

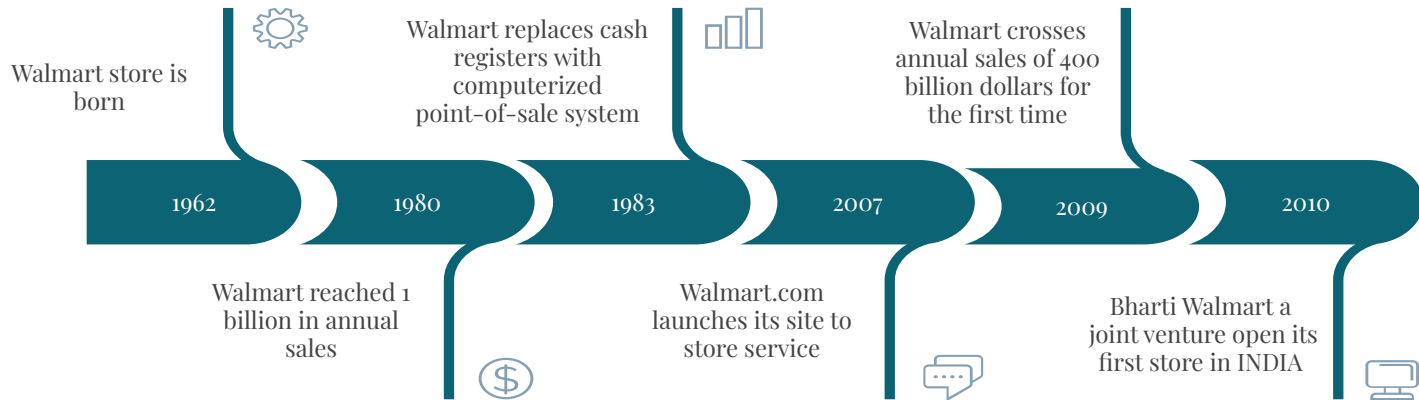
Case Study

Analysis of the financial performance of Walmart

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HOW WALMART BEGAN

- **Sam Walton's** goals for great value and great customer service.
- Competitive strategy - **One-stop shopping** and **EDLP (Everyday Low Prices)**
- 5 main types of Walmart stores:
 - Supercenters
 - Discount stores
 - Neighbourhood markets
 - Sam's club
 - Gas stations/convenience stores





Some of the salient features of its supply chain strategy

Tracking the demand of each product

Very effective information system

Lower product costs, reduced inventory carrying costs, and highly competitive pricing for the consumer

Happy with short term goals and acquisitions around the globe



Vendor Managed Inventory

Walmart uses a VMI in which suppliers take care of their products within a retailer's inventory.

Strategic Vendor Partnership

- Offering vendors the potential for long-term and high volume purchases in exchange for the lowest possible prices.

Technology

- Barcodes, RFID, collaborations

Cross-Docking as an Inventory Tactic

- Goods and unsold merchandise, within 24 hours

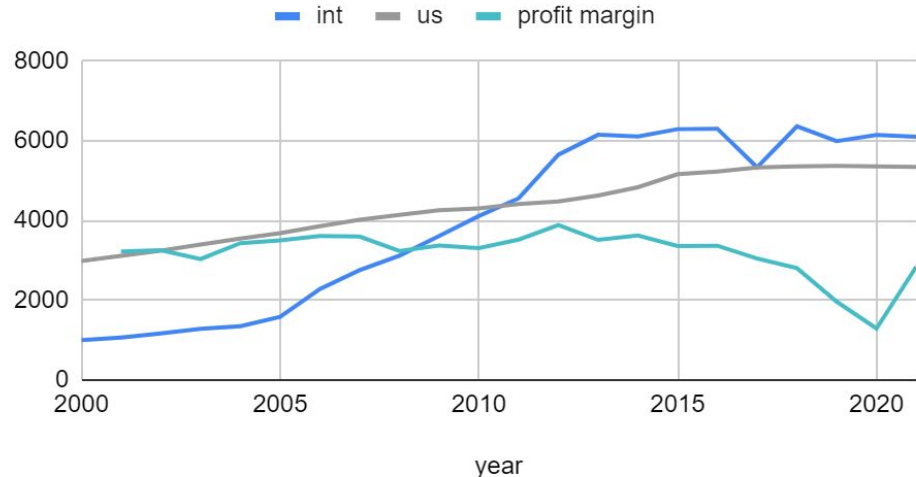
Distribution Centres

- Serves as both a warehouse and a cross docking facility.

