



TOKOBLI CAMPAIGN EVALUATION AND PRODUCT PAGE ANALYSIS

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RevoU FSDA Batch OCT25

OVERVIEW DATASET



[STUDENT] Small Dataset TokoBli E-commerce Data ☆ 🔒

File Edit Tampilan Sisipan Format Data Alat Ekstensi Bantuan Minta Gemini

🔍 100% Hanya lihat

AI Transaction ID

	A	B	C	D	E	F	G	H	I	J	
1	Transaction	Product ID	Customer ID	Status	Created At	Campaign	SKU	Price	QTY	Discount	Sh
2	ID-461	726415	84749		2023-10-10	Campaign 10/10	APPNET59E7A8CCDE9A5	5.99E+06	1	5.99E+05	
3	ID-1878	733356	85384		2023-10-10	Campaign 10/10	MEFOXF5A5351278999F-L	3.99E+06	1	0.00E+00	
4	ID-1034	729604	42851		2023-10-10	Campaign 10/10	HASQAR5A53697E3A84A	4.40E+05	2	4.40E+04	
5	ID-1844	733590	28651		2023-10-10	Campaign 10/10	MEFSIK39CA6821D46E5-XL	3.99E+06	1	0.00E+00	
6	ID-3229	741414	86994		2023-10-10	Campaign 10/10	SOGMDF5A09BC0EEF973	4.32E+06	1	0.00E+00	
7	ID-1638	732135	85563		2023-10-10	Campaign 10/10	MEFWIN59C38B52A9E8E	8.99E+06	1	0.00E+00	
8	ID-1234	730582	46608		2023-10-10	Campaign 10/10	MEFOXF5A53508E21D20-L	3.99E+06	1	0.00E+00	
9	ID-324	726298	84739		2023-10-10	Campaign 10/10	HALSHA59F1E1E99BD6E	2.99E+06	1	0.00E+00	
10	ID-3226	741384	86990		2023-10-10	Campaign 10/10	HASDUN5A7036A33A09	4.32E+06	2	4.32E+05	

DISCLAIMER

- This analysis is for educational purposes and does not reflect the actual business metrics of TokoBli.
- Insight and recommendations are derived from the provided dataset and may not represent real market conditions.

COMPANY OVERVIEW

TokoBli is Indonesia's leading e-commerce platform, offering diverse product categories and running major sales campaigns on "twin dates". The business aim to leverage data analytics to optimize campaign strategies, grow transactions, and maximize revenue while keeping campaign costs efficient.

Milestone 1

Problem Statement *using SMART*

How TokoBli aims to identify, the most effective promotional campaign among the last three major sales periods (10.10, 11.11 and 12.12) by analyzing discount, transaction count, customer count, product sold and total revenue so the goal is to optimize future year promotional strategies to improve revenue and profit more efficiently while minimizing unnecessary discount spending ?

Most Relevant Business Metrics *that best address the problem statement*

Total Revenue, Mean and Median plus Standard Deviation is the best statistic to answer the business problem. By combining these four statistical measures, we can observe the average results before and after the campaign and evaluate the variations across different periods.

Handling Missing Data in Column

Transacti	Product	Customer ID	Status	Created At	Campaign	SKU	Price	QTY	Discount	Shippin	Total Reven	Category Na	Payment Me
ID-461	726415	84749		2023-10-10	Campaign 10/10	APPNET39E	5.99E+06	1	5.99E+05	0	5,391,000	Appliances	Instant Payment
ID-1878	733356	85384		2023-10-10	Campaign 10/10	MEFOXFS45	3.99E+06	1	0.00E+00	0	3,990,000	Men's Fashion	COD
ID-1034	729804	42851		2023-10-10	Campaign 10/10	H4SQ4R5A5	4.40E+05	2	4.40E+04	0	836,000	Health & Sports	Instant Payment

Product	Customer ID	Status	Created At	Campaign	Price	QTY	Discount	Shippin	Total Reven	Category Na
726415	84749		2023-10-10	Campaign 10/10	5.99E+06	1	5.99E+05	0	5,391,000	Appliances
733356	85384		2023-10-10	Campaign 10/10	3.99E+06	1	0.00E+00	0	3,990,000	Men's Fashion
729804	42851		2023-10-10	Campaign 10/10	4.40E+05	2	4.40E+04	0	836,000	Health & Sports

