

Interaktyvi pelno ataskaita su Power BI, naudojant „NovaTech Dynamics” finansinius duomenis. (aprašymas)

1. Duomenų apžvalga

- Gavau įmonės finansinių operacijų duomenis ir juos nukroviau į Excel formatą.



- Tuomet peržiūrėjau operacijų žurnalą kuriam buvo virš 3000 operacijų, be pateiktą sakaitų planą (COA – *chart of accounts*).

	A	B	C	D	E	F
1	Date	Division	Description	Dr	Cr	Amount
2	1-Jan-19	South	Transaction 1	Cash	Revenues - services	18193.219
3	1-Jan-19	East	Transaction 2	Volume Discounts	Cash	364
4	1-Jan-19	East	Transaction 3	Cash	Interest income	8463
5	1-Jan-19	West	Transaction 4	Cash	Interest income	10100
6	2-Jan-19	North	Transaction 5	Legal & Professional	Cash	6600
7	2-Jan-19	North	Transaction 6	Volume Discounts	Cash	312
8	2-Jan-19	North	Transaction 7	Cash	Interest income	376
9	3-Jan-19	East	Transaction 8	Utilities - communication	Cash	6775.153
10	3-Jan-19	North	Transaction 9	Utilities - communication	Cash	5698.5
11	3-Jan-19	West	Transaction 10	Public relations	Cash	23.941
12	3-Jan-19	West	Transaction 11	Entertainment	Cash	19460
13	3-Jan-19	West	Transaction 12	Utilities - communication	Cash	1904
14	3-Jan-19	West	Transaction 13	Direct overhead costs	Cash	3650.4
15	4-Jan-19	North	Transaction 14	Volume Discounts	Cash	11680
16	4-Jan-19	South	Transaction 15	Salaries & wages	Cash	1592.8
17	4-Jan-19	South	Transaction 16	Entertainment	Cash	270
18	4-Jan-19	South	Transaction 17	Legal & Professional	Cash	13.6
19	4-Jan-19	South	Transaction 18	Legal & Professional	Cash	2296.2422
20	4-Jan-19	East	Transaction 19	Advertising	Cash	10.906
21	4-Jan-19	West	Transaction 20	Salaries & wages	Cash	4920
22	5-Jan-19	North	Transaction 21	Commissions	Cash	2136.9344
23	5-Jan-19	North	Transaction 22	Utilities - communication	Cash	2474.0716
24	5-Jan-19	North	Transaction 23	Cash	Revenues - services	24418.4
25	5-Jan-19	North	Transaction 24	Depreciation and amortization	Accumulated Depreciation	2957.6288
26	5-Jan-19	South	Transaction 25	Utilities - communication	Cash	202
27	5-Jan-19	South	Transaction 26	Advertising	Cash	293.7588
28	5-Jan-19	South	Transaction 27	Cash	Revenues - products	83882.8536
29	5-Jan-19	South	Transaction 28	Cash	Revenues - products	98581.544
30	6-Jan-19	South	Transaction 29	Entertainment	Cash	8.5116
31	6-Jan-19	South	Transaction 30	Salaries & wages	Cash	6879.555
32	6-Jan-19	East	Transaction 31	Depreciation and amortization	Accumulated Depreciation	954.6
33	6-Jan-19	West	Transaction 32	Utilities - other	Cash	2537.975
34	6-Jan-19	West	Transaction 33	Depreciation and amortization	Accumulated Depreciation	2966.72
35	7-Jan-19	South	Transaction 34	Utilities - other	Cash	14.75
36	7-Jan-19	South	Transaction 35	Public relations	Cash	11.554
37	7-Jan-19	East	Transaction 36	Cash	Interest income	10137.327
38	7-Jan-19	East	Transaction 37	Entertainment	Cash	18.3
39	7-Jan-19	West	Transaction 38	Utilities - energy	Cash	5162.9611
40	8-Jan-19	North	Transaction 39	Commissions	Cash	328
41	8-Jan-19	South	Transaction 40	Interest expense	Cash	12.852
42	8-Jan-19	West	Transaction 41	Interest expense	Cash	12.672
43	9-Jan-19	North	Transaction 43	Cash	Revenues - services	14248.8196
44	9-Jan-19	South	Transaction 44	Utilities - other	Cash	1174.2
45	9-Jan-19	East	Transaction 45	Depreciation and amortization	Accumulated Depreciation	751.64
46	9-Jan-19	East	Transaction 46	Benefits	Cash	1126.4
47	9-Jan-19	West	Transaction 47	Utilities - other	Cash	8.6
48	9-Jan-19	West	Transaction 48	Entertainment	Cash	7.4
49	9-Jan-19	West	Transaction 49	Advertising	Cash	2975.1117
50	9-Jan-19	West	Transaction 50	Utilities - communication	Cash	4364.2309
51	10-Jan-19	North	Transaction 51	Interest expense	Cash	8.69
52	10-Jan-19	North	Transaction 52	Direct overhead costs	Cash	1290
53	10-Jan-19	East	Transaction 53	Cash	Interest income	11.9412
54	10-Jan-19	East	Transaction 54	Benefits	Cash	83.448
55	11-Jan-19	East	Transaction 56	Interest expense	Cash	11.22

Journal **COA** +

2. ETL procesas (duomenų paruošimas) su Power Query

- Nusikrauname duomeni į Power BI ir pradame ETL procesą.