CHALLENGES TO WALMART'S SUPPLY CHAIN

- The cost of owning trucks, deviation from their competency, higher pay, inventory management issues
- Problems in their operating cycle
- Just in Time (JIT)
- Intense investments in IT
- Failure on an international level

Stores - in the US and international



Walmart -Bharti Joint venture

- The Bharti Enterprises of India and Walmart of U.S.A., made a historic partnership agreement to operate wholesale cash and carry stores in India.
- On October **9, 2012**, Walmart and Bharti announced the breakup of their dream team and decided to go separate ways in both retail and wholesale ventures.
- **Reasons behind the failure of Walmart - Bharti joint venture :**
 - ➔ High competition
 - ➔ India's FDI (Foreign Direct Investment) retailing laws
 - ➔ Terms and conditions of Joint venture
 - ➔ Politics and corruption

SWOT ANALYSIS

Strengths

Large company size
EDLP
Suppliers
Private truck fleet for deliveries;
Strong leadership
Transparency
Successful vendor partnerships
Automating their supply chain
Largest retailer wrt revenue/private employment

Weaknesses

Did not try to revolutionize
Faced a lot of opposition
Questionable labour practices
Accused of bribery
Poor working conditions
Employing illegal immigrants Loss of reputation
Unable to expand into metropolitan cities


Opportunities

Ability to procure items
Open to improving
Superior to smaller retailers and Foreign markets.
Third principal US corporate user of green power
Expansion online

Threats

Online e-commerce like Amazon
Threat of digitalization
International barrier threats Government policies
Market saturation
Cannibalization
Loss of Cost effectiveness advantage
Other companies are catching up

FINANCIAL ANALYSIS



Horizontal Analysis – Horizontal analysis is used in the review of a company's financial statements over multiple periods.

- ❑ In 2004, they decreased their total expense by 32.8 percent but their revenue increased by 9.9 percent.
- ❑ In 2020 during covid, they increased their expenses by 6 % which was considerably more than the last 8 years to generate good revenue.

Horizontal Analysis						
Year	Revenue (in millions USD)	% Revenue	Cost of goods sold (in millions USD)	Operating Expenses (in millions USD)	Total expenses (in millions USD)	% Expense
2021	559,151	6.715537709	420,315	116,288	536,603	6.596595921
2020	523,964	1.858263431	394,605	108,791	503,396	2.223178894
2019	514,405	2.810472016	385,301	107,147	492,448	2.613428463
2018	500,343	2.978144495	373,396	106,510	479,906	3.627007897
2017	485,873	0.7763466285	361,256	101,853	463,109	1.10998308
2016	482,130	-0.7250062288	360,984	97,041	458,025	-0.10447019
2015	485,651	1.964542908	365,086	93,418	458,504	2.02081785
2014	476,294	1.630851102	358,069	91,353	449,422	1.870480767
2013	468,651	4.958914602	352,297	88,873	441,170	4.975990939
2012	446,509	5.845693601	334,993	85,265	420,258	6.043547048
2011	421,849	3.37282674	314,946	81,361	396,307	3.282140558
2010	408,085	0.9476715135	304,106	79,607	383,713	0.5903617932
2009	404,254	7.222636285	303,941	77,520	381,461	7.432316354
2008	377,023	8.225497175	284,137	70,934	355,071	8.259954875
2007	348,368	11.62027677	263,979	64,001	327,980	11.79052995
2006	312,101	9.774893602	237,649	55,739	293,388	9.879030748
2005	284,310	9.907569555	216,832	50,178	267,010	-32.82665902
2004	258,681		198,747	198747	397,494	

Vertical Analysis

Vertical analysis is a method of financial statement analysis in which each item is listed as a percentage of the base figure within the statement.

