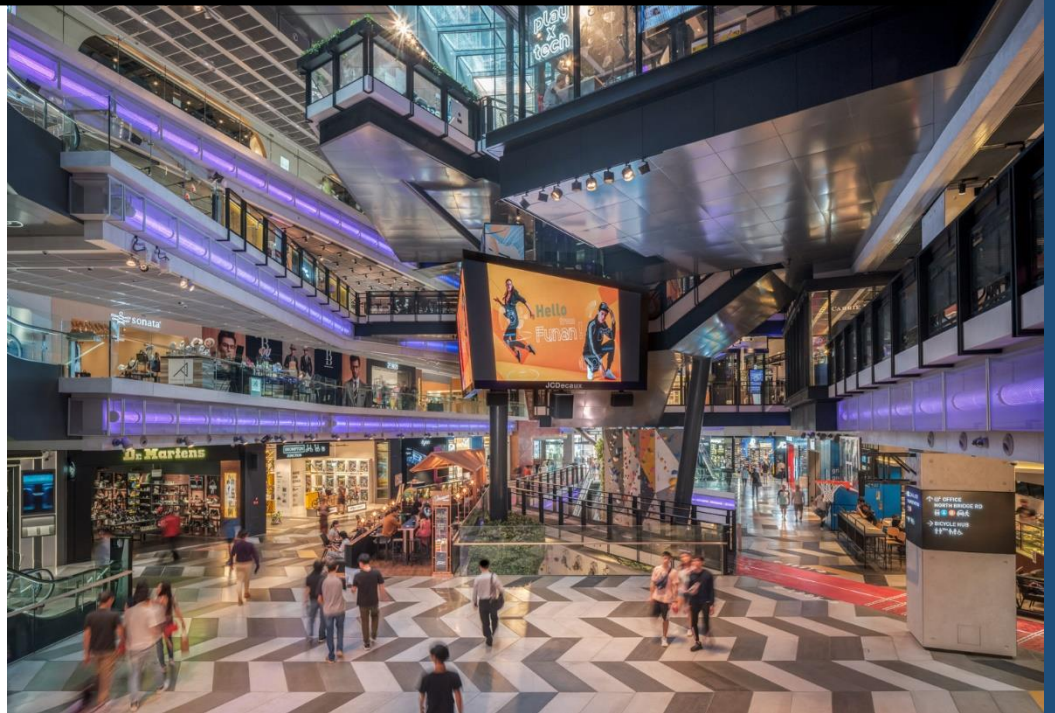


2022

Regional Profit Performance (2016 - 2020) - Insight Report



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Executive Summary

Scope

A superstore wishes to examine the business environment from 2016 to 2020 for its various Regions, Market segments, and Product categories to identify the primary business issues it may be facing now. This paper goes into detail on the Data Analysis using Tableau that was conducted to comprehend the company's current situation.

Data Analysis and Dash Boards

A customized Tableau's superstore dataset is used for this project. Five dashboards are used to provide an overview of markets, goods, and key performance factors affecting individual nations' business units, to investigate elements or trends that may account for the correlation between sales and discounts, to examine trends in the overall revenue-to-profit ratio across segments, categories, and time periods, to demonstrate how to cluster data for future market and sales research, and to examine sales, profit, and unique consumers trending over the last four years.

Recommendations

The insights obtained from the Tableau dashboard can be used to generate action plans that are to be tracked by Sales, Marketing, and Finance teams. Follow-up steps that the managers in each of these departments should consider enhancing loss-making countries' earnings are listed below.

Sales Department

1. An in-depth analysis of why these countries obtained such substantial discounts could reveal a corporate strategy or a target market share. This would allow for strategy modification without compromising sales or profit margins.
2. The country's business unit may be carrying the wrong products, resulting in low sales and losses. The sales team should do more market research to determine what products to sell in each country.
3. A closer look at the peak sales and profit periods in each of the loss-making countries for each subcategory may reveal elements in the business processes that can be replicated to boost sales.
4. To remove obstacles and re-ignite sales volumes, customers' worries about low and declining sales volumes in specific subcategories must be understood.
5. Subcategories with a limited or declining customer base require extra sales leads and calls to reach all potential customers.

Marketing Department

1. The marketing team must focus on growing awareness of the store's merchandise and brand among potential customers because the business units in these countries/areas are losing money.
2. They would also need to work with the Sales Department to discover the most popular products in these countries.

Finance Department

Because sales and profit do not correlate across categories, markets, segments, or time periods, a detailed analysis of the reasons for low profitability in specific subcategories and areas is required. High marketing expenditures, field returns, and damaged or faulty items may all need adjusting of corporate strategy, processes, and procedures to make the business unit more viable.

By combining these efforts, managers can identify opportunities to cut operational, sales, and product expenses and establish new customer and product strategy to meet a specified profit target goal for each loss-making country business unit.

Technical Summary

Dashboard 1 Insight – Descriptive Analysis

a) Aim of Dashboard

The purpose of this dashboard is to provide a bird's eye view of the markets, products, and KPIs affecting individual nations' business units.

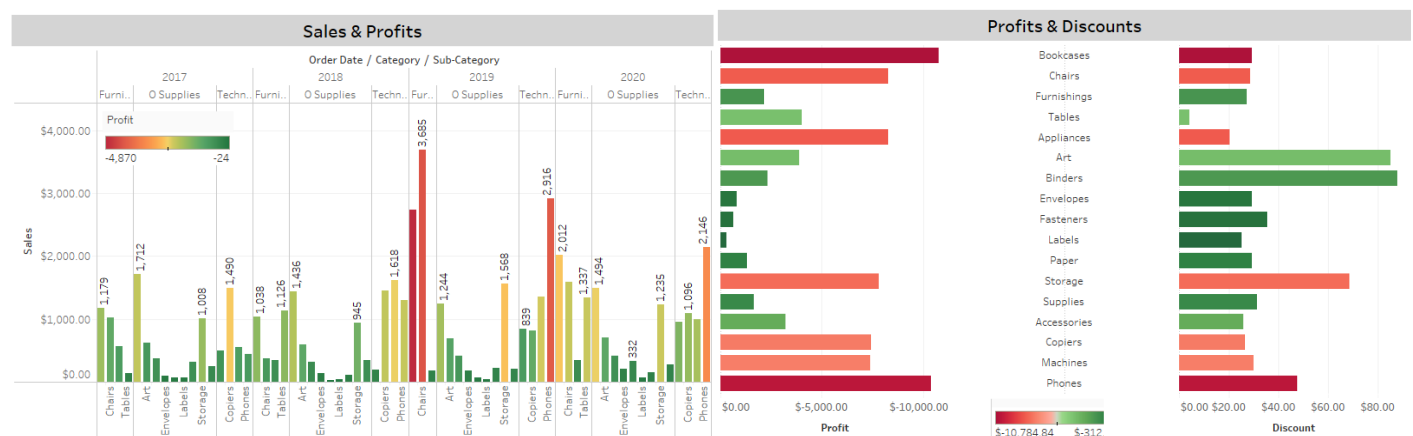
b) Data Analysis

Country Profits Maps reveal several countries lost money between 2016 and 2020. Africa's sales share is 6.2%, while APAC's is 28.36%. Labels account for 0.58 percent of global profit, whereas phones account for 13.50%.

