

Data Analysis and Visualization of Blinkit Data: Trends, Insights, and Performance Metrics



INTRODUCTION

This project dives into sales data from different supermarket outlets, exploring various product categories and locations. It looks at sales figures, item weights, and outlet details to uncover trends and key insights. The aim is to help make smarter, data-driven decisions to boost sales strategies through thorough analysis and engaging visualizations.

Item Fat Content	Item Identifier	Item Type	Outlet Establishment Year	Outlet Identifier	Outlet Location Type	Outlet Size	Outlet Type	Item Visibility	Item Weight	Sales	Rating
Regular	FDX32	Fruits and Vegetables	2012	OUT049	Tier 1	Medium	Supermarket Type1	0.1000135	15.1	145.4786	5
Low Fat	NCB42	Health and Hygiene	2022	OUT018	Tier 3	Medium	Supermarket Type2	0.008596051	11.8	115.3492	5
Regular	FDR28	Frozen Foods	2016	OUT046	Tier 1	Small	Supermarket Type1	0.025896485	13.85	165.021	5
Regular	FDL50	Canned	2014	OUT013	Tier 3	High	Supermarket Type1	0.042277867	12.15	126.5046	5
Low Fat	DRI25	Soft Drinks	2015	OUT045	Tier 2	Small	Supermarket Type1	0.033970195	19.6	55.1614	5
low fat	FDS52	Frozen Foods	2020	OUT017	Tier 2	Small	Supermarket Type1	0.005505481	8.89	102.4016	5
Low Fat	NCU05	Health and Hygiene	2011	OUT010	Tier 3	Small	Grocery Store	0.098312421	11.8	81.4618	5
Low Fat	NCD30	Household	2015	OUT045	Tier 2	Small	Supermarket Type1	0.026903714	19.7	96.0726	5
Low Fat	FDW20	Fruits and Vegetables	2014	OUT013	Tier 3	High	Supermarket Type1	0.024129332	20.75	124.173	5
Low Fat	FDX25	Canned	2018	OUT027	Tier 3	Medium	Supermarket Type3	0.101561568		181.9292	5

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Low Fat	NCB42	Health and Hygiene	2022	OUT018
Regular	FDR28	Frozen Foods	2016	OUT046
Regular	FDL50	Canned	2014	OUT013
Low Fat	DRI25	Soft Drinks	2015	OUT045
low fat	FDS52	Frozen Foods	2020	OUT017
Low Fat	NCU05	Health and Hygiene	2011	OUT010

Statistics Insights

Central Tendency:

- The average (mean) item weight is 12.86, with a median of 12.6, indicating a slight concentration around this value.
- The average (mean) sales value is 140.99, with a median of 143.01, suggesting that sales are somewhat normally distributed but with some variation.
- The average (mean) rating is 3.97, with a median of 4, indicating that most ratings are around 4.

	Item Weight	Sales	Rating
Mean	12.8576452	140.9928	3.965857
median	12.6	143.0128	4
mode	12.15	172.0422	4
standard deviation	4.64312763	62.27507	0.605616

Dispersion:

- The standard deviation of item weight is 4.64, showing moderate variability around the mean.
- The standard deviation of sales is 62.28, indicating a significant spread in sales figures.
- The standard deviation of the rating is 0.61, showing relatively low variability in ratings.

Standard Deviation	4.643456	Standard Deviation	62.27507	Standard Deviation	0.605651
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Distribution Characteristics:

- Item weight has a kurtosis of -1.23, suggesting a flatter distribution compared to a normal distribution.
- Sales have a kurtosis of -0.89, also indicating a flatter distribution.
- Ratings have a kurtosis of 8.01, showing a highly peaked distribution.
- Item weight is nearly symmetric with a skewness of 0.08.
- Sales are slightly positively skewed with a skewness of 0.13.

- Ratings are highly negatively skewed with a skewness of -2.19.

Confidence Intervals (95%):

- The 95% confidence interval for item weight is ± 0.11 around the mean.
- The 95% confidence interval for sales is ± 1.32 around the mean.
- The 95% confidence interval for rating is ± 0.01 around the mean.