Queries [2]

COA

Journal

Close & Apply

New Source

Recent Sources

Enter Data

Data source settings

Manage Parameters

Refresh Preview

Advanced Editor

Query

Choose Columns

Remove Columns

Keep Rows

Remove Rows

Sort

Split Column

Group By

Transform

Data Type: Whole Number

Merge Queries

Append Queries

Combine Files

Text Analytics

Vision

Azure Machine Learning

AI Insights

Query Settings

PROPERTIES

Name

COA

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

	Account Code	Account	IS or BS	Category	D
1	4010	Revenues - products	IS	Revenue	C
2	4020	Revenues - services	IS	Revenue	C
3	4030	Revenues - licensing	IS	Revenue	C
4	4040	Returns	IS	Revenue	D
5	5010	Cost of materials	IS	Cost of Goods Sold	D
6	5020	Commissions	IS	Cost of Goods Sold	D
7	5030	Volume Discounts	IS	Cost of Goods Sold	D
8	5040	Direct labor costs	IS	Cost of Goods Sold	D
9	5050	Direct overhead costs	IS	Cost of Goods Sold	D
10	6010	Salaries & wages	IS	Expenses	D
11	6020	Benefits	IS	Expenses	D
12	6030	Utilities - communication	IS	Expenses	D
13	6040	Utilities - energy	IS	Expenses	D
14	6050	Utilities - other	IS	Expenses	D
15	6060	Travel	IS	Expenses	D
16	6070	Entertainment	IS	Expenses	D
17	6080	Advertising	IS	Expenses	D
18	6090	Public relations	IS	Expenses	D
19	6100	Legal & Professional	IS	Expenses	D
20	6110	Depreciation and amortization	IS	Expenses	D
21	7010	Interest expense	IS	Finance Costs	D

- Pakeičiame formatą taip jog debetai eitu po kreditais bei taip pat padauginam kreditus iš -1 tam, jog po to sudarinėjant ataskaitą galėtume sutikrinti balansą.

= Table.TransformColumnTypes("#Added Custom",{{"TB amount", type number}})							
Date	Division	Description	1.2 Amount	A _C Type	A _C Account	1.2 TB amount	
Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	
117 distinct, 0 unique	4 distinct, 0 unique	500 distinct, 0 unique	493 distinct, 0 unique	2 distinct, 0 unique	23 distinct, 0 unique	986 distinct, 972 unique	
1	1/1/2019	South	Transaction 1	18193.219	Dr	Cash	-18193.219
2	1/1/2019	South	Transaction 1	18193.219	Cr	Revenues - services	18193.219
3	1/1/2019	East	Transaction 2	364	Dr	Volume Discounts	-364
4	1/1/2019	East	Transaction 2	364	Cr	Cash	364
5	1/1/2019	East	Transaction 3	8463	Dr	Cash	-8463
6	1/1/2019	East	Transaction 3	8463	Cr	Interest income	8463
7	1/1/2019	West	Transaction 4	10100	Dr	Cash	-10100
8	1/1/2019	West	Transaction 4	10100	Cr	Interest income	10100
9	1/2/2019	North	Transaction 5	6600	Dr	Legal & Professional	-6600
10	1/2/2019	North	Transaction 5	6600	Cr	Cash	6600
11	1/2/2019	North	Transaction 6	312	Dr	Volume Discounts	-312
12	1/2/2019	North	Transaction 6	312	Cr	Cash	312
13	1/2/2019	North	Transaction 7	376	Dr	Cash	-376
14	1/2/2019	North	Transaction 7	376	Cr	Interest income	376
15	1/3/2019	East	Transaction 8	6775.153	Dr	Utilities - communication	-6775.153
16	1/3/2019	East	Transaction 8	6775.153	Cr	Cash	6775.153
17	1/3/2019	North	Transaction 9	5698.5	Dr	Utilities - communication	-5698.5
18	1/3/2019	North	Transaction 9	5698.5	Cr	Cash	5698.5
19	1/3/2019	West	Transaction 10	23.941	Dr	Public relations	-23.941
20	1/3/2019	West	Transaction 10	23.941	Cr	Cash	23.941
21	1/3/2019	West	Transaction 11	19460	Dr	Entertainment	-19460
22	1/3/2019	West	Transaction 11	19460	Cr	Cash	19460
23	1/3/2019	West	Transaction 12	1904	Dr	Utilities - communication	-1904
24	1/3/2019	West	Transaction 12	1904	Cr	Cash	1904
25	1/3/2019	West	Transaction 13	3650.4	Dr	Direct overhead costs	-3650.4
26	1/3/2019	West	Transaction 13	3650.4	Cr	Cash	3650.4
27	1/4/2019	North	Transaction 14	11680	Dr	Volume Discounts	-11680
28	1/4/2019	North	Transaction 14	11680	Cr	Cash	11680
29	1/4/2019	South	Transaction 15	1592.8	Dr	Salaries & wages	-1592.8
30	1/4/2019	South	Transaction 15	1592.8	Cr	Cash	1592.8
31	1/4/2019	South	Transaction 16	270	Dr	Entertainment	-270
32	1/4/2019	South	Transaction 16	270	Cr	Cash	270

Custom Column

Add a column that is computed from the other columns.