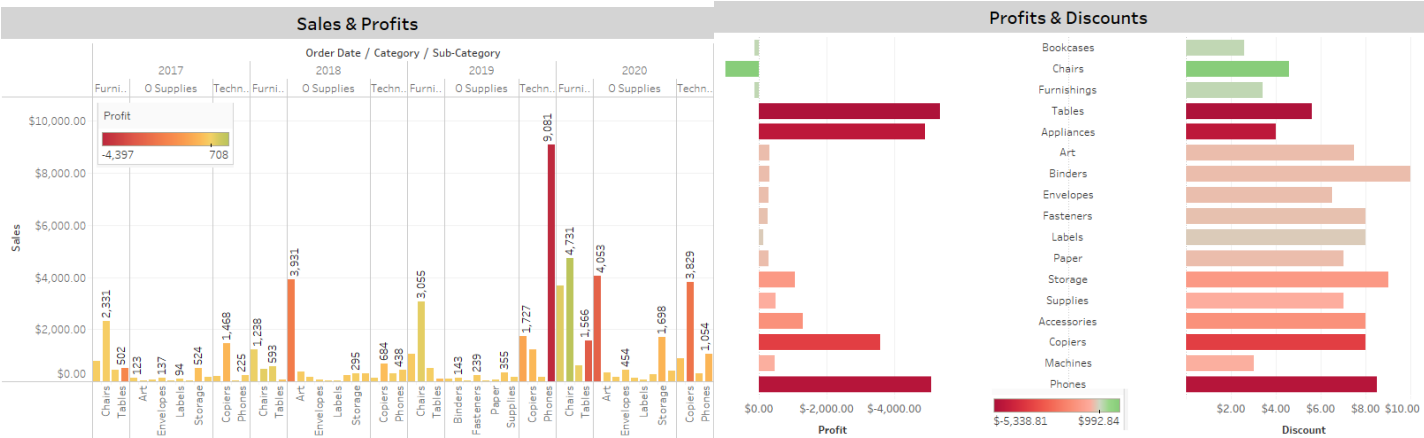
Nigeria has some states in the red on the African continent. Like Lithuania, Kazakhstan, Turkey, and Turkmenistan, Pakistan is losing money in Asia. Sweden and the Netherlands are both losing regionally. LATAM market is declining in many Argentina and Brazil areas. Oregon, Arizona, Colorado, Texas, Illinois, Tennessee, North Carolina, Ohio, and Pennsylvania are all losing market share in the USA market.

From 2016 to 2020, the Tables subcategory lost money despite revenue, while fasteners and labels had a low profit margin globally. As seen in the charts below, each lost country includes subcategories that contribute to loss. (The findings are explained using only the first four nation charts.)

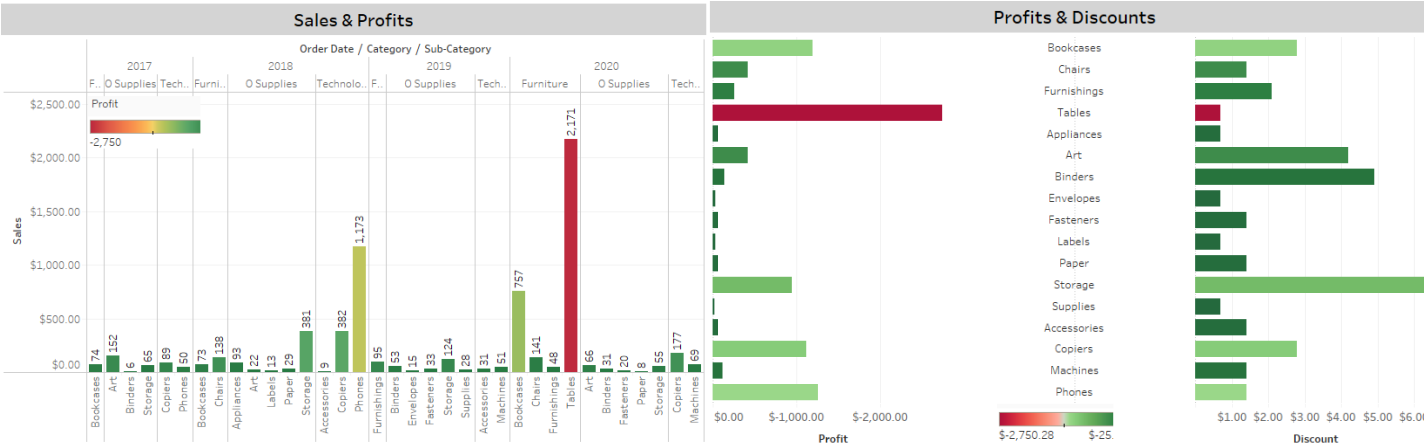
Nigeria



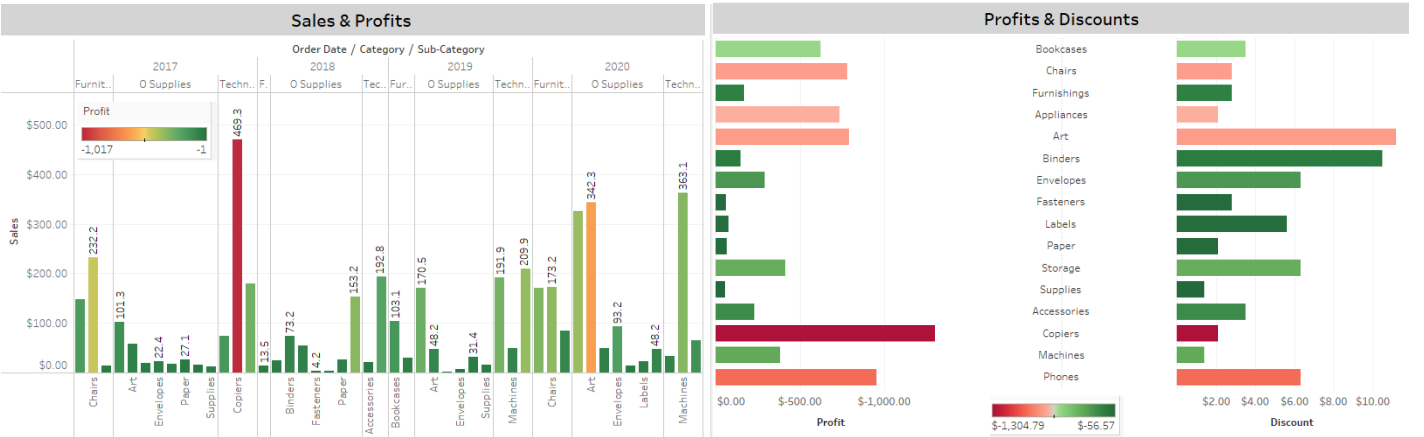
Pakistan



Lithuania



Kazakhstan



Results:

1. These countries/states lose ground in every chart subcategory.
2. Each year, the losses vary by subcategory, and there is no clear pattern within a country as to which subcategory has the most or least losses.
3. There appears to be no association between discount levels and profit margins in each subcategory.

c) Action Plan: Additional Data Collection

Only discount is presented in the data set as a potential cost component; further information on the remaining cost components must be gathered to examine their impact on subcategory profit in each location.