L5	A	B	C
1	Product ID	Customer ID	Status
2	724855	50178	complete
3	724271	19977	complete
4	724189	35535	complete
5	724677	59299	complete
6	724903	15960	complete
7	724562	42046	complete
8	724073	19100	complete
9	724900	15960	complete
10	724835	42753	complete
11	724241	21	complete
12	724190	35535	complete
13	724669	18967	complete
14	724739	33830	complete
15	724838	42753	complete
16	724517	19168	complete
17	724268	17684	complete
18	724561	42046	complete
19	724442	8616	complete
20	724898	15960	complete
21	724043	41651	complete
22	724051	44830	complete
23	724904	15960	complete

23 ×
=COUNTA(C:C)

Remove **Transaction ID, SKU and Payment Method** cause not useful and too granular for campaign performance analysis.

Removing data **"Status"** in the column is based on the **COUNTA formula**, which show that only 23 rows are filled in of 4213 data rows (only 0.54% filled).

Handling Missing Data in Row



- Fill in Price Row

A	B	C	D	E	F	G	H	I	J
Product ID	Customer ID	Created At	Campaign	Price	QTY	Discount	Shipping Co	Total Reveni	Category Name
737661	79880	10/10/2023	Campaign 10/10		1	0	0	3,320,000	Kids & Baby

E	F	G	H	I
Price	Discount	Shipping Co	Total Reveni	
4990000	0	0	9,980,000	

Formula: $\text{Price} = \text{Total Revenue} / \text{QTY}$
Calculation: $9,980,000 / 2 = 4,990,000$

By using filter, it is observed that there is one **empty row in the price**. Therefore, it can fill in by dividing the total revenue with the product quantity.

- Fill in Quantity Row

A	B	C	D	E	F	G	H	I	J
Product ID	Customer ID	Created At	Campaign	Price	QTY	Discount	Shipping Co	Total Revenue	Category Name
757475	90284	11/11/2023	Campaign 11/11	4990000		0	0	9,980,000	Men's Fashion

F	F	G	H	I
QTY	Discount	Shipping Co	Total Revenue	
$=I48/F48$	1	0	0	3,320,000

By using filter, it is observed that there is one **empty row in the quantity**. Therefore, it can fill in by dividing the total revenue with the price.

- Fill in Discount Row

A	B	C	D	E	F	G	H	I	J
Product ID	Customer ID	Created At	Campaign	Price	QTY	Discount	Shipping Co	Total Revenue	Category Name
764220	90641	11/11/2023	Campaign 11/11	680000	1		0	612,000	Kids & Baby

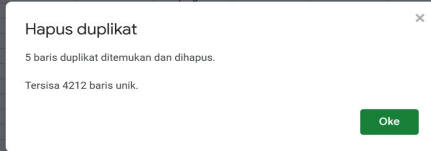
E	F	G	H	I
Price	QTY	Shipping Co	Total Revenue	
680000	1	0	0	612,000

It is observed that there is one **empty row in the discount**. Therefore, it can fill in by multiply price with quantity and reduce by total revenue.

Handling Duplicate Data



Transaction	Product ID	Customer ID	Status	Created At	Campaign	SKU	Price	QTY	Discount	Shipping Co	Total Revenue
ID-461	726415	84749		2023-10-10	Campaign 10/10 APPNET59E7A6		5.99E+06		1	5.99E+05	5,391.0
ID-1878	733356	85384		2023-10-10	Campaign 10/10 MEFOX5A5351		3.99E+06		1	0.00E+00	3,990.0
ID-1034	729604	42851							2	4.40E+04	836.0
ID-1844	733590	28651							1	0.00E+00	3,990.0
ID-3229	741414	86994							1	0.00E+00	4,320.0
ID-1638	732135	85563							1	0.00E+00	8,990.0
ID-1234	730582	48608							1	0.00E+00	3,990.0
ID-324	726298	84739							1	0.00E+00	2,990.0
ID-3226	741384	86990							2	4.32E+05	8,208.0
ID-2311	734854	62696							2	3.70E+05	7,030.0
ID-1967	734160	60338							1	2.99E+05	2,691.0
ID-2113	734769	86018							1	0.00E+00	2,000.0
ID-3240	741657	87036		2023-10-10	Campaign 10/10 MEFKAR5A7C1		7.40E+06		1	0.00E+00	7,400.0



There is **5 duplicate rows** that found and removed (from 4218 to 4213 unique rows).