Vertical Analysis (Income Statement)

When performing a Vertical Analysis of an Income Statement, Net Sales usually used as the basis for which all other items are compared.

Year	2021	2020	2019	2018	2017	2016
Int sales (in millions USD)	555233	519926	514405	495760	481320	478610
Cost of goods sold (in millions USD)	420,315	394,605	385,301	373,396	361,256	360,984
Gross Profit (in millions USD)	138,836	129,359	129,104	126,947	124,617	120,565
Operating Expenses (in millions USD)	116,288	108,791	107,147	106,510	101,853	97,041
COGS (% sales)	75.7006518	75.89637756	74.90226572	75.31789576	75.05526469	75.42341364
Gross Profit(% sales)	25.0049979	24.88027142	25.09773428	25.60654349	25.89067564	25.19065628
Operating Expenses(% sales)	20.94400009	20.92432385	20.82930765	21.4841859	21.16118175	20.27558973

We can see that the Cost of Goods Sold, Gross Profit and Operating Expenses have almost the same fraction of sales over the period from 2016-2021.

We can see that their cost of goods sold is around 75 percent of the total sales and their gross profit is around 25 percent.

Vertical Analysis (Balance Sheet)			
When creating a Vertical Analysis for a balance sheet, total assets are used as basis for analyzing each asset account.			
Year	2021	2020	2019
Inventory (in millions USD)	44,949	44,435	44,269
Property, Plant, And Equipment (in millions USD)	92,201	105,208	104,317
Total Assets (in millions USD)	252,496	236,495	219,295
Inventory (%assets)	18	19	20
Property, Plant, And Equipment (%assets)	37	44	48

We can see that Inventory is around 20 percent of their total assets and Property,Plant and Equipment is around 40 percent of the total assets.

Vertical Analysis is also highly effective while comparing two or more companies working in the same industry.

For the year 2021					
US Companies	Walmart	Amazon	e Bay	Costco	Target
Sales	559151	386064	10271	195929	93561
Cost of goods sold	420315	233307	2473	170684	66177
Gross profit	138836	152757	7798	25245	27384
Operating Expenses	536603	363165	7560	189221	87022
Total Assets	252496	321195	19310	59268	51248
Property, plant and equipment	92201	113114	1358	23492	26879
Inventories	44949	23795	-----	14215	10653
Cost of goods sold (%sales)	75.17021341	60.43220813	24.07749976	87.11523052	70.73139449
Gross profit (%sales)	24.82978659	39.56779187	75.92250024	12.88476948	29.26860551
Operating Expenses (%sales)	95.96745781	94.06860002	73.60529647	96.57631081	93.0109768
Property, plant and equipment (%assets)	36.51582599	35.21661296	7.032625583	39.63690356	52.44887605
Inventories (%assets)	17.80186617	7.408272233	-----	23.98427482	20.78715267

Inferences

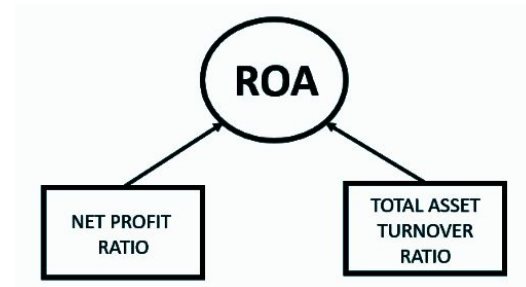
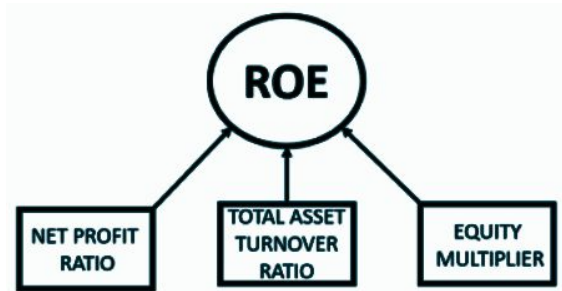
Metric	Highest	Lowest	Possible explanation
Cost of goods sold (%sales)	Costco	–	Low price membership based model
Gross profit (%sales)	eBay	–	Asset-light selling approach, that avoids expensive areas like manufacturing and shipping
Operating expenses (%sales)	–	eBay	
PPE (%sales)	–	eBay	
Gross profit (%sales)	–	Costco	Tends to cut prices to gain market shares, maintains EDLP
Inventory (%assets)	Costco	–	responsiveness
Inventory (%assets)	–	Amazon	Online store, can takes days to deliver
PPE (%assets)	Target	–	Popular in big cities, where land and equipment is more expensive