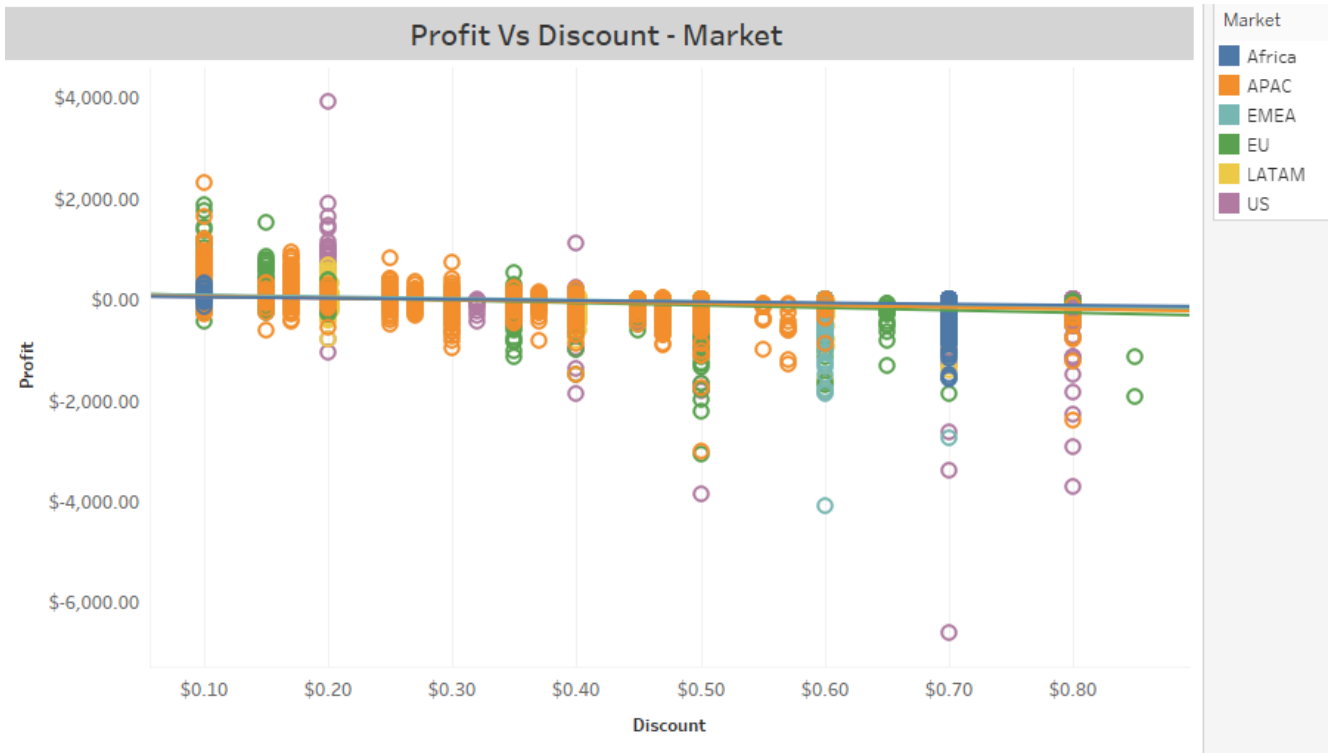
Dashboard 2 Insight – Descriptive Analysis

a) Aim of Dashboard

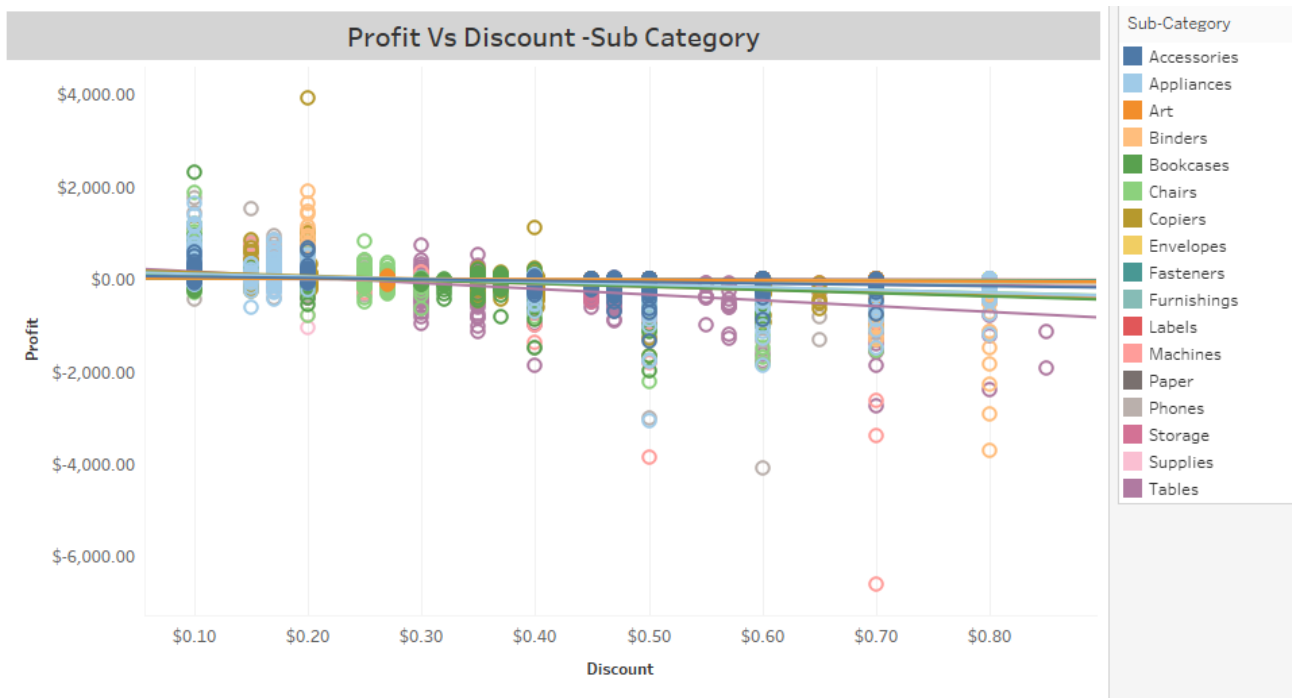
The Dashboard is designed to analyze potential reasons or trends that may contribute to the existence of a correlation between sales and discounts.