Adjusting The Data Types of Columns

	E	F	G
	Price	QTY	Discount
I/10	5.99E+06	1	0.00E+00
I/10	1.99E+06	1	0.00E+00
I/10	5.53E+06	2	0.00E+00
I/10	2.49E+06	1	0.00E+00
I/10	2.20E+06	1	0.00E+00
I/10	8.00E+06	1	0.00E+00
I/10	5.49E+06	1	0.00E+00

E	F	G
Price	QTY	Discount
10	5990000	1
10	1990000	1
10	5530000	2
10	2490000	1
10	2200000	1
10	8000000	1
10	5490000	1
10	4800000	1
10	1620000	2
10	2100000	5
10	3060000	1
10	1200000	1
10	2990000	1
10	270000	2
10	6740000	1
10	4450000	1

C
Created At
8
2023-10-10
7
2023-10-10
5
2023-10-10
9
2023-10-10
0
2023-10-10
6
2023-10-10
0
2023-10-10

Created At
10/10/2023
10/10/2023
10/10/2023
10/10/2023
10/10/2023
10/10/2023
10/10/2023

Adjusting the data types of **Price and Discount** to format IDR and change format of **Date** (day/month/year).

IDENTIFY OUTLIERS BASED ON TOTAL REVENUE

Before Outlier Removal		
Q1		2280000
Q3		6950000
IQR		4670000
Q1-1.5*IQR	Lower Limit	-4725000
Q3+1.5*IQR	Upper Limit	13955000
	Range	0 - 13955000
Mean		4,696,285
Standard Deviation		4100055
Mean ± SD		4696285 ± 4100055
Range		596230 - 8796340

When we look at the range of values using **Mean ± SD** approach, the **total revenue ranges from Rp 596.230 to Rp 8.796.340**. This method is quite simple but may result in too many potential outliers. To avoid this issue, we use the **Tuckey Method** instead. With this approach, the **range of Total Revenue is between 0 and Rp 13.955.000** (**Lower Limit** -Rp 4.725.000 = 0 and **Upper Limit** Rp 13.955.000, **Q1** Rp 2.280.000, **Q3** Rp 6.950.000 and **IQR** Rp 4.670.000).

ELIMINATE ALL OUTLIERS BASED ON TOTAL REVENUE

A	
1	Total Revenue
4202	16,590,000
4203	21,000,000
4204	48,090,000
4205	50,190,000
4206	64,000,000
4207	65,100,000
4208	69,800,000
4209	69,900,000
4210	74,250,000
4211	74,250,000
4212	78,400,000
4213	83,556,000

outliers

After Outlier Removal	
Q1	2280000
Q3	6900000
IQR	4620000
Lower Limit	-4650000
Upper Limit	13830000
Range	0 - 13830000
Mean	4,539,435
Standard Deviation	2643520
Mean ± SD	4539435 ± 2643520
Range	1895915 - 7182955

After removing outliers, it is evident that the **Mean ± SD** method shows vulnerability in the total revenue interval (**Range Rp 1.895.915 - Rp 7.182.955**). In contrast, the **Tuckey Method**, which is a statistical approach based on data order (quartiles), does not show significant changes in the total revenue interval (**Range 0 - Rp 13.830.000**). Therefore, it can be concluded that the **Tuckey Method is less sensitive to outliers compared to Mean ± SD Method**.