New column name

TB Amount

Custom column formula ①

= if [Type] = "Dr" then [Amount] * (-1) else [Amount]

Available columns

Date
Division
Description
Amount
Type
Account

<< Insert

[Learn about Power Query formulas](#)

✓ No syntax errors have been detected.

OK

Cancel

- Sutvarkę debetu ir kreditų eigą, pereiname prie įmonės regioninio pasiskirstymo ir sukuriam atskirą dimensinę lentelę (DIM) kuri būtų kaip papildomi duomenys.

Query Editor

Add Column View Tools Help

Conditional Column Index Column Duplicate Column Format Merge Columns Extract Parse From Text

✕ ✓ f_x = Table.Distinct(#"Removed Other

	A ^B _C Division
	<div> <div>Valid 100%</div> <div>Error 0%</div> <div>Empty 0%</div> </div> <div> <div></div> <div></div> <div></div> <div></div> </div> <div>4 distinct, 4 unique</div>
1	South
2	East
3	West
4	North

- Toliau pereinam prie laiko dimensinės lentelės, kuria taip pat sukuriam iš žurnalo lentelės, tačiau pradžioj kad duomenys būtų neiškraipyti perkeičiam juos į Excel serijinius numerius.

Power Query Editor interface showing the 'List Tools' ribbon and a query named 'Query1'. The formula bar displays the M code: `= {Number.From(List.Min(Journal[Date]))..Number.From(List.Max(Journal[Date]))}`. The preview table shows a list of sequential numbers.

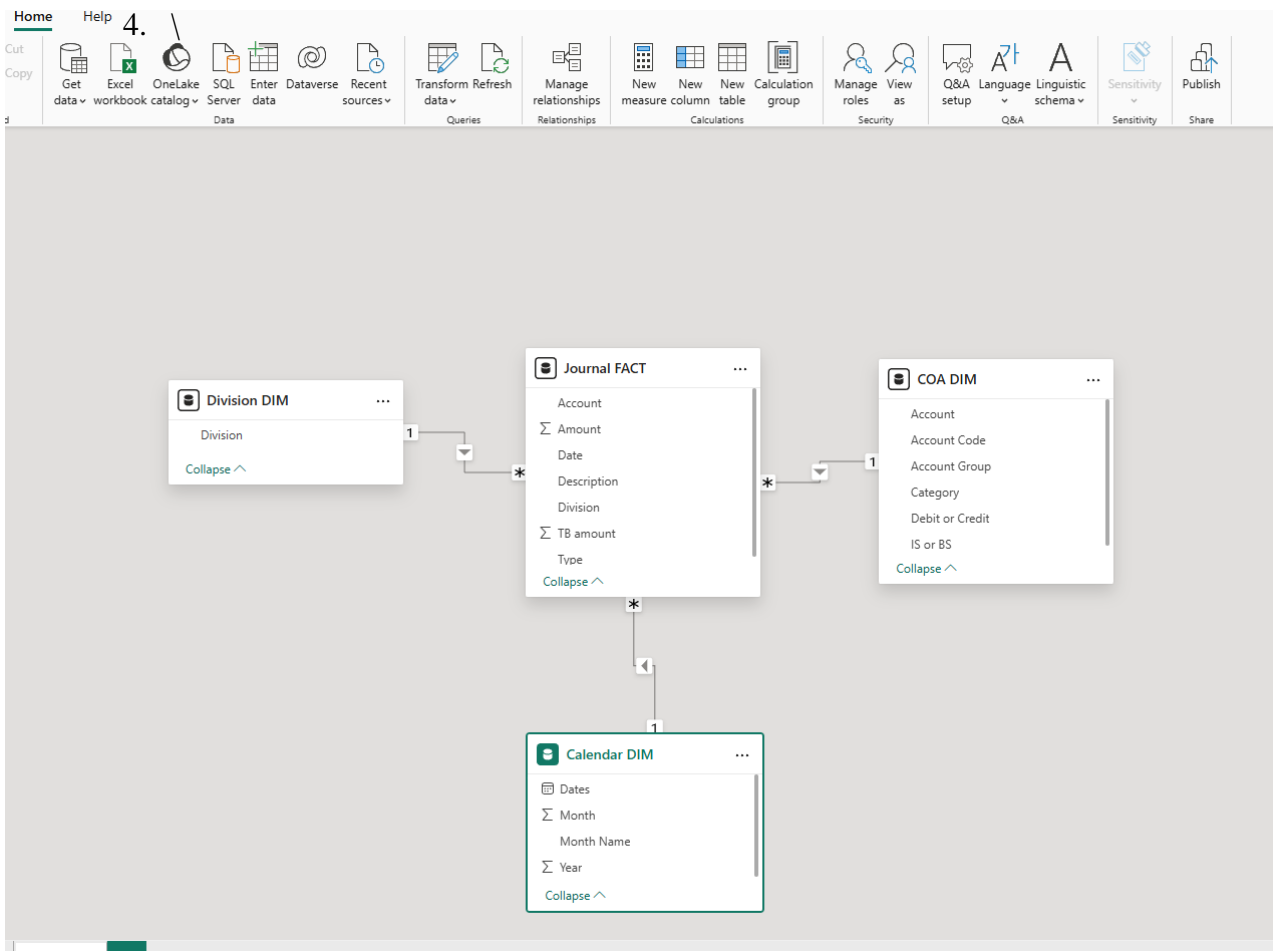
	List
1	43466
2	43467
3	43468
4	43469
5	43470
6	43471
7	43472
8	43473

- Sukurę lentelę, suformatuojam serijinius numerius į datas.