b) Data Analysis

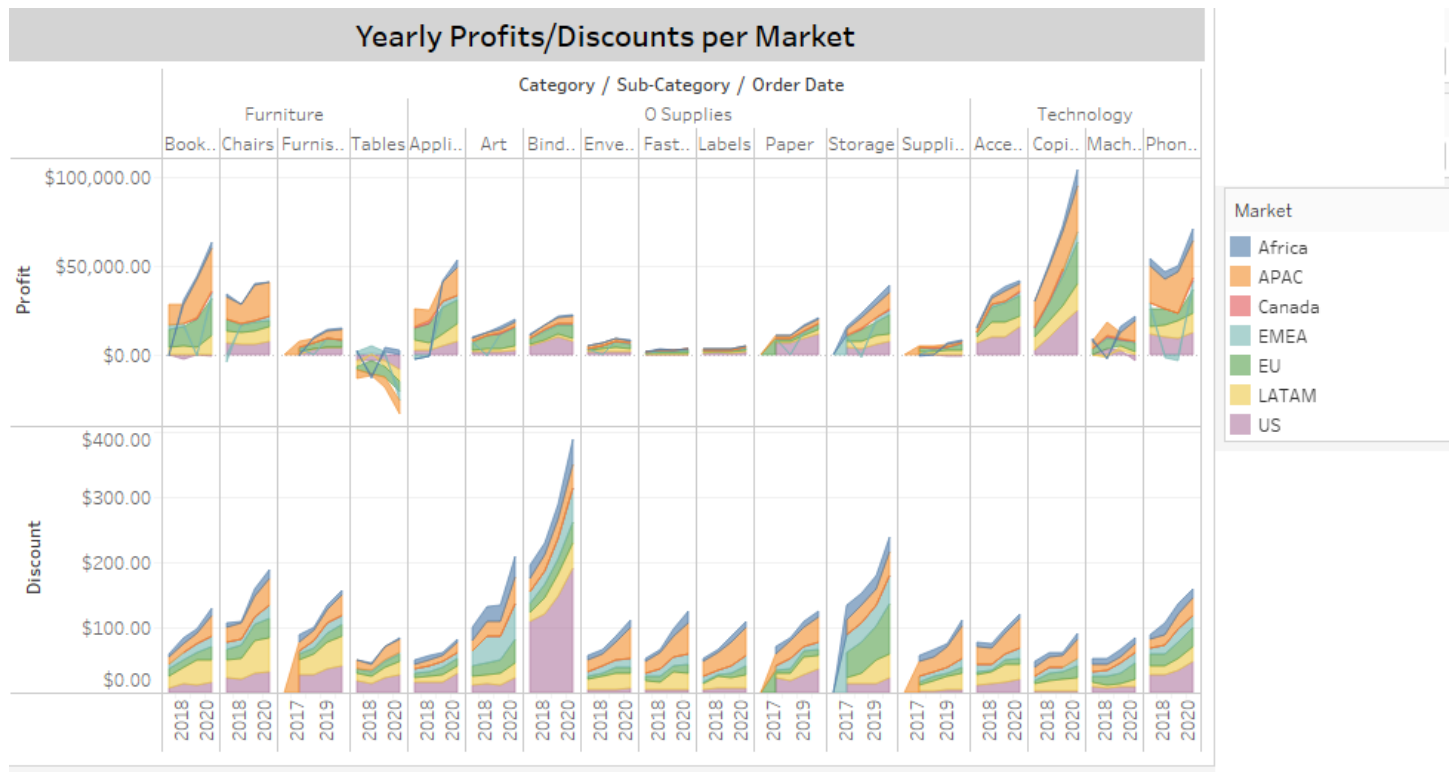
There is no relationship between discount value and profits in any market, and that there is a very little developing trend toward losses as discount value increases. Notable results included increased discount rates in several areas, particularly in Africa.



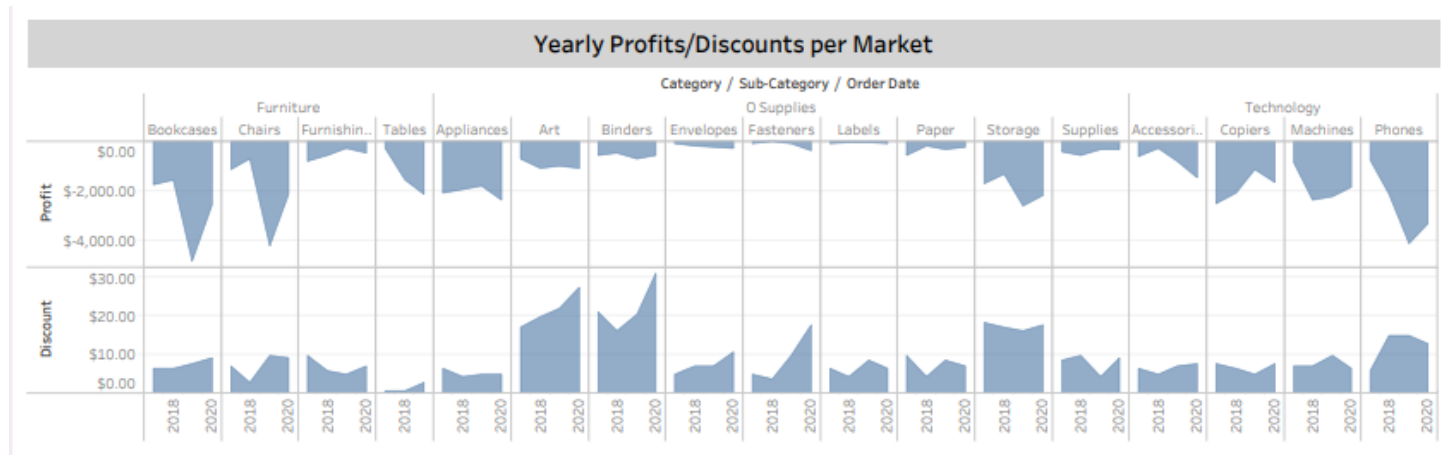
Profitability vs discount chart for several subcategories demonstrates once again that discount value has no link with profitability and that there is very little rising tendency toward losses as discount value grows. A noticeable distinction is that certain subcategories, such as tables, experienced a more dramatic downward trend as the discount increased than others.



Profitability and discount charts for several subcategories from 2016 to 2020 demonstrate that the profit margin for tables was negative in all markets, while it was positive but extremely low for furnishings, envelopes, fasteners, labels, paper, supplies, and machines. However, profitability is independent to the discounts applied in these marketplaces. There are subcategories that have profited while offering a substantial discount.



In a filtered version of the same chart for Nigeria alone, we can see a more precise indication of the profitability and discount status and relationship for each subcategory for each year.



Dashboard 3 Insight – Descriptive Analysis

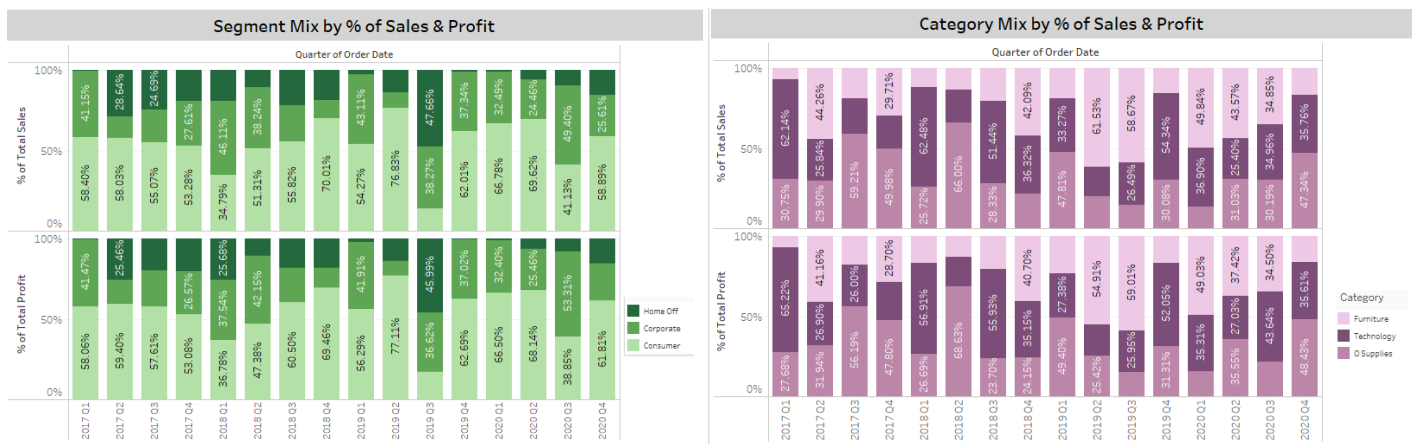
a) Aim of Dashboard

The purpose of this Dashboard is to determine whether we can detect patterns or consistency in the overall ratio of revenue to profit across segments, categories, and time periods.