Ratio Analysis

- ❑ **Return on Assets** – ROA is an indicator of how efficient or profitable a company is relative to its assets or the resources it owns or controls.
- ❑ **Return on equity** – Return on equity (ROE) is a measure of financial performance calculated by dividing net income by shareholders' equity.
- ❑ **Profit Margin** – The profit margin is a ratio of a company's profit (sales minus all expenses) divided by its revenue.
- ❑ **Inventory Turnover** – Inventory turnover is a financial ratio showing how many times a company has sold and replaced inventory during a given period. This is unaffected by increasing the number of stores.

DuPont Analysis

- The original equation for ROE can be broken down into three components: **operating efficiency, asset efficiency, and leverage**. Same for ROA
- Operating efficiency is measured by the Net Profit Margin
- Asset efficiency is measured by the Total Asset Turnover
- Financial leverage is determined by the Equity Multiplier



Calculated metrics for 2010-2021

H_0 = There is no association between two groups

H_1 = There is an association between two groups (H_0 is false)

Year	Net income(in millions USD)	sales (in millions USD)	NPR	Assets (in millions USD)	TATR	Liabilities (in millions USD)	EQM
2021	13,510	555233	2.43	252496	219.9	164965	288.46
2020	14,881	519926	2.86	236495	219.85	154943	289.99
2019	6,670	514405	1.3	219295	234.57	139661	275.38
2018	9,862	495761	1.99	204522	242.4	123700	253.05
2017	13,643	481317	2.83	198825	242.08	118290	246.88
2016	14,694	478614	3.07	199581	239.81	115970	238.7
2015	16,363	482229	3.39	203490	236.98	117553	236.79
2014	16,022	473076	3.39	204751	231.05	123412	251.73
2013	16,999	465604	3.65	203105	229.24	121367	248.48
2012	15,699	443416	3.54	193406	229.27	117645	255.28
2011	16,389	418500	3.92	180782	231.49	109535	253.74
2010	14,370	405046	3.55	170407	237.69	97759	234.57
		MEAN	2.993333333		232.8608333		256.0875
		STDEV	0.7660445434		7.603331158		18.79146185

A company like Walmart which sells goods at EDLP is likely to see high asset turnover but a much smaller profit margin.

How to perform ANOVA (taking the example of NPR and TATR)

Step 1:

We need to find the combined mean of the data - which turns out to be **118**. Then we need to find the square of the deviation of each reading from the grand mean, for example, $(2.43 - 118)^2 = 13339.57626$ and so on.

NPR
2.43
2.86
1.3
1.99
2.83
3.07
3.39
3.39
3.65
3.54
3.92
3.55

TATR
219.9
219.85
234.57
242.4
242.08
239.81
236.98
231.05
229.24
229.27
231.49
237.69

	grand mean	118
	Δ NPR	Δ TATR
1	13339.57626	10398.47573
2	13240.43367	10388.28094
3	13601.87657	13605.57001
4	13441.40729	15493.50698
5	13247.33859	15413.94672
6	13192.14959	14855.44538
7	13118.74346	14173.59697
8	13118.74346	12796.79428
9	13059.25178	12390.56542
10	13084.40483	12397.24509
11	12997.61505	12896.53604
12	13082.11719	14343.15621

How to perform ANOVA (taking the example of NPR and TATR)

Step 2:

The sum of the squares of the deviations is the total sum of the squares.

Then the sum of the squares has to be calculated for within the two groups (NPR and TATR), and this is calculated as $11 * ((\text{standard deviation of NPR})^2 + (\text{standard deviation of TATR})^2)$ (11 as the number of subgroups is 12, and $(n-1)$).