Power Query Editor interface showing a table with columns 'Date', 'Year', 'Month', and 'Month Name'. The formula bar displays the M code: `= Table.TransformColumns(#"Inserted Month Name", {{"Month Name", each Text.Start(_, 3), type text}})`. The preview table shows a list of dates and corresponding year, month, and month name values.

	Date	Year	Month	Month Name
1	1/1/2019	2019	1	Jan
2	1/2/2019	2019	1	Jan
3	1/3/2019	2019	1	Jan
4	1/4/2019	2019	1	Jan
5	1/5/2019	2019	1	Jan
6	1/6/2019	2019	1	Jan
7	1/7/2019	2019	1	Jan
8	1/8/2019	2019	1	Jan
9	1/9/2019	2019	1	Jan
10	1/10/2019	2019	1	Jan
11	1/11/2019	2019	1	Jan
12	1/12/2019	2019	1	Jan
13	1/13/2019	2019	1	Jan
14	1/14/2019	2019	1	Jan
15	1/15/2019	2019	1	Jan
16	1/16/2019	2019	1	Jan
17	1/17/2019	2019	1	Jan
18	1/18/2019	2019	1	Jan
19	1/19/2019	2019	1	Jan
20	1/20/2019	2019	1	Jan
21	1/21/2019	2019	1	Jan
22	1/22/2019	2019	1	Jan
23	1/23/2019	2019	1	Jan
24	1/24/2019	2019	1	Jan
25	1/25/2019	2019	1	Jan
26	1/26/2019	2019	1	Jan
27	1/27/2019	2019	1	Jan
28	1/28/2019	2019	1	Jan

3. Iš gautų lentelių sudarom duomenų modelį pasitelkiant žvaigdžių schema.



Division DIM (sukurta) – regionu lentelė
COA DIM – sąskaitų plano lentelė
Calendar DIM (sukurta) – kalendoriaus lentelė
Journal FACT – pagrindinė operacijų lentelė iš kurių bus daromas raportas

5. Measures ir DAX panaudojimas raporto kūrimui.

- Visų pirma patikriname, jog debetai būtų lygus kreditam prieš sukuriant atskirus duomenis.

Clipboard		Data	
		Debit or Credit	Reporting value
C			7,443,991.33
D			-7,443,991.33
Total			0.00

- Sukuriame Pajamų (nuostolių) ataskaitos measures.

```
1 Revenue = CALCULATE([Reporting value], 'COA DIM'[Category] = "Revenue")
```

Structure		Formatting	
X ✓		1	Cost of Goods Sold =
		2	CALCULATE(
Asset		3	[Reporting Value],
Cost of Goods		4	'COA DIM'[Category] = "Cost of Goods Sold"
Expenses		5)

```
1 Gross Profit = [Revenue] + [Cost of Goods Sold]
```

Structure		Formatting		Properties	
X ✓		1	Expenses = CALCULATE([Reporting Value], 'COA DIM'[Category] = "Expenses")		
		A		4,204,044.09	

X ✓		1	EBIT = [Gross Profit] + [Expenses]
-----	--	---	------------------------------------

