form_date	actual_spmp_wo_date	sla_working_days	sla_standard	sla_percentage	sla_flagging
1	P0.21.1980	Aisha	Penunjukan Langsung	2021-10-01	2021-10-14	10	10	100.0	Achieved
2	P0.21.1979	Aisha	Penunjukan Langsung	2021-10-01	2021-10-14	10	10	100.0	Achieved
3	P0.21.2124	Aisha	Pemilihan Langsung	2021-10-19	2022-02-08	77	15	19.48	Not Achieved
4	P0.21.2163	Aisha	Penunjukan Langsung	2021-10-21	2021-12-31	50	10	20.0	Not Achieved
5	P0.21.2552	Aisha	Penunjukan Langsung	2021-12-03	2021-12-17	11	10	90.91	Not Achieved

# ■ DATA PREPARATION AND ANALYSIS

## DATA ANALYSIS

### 1. Most Frequent Procurement Type

Identifies the most common procurement methods and their total counts, highlighting which methods are used most frequently.

```
proc_analyst Run Save query Download Share Schedule Open in More
209 -- =====
210 -- DATA ANALYSIS
211 -- =====
212 -- =====
213
214 -- 1. Most Frequent Procurement Type
215 SELECT
216   procurement_method,
217   COUNT(DISTINCT procurement_id_number) AS total_procurements
218 FROM `procurement-analyst.procurement.proc_dummy_clean`
219 GROUP BY procurement_method
220 ORDER BY total_procurements DESC;
221
222
223
✓ This script will process 3.31 MB when run.
```

Query results

Job information Results Visualization JSON Execution details Execution graph

Row	procurement_method	total_procurements
1	Penunjukan Langsung	678
2	Work Order	367
3	Pemilihan Langsung	181
4	PADI UMKM	70

Results: Direct Appointment is the most frequently used procurement method, followed by Work Orders. Competitive and SME-based methods like Direct Selection and PADI UMKM are used less often.

### 2. Monthly and Yearly Procurement Volume

Shows procurement volume trends by month and year, enabling monitoring of activity patterns over time.

```
proc_analyst Run Save query Download Share Schedule Open in More
221
222 -- 2. Monthly and Yearly Procurement Volume
223 SELECT
224   EXTRACT(YEAR FROM form_date) AS year,
225   EXTRACT(MONTH FROM form_date) AS month,
226   COUNT(DISTINCT procurement_id_number) AS total_procurements
227 FROM `procurement-analyst.procurement.proc_dummy_clean`
228 GROUP BY year, month
229 ORDER BY year, month;
230
231
232
✓ This script will process 3.31 MB when run.
```

Query results

Job information Results Visualization JSON Execution details Execution graph

Row	year	month	total_procurements
1	2021	10	220
2	2021	11	184
3	2021	12	148
4	2022	1	177
5	2022	2	175
6	2022	3	235
7	2022	4	158

Results: Procurement activity increased from late 2021 to early 2022. The highest volume occurred in March 2022 (235 procurements), while the lowest was in December 2021 (148). This indicates growing procurement momentum entering 2022 after a slower end to 2021.

# ■ DATA PREPARATION AND ANALYSIS

## DATA ANALYSIS

### 3. Procurement Efficiency Classification

Classifies procurements based on efficiency: 'Efficient', 'Over Budget', or 'Same', and summarizes project counts, percentage, and total cost differences.

```
proc_analyst Run Save query Download Share Schedule Open in More
231 -- 3. Procurement Efficiency Classification
232 WITH efficiency_summary AS (
233     SELECT
234         CASE
235             WHEN efficiency2 > 0 THEN 'Efficient (Hemat)'
236             WHEN efficiency2 < 0 THEN 'Over Budget'
237             ELSE 'Same (No Difference)'
238         END AS efficiency_status,
239         COUNT(*) AS total_projects,
240         SUM(ABS(efficiency2)) AS total_difference
241     FROM `procurement-analyst.procurement.proc_dummy_clean`
242     WHERE order_value IS NOT NULL
243         AND final_procurement_value IS NOT NULL
244     GROUP BY efficiency_status
245 )
246
247     SELECT
248         efficiency_status,
249         total_projects,
250         ROUND(total_projects * 100.0 / SUM(total_projects) OVER(), 2) AS percentage_of_projects,
251         total_difference
252     FROM efficiency_summary
253     ORDER BY percentage_of_projects DESC;
This script will process 3.31 MB when run.
```

