CHINOOK MUSIC SALES ANALYSIS

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Agenda:

- Problem Statement

- Data Description

- Insights

- Recommendation

- Conclusion

Problem Statement:

- Identify entities and relationships (e.g., Employee, Customer, Invoice).
- Cleaning missing values or duplicates to ensure reliable analysis and reporting.
- Determine key metrics like sales performance and customer demographics.
- Analyze total sales, average order value, top-selling products by location, and customer group.
- Examine customers purchase history and churn rates
- Analyze sales across different location to find popular product combinations to use for cross-selling.
- Review promotions effect on sales and customer behavior.
- Identify growth opportunities, optimize pricing, and create targeted marketing strategies

Data Description:

- Tables included in the dataset are albums, artists, customers, employees, genres, invoices, tracks, and playlists.

- Below is the database schema
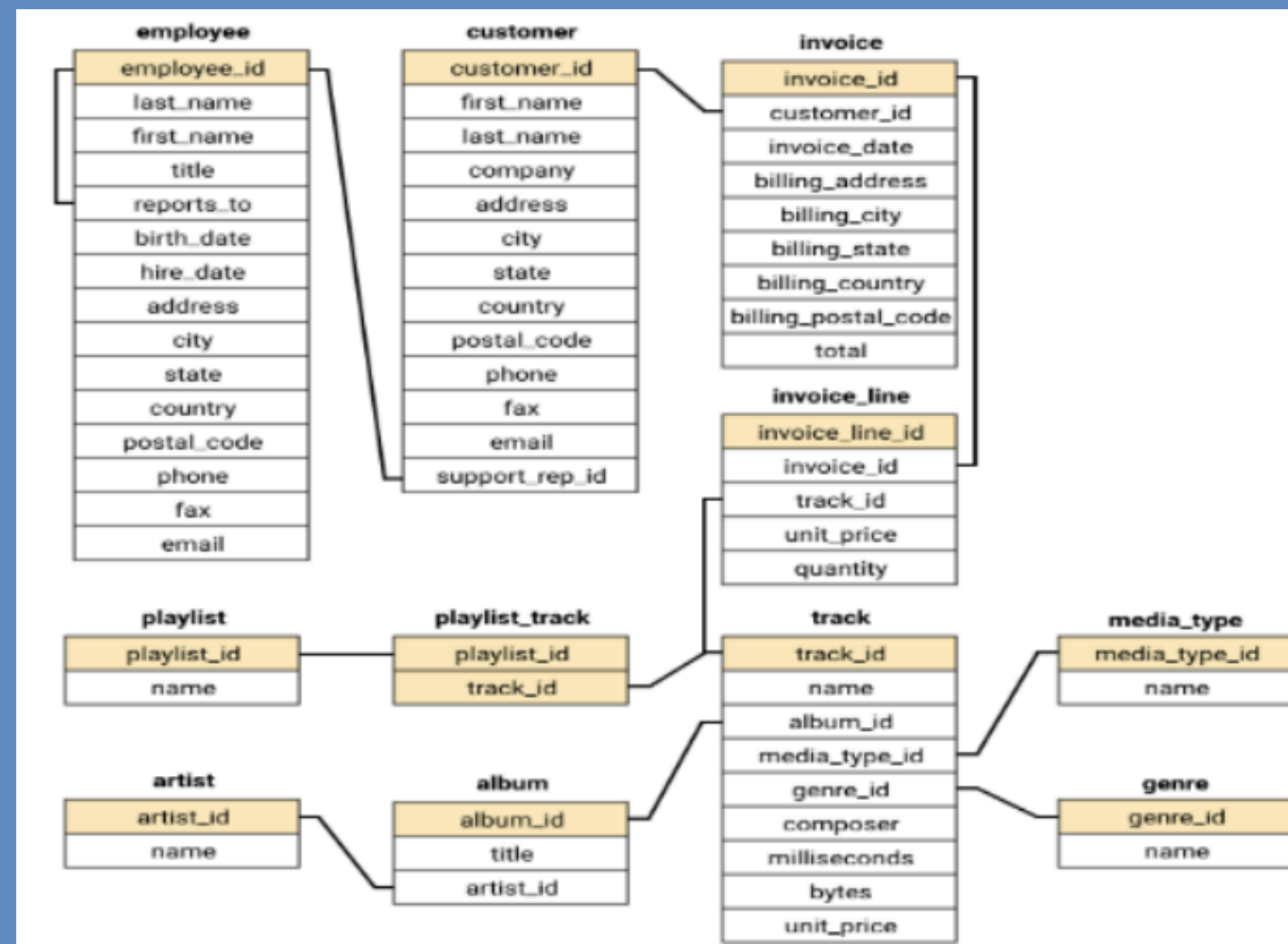
- This involve querying the database to get a deeper understanding of customer behaviour, sales performance and product popularity.