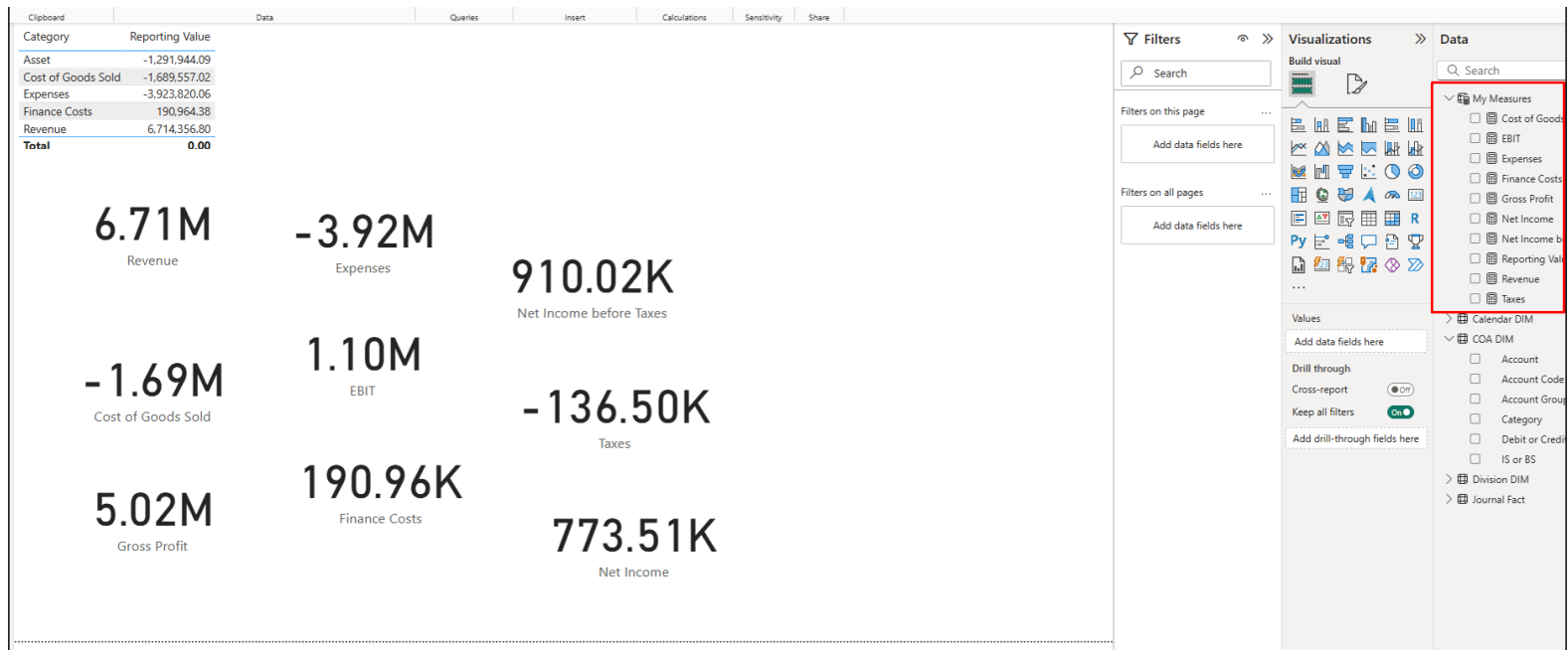
X ✓		1	Finance Costs = CALCULATE([Reporting Value], 'COA DIM'[Category] = "Finance Costs")
		A	
			4,204,044.09

Structure		Formatting	
X ✓		1	Net Income before Taxes = [EBIT] - [Finance Costs]

X ✓		1	Taxes = IF([Net Income before Taxes]>0,-[Net Income before Taxes]*0.15,0)
-----	--	---	---

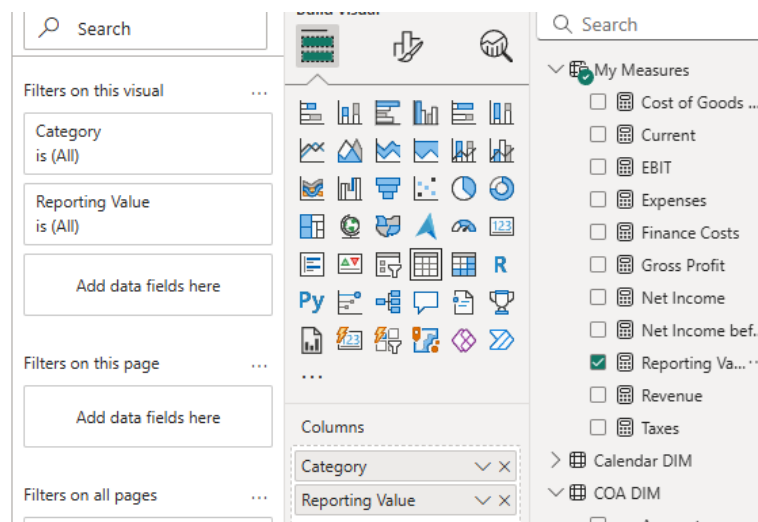
Structure		Formatting		Properties	
X ✓		1	Net Income before Taxes = [EBIT] - [Finance Costs]		
Asset				-1,291,944.09	

- Sutikrinam ar duomenys gerai suskaičiuoti.



6. Sudarome pajamų (nuostolių) ataskaitą.

Category	Reporting Value
Revenue	0.00
Cost of Goods Sold	0.00
Gross Profit	0.00
Expenses	0.00
EBIT	0.00
Finance Costs	0.00
Net Income before Taxes	0.00
Taxes	0.00
Net Income	0.00
Total	0.00



- Įdedam duomenis iš 2020 metų ir pervadinam tai į dabartinį periodą (Current).

```

1 Current =
2 VAR CurrentCategory = SELECTEDVALUE(Layout[Category])
3
4 VAR Amount =
5     SWITCH(TRUE(),
6         CurrentCategory = "Revenue", [Revenue],
7         CurrentCategory = "Cost of Goods Sold", [Cost of Goods Sold],
8         CurrentCategory = "Gross Profit", [Gross Profit],
9         CurrentCategory = "Expenses", [Expenses],
10        CurrentCategory = "EBIT", [EBIT],
11        CurrentCategory = "Finance Costs", [Finance Costs],
12        CurrentCategory = "Net Income before Taxes", [Net Income before Taxes],
13        CurrentCategory = "Taxes", [Taxes],
14        CurrentCategory = "Net Income", [Net Income]
15    )
16
17 RETURN
18     Amount

```

Category	Current
Revenue	6,714,356.80
Cost of Goods Sold	-1,689,557.02
Gross Profit	5,024,799.77
Expenses	-3,923,820.06
EBIT	1,100,979.71
Finance Costs	190,964.38
Net Income before Taxes	910,015.33
Taxes	-136,502.30
Net Income	773,513.03
Total	

- Įdedam duomenis iš 2019 metų ir pervadinam tai į praeitų metų periodą (Previous).

```
1 Previous = CALCULATE([Current],SAMEPERIODLASTYEAR('Calendar DIM'[Date]))
```

Category	Current	Previous
Revenue	6,714,356.80	3,343,866.70
Cost of Goods Sold	-1,689,557.02	-794,783.66
Gross Profit	5,024,799.77	2,549,083.04
Expenses	-3,923,820.06	-1,914,585.25
EBIT	1,100,979.71	634,497.79
Finance Costs	190,964.38	143,056.98
Net Income before Taxes	910,015.33	491,440.81
Taxes	-136,502.30	-73,716.12
Net Income	773,513.03	417,724.69
Total		

- Suskaičiuojam pokytį tarp abiejų metų (change).