Kurtosis	-1.22777	Kurtosis	-0.88977	Kurtosis	8.006261
Skewness	0.082426	Skewness	0.127202	Skewness	-2.18898
Range	16.795	Range	235.5984	Range	4
Minimum	4.555	Minimum	31.29	Minimum	1
Maximum	21.35	Maximum	266.8884	Maximum	5
Sum	90774.98	Sum	1201681	Sum	33801
Count	7060	Count	8523	Count	8523
Largest(1)	21.35	Largest(1)	266.8884	Largest(1)	5
Confidence Level(95.0%)	0.108333	Confidence Level(95.0%)	1.322293	Confidence Level(95.0%)	0.01286

Relationships:

- The correlation between item weight and sales is 0.027, indicating a very weak positive relationship.

Correlation		
	<i>Item Weight</i>	<i>Sales</i>
Item Weight	1	
Sales	0.02714113	1

PIVOT TABLE

Categories: Baking Goods, Breads, Breakfast, Canned, Dairy, Frozen Foods, Fruits and Vegetables, Hard Drinks, Health and Hygiene, Household, Meat, Others, Seafood, Snack Foods, Soft Drinks, Starchy Foods.

Tiers: Tier 1, Tier 2, Tier 3.

Sales Counts: Provides item counts sold in each tier. For example, "Frozen Foods" sold 250 in Tier 1, 279 in Tier 2, and 327 in Tier 3, totaling 856.

Grand Total Sales: 8523 items sold across all tiers.

Outlet Size Breakdown: Sales data over the years shows varying counts for different tiers. For instance, Tier 1 sales totaled 930 in 2011, and Tier 2 totaled 2785.

Item Fat Content		All			
Count of Outlet Type	Column Labels				
	Row Labels	Tier 1	Tier 2	Tier 3	Grand Total
	Baking Goods	185	211	252	648
	Breads	67	84	100	251
	Breakfast	33	32	45	110
	Canned	177	222	250	649
	Dairy	205	214	263	682
	Frozen Foods	250	279	327	856
	Fruits and Vegetables	337	399	496	1232
	Hard Drinks	58	72	84	214
	Health and Hygiene	138	166	216	520
	Household	250	296	364	910
	Meat	123	125	177	425
	Others	56	52	61	169
	Seafood	19	22	23	64
	Snack Foods	334	401	465	1200
	Soft Drinks	120	157	168	445
	Starchy Foods	36	53	59	148
	Grand Total	2388	2785	3350	8523
Outlet Identifier	All				
Item Type	All				
Sales	All				

Count of Outlet Size		Column Labels									Grand Total
Row Labels		2011	2012	2014	2015	2016	2017	2018	2020	2022	
Tier 1			930			930		528			2388
Tier 2					929		930		926		2785
Tier 3		555		932				935		928	3350
Grand Total		555	930	932	929	930	930	1463	926	928	8523

SORTING – FILTER

Key Insights:

- **Highest Sales:** Both Fat and Regular Canned items have achieved the highest sales figures.

- **Outlet Types:** Most high-sales items are from Supermarket Type1 and Grocery Stores, predominantly in small-sized outlets.
- **Rating Variability:** Ratings for high-sales items vary, with a range from 2.9 to 5.

Conditional Formatting

- **Large to Small Sorting:** Items have been sorted from highest to lowest sales for easier analysis.
- **Highlighting:** Conditional formatting has been used to visually emphasize high sales figures.

Outlet Size ▾	Outlet Type ▾	Item Visibility ▾	Item W ▾	Sales ▾	Rating ▾
Small	Supermarket Type1	0.125210375	6.465	266.8884	5
Small	Supermarket Type1	0.139521931	17	266.8884	4
Medium	Grocery Store	0.008762556	19.85	266.6884	4.7
High	Supermarket Type1	0.069487587	9	266.6884	4.3
Small	Supermarket Type1	0.06953231	9	266.5884	4
Small	Grocery Store	0.21799414		266.5884	2.9
Medium	Supermarket Type1	0.069653585	9	266.2884	4.1
Medium	Supermarket Type1	0.005243282	19.85	266.1884	4
High	Supermarket Type1	0.124402507	6.465	266.1884	3.4

SALES PER ITEM WEIGHT ANALYSIS

Formula Used:

=Table1[@Sales] / Table1[@[Item Weight]]

Explanation:

- **Purpose:** This formula calculates sales per unit weight for each item.
- **Results:** Values indicate how much sales revenue is generated per unit weight of the items.
- **Insight:** Helps in understanding the efficiency of sales relative to item weight.