- By analyzing the data, we can make proper decisions to optimize sales, improve customer satisfaction, develop effective marketing strategies and improve overall performance.

Key Metrics and Visualizations:

- Analyze the demographic breakdown of customers based on country, state, and city.
- Top selling artist, album, track and genre for each country
- Total revenue and number of invoices by location
- Top 5 customers by total revenue in each country
- Customers purchasing behavior patterns by region
- Customers churn rate
- Total revenue and average order value generated by each customer
- Ranking based on genre sales
- Identify long-term customers
- Customers purchased tracks from 3 different genre

Customer demographic analysis by country

USA has highest number of customers of 13 and lowest number of customers in Chile with 1 customer.

No of customers Vs country
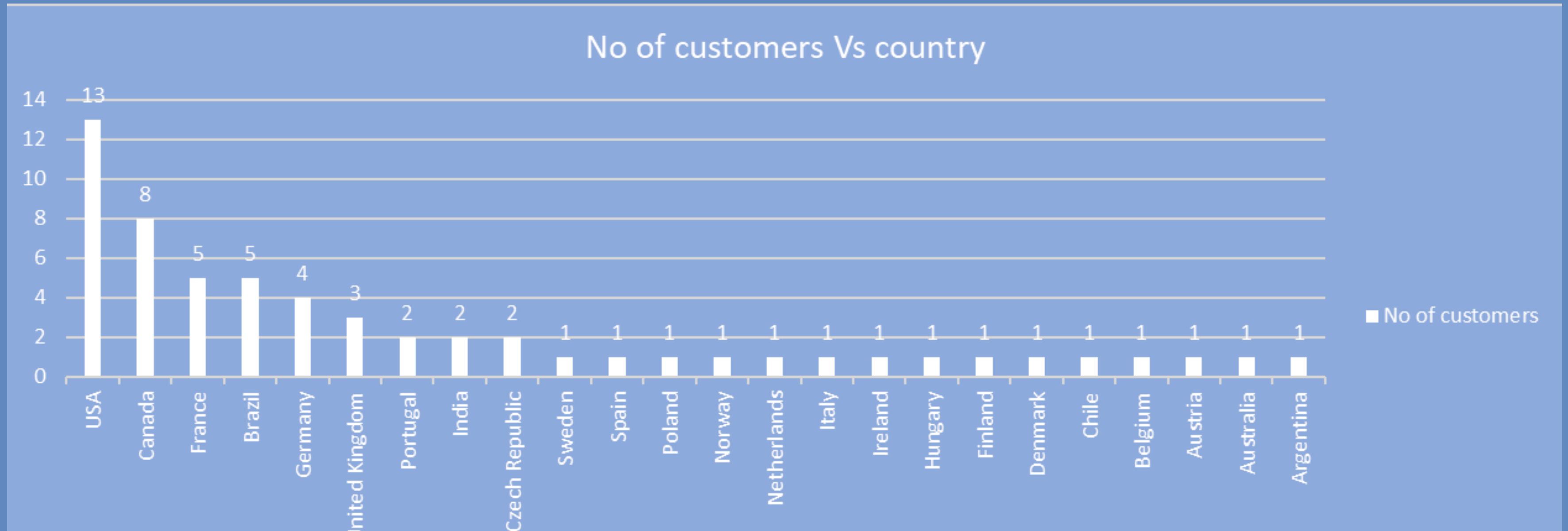
Total revenue and number of invoices by country