Query results

Job information	Results	Visualization	JSON	Execution details	Execution graph
Row	efficiency_status	total_projects	percentage_of_pr...	total_difference	
1	Efficient (Hemat)	580	63.67	14215892187.0	
2	Same (No Difference)	330	36.22	0.0	
3	Over Budget	1	0.11	2700000.0	

Results: Most procurement projects were classified as **Efficient (64%)**, indicating strong cost savings. About **36%** of projects had **no difference** between planned and final values, while only **0.1%** went **over budget**. Overall, procurement operations show high efficiency with minimal financial deviation.

### 4. Average SLA Performance by Procurement Method

Calculates average SLA achievement per procurement method and counts how many projects meet or miss SLA targets.

```
proc_analyst Run Save query Download Share Schedule Open in More
254
255 -- 4. Average SLA Performance by Procurement Method
256 SELECT
257     procurement_method,
258     ROUND(AVG(sla_percentage), 2) AS avg_sla_percentage,
259     COUNT(*) AS total_projects,
260     SUM(CASE WHEN sla_flagging = 'Achieved' THEN 1 ELSE 0 END) AS achieved_count,
261     SUM(CASE WHEN sla_flagging = 'Not Achieved' THEN 1 ELSE 0 END) AS not_achieved_count
262     FROM `procurement-analyst.procurement.proc_dummy_clean`
263     GROUP BY procurement_method
264     ORDER BY avg_sla_percentage DESC;
265
This script will process 3.31 MB when run.
```

Query results

Job information	Results	Visualization	JSON	Execution details	Execution graph
Row	procurement_method	avg_sla_percentage	total_projects	achieved_count	not_achieved_count
1	PADI UMKM	269.52	70	70	0
2	Pemilihan Langsung	245.43	181	160	19
3	Penunjukan Langsung	211.23	678	610	61
4	Work Order	126.52	367	279	66

Results: PADI UMKM shows the highest SLA performance, followed by Direct Selection and Direct Appointment. Work Orders record the lowest SLA achievement. Overall, PADI UMKM and Direct Selection methods show the best adherence to service level targets.

# ■ DATA PREPARATION AND ANALYSIS

## DATA ANALYSIS

### 5. Top 10 PICs with the Best SLA Performance

Ranks procurement PICs by average SLA performance, highlighting top performers with at least 3 projects.

```
proc_analyst Run Save query Download Share Schedule Open in More
265
266 -- 5. Top 10 PICs with the Best SLA Performance
267 SELECT
268   procurement_pic,
269   ROUND(AVG(sla_percentage), 2) AS avg_sla_percentage,
270   COUNT(*) AS total_procurements,
271   SUM(CASE WHEN sla_flagging = 'Achieved' THEN 1 ELSE 0 END) AS achieved_count
272   FROM `procurement-analyst.procurement.proc_dummy_clean`
273   GROUP BY procurement_pic
274   HAVING COUNT(*) > 3 -- filter minimal 3 projects
275   ORDER BY avg_sla_percentage DESC
276   LIMIT 10;
```

This script will process 3.31 MB when run.

Query results

procurement_pic	avg_sla_percentage	total_procurements	achieved_count
Nadia	271.39	92	91
Michael	251.5	101	97
Oliver	243.51	166	146
Sofia	226.74	167	156
Lucas	208.36	114	89
Hiroshi	203.54	84	84
Daniel	182.84	184	148
Evelyn	129.71	336	263
Chloe	127.59	43	40
Aisha	88.87	10	5

Results: Nadia achieved the highest SLA performance (271%), followed by Michael and Oliver. Overall, these top PICs maintained strong SLA achievement consistency.