STATISTICAL MEASUREMENTS *for Total Revenue*

Mean	4696285	If the mean is greater than the median, it means the data distribution has a positive skew or is right-skewed. This indicates that most of the data are concentrated on the left side (lower values), while there are a few extremely high values (a long right tail) that pull the mean upward.
Median	4230000	
Skewness	9	A skewness value of 9 indicates a highly skewed (and even non-normal) distribution to the right, meaning the data have a long tail on the right side and most of the data points are concentrated on the left. In general, skewness values between -1 and +1 are considered approximately symmetrical, while values greater than +1 or less than -1 are typically considered highly skewed.
Minimum	45000	The minimum value, which represents the smallest total revenue in the dataset, is Rp 45.000, while the highest value is Rp 83.556.000,-
Maksimum	83556000	

Total Revenue	
Mean	4696285
Standard Error	63175
Median	4230000
Mode	7200000
Standard Deviation	4100055
Sample Variance	1681045309440
Kurtosis	153
Skewness	9
Range	83511000
Minimum	45000
Maximum	83556000
Sum	19780753700
Count	4212
Largest(1)	83556000
Smallest(1)	45000
Confidence Level(95%)	123856

STATISTICAL MEASUREMENTS *for Quantity*

Mean	1	If the mean and median of a dataset are the same, it means the data distribution is symmetric and does not have any significant outliers (extreme values). This indicates that the data are evenly distributed around the central value, with approximately the same number of observations below and above the middle value.
Median	1	
Skewness	15	A skewness value of 15 means that the data distribution has a very high or extreme positive skewness (right-skewed), indicating that the data are heavily concentrated on the left side with a long tail extending to the right.
Minimum	1	The minimum value, which represents the smallest quantity in the dataset, is 1, while the highest value is 31.
Maksimum	31	

QTY	
Mean	1
Standard Error	0
Median	1
Mode	1
Standard Deviation	1
Sample Variance	2
Kurtosis	300
Skewness	15
Range	30
Minimum	1
Maximum	31
Sum	5430
Count	4212
Largest(1)	31
Smallest(1)	1
Confidence Level(95%)	0

STATISTICAL MEASUREMENTS *for Discount*

Mean	83327	A condition where the mean is 83,327 and the median is 0 indicates an extreme imbalance or a highly skewed data distribution.
Median	0	
Skewness	2	A skewness value of 2 means that the data distribution is moderately right-skewed (positive skew), as it has a longer tail on the right side of the higher values. This indicates that most of the data are concentrated at lower values, but there are some extremely high values that pull the mean to the right, making it greater than the median.
Minimum	0	The minimum value, which represents the smallest discount in the dataset, is 0, while the highest value of discount is Rp 900.000,-
Maksimum	900000	

<i>Discount</i>	
Mean	83327
Standard Error	2922
Median	0
Mode	0
Standard Deviation	189624
Sample Variance	35957160368
Kurtosis	5
Skewness	2
Range	900000
Minimum	0
Maximum	900000
Sum	350971300
Count	4212
Largest(1)	900000
Smallest(1)	0
Confidence Level(95%)	5728

BUSINESS KEY INSIGHT *from Total Revenue*

- From **Mean (4696285)**, we can see the average revenue per transaction is relatively high, indicating stable sales performance.
- From **Median and Skewness (4230000, 9)** we can see that the distribution is positively skewed, meaning most transactions are concentrated at lower revenue values.
- From **Standard Deviation and Range (4100055, 83511000)** indicated the dataset shows a wide spread, with large variation between transaction.
- From **Minimum and Maximum (45000, 83556000)** we can see large gap values indicated potential outliers.

BUSINESS KEY INSIGHT *from Quantity*

- From **Mean (1)**, we can see the average quantity sold per transaction, is only 1 item, which indicates that most customers purchase single unit order.
- From **Median and Skewness (1, 15)**, indicates a very high skewness, that a few transactions have significantly higher quantities, creating a long right tail in the distribution.
- From **Standard Deviation and Range (1, 30)**, we can see although most transactions have low quantities, there is a wide range, showing occasional bulk orders from wholesale buyer or special promotions.

BUSINESS KEY INSIGHT *from Discount*

- From **Mean (83327)**, the average discount given per transaction is Rp 83.327, suggesting that discounts are commonly applied and the company likely using discounts strategically to stimulate sales.
- From **Skewness (2)** shows that a small portion of transactions received significantly higher discount.
- From **Range and Standar Deviation (900000, 189624)** that very large, indicate high variability in discount values.