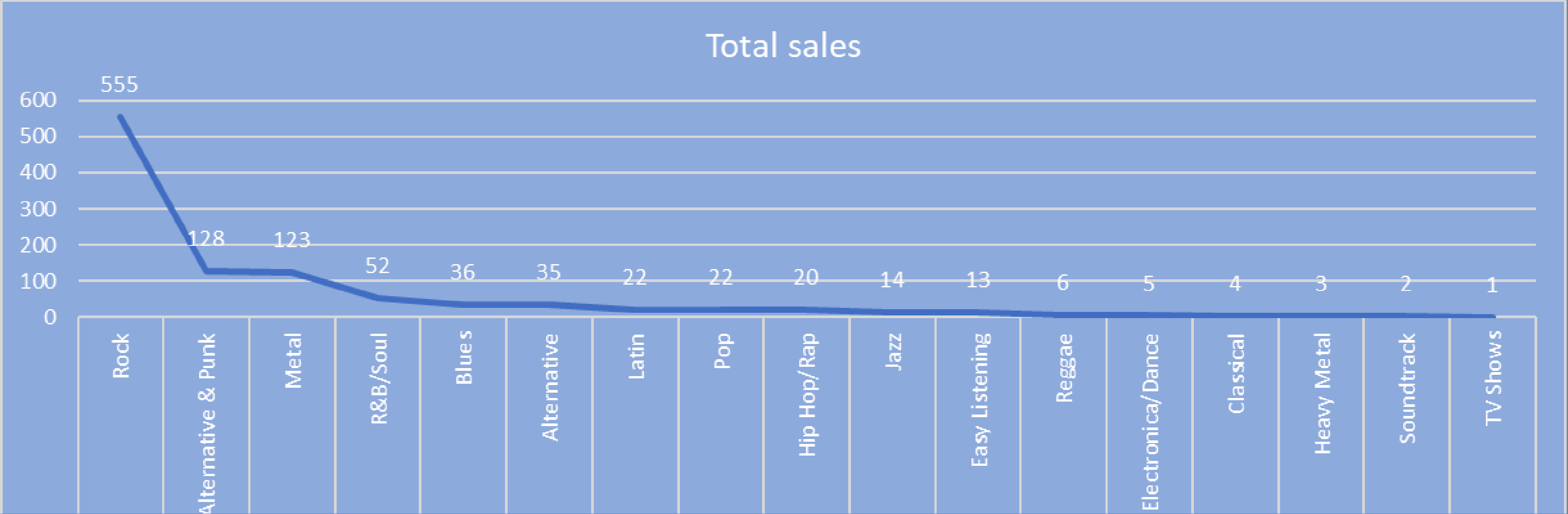USA has the highest total revenue of $1040.49 and highest invoices count with 131. Denmark has the lowest total revenue with $37.62 and lowest invoices with 10. USA, Canada, Brazil, France, and Germany are the top 5 countries with maximum invoices and revenue, whereas Belgium, Austria, Italy, and Argentina are at the lower end with lowest invoices and revenue.

billing_country	invoice_count	total_revenue
USA	131	1040.49
Canada	76	535.59
Brazil	61	427.68
France	50	389.07
Germany	41	334.62
Czech Republic	30	273.24
United Kingdom	28	245.52
Portugal	29	185.13
India	21	183.15
Ireland	13	114.84
Spain	11	98.01