Sales per Item
Weight
9.634344371
9.775355932
11.91487365

CHART – DISPLAY

Chart 1 - Sales by Item Category

The chart displays the total sales for each item category. Fruits and Vegetables lead with 178,124.08, followed by Snack Foods at 175,433.92, and Frozen Foods at 118,558.88. Seafood has the lowest sales at 9,077.87. The grand total sales across all categories amount to 1,201,681.49.

Row Labels	Sum of Sales
Baking Goods	81894.7364
Breads	35379.1198
Breakfast	15596.6966
Canned	90706.729
Dairy	101276.4616
Frozen Foods	118558.8814
Fruits and Vegetables	178124.081
Hard Drinks	29334.6806
Health and Hygiene	68025.8388
Household	135976.5254
Meat	59449.8638
Others	22451.8916
Seafood	9077.87
Snack Foods	175433.9224
Soft Drinks	58514.167
Starchy Foods	21880.0274
Grand Total	1201681.493

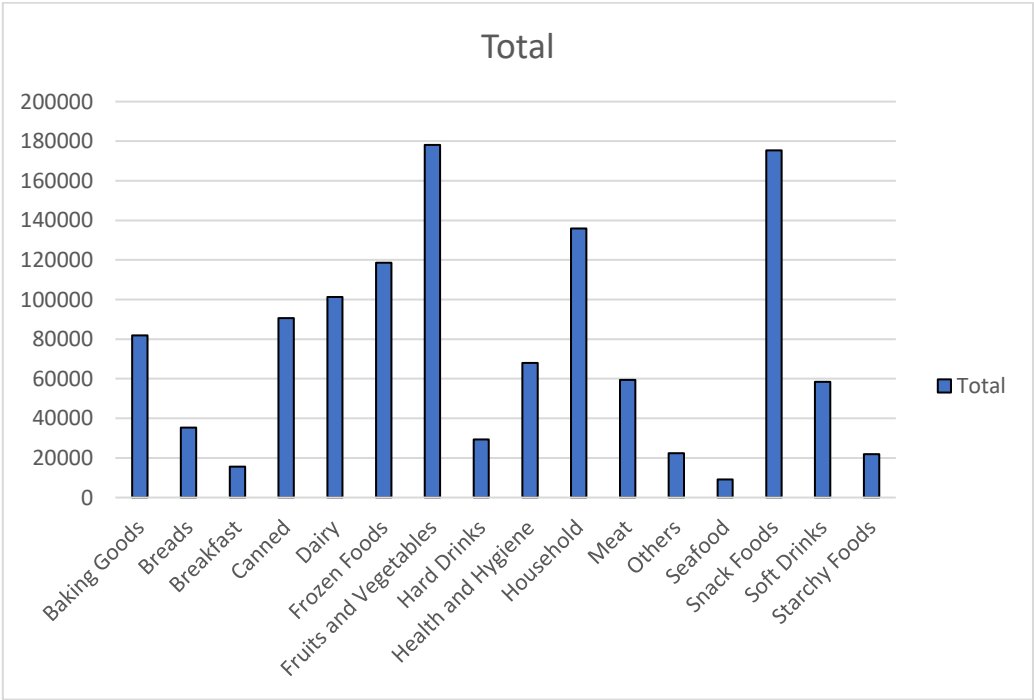


Chart 2 - Sales by Tier

The chart shows total sales by tier:

- Tier 1: \$336,397.81
- Tier 2: \$393,150.65
- Tier 3: \$472,133.03

Grand Total: \$1,201,681.49

Tier 3 has the highest sales, followed by Tier 2 and Tier 1.