Milestone 2

EXPLORATORY DATA ANALYSIS (EDA)

Differences Variable Among The Three Campaign Period

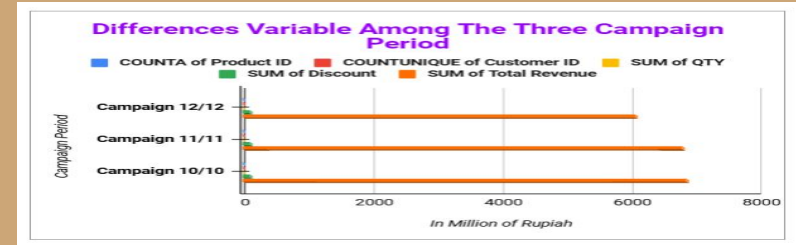
Campaign	COUNTA of Product ID	COUNTUNIQUE of Customer ID	SUM of QTY	SUM of Discount	SUM of Total Revenue
Campaign 10/10	1411	896	1,882	116149500	6,872,795,500
Campaign 11/11	1400	880	1,705	125353000	6,824,327,000
Campaign 12/12	1401	856	1,843	109536800	6,083,631,200

Revenue Performance

Campaign 10/10 generated the highest revenue Rp 6.87 billion, even though its discount was lower than Campaign 11/11. **Campaign 12/12 had the lowest revenue** Rp 6.08 billion, despite having a relatively high quantity sold. A larger discount does not necessarily lead to higher revenue. Campaign 11/11 offered the biggest discount, yet it still fell short of Campaign 10/10 in terms of total revenue.

Discount Performance

Campaign 12/12 was the most efficient, it offered the smallest discount (Rp109 million) while maintaining comparable quantity and product sales to the other campaigns. **Campaign 11/11 was the least efficient**, it gave the highest discount (Rp125 million), yet its quantity and revenue were lower than Campaign 10/10. The discount strategy in Campaign 12/12 was more cost-effective while remaining competitive in sales volume.



Customer Performance

There was a decline in the number of customers from 896 → 880 → 856. **Despite the decrease in customer count, the total quantity remained high in Campaign 12/12.** Customers in Campaign 12/12 tended to purchase more items per person, indicating higher individual buying behavior.

Product Performance

The number of **products sold remained relatively stable across all three campaigns (around 1,400 units).** Campaign 10/10 slightly outperformed the others in both product count and total revenue. Campaign 10/10 may have featured more attractive product offerings or a more effective promotional strategy.

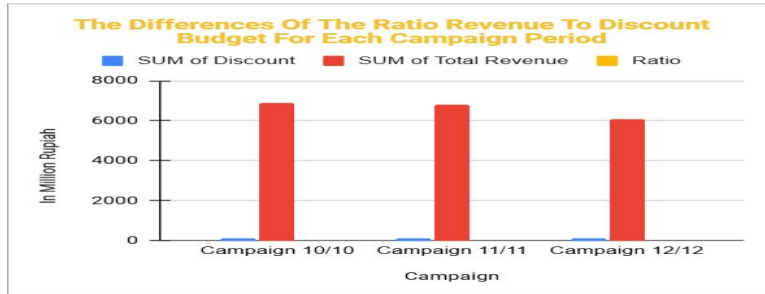
The Differences Of The Ratio Revenue To Discount Budget For Each Campaign Period

Campaign	SUM of Discount	SUM of Total Revenue	Ratio
Campaign 10/10	116149500	6,872,795,500	59.17
Campaign 11/11	125353000	6,824,327,000	54.44
Campaign 12/12	109536800	6,083,631,200	55.54

Campaign Efficiency

Campaign 10/10 was the most efficient, it had the highest ratio (59.17), indicating that each rupiah of discount generated more revenue compared to the other campaigns. Campaign 11/11 was the least efficient, it had the lowest ratio (54.44), despite offering the largest discount. Offering a larger discount does not guarantee efficiency. Campaign 10/10 successfully maximized revenue with a more controlled discount strategy.