1 %Δ (change) = DIVIDE([Current] - [Previous], ABS([Previous]),0)

Year

2019

2020

Category	Current	Previous	%Δ (change)
Revenue	3,370,490.10	3,343,866.70	0.80%
Cost of Goods Sold	-894,773.36	-794,783.66	-12.58%
Gross Profit	2,475,716.73	2,549,083.04	-2.88%
Expenses	-2,009,234.81	-1,914,585.25	-4.94%
EBIT	466,481.92	634,497.79	-26.48%
Finance Costs	47,907.39	143,056.98	-66.51%
Net Income before Taxes	418,574.52	491,440.81	-14.83%
Taxes	-62,786.18	-73,716.12	14.83%
Net Income	355,788.35	417,724.69	-14.83%
Total			

- Sutvarkom formatą bei dizainą.

Year

2019

2020

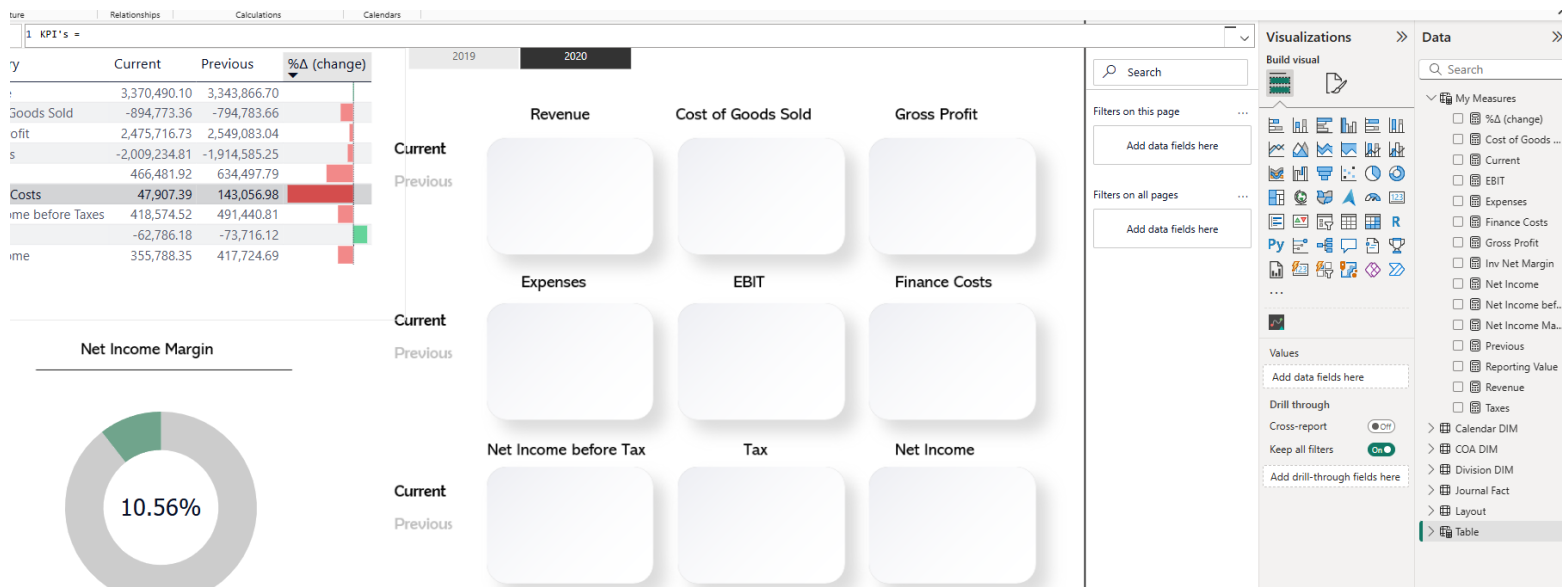
Category	Current	Previous	%Δ (change)
Revenue	3,370,490.10	3,343,866.70	
Cost of Goods Sold	-894,773.36	-794,783.66	
Gross Profit	2,475,716.73	2,549,083.04	
Expenses	-2,009,234.81	-1,914,585.25	
EBIT	466,481.92	634,497.79	
Finance Costs	47,907.39	143,056.98	
Net Income before Taxes	418,574.52	491,440.81	
Taxes	-62,786.18	-73,716.12	
Net Income	355,788.35	417,724.69	

7. Sudarome Grynojo pelno maržos diagramą.

- Sukuriam naujus measures.

```
1 Net Income Margin = [Net Income]/[Revenue]
Year
1 Inv Net Margin = 1 - [Net Income Margin]
Year
```

- Sukuriamo diagramą bei taip pat įdedam nauja formatą ataskaitos rodikliams.