	SS	dof	MSS
total	317676.7775	23	13812.0338
within groups	642.3721583	22	29.19873447
between groups	317034.4053	1	317034.4053

Step 3:

The test statistic is calculated as $\text{MSS (within groups)} / \text{MSS (between groups)}$, and compared with the standard value F_{α} - considering a significance level α of .95, and degrees of freedom as 1 and 22, this can be calculated using Excel as =FINV(0.05, 1, 22) which comes out to be around 4.301.

Test statistic (F dist)	F _o
10857.81323	4.300949502

ANOVA analysis - one-way test of independence

	118	F(0.05, 1, 22)	4.300949502	p	0.05
NPR and TATR	df	SS	MSS	F-stat	p
Between groups	1	317034.4053	317034.4053	10857.81323	0
Within groups	22	642.3721583	29.19873447		
Total	23	317676.7775	13812.0338		rejected
	244.4741667				
EQM and TATR	df	SS	MSS	F-stat	p
Between groups	1	3236.868267	3236.868267	15.75387906	0.0006502878602
Within groups	22	4520.226517	205.4648417		
Total	23	7757.094783	337.2649906		rejected
	129.5404167				
NPR and EQM	df	SS	MSS	F-stat	p
Between groups	1	384339.9432	384339.9432	2173.217826	0
Within groups	22	3890.764492	176.8529314		
Total	23	388230.7077	16879.59599		rejected

We observe that the null hypothesis fails in each case, which proves that the groups are all linked to one another.

Question 01

Evaluate Walmart's financial performance based on the various metrics discussed in Section 3.1, such as ROE, ROA, profit margin, asset turns, APT, C2C, ART, INVT, and PPET.

1. Compare the metrics for Walmart with similar metrics for Amazon from Table 3-1.
2. Which metrics does Amazon perform better on? Which metrics does Walmart perform better on?
3. What supply chain drivers and metrics might explain this difference in performance?

Walmart			AMAZON			
Year ended January 31 (millions)	2010	2009	Year ended January 31 (millions)	2010	2009	2008
Net operating revenues	408214	404374	Net operating revenues	34204	24509	19166
Cost of goods sold	304657	304056	Cost of goods sold	26561	18978	14896
Gross profit	103557	100318	Gross profit	7643	5531	4270
Selling, general and administrative expense	79607	77520	Selling, general and administrative expense	6237	4402	3428
Operating income	23950	22798	Operating income	1406	1129	842
Interest expense	2065	2184	Interest expense	39	34	71
Other income (loss) net	181	284	Other income (loss) net	130	66	130
Income before income taxes	22066	20898	Income before income taxes	1497	1161	901
Income taxes	7139	7145	Income taxes	352	253	247
Other expenses	592	353				
Net income	14335	13400	Net income	1152	902	645

Assets			Assets			
Cash and cash equivalents	7907	7275	Cash and cash equivalents	3777	3444	2769
Short-term investments	0	0	Short-term investments	4985	2922	958
Net receivables	4144	3905	Net receivables	1783	1260	1031
Inventories	33160	34511	Inventories	3202	2171	1399
Total current assets	48331	48949	Total current assets	13747	9797	6157
Property, plant and equipment	102307	95653	Property, plant and equipment	2414	1290	854
Goodwill	16126	15260	Goodwill	1349	1234	438
Other assets	3942	3567	Other assets	1265	1492	705
Total assets	170706	163429	Total assets	18797	13813	8314
Liabilities and stockholder equity			Liabilities and stockholder equity			
Accounts payable	50550	47638	Accounts payable	10372	7364	4687
Short-term debt	4919	7669	Short-term debt	0	0	59
Other current liability	92	83				
Total current liability	55561	47638	Total current liability	10372	7364	4746
Long-term debt	36401	34549	Long-term debt	0	109	533
Other liabilities	7688	7808	Other liabilities	1561	1083	363
Total liabilities	99650	97747	Total liabilities	11933	8556	5642
Stockholder equity	5257	2672	Stockholder equity	6864	5257	2672



WALMART

Metric	2010	2009
TAX Rate	32.3529	34.1899
ROA	9.2158	9.0787
ROE	20.1742	20.4013
Profit Margin	3.8538	3.6692
Asset Turnover	2.3913	2.4743
ART	98.5072	103.5529
APT	6.0268	6.3826
INVT	9.1875	8.8104
PPET	3.9901	4.2275