Total revenue and invoices by country

Invoice_count — total_revenue
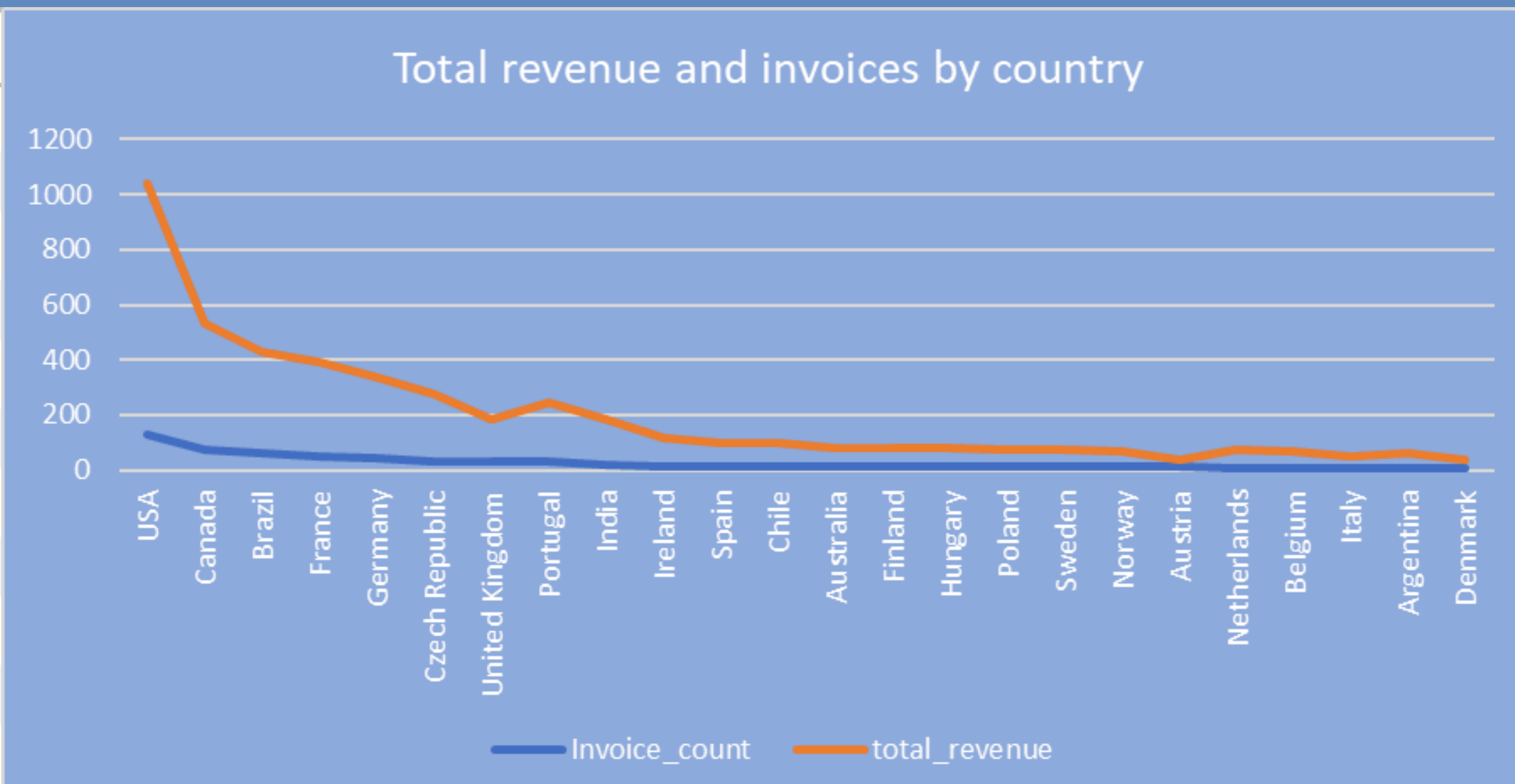
Top genre by sales in USA:

Rock is the leading genre with total sales of $555 and Alternative & Punk and Metal are also the popular one with 2nd and 3rd ranked. Since they are popular, customers might buy them together. There's a great opportunity to boost sales by cross-selling

Total sales

Rock	Alternative & Punk	Metal	R&B/Soul	Blues	Alternative	Latin	Pop	Hip Hop/Rap	Jazz	Easy Listening	Reggae	Electronica/Dance	Classical	Heavy Metal	Soundtrack	TV Shows
555	128	123	52	36	35	22	22	20	14	13	6	5	4	3	2	1

Top genre by sales in other countries

Rock is the highest-selling genre in most countries, including Canada, France and Brazil. Also the other most popular genres are Alternative & Punk, and Metal