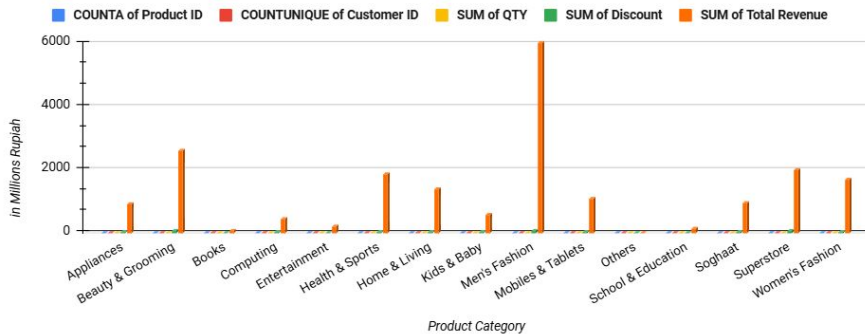
The smallest discount (Rp109 million) was offered in Campaign 12/12, yet its efficiency ratio was better than Campaign 11/11. This indicates that Campaign 12/12 discount strategy was more cost-effective while still generating competitive revenue.



Description Product Category Base On Transaction, Consumer, Product Sold, Revenue and Discount

Category Name	COUNTA of Product ID	COUNTUNIQUE of Customer ID	SUM of QTY	SUM of Discount	SUM of Total Revenue
Appliances	138	129	159	33524000	912,796,000
Beauty & Grooming	536	372	779	53874500	2,582,981,500
Books	11	9	11	658000	45,322,000
Computing	77	72	85	7769000	418,391,000
Entertainment	24	24	34	1764000	200,976,000
Health & Sports	508	187	734	32985000	1,853,265,000
Home & Living	334	271	370	24269000	1,376,458,000
Kids & Baby	174	132	184	15693000	574,457,000
Men's Fashion	1031	842	1,095	41097000	5,999,843,000
Mobiles & Tablets	272	236	303	20285000	1,073,325,000
Others	1	1	2	0	5,000,000
School & Education	42	34	47	2386000	138,826,000
Soghaat	273	169	356	19864800	921,203,200
Superstore	497	242	966	59991000	1,984,339,000
Women's Fashion	294	237	305	36879000	1,693,571,000

Description Product Category Base On Transaction, Consumer, Product Sold, Revenue and Discount



Top Revenue Categories

- **Men's Fashion** leads with the highest revenue Rp 5.99 billion, supported by the highest product count (1.031) and customer base (842).
- **Beauty & Grooming** and **Superstore** follow with Rp 2.58 billion and Rp 1.98 billion respectively.

High Efficiency Segments

- **Health & Sports** and **Home & Living** show strong revenue (Rp 1.85 billion and Rp 1.37 billion) with moderate product and customer counts.
- **Mobiles & Tablets** also perform well (Rp 1.07 billion) with relatively low quantity sold (303), suggesting high-value items.

Low Revenue Categories

- **Books, Entertainment, School & Education, and Others** contribute minimal revenue (under Rp 200 million).
- They also have low product counts and customer engagement.

Discount Allocation

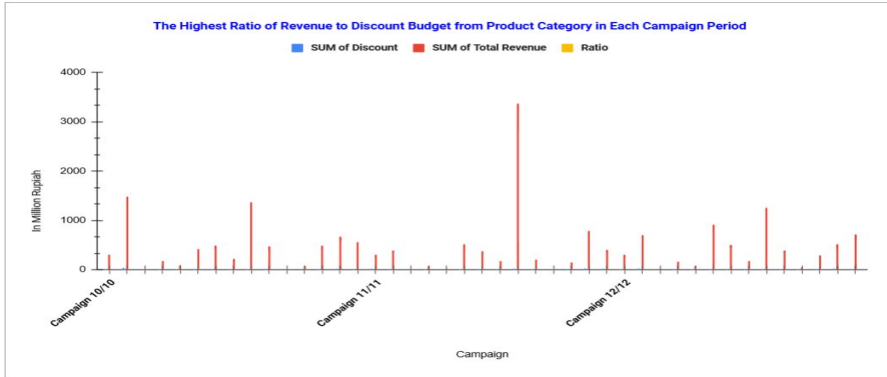
- **Superstore** and **Beauty & Grooming** received the highest total discounts (Rp 59.99 million and Rp 53.87 million), aligning with their high sales volume.
- **Men's Fashion**, despite leading in revenue, had a moderate discount (Rp 41.09 million).