Row Labels	Sum of Sales
Tier 1	336397.812
Tier 2	393150.6476
Tier 3	472133.0332
Grand Total	1201681.493

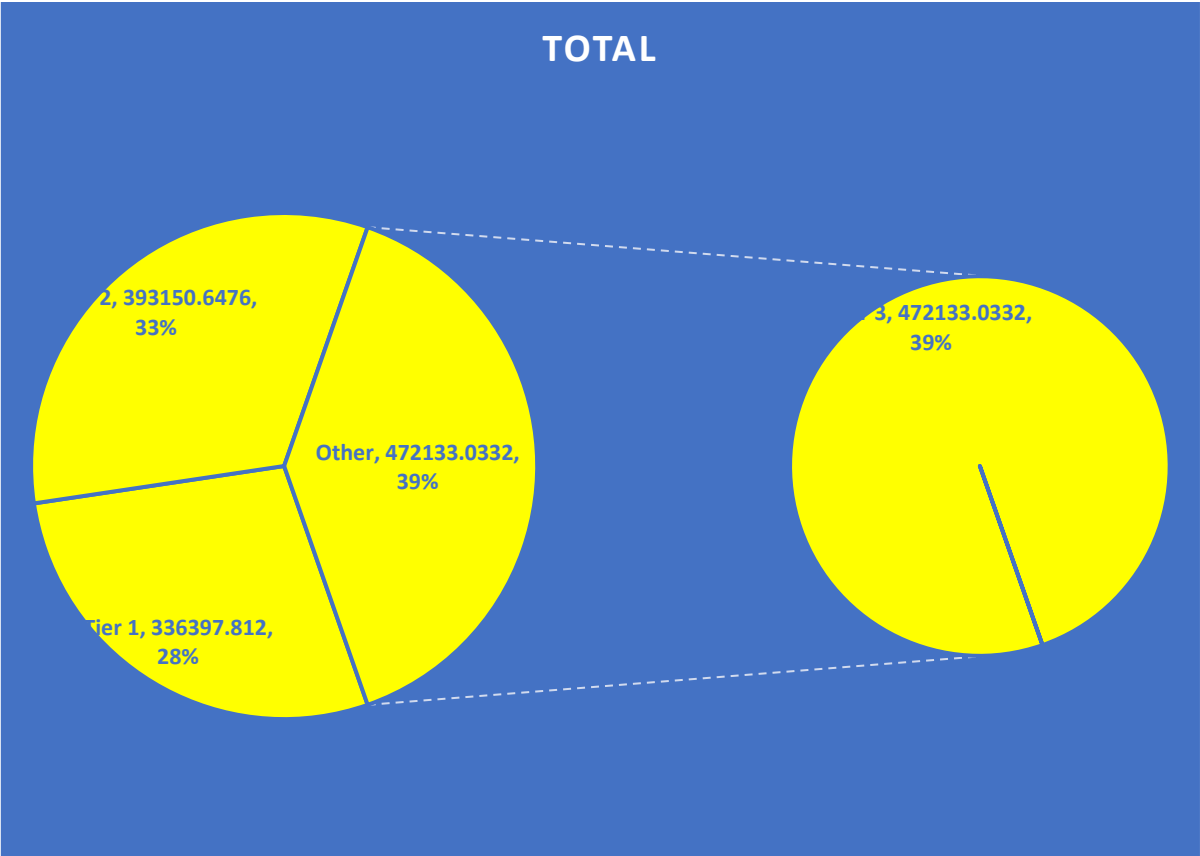


Chart 3 - Sales by Year

The chart shows total sales by year:

- Highest Sales: 2018 with \$204,522.26
- Notable Years: 2012, 2014, 2015, 2016, 2017, and 2022, all around \$130,000-\$133,000
- Lowest Sales: 2011 with \$78,131.57

Grand Total: \$1,201,681.49

Row Labels	Sum of Sales
2011	78131.5666
2012	130476.8598
2014	131809.0156
2015	130942.7802
2016	132113.3698
2017	133103.907
2018	204522.257
2020	129103.9604
2022	131477.7764
Grand Total	1201681.493

