Cookie Data Report

1. Introduction:

In our cookie dataset, we focus on six varieties: Chocolate Chip, Fortune Cookie, Sugar, Oatmeal Raisin, Snickerdoodle, and White Chocolate Macadamia Nut.

We have extensive data on these cookies, including the number of units sold, their costs, the revenue they generated, and their profits. This analysis spans various countries and dates, allowing us to observe differences across locations and times.

This report goes beyond cookies; it delves into consumer preferences, pricing willingness, and the popularity of these treats. Prepare to discover intriguing insights into the cookie market and its implications for businesses like yours.

2. Questionnaire:

Q1. Compare Malaysia and Philippines on the bases of two types of Cookies

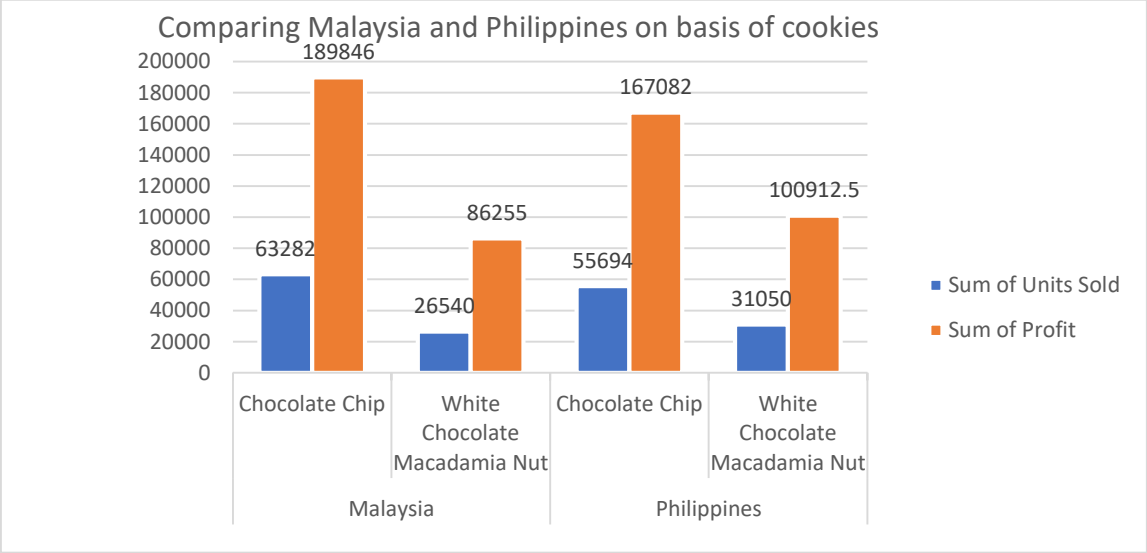
Q2. What is the performance of Choco Chips Cookies in all Country Which Competes the best?

Q3. Compare all the countries on the bases of profit and unit sold, which is the best performance country on the basis of profit.

Q4. which Cookie is the bestselling Cookie in India and US in year 2019,

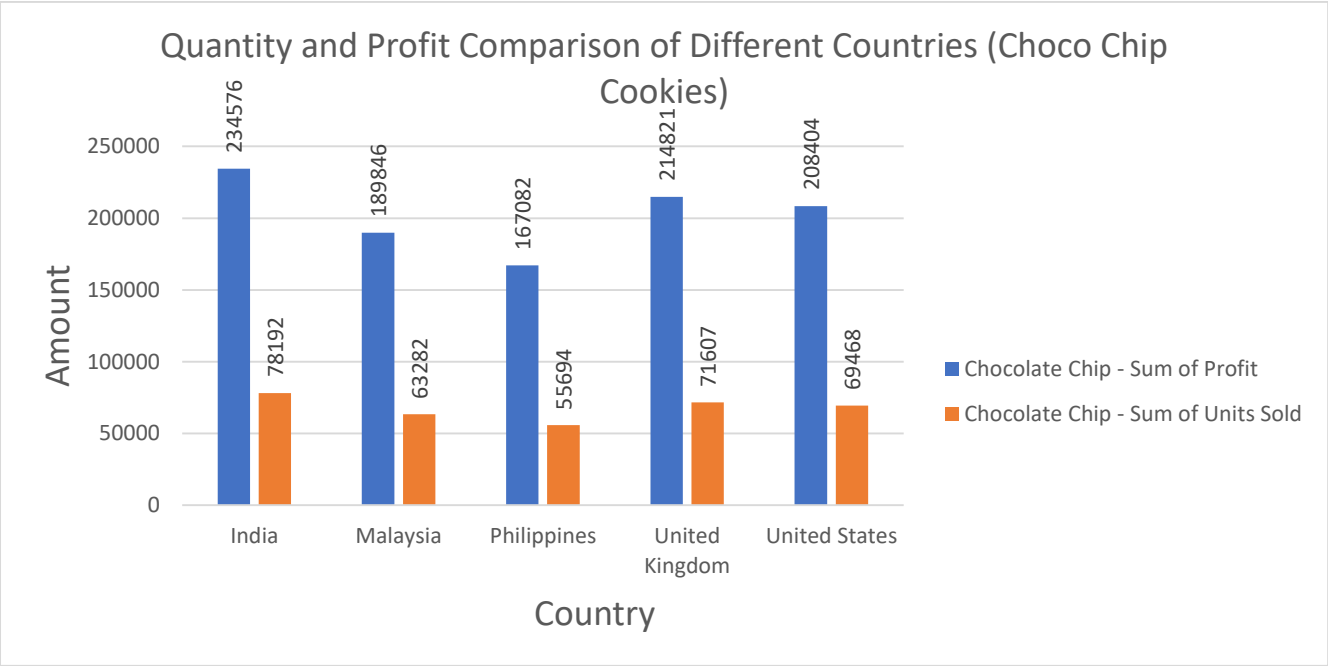
3. Analytics:

Q1. Compare Malaysia and Philippines on the bases of two types of Cookies.



Answer:
Malaysia sold more products overall compared to the Philippines and earned $8,106.5 more in profit than the Philippines.

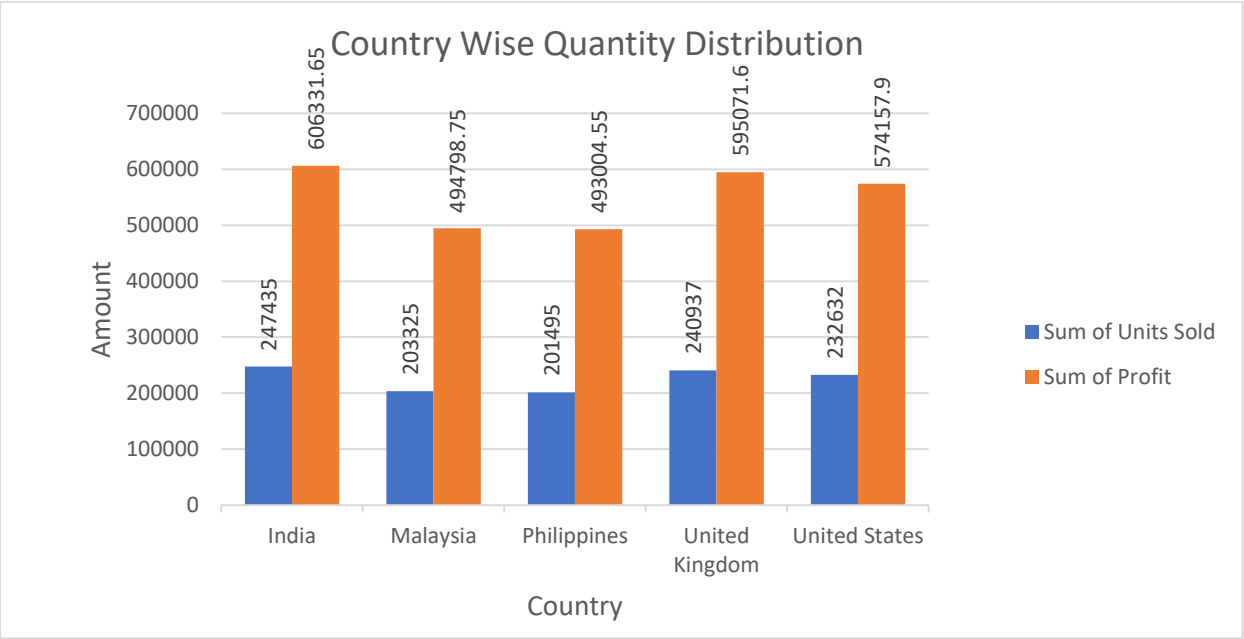
Q2. What is the performance of Choco Chips Cookies in all Country Which Competes the best?



Answer:

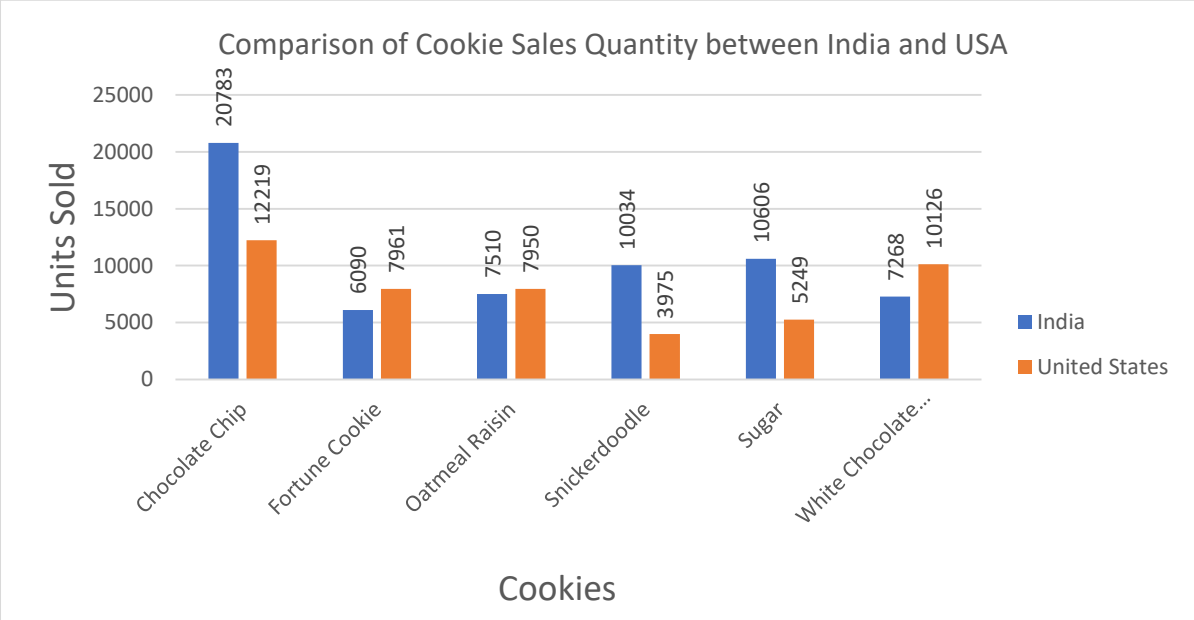
India stands out as the top consumer of Choco Chips globally, driven by its outstanding profitability and record-breaking sales figures.

Q3. Compare all the countries on the bases of profit and unit sold, which is the best country on the basis of profit.



Answer:
India stands out as the leading performer globally in terms of both profit generation and units sold.

Q4. Which Cookie is the best Selling Cookie in India and US in year 2019,



Answer:
In the year 2019, Chocolate Chip cookies emerged as the top-selling cookie in both India and the United States.

Regression:

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.829304							
R Square	0.687746							
Adjusted R Square	0.687298							
Standard Error	1462.76							
Observations	700							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.29E+09	3.29E+09	1537.356	1.4E-178			
Residual	698	1.49E+09	2139668					
Total	699	4.78E+09						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-74.4103	116.5304	-0.63855	0.523326	-303.202	154.3817	-303.202	154.3817
Units Sold	2.500792	0.063781	39.20914	1.4E-178	2.375567	2.626017	2.375567	2.626017

The regression model, with a significant p-value ($p < 0.001$), demonstrates a robust positive correlation between units sold and the outcome variable. The model's predictive precision is affirmed by its high R-squared value of 0.688, indicating that roughly 68.8% of the variance in the outcome variable can be elucidated by the predictor variable, units sold.

Co-relation:

	Units Sold	*Revenue*
Units Sold	1	0.796298
Revenue	0.796298	1

The correlation coefficient between units sold and revenue is 0.796, suggesting a strong positive correlation between these two variables.

Anova (Single Factor) :

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
3450	699	1923505	2751.795	4154648		
5175	699	2758189	3945.908	6850161		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.98E+08	1	4.98E+08	90.57022	7.53E-21	3.848129
Within Groups	7.68E+09	1396	5502405			
Total	8.18E+09	1397				

The ANOVA findings highlight a notable distinction between the two groups ($p < 0.001$), with 1 degree of freedom. The within-group error is calculated at 7681356717, and the total R-squared value stands at 0.06, implying that the model accounts for 6% of the variability observed in the data.

Anova two factor without Replication:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	8.21E+08	48	17108242	5.848894	8.54E-17	1.445925
Columns	5.65E+10	3	1.88E+10	6435.486	3.8E-153	2.667443
Error	4.21E+08	144	2925039			
Total	5.77E+10	195				

The ANOVA results unveil substantial variation both among rows and columns ($p < 0.001$), with degrees of freedom (df) values of 48 and 3, correspondingly. The error term is associated with a degree of freedom of 144.

Descriptive Statistics:

Units Sold	
Mean	1608.32
Standard Error	32.78652
Median	1542.5
Mode	727
Standard Deviation	867.4498
Sample Variance	752469.1
Kurtosis	-0.31491
Skewness	0.43627
Range	4293
Minimum	200
Maximum	4493
Sum	1125824
Count	700

Profit	
Mean	3947.664
Standard Error	98.86874
Median	3424.5
Mode	5229
Standard Deviation	2615.821
Sample Variance	6842519
Kurtosis	0.338621
Skewness	0.840484
Range	13319
Minimum	160
Maximum	13479
Sum	2763364
Count	700

4. Conclusion and Review:

After a comprehensive analysis of the cookie sales data, it becomes apparent that there are significant trends and insights to extract. By scrutinizing crucial metrics like units sold, revenue, cost, and profit across various countries and products, valuable conclusions can be drawn regarding market demand, pricing strategies, and overall profitability. This holistic comprehension will facilitate informed decision-making aimed at resource optimization, targeted market approaches, and profit maximization in future cookie sales endeavours.