The Highest Ratio of Revenue to Discount Budget from Product Category in Each Campaign Period

Campaign	Category Name	SUM of Discount	SUM of Total Revenue	Ratio
Campaign 10/10	Appliances	10273000	305,087,000	29.70
	Beauty & Grooming	29175500	1,488,369,500	51.03
	Books	0	5,976,000	
	Computing	20030000	180,487,000	90.10
	Entertainment	8990000	99,911,000	107.89
	Health & Sports	93860000	425,104,000	45.29
	Home & Living	7433000	491,197,000	66.08
	Kids & Baby	27060000	214,194,000	79.16
	Men's Fashion	10532000	1,374,028,000	130.46
	Mobiles & Tablets	6543000	474,477,000	72.52
Campaign 11/11	School & Education	0	6,000,000	
	Soghaat	9445000	489,415,000	51.80
	Appliances	16177000	301,613,000	18.87
	Beauty & Grooming	9361000	386,639,000	42.37
	Books	424000	14,106,000	33.27
	Computing	26900000	72,970,000	27.13
	Entertainment	0	23,180,000	
	Health & Sports	10834000	516,416,000	47.67
	Home & Living	10395000	374,184,000	36.99
	Kids & Baby	9365000	162,065,000	19.24
Campaign 12/12	Men's Fashion	196399000	3,374,994,000	172.05
	Appliances	8074000	249,100,000	30.74
	Beauty & Grooming	16338000	309,096,000	37.91
	Books	234000	25,246,000	107.89
	Computing	3076000	168,954,000	53.63
	Entertainment	885000	80,885,000	93.51
	Health & Sports	12785000	611,746,000	51.43
	Home & Living	6440000	611,077,000	79.36
	Kids & Baby	3622000	177,308,000	48.96
	Men's Fashion	196399000	3,374,994,000	172.05

Notes :

- There are several ratio values that "undefined or cannot be determined as a valid numerical value" for the campaign 10.10 in the book and others product categories, as well as for campaign 11.11 in the entertainment product category.
- This is because the total discount value is zero. In the business context, this occurs when the company does not provide any discounts at all during the analyzed period.



Campaign 10/10 : Product Category School & Education

This category delivered exceptional efficiency, generating Rp 80.4 million in revenue from just Rp 209,000 in discount (ratio 384.89). A standout performer despite its niche size.

Campaign 11/11 : Product Category Men's Fashion

Men's Fashion dominated both in volume and efficiency (Revenue Rp 3.374.994.000,- , Discount Rp 19.616.000,- and Ratio 172.05), making it the top performing category in this campaign.

Campaign 12/12 : Product Category Books

Despite its niche size, the Books category has revenue Rp 25.246.000,- and discount Rp 234.000,- (ratio 107.89). This is delivered the highest return per rupiah spent on discount in Campaign 12/12.

INSIGHTS AND ACTIONABLE BUSINESS RECOMMENDATION

Overall Insights from Campaign Performance

1. Revenue versus Discount Efficiency

- Campaign 10/10 had the highest overall revenue and the best discount-to-revenue efficiency.
- Campaign 11/11 offered the largest total discount but did not outperform Campaign 10/10 in revenue, indicating diminishing returns.
- Campaign 12/12 was the most cost-efficient in terms of discount allocation, with several categories showing strong ROI despite lower budgets.

2. Top Performing Categories

- School & Education (Campaign 10/10) is the highest ratio (384.89), exceptional efficiency from minimal discount.
- Men's Fashion (Campaign 11/11) is a dominated in both volume and efficiency (ratio 172.05), a consistent revenue driver.
- Books (Campaign 12/12) is the highest efficiency (ratio 107.89) despite low total revenue, showing strong ROI per rupiah spent.

3. Category Level Trends

- Men's Fashion, Beauty & Grooming, and Superstore consistently generated high revenue across campaigns.
- Computing and Entertainment showed strong efficiency in Campaign 12/12, suggesting high-value transactions with low promotional cost.
- Low-performing categories like Others, Books (in some campaigns), and School & Education (except 10/10) had limited reach but occasional spikes in efficiency.