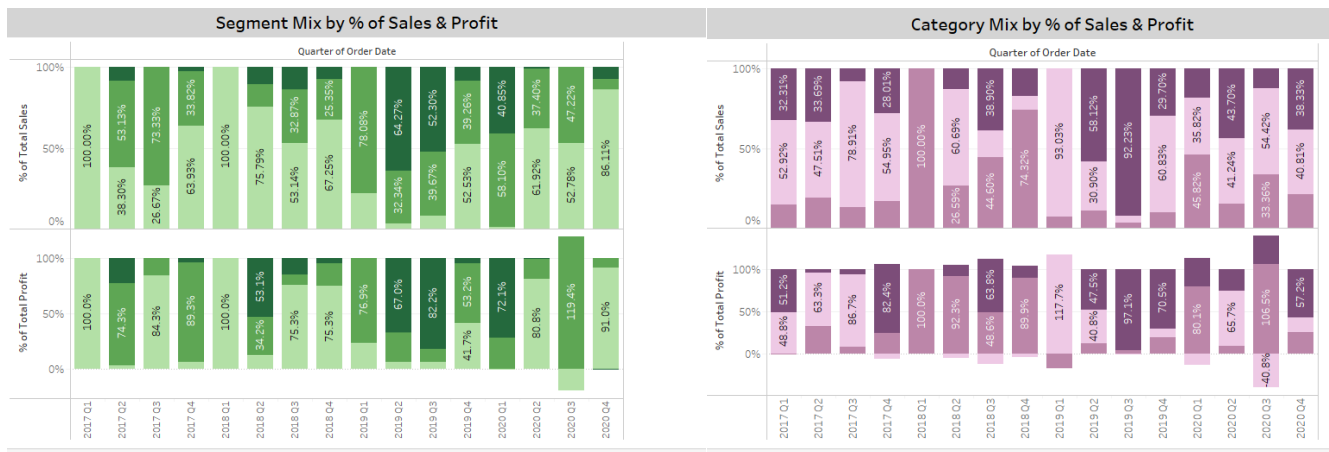
b) Data Analysis

Globally, the Consumer segment and the Technology category have contributed the most to sales and profit, according to segment and category mix percentages. When we analyze on a granular level the countries that were recognized as experiencing losses during the last four years, we discover a variety of other trends as below.

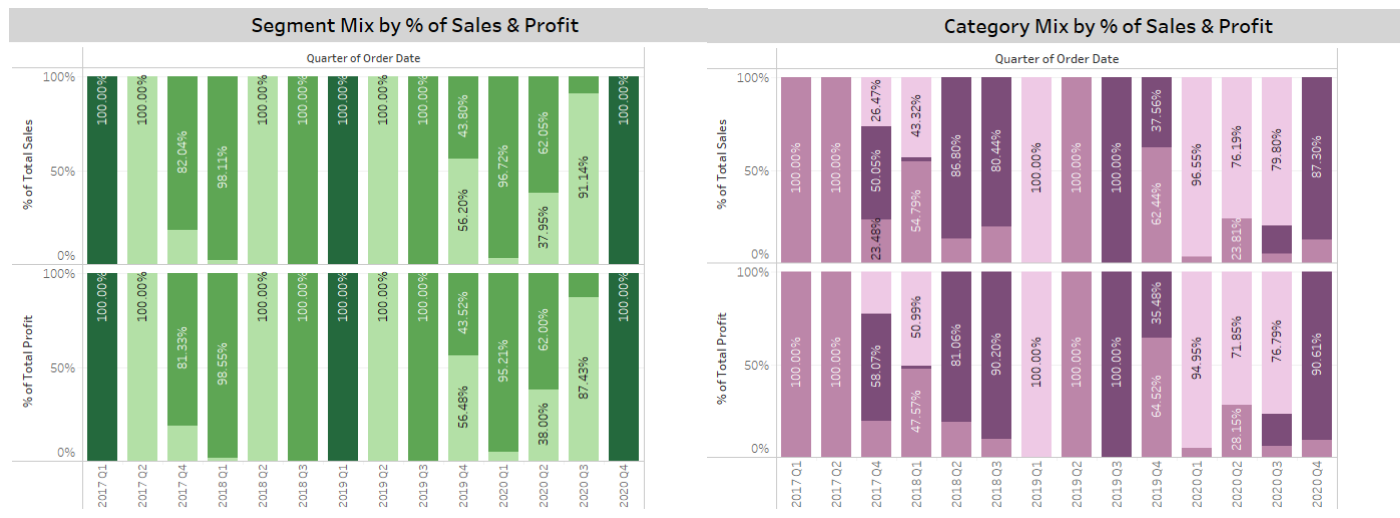
Nigeria



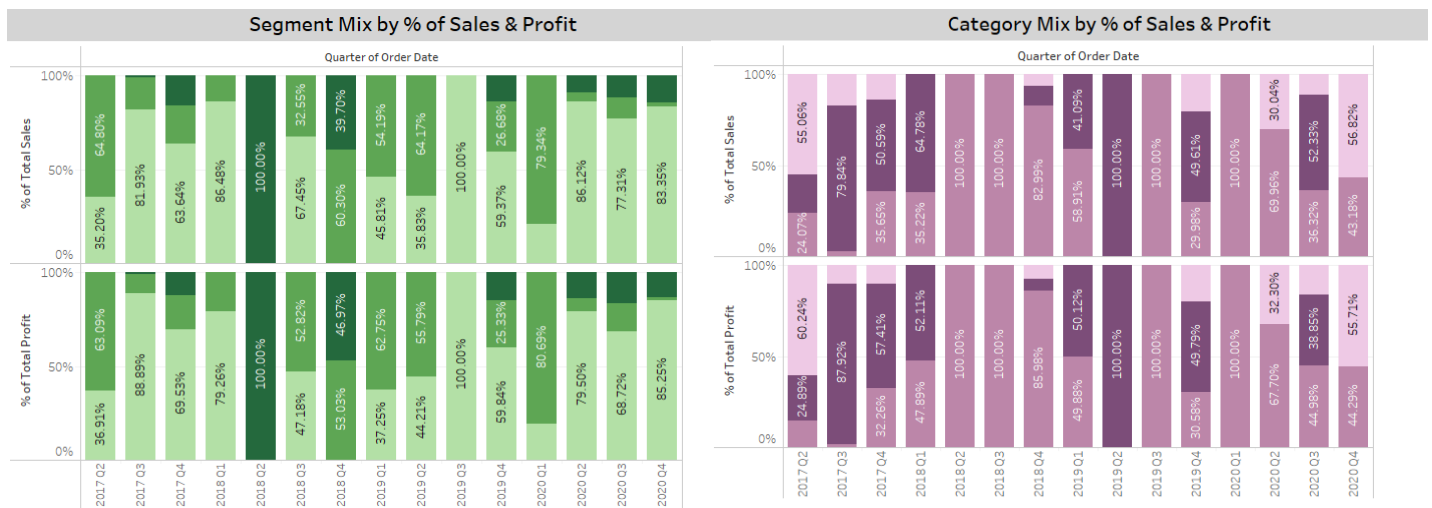
Pakistan



Lithuania



Kazakhstan



Results:

From the Segment Mix and Category Mix Charts

1. Neither the segment that generates the highest or lowest percentage of total revenue nor the segment that earns the highest or lowest percentage of overall profits is consistent across quarters in each of these four losing countries.
2. Similarly, in the majority of losing countries, there is no association between the proportion of total sales and the proportion of total profits for each quarter segment.
3. Likewise, the same effect as 1 and 2 is observed when categorical comparisons are conducted.