AMAZON

Metric	2010	2009	2008
TAX Rate	23.5137	21.7916	27.414
ROA	6.2873	6.7226	8.3779
ROE	16.7832	17.1581	24.1392
Profit Margin	3.4552	3.7888	3.6342
Asset Turnover	1.8197	1.7743	2.3053
ART	19.1834	19.4516	18.5897
APT	2.5608	2.5771	3.1782
INVT	8.2951	8.7416	10.6476
PPET	14.169	18.9992	22.4426

Ans(2): The one metric on which Amazon performed better than Walmart was PPET

SUPPLY CHAIN DRIVERS THAT IMPACTED THIS DIFFERENCE

PRICING

Walmart is known for its lower prices and amazon being a digital platform was not accessible by most people and their focus was not reduced prices but customer comfort.

INVENTORY

Greater the value of inventory, the more will be the ability of the company to be responsive and maintain a supply chain accordingly. This implies that C2C will decrease for a company which has more inventory, and this can explain the huge difference in these values for Amazon (-11.53) and Walmart (-1.15) respectively (in weeks).

Year	inventory (WM)	inventory (AM)
2012	40714	6031
2011	36437	4992
2010	32713	3202
2009	34511	2171
2008	35159	1399


Possible reasons for Walmart outperforming Amazon:

- lack of a physical presence
- Walmart serves as the primary low-cost retailer for a high contingent of rural poor Americans
- one-stop-shop facility is offered by both these retailers
- Amazon was more of a privilege to those who are able to access the digital world, and this has restricted its customer segment.
- Walmart's huge distribution network, which also includes a private fleet of trucks for transportation
- strategic vendor partnerships, cross-docking, RFID

Current scenario

- Walmart has begun offering free two-day delivery on all Walmart.com orders over \$35.
- E-commerce has grown from being less than 5% of retail sales in 2010 to being more than 18% by 2020.
- Amazon aims to target the grocery segment of Walmart's products.
- Walmart started an online presence in 2007 with Walmart.com.
- Amazon started a physical presence with small stores in the US.

Question 02




In 2010, Walmart announced that it planned to move into urban areas in the United States by building and operating smaller format stores compared to the large stores it had operated up to that point. Which supply chain metrics will be impacted by this move? How will this move impact the various financial metrics? Why?

Possible reasons why Walmart had to expand to smaller stores:

- The **recession** after 2008 caused Walmart's market share growth rate to decline
- The **growth of various e-commerce companies**
- The saturation and declining market size of rural and suburban markets
- Many grassroots organizations have rebelled against Walmart's expansion
- **poor performance of supercenters, as people no longer preferred them as much.**
- The decline in rural population
- **Cannibalization** - as newer stores were set up in places where stores already existed, they siphoned off the sales of the other stores.
- Its **low market share in top urban areas** (about 24% in the top 10 most populated metropolitan areas)

Which supply chain metrics will be impacted by this move?



In 2010 the number of neighbourhood markets increased by only 5. However, the rate of increase in the number of neighbourhood stores increased from 2011 to 2014 (by 31 in 2011 , 21 in 2012, 76 in 2013, 121 in 2014). They kept on decreasing the number of discount stores along with this, thus proving that they believed that neighborhood markets were indeed more profitable.

Impact on Supply Chain Metrics

- **Inventory to sales ratio** - This metric will help you to adjust your stock in order to ensure high margins and tell you how well your company is dealing with unexpected situations. The lowest value for it was in 2010 and after this in 2011 there was a major jump and the value was fairly constant after a couple of years. Inventory was at its lowest in 2010.
- **Supply chain costs** - Supply chain costs increased with the increase in the number of stores.

- **On time shipping** and **fraction of on-time delivery** would have improved, at least in those places where they established smaller stores.
- **Customer order cycle time** – It is the measurement of how long it takes to deliver a customer order after the purchase order is received. Increasing the number of stores helped in shifting resources around areas of most activity and hence decreased the customer order cycle time.