Total sales

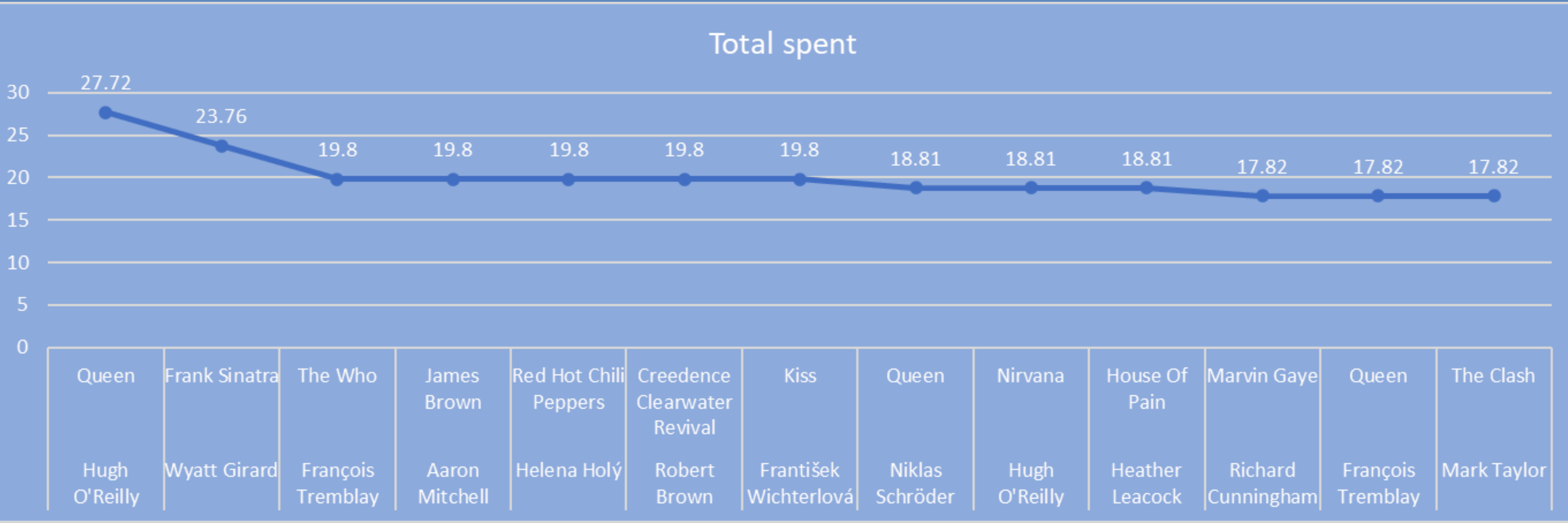| Country	Genre	Sales
Canada	Rock	330
France	Rock	208
Brazil	Rock	203
Germany	Rock	192
United Kingdom	Rock	164
Czech Republic	Rock	142
Portugal	Rock	107
India	Rock	101
Brazil	Alternative & Punk	73
Brazil	Metal	71
Canada	Metal	71
Ireland	Rock	70
Chile	Rock	60
Sweden	Rock	59
France	Metal	53
Finland	Rock	46
Spain	Rock	46
Hungary	Rock	44
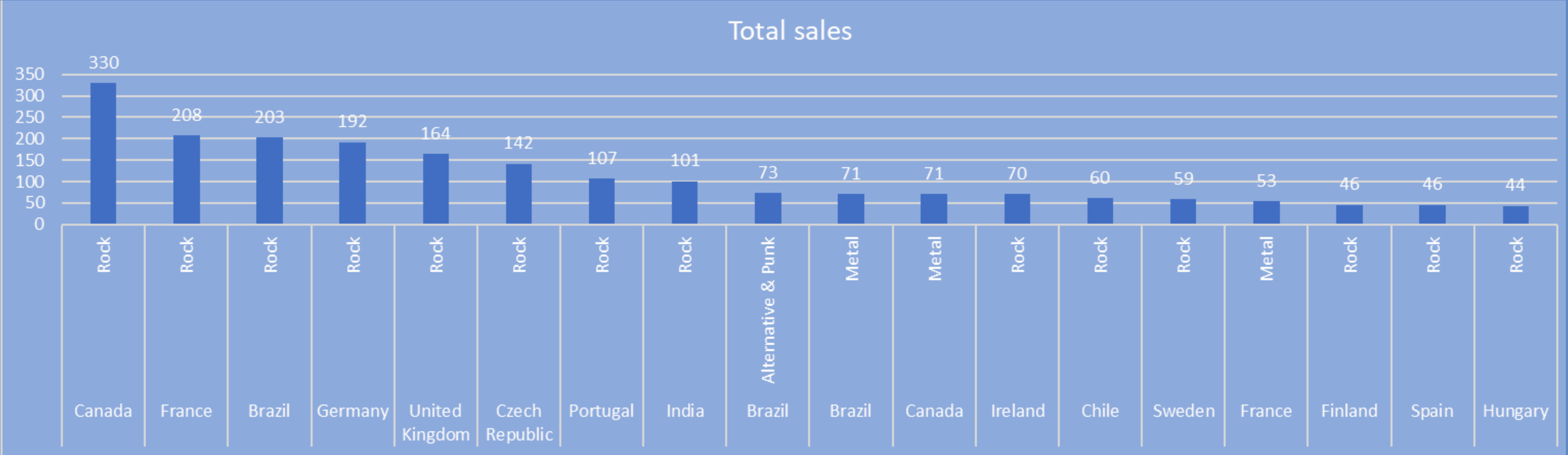
Top Albums in each genre