8. Sukuriam naujus Measures naujiems duomenims.

```
1 Revenue Current = CALCULATE([Current], Layout[Category]="Revenue")
```

```
1 Revenue Previous = CALCULATE([Previous], Layout[Category] = "Revenue")
```

```
1 Revenue % Change = CALCULATE([%Δ (change)], Layout[Category] = "Revenue")
```

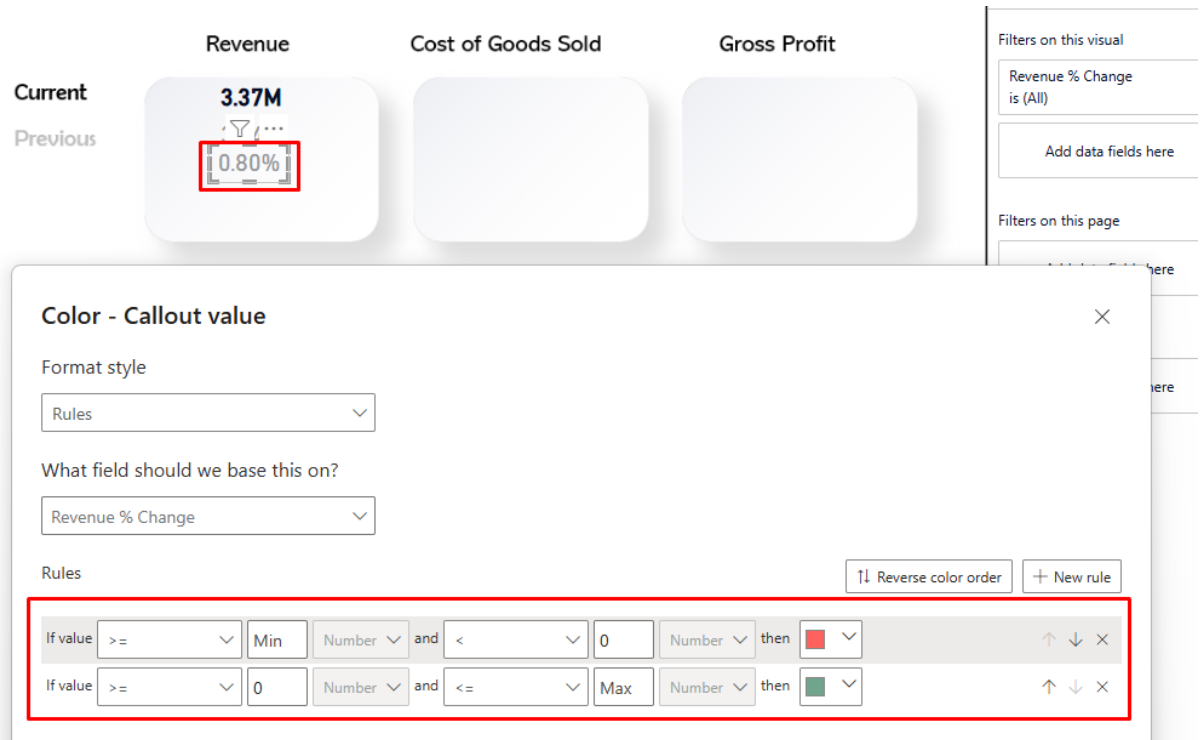
```
1 Cost of Goods Sold Current = ABS(CALCULATE([Current], Layout[Category] = "Cost of Goods Sold"))
```

```
1 Cost of Goods Sold Previous = ABS(CALCULATE([Previous], Layout[Category] = "Cost of Goods Sold"))
```

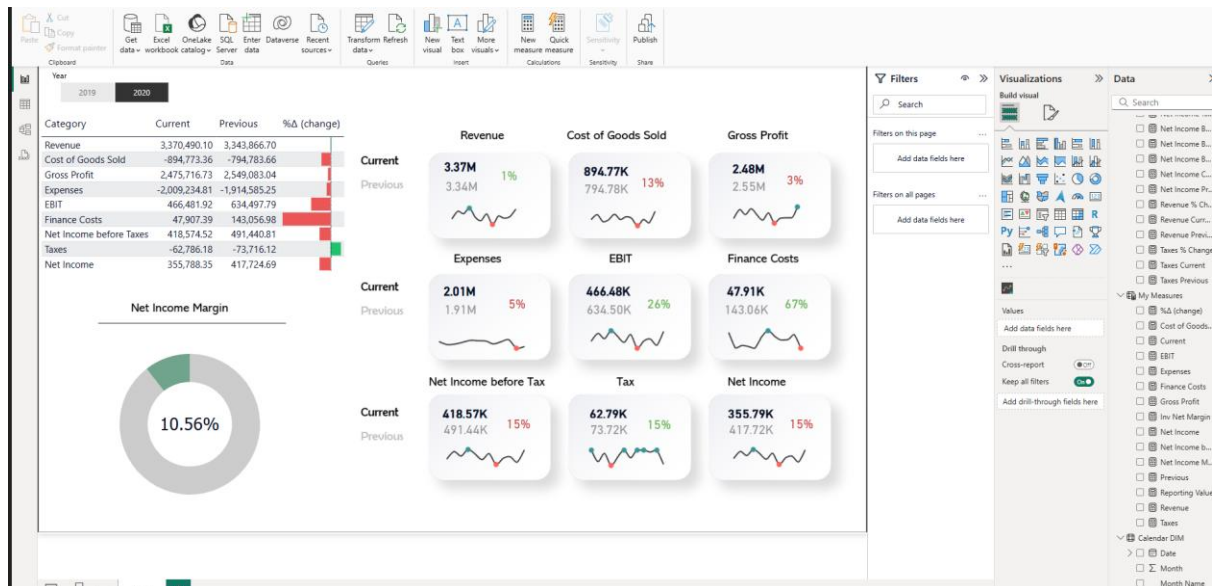
```
1 Cost of Goods Sold % Change = CALCULATE([%Δ (change)], Layout[Category] = "Cost of Goods Sold")
```