This indicates that while a segment or category earns revenue, its costs fluctuate quarterly, causing earnings to fluctuate as well.

4. The Cumulative Sales and Profit by Week of the Year Charts exhibit global pattern spikes, while the charts for specific loss-making countries illustrate other pattern spikes. Further investigation of these numbers may reveal information valuable to these countries' profitability.

Dashboard 4 Insight – Prescriptive Analysis

a) Aim of Dashboard

From the dataset, sales performance, profit margins, discounts, amount ordered, and unique customer count are all viable classifiers for categorizing markets differently based on their differentiating KPIs. The map was clustered using Tableau's k-means method, with marks inside each cluster being more similar than marks between clusters. To create nine clusters, Tableau's Euclidean distance measurement was utilized, and the number of clusters was left to automated.

b) Data Analysis

Nigeria – Cluster 1

Profit Breakdown			Sales Breakdown			Discount Breakdown			Quantity Breakdown		
Region / Country			Region / Country			Region / Country			Region / Country		
Category	Sub-Catego..	Africa Nigeria	Category	Sub-Catego..	Africa Nigeria	Category	Sub-Catego..	Africa Nigeria	Category	Sub-Catego..	Africa Nigeria
Furniture	Bookcases	\$-10,784.84	Furniture	Bookcases	\$6,967.43	Furniture	Bookcases	\$29.40	Furniture	Bookcases	96
	Chairs	\$-8,265.11		Chairs	\$6,670.99		Chairs	\$28.70		Chairs	102
	Furnishings	\$-2,161.48		Furnishings	\$1,434.80		Furnishings	\$27.30		Furnishings	95
	Tables	\$-4,020.92		Tables	\$2,606.29		Tables	\$4.20		Tables	21
O Supplies	Appliances	\$-8,300.06	O Supplies	Appliances	\$5,886.10	O Supplies	Appliances	\$20.30	O Supplies	Appliances	77
	Art	\$-3,991.65		Art	\$2,633.26		Art	\$85.40		Art	311
	Binders	\$-2,329.25		Binders	\$1,517.08		Binders	\$88.20		Binders	267
	Envelopes	\$-803.26		Envelopes	\$620.05		Envelopes	\$29.40		Envelopes	77
	Fasteners	\$-632.38		Fasteners	\$503.24		Fasteners	\$35.70		Fasteners	116
	Labels	\$-312.07		Labels	\$211.46		Labels	\$25.20		Labels	68
	Paper	\$-1,318.94		Paper	\$794.77		Paper	\$29.40		Paper	105
	Storage	\$-7,832.30		Storage	\$4,755.73		Storage	\$68.60		Storage	211
	Supplies	\$-1,667.94		Supplies	\$1,083.80		Supplies	\$31.50		Supplies	116
	Accessories	\$-3,192.08		Accessories	\$2,483.22	Technology	Accessories	\$25.90		Accessories	74
Technology	Copiers	\$-7,456.55	Technology	Copiers	\$4,851.37		Copiers	\$26.60		Copiers	73
	Machines	\$-7,383.21		Machines	\$4,526.61		Machines	\$30.10		Machines	101
	Phones	\$-10,398.74		Phones	\$6,804.13		Phones	\$47.60		Phones	146

Pakistan – Cluster 1

Profit Breakdown			Sales Breakdown			Discount Breakdown			Quantity Breakdown		
Region / Country			Region / Country			Region / Country			Region / Country		
Category	Sub-Catego..	Central Asia Pakistan	Category	Sub-Catego..	Central Asia Pakistan	Category	Sub-Catego..	Central Asia Pakistan	Category	Sub-Catego..	Central Asia Pakistan
Furniture	Bookcases	\$128.14	Furniture	Bookcases	\$6,753.31	Furniture	Bookcases	\$2.60	Furniture	Bookcases	37
	Chairs	\$992.84		Chairs	\$10,590.77		Chairs	\$4.60		Chairs	96
	Furnishings	\$132.62		Furnishings	\$2,150.45		Furnishings	\$3.40		Furnishings	63
	Tables	\$-5,338.94		Tables	\$2,240.00		Tables	\$5.60		Tables	19
O Supplies	Appliances	\$-4,897.18	O Supplies	Appliances	\$8,107.28	O Supplies	Appliances	\$4.00	O Supplies	Appliances	40
	Art	\$-293.03		Art	\$671.31		Art	\$7.50		Art	62
	Binders	\$-289.65		Binders	\$568.41		Binders	\$10.00		Binders	76
	Envelopes	\$-274.29		Envelopes	\$696.42		Envelopes	\$6.50		Envelopes	51
	Fasteners	\$-248.07		Fasteners	\$429.75		Fasteners	\$8.00		Fasteners	56
	Labels	\$-124.80		Labels	\$240.75		Labels	\$8.00		Labels	46
	Paper	\$-286.57		Paper	\$594.97		Paper	\$7.00		Paper	54
	Storage	\$-1,051.11		Storage	\$2,872.05		Storage	\$9.00		Storage	72
	Supplies	\$-470.94		Supplies	\$1,012.68		Supplies	\$7.00		Supplies	66
	Accessories	\$-1,299.93		Accessories	\$2,915.91	Technology	Accessories	\$8.00		Accessories	58
Technology	Copiers	\$-3,584.68	Technology	Copiers	\$7,198.40		Copiers	\$8.00		Copiers	68
	Machines	\$-447.53		Machines	\$832.10		Machines	\$3.00		Machines	11
	Phones	\$-5,093.73		Phones	\$10,798.13		Phones	\$8.60		Phones	73

Lithuania – Cluster 1

Profit Breakdown			Sales Breakdown			Discount Breakdown			Quantity Breakdown		
		Region / Country			Region / Country			Region / Country			Region / Country
Category	Sub-Catego..	EMEA Lithuania	Category	Sub-Catego..	EMEA Lithuania	Category	Sub-Catego..	EMEA Lithuania	Category	Sub-Catego..	EMEA Lithuania
Furniture	Bookcases	\$-1,198.61	Furniture	Bookcases	\$903.55	Furniture	Bookcases	\$2.80	Furniture	Bookcases	12
	Chairs	\$-417.39		Chairs	\$279.78		Chairs	\$1.40		Chairs	2
	Furnishings	\$-262.24		Furnishings	\$143.39		Furnishings	\$2.10		Furnishings	12
	Tables	\$-2,750.28		Tables	\$-1,173.88		Tables	\$0.70		Tables	8
O Supplies	Appliances	\$-64.58	O Supplies	Appliances	\$92.82	O Supplies	Appliances	\$0.70	O Supplies	Appliances	1
	Art	\$-416.62		Art	\$239.99		Art	\$4.20		Art	25
	Binders	\$-138.66		Binders	\$90.36		Binders	\$4.90		Binders	23
	Envelopes	\$-29.60		Envelopes	\$14.80		Envelopes	\$0.70		Envelopes	1
	Fasteners	\$-63.98		Fasteners	\$53.50		Fasteners	\$1.40		Fasteners	12
	Labels	\$-27.76		Labels	\$12.78		Labels	\$0.70		Labels	4
	Paper	\$-59.48		Paper	\$37.32		Paper	\$1.40		Paper	5
	Storage	\$-943.74		Storage	\$625.50		Storage	\$5.30		Storage	17
	Supplies	\$-25.28		Supplies	\$28.06		Supplies	\$0.70		Supplies	2
	Accessories	\$-59.48		Accessories	\$39.96		Accessories	\$1.40		Accessories	2
Technology	Copiers	\$-1,119.96	Technology	Copiers	\$648.36	Technology	Copiers	\$2.80	Technology	Copiers	7
	Machines	\$-123.68		Machines	\$120.29		Machines	\$1.40		Machines	3
	Phones	\$-1,264.54		Phones	\$1,222.73		Phones	\$1.40		Phones	7