Rock is the leading genre in sales with multiple top-selling albums like "Are You Experienced?" , "The Doors," "Greatest Hits I," and "Big Ones."
The 2nd top is Metal with two successful albums, "Faceless" and "Mezmerize," showing a solid market for this genre.


Total slaes

Top artists by customers total spent

Queen leads with top customers like Hugh O'Reilly and Niklas Schröder. Other artists, such as Frank Sinatra, The Who, James Brown, and Red Hot Chili Peppers, also see notable spending. Wyatt Girard and François Tremblay also spend significantly on artists like Frank Sinatra and The Who.

Total spent

Queen	Frank Sinatra	The Who	James Brown	Red Hot Chili Peppers	Creedence Clearwater Revival	Kiss	Queen	Nirvana	House Of Pain	Marvin Gaye	Queen	The Clash
27.72	23.76	19.8	19.8	19.8	19.8	19.8	18.81	18.81	18.81	17.82	17.82	17.82
Hugh O'Reilly	Wyatt Girard	François Tremblay	Aaron Mitchell	Helena Holý	Robert Brown	František Wichterlová	Niklas Schröder	Hugh O'Reilly	Heather Leacock	Richard Cunningham	François Tremblay	Mark Taylor

Tracks purchased per customer

František Wichterlová have the tracks purchased with 146, followed by Helena Holý with 130 and Hugh O'Reilly with 115.