### 6. Top Efficient PICs Based on Total Efficiency

Identifies PICs generating the highest total savings and efficiency percentage, focusing on procurements delivered under budget.

```
proc_analyst Run Save query Download Share Schedule Open in More
278 -- 6. Top Efficient PICs Based on Total Efficiency
279 SELECT
280   procurement_pic AS PIC_Name,
281   COUNT(DISTINCT procurement_id_number) AS Total_Procurement,
282   SUM(efficiency2) AS Total_Savings,
283   AVG(efficiency2) AS Avg_Savings_Per_Procurement,
284   SAFE_DIVIDE(SUM(efficiency2), SUM(order_value_filled)) * 100 AS Efficiency_Percentage
285   FROM
286   `procurement-analyst.procurement.proc_dummy_clean`
287   WHERE
288   efficiency2 > 0 -- hanya yang efisien (hemat)
289   GROUP BY
290   PIC_Name
291   ORDER BY
292   Total_Savings DESC;
293
```

This script will process 3.31 MB when run.

Query results

PIC_Name	Total_Procurement	Total_Savings	Avg_Savings_Per_Procurement	Efficiency_Percentage
Sofia	112	3295266580.0	29422023.035714302	28.312272507202117
Lucas	63	3243219185.0	51479669.6031746	10.475805398609188
Chloe	9	2969653541.0	329961504.55555558	8.7473896993948763
Daniel	144	2467375200.0	17134550.000000007	14.916825919520562
Michael	25	732317304.0	29292692.159999996	19.268827746626396
Oliver	91	403566800.0	4434799.999999991	12.349794286789365
Evelyn	28	380926932.0	13604533.285714285	12.14212298409268
Hiroshi	61	378818396.0	6210137.639344262	13.686462280806506
Nadia	47	344748249.0	7335069.1276595742	12.564434015840378

Results: Sofia achieved the highest total efficiency savings, followed by Lucas and Chloe. Sofia also maintained strong average savings per procurement, indicating both volume and cost-effectiveness.

# ■ DATA PREPARATION AND ANALYSIS

## DATA ANALYSIS

### 7. SLA Summary

Summarizes overall SLA performance: total procurements, average SLA, number of achieved vs. not achieved projects, and overall SLA achievement rate.

```
proc_analyst Run Save query Download Share Schedule Open in ...  
294 -- 7. SLA Summary  
295 SELECT  
296 COUNT(DISTINCT procurement_id_number) AS total_procurement,  
297 ROUND(AVG(sla_percentage), 2) AS avg_sla_percentage,  
298 SUM(CASE WHEN sla_flagging = 'Achieved' THEN 1 ELSE 0 END) AS total_achieved_sla,  
299 SUM(CASE WHEN sla_flagging = 'Not Achieved' THEN 1 ELSE 0 END) AS total_not_achieved_sla,  
300 ROUND(  
301 SAFE_DIVIDE(  
302 SUM(CASE WHEN sla_flagging = 'Achieved' THEN 1 ELSE 0 END),  
303 COUNT(DISTINCT procurement_id_number))  
304 ) * 100,  
305 2  
306 ) AS sla_achievement_rate  
307 FROM `procurement-analyst.procurement.proc_dummy_clean`;  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
This script will process 3.31 MB when run.  
  
Query results  
Job information Results Visualization JSON Execution details Execution graph  
Row // total_procurement // avg_sla_percentage // total_achieved_sla // total_not_achieved_sla // sla_achievement_rate //  
1 | 1297 | 196.04 | 1119 | 147 | 86.28
```

Results: Out of 1,297 procurements, 1,119 met the SLA target, resulting in an achievement rate of 86.28% and an average SLA percentage of 196.04%. This indicates strong and consistent overall performance in meeting time targets.