Kazakhstan – Cluster 1

Profit Breakdown			Sales Breakdown			Discount Breakdown			Quantity Breakdown		
		Region / Country			Region / Country			Region / Country			Region / Country
Category	Sub-Catego..	EMEA Kazakhstan	Category	Sub-Catego..	EMEA Kazakhstan	Category	Sub-Catego..	EMEA Kazakhstan	Category	Sub-Catego..	EMEA Kazakhstan
Furniture	Bookcases	\$-622.85	Furniture	Bookcases	\$421.27	Furniture	Bookcases	\$3.50	Furniture	Bookcases	9
	Chairs	\$-784.29		Chairs	\$405.42		Chairs	\$2.80		Chairs	11
	Furnishings	\$-172.08		Furnishings	\$143.44		Furnishings	\$2.80		Furnishings	10
	Tables	\$-733.89		Tables	\$596.82		Tables	\$2.10		Tables	7
O Supplies	Appliances	\$-791.83	O Supplies	Appliances	\$473.42	O Supplies	Appliances	\$11.20	O Supplies	Appliances	39
	Art	\$-150.74		Art	\$143.59		Art	\$10.50		Art	29
	Binders	\$-292.69		Binders	\$177.98		Binders	\$6.30		Binders	17
	Envelopes	\$-62.95		Envelopes	\$35.15		Envelopes	\$2.80		Envelopes	8
	Fasteners	\$-76.08		Fasteners	\$57.63		Fasteners	\$5.60		Fasteners	19
	Labels	\$-66.47		Labels	\$53.38		Labels	\$2.10		Labels	7
	Paper	\$-412.39		Paper	\$217.22		Paper	\$6.30		Paper	10
	Storage	\$-56.57		Storage	\$29.17		Storage	\$1.40		Storage	3
	Supplies	\$-231.41		Supplies	\$129.88		Supplies	\$3.50		Supplies	5
	Accessories	\$-394.79		Accessories	\$661.23		Accessories	\$2.10		Accessories	8
Technology	Copiers	\$-385.26	Technology	Copiers	\$412.11	Technology	Copiers	\$1.40	Technology	Copiers	11
	Machines	\$-956.72		Machines	\$647.74		Machines	\$1.40		Machines	8
	Phones			Phones			Phones	\$4.30		Phones	16

By analyzing profit, sales, discount, and quantity breakdowns within a cluster of losing countries, we may be able to identify common operational, marketing, and sales issues that need to be addressed. Customers in the same cluster segment are likely to respond to marketing efforts similarly. As a result, segmentation helps the business better understand the customers, target the right groups, and tailor the marketing efforts.

c) Action Plan – Creating new Clusters to analyze problematic countries

Clustering can be done using Tableau's K mean approach or any other machine learning methodology familiar to the analytics group division. To provide a remedy to the causes of the losses, a dedicated team comprising of financial, sales, and marketing professionals can then focus on and assess data from each of these clusters.

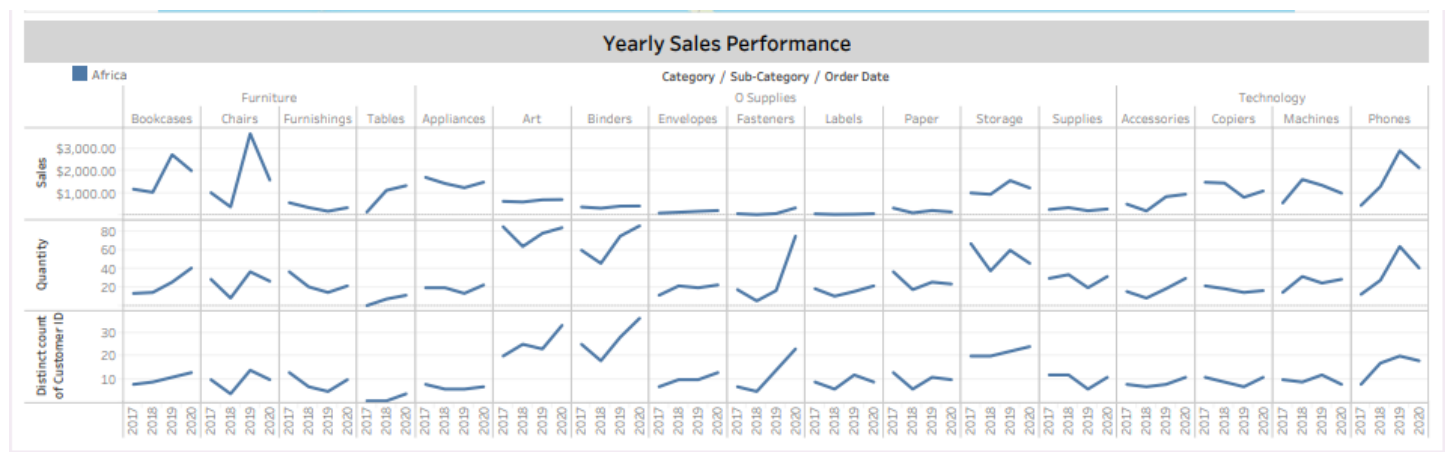
Dashboard 5 Insight – Prescriptive Analysis

a) Aim of Dashboard

The dashboard examines the trend in sales, profit, and unique consumers for the cluster sectors' loss-making countries over the last four years to gain insight into how they are performing and forecast their future performance.