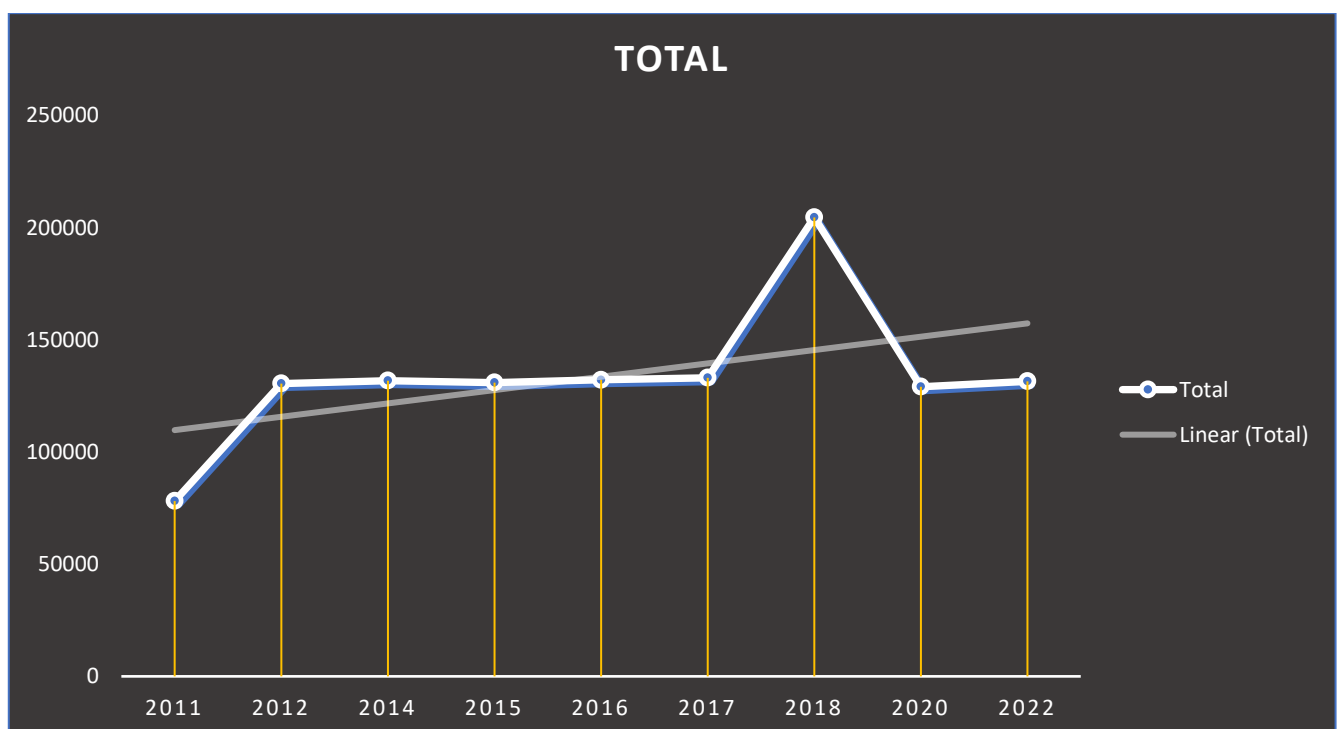


Chart 4 – Sales by Outlet Type and Year

- Grocery Store: \$151,939.15 (2011, 2018)
- Supermarket Type1: \$787,549.89 (2012-2020)
- Supermarket Type2: \$131,477.78 (2022)
- Supermarket Type3: \$130,714.67 (2018)

Grand Total: \$1,201,681.49

Supermarket Type1 leads in sales, consistently contributing over multiple years.