- Lygiai tokių pačiu principu sukuriam ir kitiems rodiklius naujus measures.

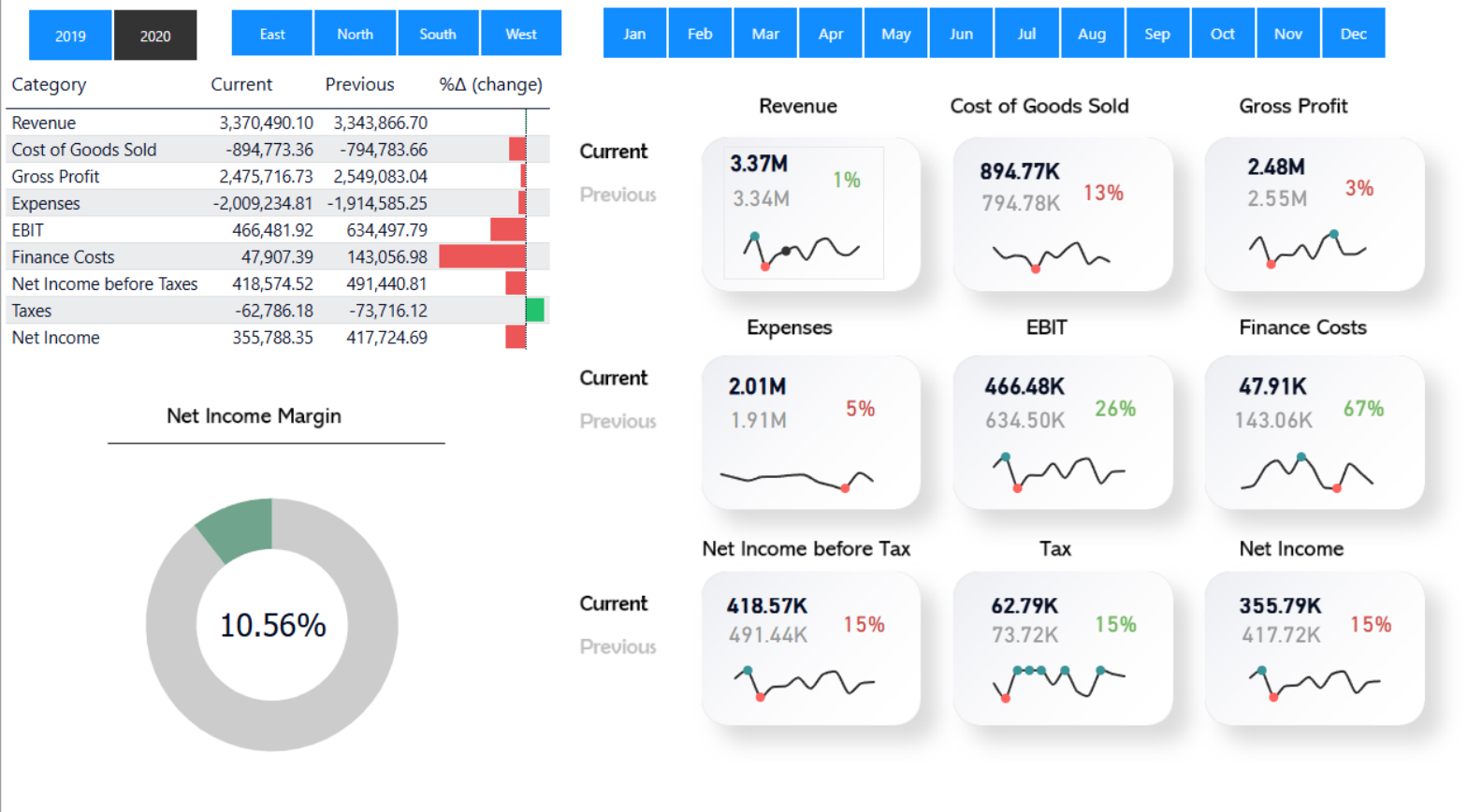
- Ir taip pat sukuriame vizualizacinę kreivę, tam jog matyti bendrą įmonės paveikslą.



- Galutinis rodiklių rezultatas:



9. Sudedame filtrus kurie leistų atskirti informaciją pagal kiekvieną apskaitinį mėnesio periodą, bei pagal regionus ir taip užbaigiame raportą.



Net Income Margin

10.56%