4. Customer Behavior

- Unique customer counts declined slightly across campaigns, but quantity sold remained stable or increased that indicating higher purchase volume per customer in later campaigns.

ACTIONABLE BUSINESS RECOMMENDATIONS

1. Optimize Discount Strategy

- Avoid blanket high discounts like in Campaign 11/11, instead, apply targeted promotions to categories with proven ROI (e.g., Men's Fashion, Computing).
- Use ratio analysis to guide future budget allocation, prioritize categories with high revenue to discount ratio.

2. Segment and Prioritize Categories

- Focus investment on high-efficiency categories like Men's Fashion, Computing, Books (for niche campaigns), and School & Education (for targeted outreach).
- Reassess low-performing segments, consider phasing out or repositioning categories like Others or Entertainment (in Campaign 11/11).

3. Campaign Design Strategy

- Use Campaign 10/10 as a benchmark for balancing discount and revenue.
- For future campaigns, test smaller discount allocations in high efficiency categories to validate ROI before scaling.

4. Customer Targeting

- Leverage insights from Campaign 12/12, fewer customers bought more suggesting potential for loyalty programs or bundle offers.
- Segment customers by category engagement to personalize offers and improve conversion.

STATISTICAL HYPOTHESIS TESTING

Objective

To determine whether the new product page design leads to a higher average order value compared to the current product page.

Formula Hypotheses

Null Hypothesis (H_0) : The average order value of the new page is equal to that of the current page. ($H_0 = H_1$)

Alternatif Hypothesis (H_1) : The average order value of the new page is greater than the current page. ($H_0 > H_1$)

New Page > Current Page

H_0 : Order New Page = Order Current Page

H_1 : Order New Page > Order Current Page

Alpha : 5% or 0.05

t-Test: Two-Sample Assuming Equal Variances

	Current Page	New Page
Mean	746102.61	830460.16
Variance	22436486774	33088798170
Observations	498	502
Pooled Variance	27783989789	
Hypothesized Mean Difference	0	
df	998	
t Stat	-8.001901057	
P(T<=t) one-tail	0	
t Critical one-tail	1.646381816	
P(T<=t) two-tail	0	
t Critical two-tail	1.962343802	

Statistical Interpretation

1. The t-test = -8.00, which is far below the critical value of 1.646.
2. The p-value = 0.000, indicating strong statistical significance.
3. Since the p-value is less than 0.05, we reject the null hypothesis.

Conclusion

1. The test provides strong evidence that the new product page design significantly increases average order value.
2. The uplift is approximately Rp 84,000 per transaction, or 11.3% improvement, tell us that the new page increased average order value by 11.3% compared to current page.

Absolute Uplift

Mean of New Page - Mean of Current Page

830460.16 - 746102.61 = 84357.55 (We round it to Rp 84,000 for simplicity).

Percentage Uplift

$(84357.55/746102.61) \times 100\% = 11.3\%$

Business Recommendation *by using OBIPR Framework*

Observation	Business Impact	Isolation	Prioritization	Recommendation
Evaluate whether the new product detail page design should be rolled out to all users, based on its impact on average order value (AOV) and overall business performance.	Launched a redesigned product detail page, To validate its effectiveness, a two-week A/B test was conducted. The test was designed to determine whether the new design leads to a statistically significant increase in user spending.	<p>The statistical analysis revealed the following of t-Test :</p> <ul style="list-style-type: none">• Mean Order Value Current Page vs New Page• Variance Current Page vs New Page• t-Statistic• p-value (one-tailed)• Critical t-value ($\alpha = 0.05$)	<p>High Effort and High Impact</p> <p>By roll out the new product page design to all users, supported by a structured implementation and monitoring plan.</p>	<ul style="list-style-type: none">• The A/B test results provide clear, statistically significant evidence that the new design improves user spending behavior. The uplift in AOV aligns with TokoBli's strategic goals to increase revenue and enhance user experience.• Rolling out the new design, combined with ongoing optimization and performance tracking, will position TokoBli for stronger conversion rates and long-term growth.