Tracks purchased
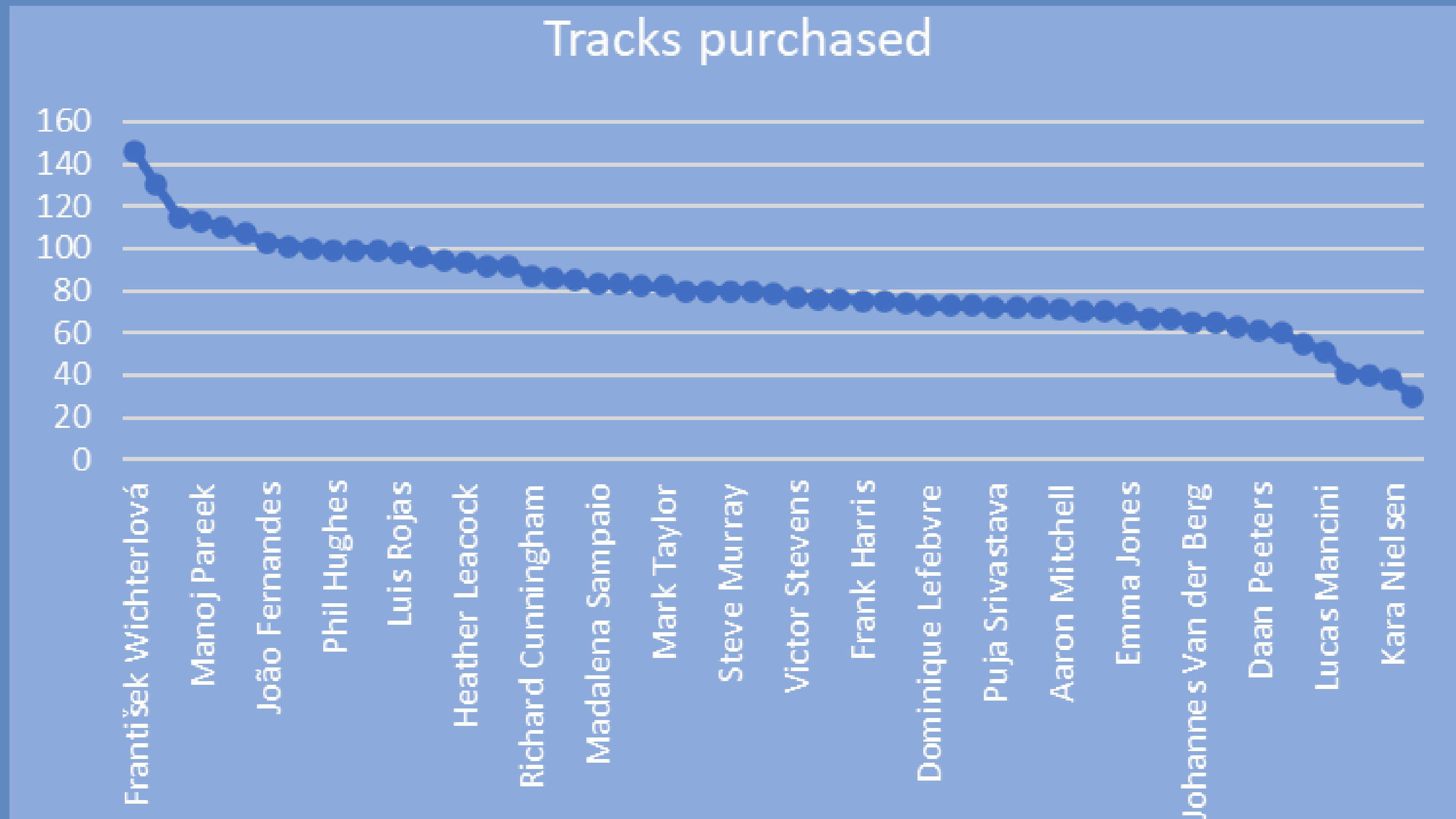
Top 5 customers by total revenue in each country:

Czech Republic has the highest-spending country with two customers each which results in strong market sales strategies

customer_name	country	total_revenue
František Wichterlová	Czech Republic	144.54
Helena Holý	Czech Republic	128.70
Hugh O'Reilly	Ireland	114.84
Manoj Pareek	India	111.87
Luís Gonçalves	Brazil	108.90

Customers purchasing behavior patterns by region:

country	state	city	total_customers	total_purchases	total_spending	avg_order_value	avg_purchase_frequency
Czech Republic	N.A	Prague	2	30	273.24	9.38	15.00
USA	CA	Mountain View	2	20	169.29	8.60	10.00
United Kingdom	N.A	London	2	19	166.32	8.72	9.50
Germany	N.A	Berlin	2	20	158.40	7.94	10.00
France	N.A	Paris	2	18	151.47	8.42	9.00
Brazil	SP	São Paulo	2	22	129.69	5.98	11.00
Ireland	Dublin	Dublin	1	13	114.84	8.83	13.00
India	N.A	Delhi	1	13	111.87	8.61	13.00
Brazil	SP	São José dos Campos	1	13	108.90	8.38	13.00
Brazil	DF	Brasília	1	15	106.92	7.13	15.00
Portugal	N.A	Lisbon	1	13	102.96	7.92	13.00
Canada	QC	Montréal	1	9	99.99	11.11	9.00

- High order value and frequency in Prague, Mountain View, and London which indicate a strong market for premium products.
- Moderate in São Paulo and Berlin need to focus on retention and repeat purchases.
- Low in Edmonton and Copenhagen, use promotions to increase sales.

Customers churn rate:

	churn_rate
▶	1.6949

- The customer churn rate is 1.6949, indicating that 1.7% of customers are leaving over a specific period.
- Need to focus on improving customer engagement, enhancing service quality, and acting on customer feedback.