Sum of Sales	Column Labels				
Row Labels	Grocery Store	Supermarket Type1	Supermarket Type2	Supermarket Type3	Grand Total
2011	78131.5666				78131.5666
2012		130476.8598			130476.8598
2014		131809.0156			131809.0156
2015		130942.7802			130942.7802
2016		132113.3698			132113.3698
2017		133103.907			133103.907
2018	73807.5824			130714.6746	204522.257
2020		129103.9604			129103.9604
2022			131477.7764		131477.7764
Grand Total	151939.149	787549.8928	131477.7764	130714.6746	1201681.493

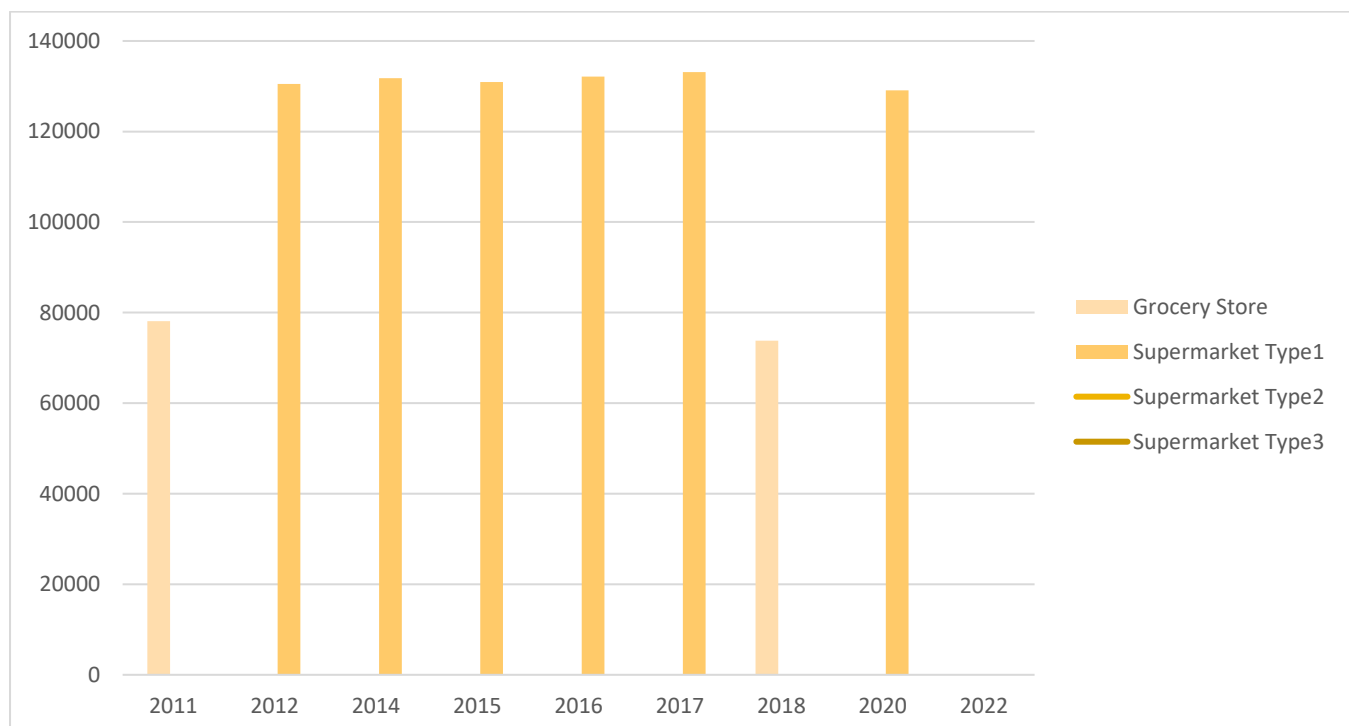
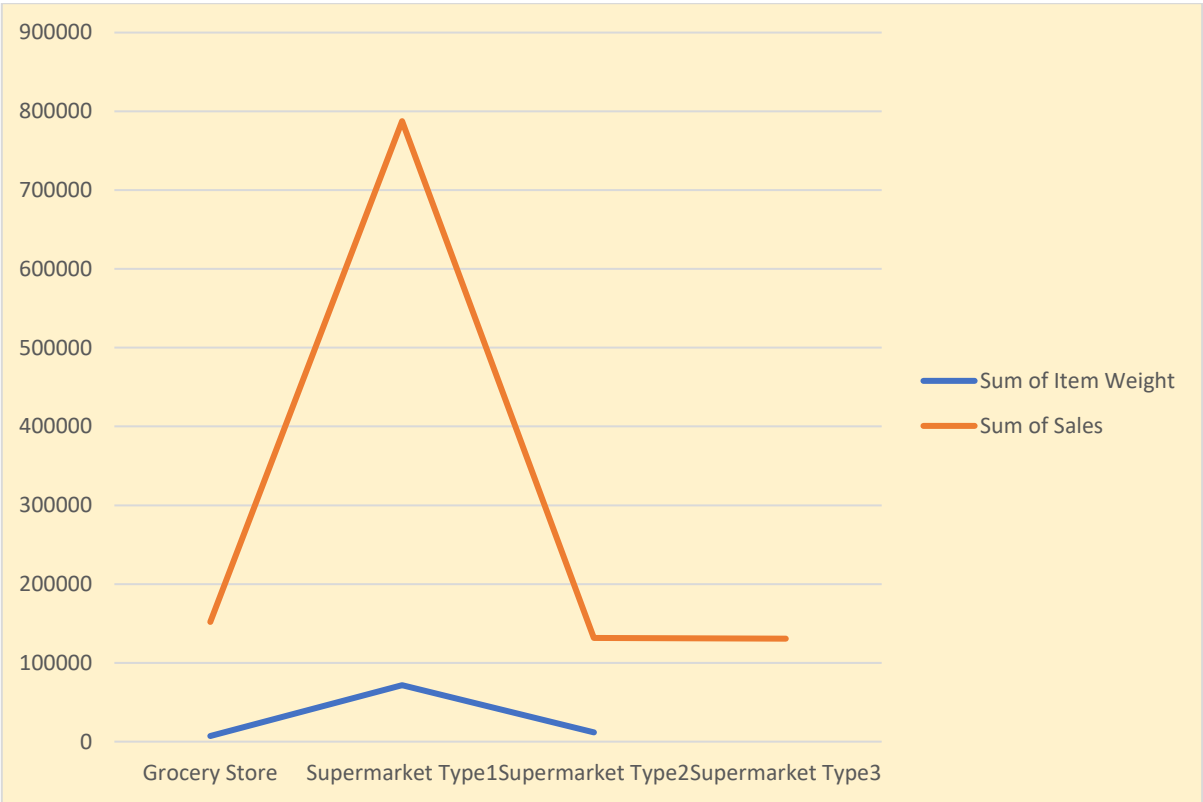