Which financial metrics will be impacted by this move?

By observing the values for roa, roe, inventory turnover and profit margin, we can see that the values for 2011 were particularly higher. We ran a regression analysis on Excel to see if the number of stores did indeed have a significant impact on various financial metrics such as ROA, ROE, profit margin and INVT.

Data used for regression

Variables considered – s (number of supercenters), ds (number of discount stores), o (other neighborhood markets), c (number of Sam's Club outlets), i (number of international outlets), inv (amount in inventory) and size (number of employees).

Year	s	ds	o	c	i	inv (USD m)	size	roa (%)	roe (%)	pm (%)	invt (%)
2021	3570	374	799	599	6101	44,949	2,300,000	5.4282	15.7	2.4162	9.3509
2020	3571	376	809	599	6146	44,435	2,200,000	6.4276	18.6	2.8401	8.8805
2019	3570	386	813	599	5993	44,269	2,200,000	3.2737	9	1.296	8.7036
2018	3561	400	800	597	6360	43,783	2,300,000	5.1452	13	1.971	8.5283
2017	3522	415	735	660	5332	43,046	2,300,000	7.1887	17.8	2.8079	8.3923
2016	3465	442	667	655	6299	44,469	2,300,000	7.5558	18	3.0477	8.1177
2015	3407	470	639	647	6290	45,141	2,200,000	8.2628	19.6	3.3696	8.0877
2014	3288	508	407	632	6107	44,858	2,200,000	8.0835	20.3	3.3639	7.9823
2013	3158	561	286	620	6148	43,803	2,200,000	8.7167	21.7	3.6272	8.0428
2012	3029	629	210	611	5651	40,714	2,200,000	8.4837	21.7	3.5159	8.228
2011	2907	708	189	609	4557	36,437	2,100,000	8.8278	22.4	3.885	8.6436
2010	2747	803	158	596	4112	32,713	2,100,000	8.7802	20.6	3.5213	9.2962
2009	2612	891	153	602	3615	34,511	2,100,000	8.4036	20.5	3.31	8.8071
2008	2447	971	132	591	3121	35,159	2,100,000	8.1149	20.5	3.3767	8.0815
2007	2256	1075	112	579	2757	33,685	1,900,000	8.0409	19.8	3.2391	7.8367
2006	1980	1209	100	567	2285	31,910	1,800,000	8.2555	21.5	3.5985	7.4475
2005	1713	1333	85	551	1587	29,762	1,700,000	8.7238	21.2	3.6112	7.2855

Relevant interpretation of summary output for regression analysis in Excel

Consider the following sample output obtained as a result of regression

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.935318541							
R Square	0.874820774							
Adjusted R Square	0.777459153							
Standard Error	0.7390941							
Observations	17							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	7	34.35807353	4.908296219	8.985273356	0.001922827			
Residual	9	4.916340797	0.546260089					
Total	16	39.27441433						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	45.6645905	43.9651432	1.038654424	0.326063959	-53.79147311	145.1206541	-53.79147311	145.1206541
s	-0.01545893	0.011464856	-1.348375501	0.210488207	-0.041394235	0.010476375	-0.041394235	0.010476375
ds	-0.022914951	0.020574037	-1.113779976	0.294233352	-0.069456657	0.023626755	-0.069456657	0.023626755
o	-0.000675081	0.002814348	-0.239871237	0.81580413	-0.007041578	0.005691416	-0.007041578	0.005691416
c	0.04256755	0.011484661	3.706469874	0.004871522	0.016587442	0.068547659	0.016587442	0.068547659
i	0.000905967	0.000802013	1.129616341	0.287844635	-0.000908312	0.002720246	-0.000908312	0.002720246
inv	-0.000187347	0.000158818	-1.179630465	0.268388111	-0.000546619	0.000171925	-0.000546619	0.000171925
size	5.16872E-07	4.43351E-06	0.116583098	0.909750485	-9.51242E-06	1.05462E-05	-9.51242E-06	1.05462E-05

1. **ANOVA** – The null hypothesis is that **no linear relationship exists any of the variables between the variables and Y**. If the F statistic value obtained is greater than the significance F, then we can reject this null hypothesis.
2. **Regression coefficients** – The p values show the significance of the coefficients, here we have assumed a significance level of 0.10, and if the p-value exceeds 0.10, then it means that that variable does not significantly contribute to the output.