Total revenue and average order value generated by each customer:

František Wichterlová is the highest revenue generating customer along with Helena Holý, Hugh O'Reilly, and Manoj Pareek each exceeding 100. Many customers contribute between $70 and $100 in total revenue, indicating a strong moderate customer type.

customer_id	customer_name	number_of_invoices	total_revenue	average_order_value
5	František Wichterlová	18	144.54	8.03
6	Helena Holý	12	128.70	10.73
46	Hugh O'Reilly	13	114.84	8.83
58	Manoj Pareek	13	111.87	8.61
1	Luís Gonçalves	13	108.90	8.38
13	Fernanda Ramos	15	106.92	7.13
34	João Fernandes	13	102.96	7.92
3	François Tremblay	9	99.99	11.11
42	Wyatt Girard	11	99.99	9.09

Average order value:

customer_id	customers	avg_order_value
3	François Tremblay	11.11
6	Helena Holý	10.73
29	Robert Brown	10.15
18	Michelle Brooks	9.90
37	Fynn Zimmermann	9.41
27	Patrick Gray	9.35
16	Frank Harris	9.28
42	Wyatt Girard	9.09

- François Tremblay has the highest average order value, along with Helena Holý and Robert Brown also have high average order values above 10.
- A significant number of customers have average order values ranging between 7 and 9, indicating a moderate spending pattern
- The data says a wide range of average order values, showing diverse spending behaviors among customers.

Long-term customers

František Wichterlová and Helena Holý shows high lifetime value, indicating long-term customer. Therefore analyze their purchasing pattern and encourage repeat purchases by offering rewards and discounts to enhance their loyalty.

customer_id	customer_name	first_purchase_date	total_invoices	total_spent
5	František Wichterlová	2017-05-29	18	144.54
6	Helena Holý	2017-08-31	12	128.70
46	Hugh O'Reilly	2017-02-18	13	114.84
58	Manoj Pareek	2017-02-21	13	111.87
1	Luís Gonçalves	2017-01-26	13	108.90
13	Fernanda Ramos	2017-05-18	15	106.92
34	João Fernandes	2017-02-25	13	102.96
3	François Tremblay	2017-02-21	9	99.99

Customers purchased tracks from 3 different genre:

customer_id	customers	genre_count
2	Leonie Köhler	14
5	František Wichterlová	13
44	Terhi Hämäläinen	13
35	Madalena Sampaio	13
22	Heather Leacock	13
30	Edward Francis	13
38	Niklas Schröder	12
23	John Gordon	12
46	Hugh O'Reilly	12
13	Fernanda Ramos	12

- Leonie Köhler has the highest genre count at 14 and the genre count range is between 12 to 14 which indicates customer's diverse taste in music genres
- The data is useful for understanding customer preferences based on genre diversity.

Recommendation

- USA has the largest customer base, continue personalized offers or loyalty programs to retain and expand this customer base.

- USA, Canada, Brazil, France, and Germany generate most of the revenue and invoices, so focusing on customer loyalty can boost earnings. In contrast, countries like Belgium, Austria, Italy, and Argentina have lower engagement. Running market surveys in these regions can help identify issues and adjust the product offering to increase sales.

- Rock leads the sales followed by Alternative & Punk and Metal. Combining these present a great opportunity to boost sales through cross-selling.

- František Wichterlová is the highest revenue generating customer along with Helena Holý, Hugh O'Reilly, and Manoj Pareek. Many customers contribute in moderate level. Hence By focusing on personalized engagement with top customers and targeted marketing efforts for moderate customers will enhance revenue generation .

Conclusion:

- Removing null values and duplicates enables dataset more accurate analysis and decision-making.
- Focus on promoting high-performing genres like Rock.
- Encourage repeat purchases by rewarding long-term customers and loyalty programs.
- Promote Rock in the USA and Alternative & Metal in Brazil, and implement cross-selling strategies to boost engagement and sales.
- Churn rate is 1.7%, which needs to improve customer retention strategies, especially in regions with moderate sales.
- Tailor strategies based on country-specific spending and purchasing patterns.
- Focus on growth opportunities, optimize pricing, and create targeted marketing strategies.

Thank you