Chart 5 - Sales and Item Weight by Outlet Type

Row Labels	Sum of Item Weight	Sum of Sales
Grocery Store	7166.8	151939.149
Supermarket Type1	71661.71	787549.8928
Supermarket Type2	11946.465	131477.7764
Supermarket Type3		130714.6746
Grand Total	90774.975	1201681.493



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Low Fat	NCB42	Health and Hygiene	2022	OUT018
Regular	FDR28	Frozen Foods	2016	OUT046
Regular	FDL50	Canned	2014	OUT013
Low Fat	DRI25	Soft Drinks	2015	OUT045
low fat	FDS52	Frozen Foods	2020	OUT017
Low Fat	NCU05	Health and Hygiene	2011	OUT010
Low Fat	NCD30	Household	2015	OUT045
Low Fat	FDW20	Fruits and Vegetables	2014	OUT013
Low Fat	FDX25	Canned	2018	OUT027
LF	FDX21	Snack Foods	2018	OUT027
Low Fat	NCU41	Health and Hygiene	2017	OUT035
Low Fat	FDL20	Fruits and Vegetables	2022	OUT018
Low Fat	NCR54	Household	2014	OUT013

CONCLUSION

The analysis reveals that Supermarket Type1 outlets lead significantly in both item weight (71,661.71 kg) and sales (\$787,549.89), indicating their high capacity and performance. Supermarket Type2 and Type3 also contribute notably, with Type2 having moderate item weight and sales. Grocery Stores, despite having the least item weight (7,166.8 kg), maintain a respectable sales figure (\$151,939.15). This highlights the efficiency and impact of different outlet types on overall sales performance.

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Thank You