When ROA is taken as the dependent variable - Ho is rejected by ANOVA, and thus some linear relationship exists between atleast one of the independent variables and ROA. However, we find that except for the number of Sam's Club outlets, none of the others coefficients contribute significantly to ROA.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	34.35807353	4.908296219	8.985273356	0.001922827
Residual	9	4.916340797	0.546260089		
Total	16	39.27441433			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	45.6645905	43.9651432	1.038654424	0.326063959
s	-0.01545893	0.011464856	-1.348375501	0.210488207
ds	-0.022914951	0.020574037	-1.113779976	0.294233352
o	-0.000675081	0.002814348	-0.239871237	0.81580413
c	0.04256755	0.011484661	3.706469874	0.004871522
i	0.000905967	0.000802013	1.129616341	0.287844635
inv	-0.000187347	0.000158818	-1.179630465	0.268388111
size	5.16872E-07	4.43351E-06	0.116583098	0.909750485

The same results as obtained for ROA - we reject Ho in ANOVA and the number of Sam's Clubs come out to be statistically significant.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	152.0147662	21.71639518	4.403553178	0.021620311
Residual	9	44.3840573	4.931561922		
Total	16	196.3988235			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	179.2776608	132.0994477	1.357141637	0.207791775
s	-0.048056378	0.034447769	-1.395050532	0.196467375
ds	-0.084074204	0.061817585	-1.360037024	0.206907639
o	-0.003234587	0.008456103	-0.382515134	0.710956029
c	0.070815756	0.034507277	2.05219771	0.070363107
i	0.000374736	0.00240976	0.155507694	0.879853029
inv	-0.000148783	0.000477192	-0.311788556	0.762303117
size	1.34274E-06	1.33211E-05	0.100798065	0.921920551

For profit margin, we find have the same results as for ROA – some linear relationship exists, and only the number of Sam’s Club outlets has a significant contribution.



ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	5.920043741	0.845720534	6.000653677	0.008004912
Residual	9	1.26844261	0.140938068		
Total	16	7.188486351			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	30.95177643	22.33175801	1.385998201	0.199122395
s	-0.008598541	0.005823486	-1.47652831	0.173913648
ds	-0.014508157	0.010450425	-1.388283983	0.198449096
o	-0.000410547	0.001429526	-0.287190785	0.780468818
c	0.015868235	0.005833546	2.720169799	0.023601253
i	0.000246402	0.000407376	0.604850204	0.560217075
inv	-5.95947E-05	8.06706E-05	-0.738740853	0.478885891
size	-2.73286E-07	2.25197E-06	-0.121354602	0.906076449

For inventory turnover, H_0 is rejected using ANOVA, and both the count of Sam’s Club outlets as well as the inventory (in millions USD) contribute to it.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	4.583831003	0.654833	8.472757178	0.002385036
Residual	9	0.695581955	0.077286884		
Total	16	5.279412958			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	17.38890301	16.53718769	1.051503033	0.320439985
s	0.001208038	0.004312427	0.28012942	0.785710385
ds	-0.00296238	0.007738783	-0.382796622	0.71075451
o	-0.000746019	0.001058598	-0.704723918	0.498811495
c	-0.009873963	0.004319877	-2.285704826	0.048111491
i	-0.000219256	0.000301672	-0.726802513	0.485820275
inv	-0.00014948	5.97385E-05	-2.502234572	0.033737901
size	1.23911E-06	1.66763E-06	0.743034695	0.476407389



Conclusions that can be drawn

- The increase in the number of neighbourhood markets did not have the desired impact.
- One possible explanation for this could be the impact of cannibalization
- They could have tried to focus on expanding into bigger cities in the United States, or on an international level

Reasons for not succeeding in New York

- Walmart has not been very successful in cities like New York due to price, competition, and the city's grid system.
- It has also faced opposition from the city's residents, mostly due to criticism it earned regarding employee pay, working conditions and cutting down on health insurance.

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