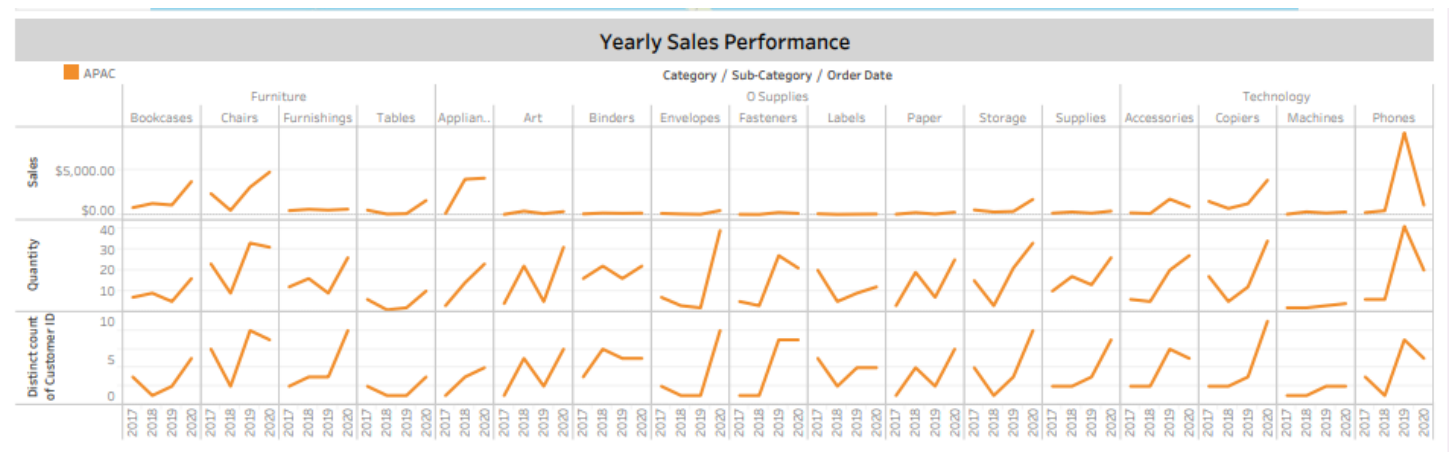
b) Data Analysis

Nigeria – Cluster 1



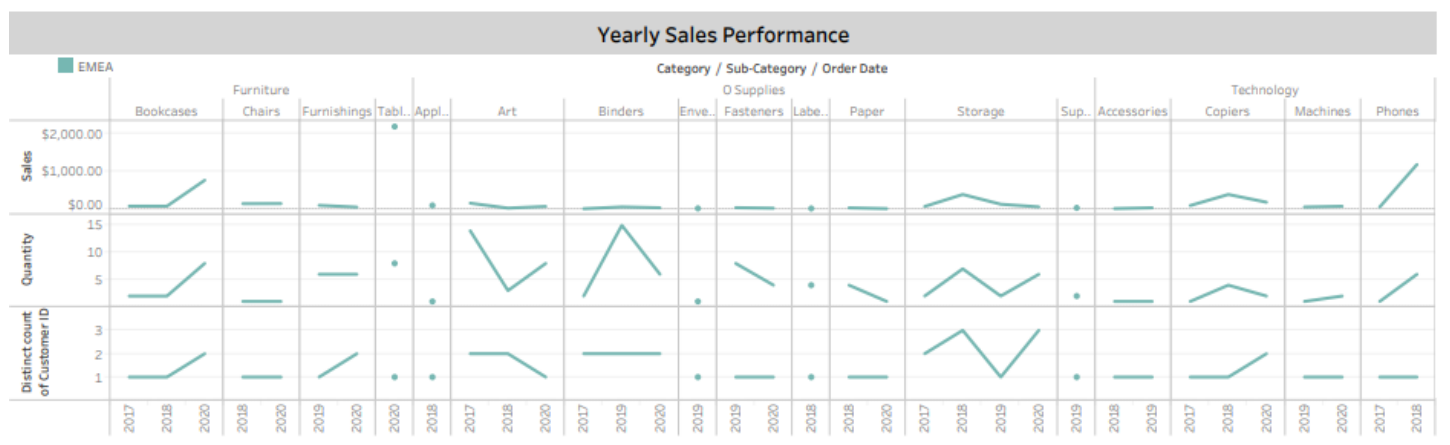
Tables and appliances have a limited customer base. The purchase of copiers is declining. The volume of envelopes, labels, paper, supplies, accessories, photocopiers, and machines sold appears to fluctuate rather than increasing significantly.

Pakistan – Cluster 1



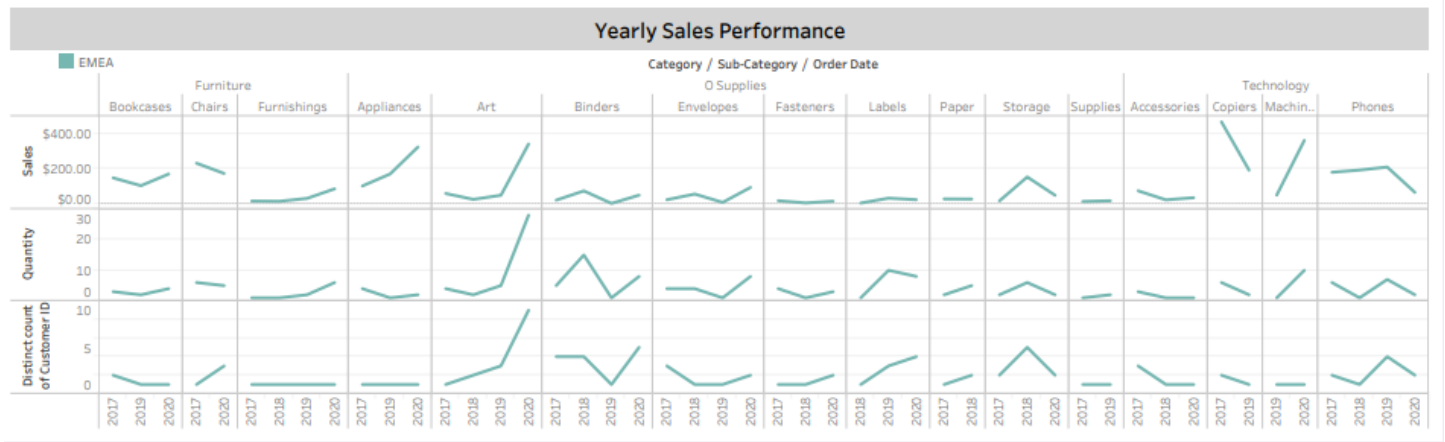
Machines serve a limited number of customers. The volume of bookcases, furniture, paintings, binders, labels, paper, and supplies sold appears to fluctuate rather than rise.

Lithuania – Cluster 1



Chairs, accessories, and machines all cater to a specific customer. Fasteners and paper are being sold in diminishing quantities.

Kazakhstan – Cluster 1



Furnishings, appliances, and supplies are all geared toward a niche market. Appliances, accessories, and bookcases sales are becoming scarce.

The data indicates that there are subcategories in these countries with abnormally low and declining sales volumes as well as variable demand for others.

Conclusion

The Tableau dashboard insights can be used to develop action plans that can be tracked by the Sales, Marketing, and Finance departments. The following is a list of potential follow-up steps that each of them should explore to increase the earnings of deficit countries.

Sales Department

1. A comprehensive study of why these countries received such substantial discounts would be beneficial in evaluating whether the business unit had a business plan or was seeking to reach a specified market share. This enables strategy refinement without sacrificing sales or profit margins.
2. It is possible that the country's business unit is stocking the improper products, resulting in decreased sales and losses. The sales staff should conduct additional market research to discover the most suited products for each country.
3. Each of the loss-making countries' peak sales and profit periods for each subcategory should be explored further to extract any relevant data that may reveal probable elements that can be replicated to increase sales.
4. A concerted effort must be made to understand customer concerns regarding low and declining sales volumes in specific subcategories to remove roadblocks and re-ignite sales volumes.
5. Subcategories with a limited or declining client base require additional sales leads to guarantee that all potential customers are covered.

Marketing Department

1. Given that the business units in these countries/areas are losing money and no subcategory is gaining momentum with customers, the marketing team's primary objective should be to increase awareness of the store's merchandise and brand among potential customers.
2. Additionally, they need to work with the Sales Department to determine which products are most requested by clients in these countries.

Finance Department

Due to the absence of correlation between revenue and profit across categories, markets, segments, and time periods, a thorough examination of the poor profitability in specific subcategories within certain marketplaces is necessary to ascertain the primary contributing factors. High marketing expenditures, field returns, and damaged or faulty items can all contribute to the need for business strategy and operations refinement or even modification.