by Hilda Hamdah Husniyyah

### 8. Overall Efficiency Summary

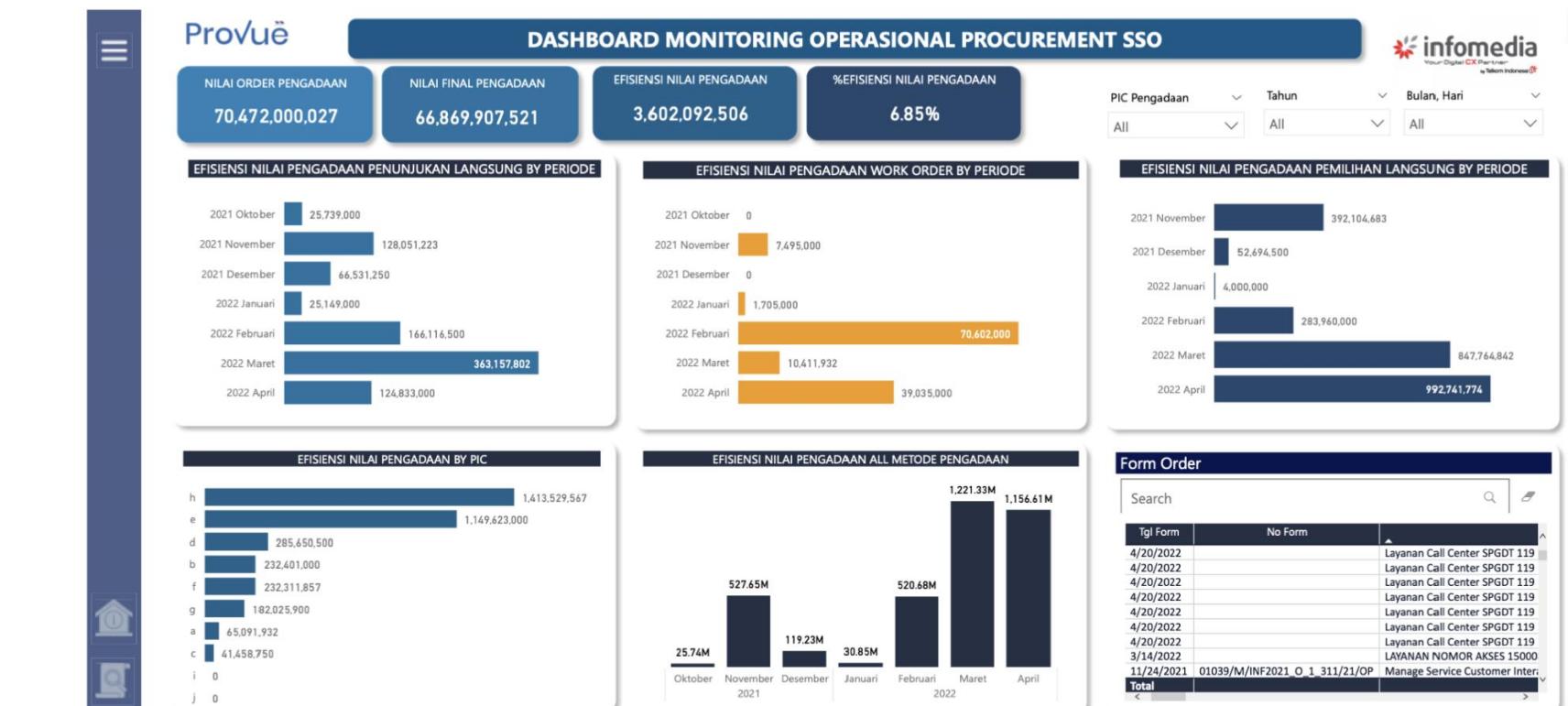
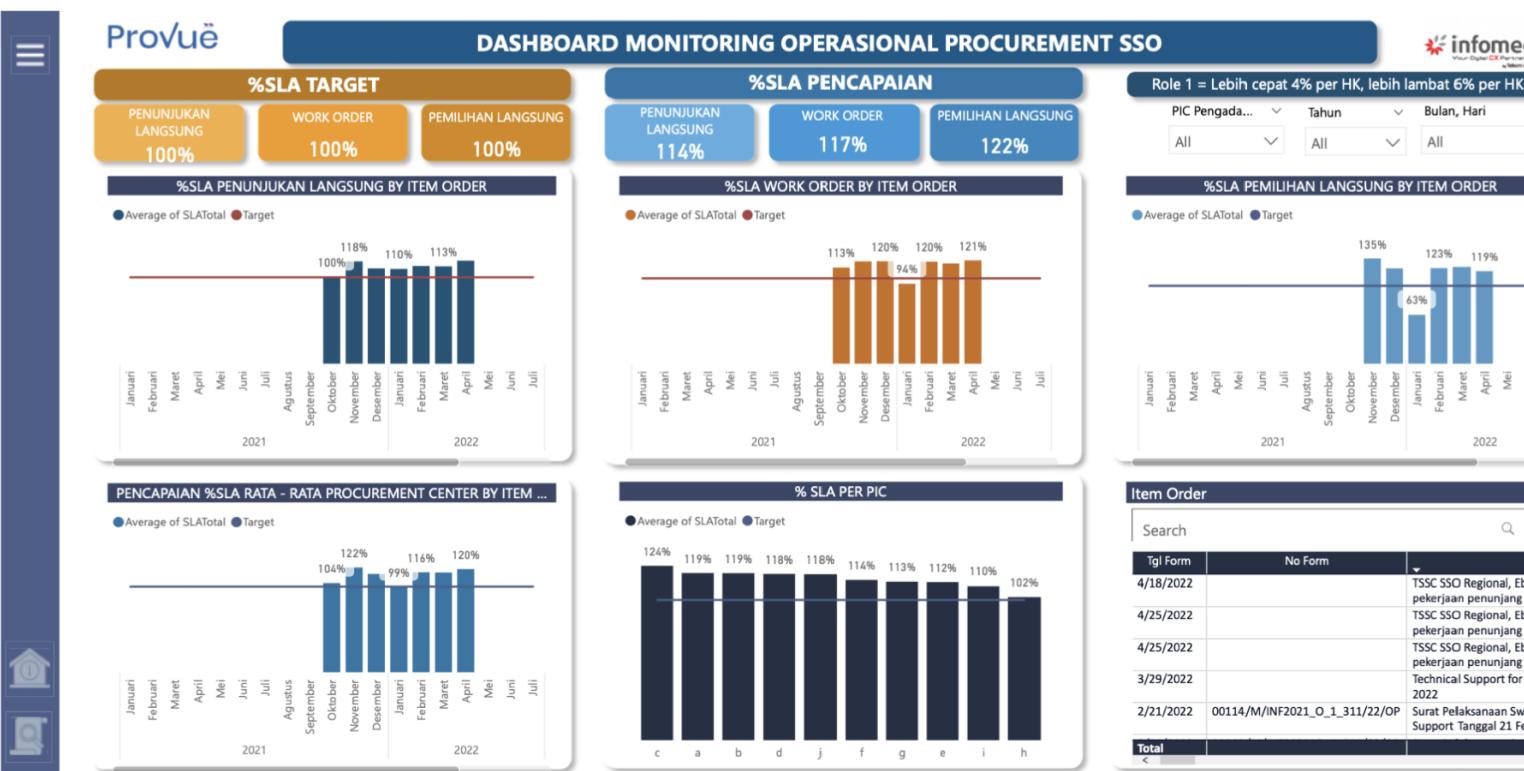
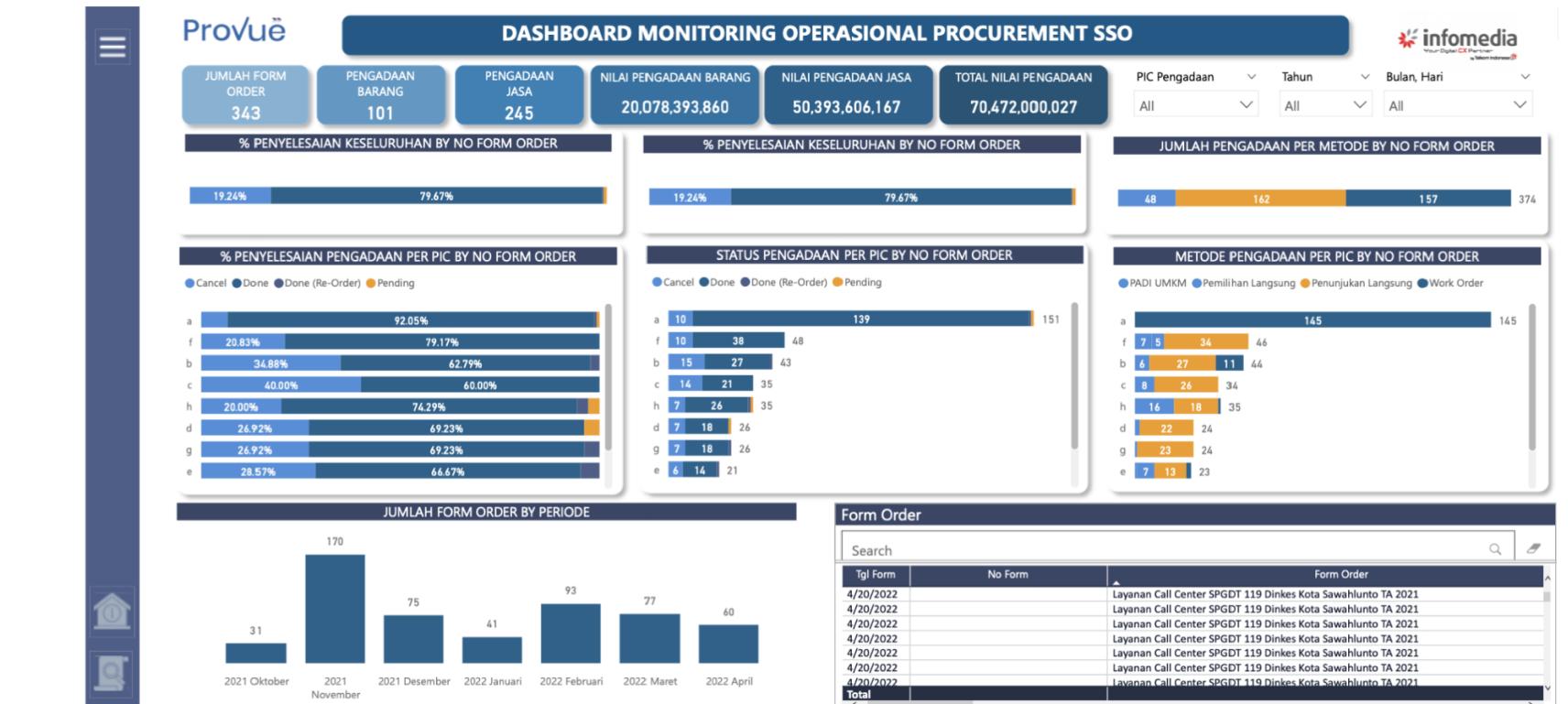
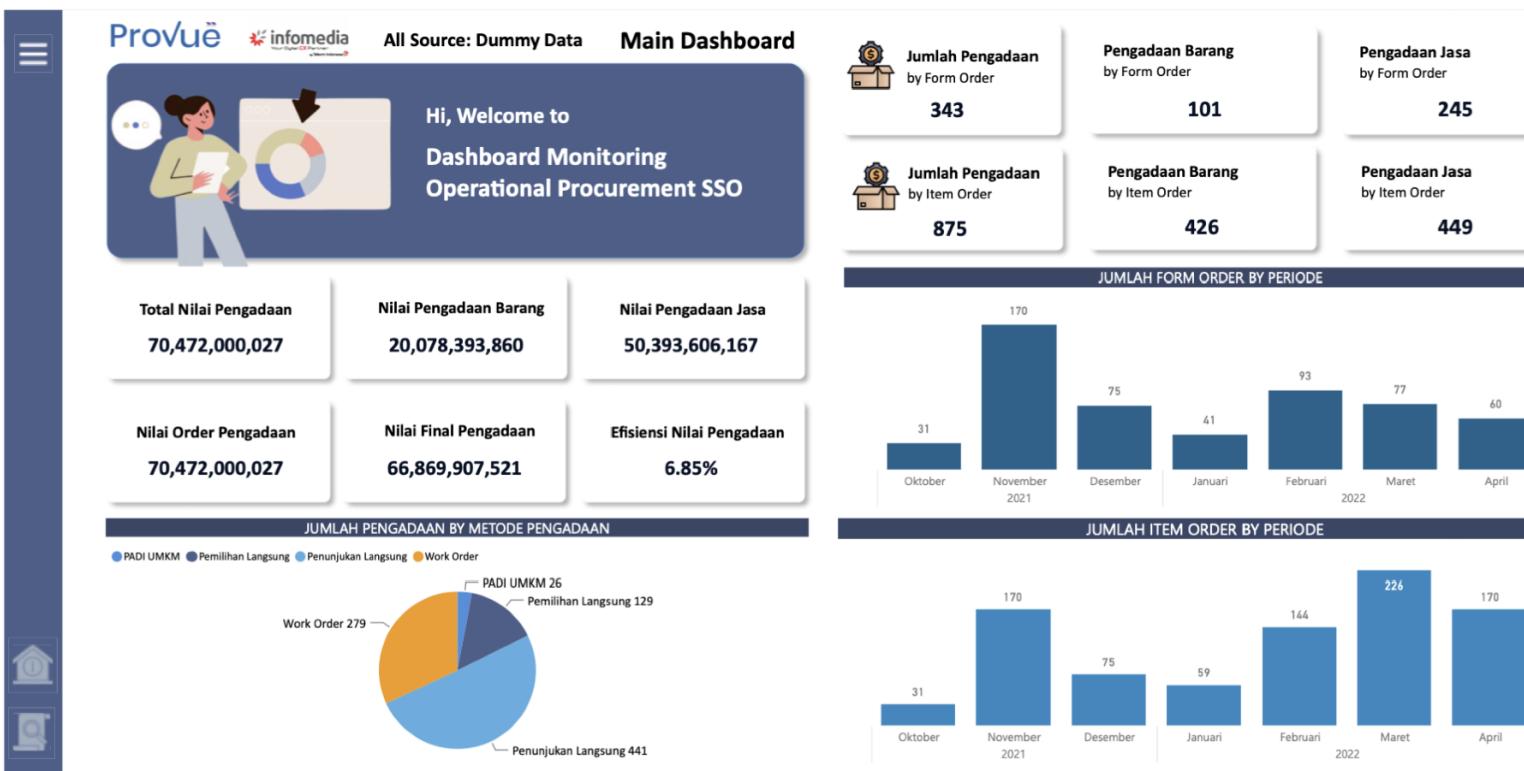
Provides overall efficiency metrics: total procurements, total cost savings, and overall efficiency percentage across all projects.

```
proc_analyst Run Save query Download Share Schedule Open in ...  
308  
309 -- 8. Overall Efficiency Summary  
310 SELECT  
311 COUNT(procurement_id_number) AS total_procurement,  
312 ROUND(  
313 SAFE_DIVIDE(SUM(efficiency2), SUM(order_value_filled)) * 100,  
314 2  
315 ) AS overall_efficiency_percentage,  
316 ROUND(SUM(efficiency2), 2) AS total_cost_saving  
317 FROM `procurement-analyst.procurement.proc_dummy_clean`;  
318  
319  
This script will process 3.31 MB when run.  
  
Query results  
Job information Results Visualization JSON Execution details Execution graph  
Row // total_procurement // overall_efficiency_percentage // total_cost_saving //  
1 | 1297 | 5.84 | 14213192187.0
```

