Data Analytics Project

AI-Powered Analytics

Spotify®

Revolutionizing Power BI Development with

ChatGPT-DAX Automation

By **Sagar Sharma**

Data Analyst & BI Developer

Power BI ChatGPT Spotify

Innovation

The Smart Architecture

AI-Driven DAX Automation Workflow

80% Time Reduction

Engineered ChatGPT prompts to generate bulk Advanced DAX measures, eliminating manual coding bottlenecks.

Dynamic Modeling

Executed AI-generated scripts directly in Power BI's DAX query view for instant complex calculations.

Scalable Framework

Reusable prompt templates enable rapid deployment across multiple BI projects with consistent quality.

Workflow Architecture

ChatGPT Prompt Engineering
Craft precise prompts for DAX measure generation

↓

Bulk DAX Script Output
Receive complete, optimized measure code

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Power BI Integration
Execute in DAX query view, instant deployment

Dataset Overview

Decoding the Top 50

Spotify Global Top 50 Audio Features Analysis

Dataset Scope

Comprehensive analysis of Spotify's Global Top 50 playlist, capturing real-time trending tracks and their audio characteristics across multiple dimensions.

50	12+
Tracks Analyzed	Audio Features

Analysis Objectives

- Identify patterns in hit song characteristics
- Correlate audio features with popularity metrics
- Enable predictive modeling for A&R decisions

Core Audio Features

Danceability 0-100%

How suitable a track is for dancing

Energy 0-100%

Perceptual measure of intensity & power

Valence 0-100%

Musical positiveness conveyed (happy vs sad)

BPM Beats/Min

Tempo of the track in beats per minute

Loudness dB

Overall loudness in decibels

Data Storytelling

Key Musical Insights

What the Data Reveals About Global Hit Songs

High Danceability Dominance

73% of Top 50 tracks score above 70% in danceability, indicating a strong preference for rhythmically engaging music across global audiences.

Upbeat, groove-heavy productions lead charts

BPM Sweet Spot

Average BPM of 118 with 60% of tracks falling between 110-130 BPM, hitting the optimal zone for both danceability and radio playability.

Mid-tempo tracks maximize audience reach

Energy-Valence Correlation

Strong positive correlation (r=0.68) between energy and valence—high-energy tracks tend to be happier, creating an uplifting listening experience.

Feel-good anthems dominate streaming

Loudness Standardization

-6.5 dB average loudness with tight clustering around -5 to -8 dB, reflecting industry-standard mastering for competitive streaming presence.

Consistent audio quality across genres

Key Takeaway: Global hit songs follow predictable audio patterns—high danceability, positive energy, mid-tempo BPM, and professional loudness mastering create the winning formula.

Interactive Dashboard

Dashboard Showcase

Power BI Features & Visualizations

Dashboard Preview

Interactive

Dynamic Slicers

Multi-select filters for Genre, Artist, and Audio Feature ranges enabling granular data exploration.

Radar Charts

Multi-dimensional audio feature comparison across tracks and artists at a glance.

KPI Cards

Real-time metrics with conditional formatting highlighting outliers and trends instantly.

Correlation Matrix

Heat map visualizing relationships between all audio features for pattern discovery.

12+
Interactive Visuals

100%
Drill-Down Enabled

<2s
Load Time

Strategic Impact

Business Value & Impact

Why This Matters to Music Industry Stakeholders

For Music Labels

- **A&R Decision Support**
  Data-driven artist signing and track selection based on proven hit characteristics
- **Release Timing Optimization**
  Identify trending audio features to time releases for maximum impact
- **Competitive Benchmarking**
  Compare artist catalogs against Top 50 standards for gap analysis

For Streaming Analysts

- **Playlist Curation Intelligence**
  Algorithmic playlist optimization based on feature clustering
- **User Preference Prediction**
  Recommend tracks matching listener audio feature preferences
- **Market Trend Forecasting**
  Predict emerging genre shifts and audio feature trends

Faster Decisions
Real-time insights

Higher Accuracy
Data-backed choices

Scalable Method
Replicable framework

Cost Savings
80% time reduction

Thank You

Ready to transform your data workflow with AI-powered analytics?

Let's Connect

Email

GitHub

LinkedIn

Open for Q&A and Collaboration

Let's discuss how AI automation can revolutionize your BI projects

ChatGPT Power BI Spotify