Results: From 1,297 procurements, the **overall efficiency rate is 5.84%**, resulting in a **total cost saving of 14.21 billion**. This indicates effective cost optimization across procurement activities.

# VISUALIZATION

These are sample visualizations based on the dummy procurement data. The dashboards might have slight differences, but the overall insights remain similar. The full version is available through the link below [https://bit.ly/dashboard\\_proc\\_analysis](https://bit.ly/dashboard_proc_analysis)





## KEY INSIGHT

- **SLA achievement rate reached 86.28%**, meaning most procurements were completed within the target timeline — indicating strong schedule adherence and reliable project execution.
  - **Average SLA percentage was 196.04%**, showing that, on average, procurements were completed nearly twice as fast as the expected target, reflecting high time efficiency.
  - **Overall efficiency reached 5.84%**, equivalent to **IDR 14.2B in cost savings**, demonstrating effective budget utilization and strong financial control.
  - **Top performers (Nadia, Michael, Sofia)** consistently achieved high SLA and efficiency scores, serving as benchmarks for best practices.
- These insights indicate that procurement operations are both **timely and cost-efficient**, contributing positively to overall company performance.



## BUSINESS IMPACT & RECOMMENDATION

- High SLA and efficiency improve operational reliability and cost control.
- Recognize top-performing PICs; support others through training.
- Continue tracking SLA & efficiency to sustain performance.



## CONCLUSION

Overall, the procurement process shows strong performance — projects are completed on time and under budget, reflecting effective coordination and cost control. Continuous monitoring and data-driven improvements will help sustain this positive trend.



# **THANK YOU!**

PRESENTATION BY HILDA HAMDAH HUSNIYYAH