

The Electric Guitar Threatens the Acoustic for Top Selling Spot*

An analysis of guitar sales data over 15 years and the trends between electric and acoustic.

Liam Wall

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Guitar sales in 2020 peaked at \$1.3 billion a 60% increase from 2019 and the trend has continued to 2023 and has no signs of slowing in 2024. This paper delves into the sales of guitar sales in the United States over the past 15 years, employing a data on guitar sales by volumes, type of guitars, and their average price to understand the evolving preferences among consumers. The study of this data reveals a significant shift in the popularity between electric and acoustic guitars, reflecting changing trends due to COVID-19 and economic, technological, and music preference changes. The findings not only chart the changing tastes of guitar enthusiasts and musicians but also hint at underlying factors driving these trends, offering valuable insights for manufacturers, retailers, and policymakers in the music industry.

1 Introduction

The guitar, an emblem of musical expression and cultural significance, has long been a staple in the global music industry. Its allure spans genres, from the soulful strains of acoustic melodies to the electrifying riffs of rock and roll. In the United States, the guitar market has experienced a remarkable resurgence in recent years, particularly highlighted by the significant spike in sales in 2020, where it peaked at \$1.3 billion—a 60% increase from the previous year. This resurgence has not only continued through to 2023 but shows no signs of slowing as we move into 2024. The surge in guitar sales amidst the challenges of the COVID-19 pandemic and the changing economic landscape raises intriguing questions about the factors fueling this growth and the shifting preferences among guitar enthusiasts.

*Code and data are available at: <https://github.com/Lwall02/guitars>.

This research paper aims to explore the dynamics of guitar sales in the United States over the past 15 years, focusing on the sale volumes, types of guitars (electric and acoustic), and their average pricing. By analyzing these aspects, the study seeks to uncover the evolving consumer preferences that have contributed to the recent boom in guitar sales. The dataset utilized encompasses a broad range of sales data, offering a comprehensive overview of the market trends. This analysis is particularly relevant in the context of the COVID-19 pandemic, which has had a profound impact on consumer behavior and leisure activities, potentially influencing the spike in guitar sales. Moreover, the study considers how economic fluctuations, technological advancements, and shifts in musical preferences may have contributed to the changing landscape of guitar popularity.

The significant shift in the popularity between electric and acoustic guitars, as revealed by our study, reflects a broader narrative of change within the music industry and consumer habits. This paper not only charts these changing tastes among guitar enthusiasts and musicians but also delves into the underlying factors driving these trends. By doing so, it offers valuable insights for a wide range of stakeholders, including manufacturers, retailers, and policymakers in the music industry. Understanding these trends is crucial for adapting to the evolving market and for predicting future developments in the world of music and musical instruments. This research contributes to the broader discourse on cultural consumption patterns and the impact of global events on the arts and entertainment sectors, providing a window into the changing psyche of the modern consumer.

The open source programming language R was used in the making of this report (R Core Team (2022)).

2 Data

2.1 Annual Area Burnt By Wildfires

The data set downloaded from <https://ourworldindata.org/grapher/annual-area-burnt-by-wildfires> contains the annual area burnt by wildfires per year from 2012 to 2024. The area burnt by wildfires is reported in hectares. The 2024 data is listed as incomplete because the year has not passed and was last updated on April 15, 2024. The data includes cumulative annual figures for Africa, Asia, Europe, North America, South America, and Oceania. The total figures for annual global data can be calculated by summing the mentioned regions. The data also contains complete 13 year data for 252 individual countries. 48 countries have recorded 0 hectares burnt for all 13 years of study *Annual Area Burnt by Wildfires* (2024).

2.2 Per Capita CO2 Emissions

The data set downloaded from [https://ourworldindata.org/explorers/co2?facet=none&hideControls=false&Gas+or+Warming=CO₂&Accounting=Production-based&Fuel+or+Land+Use=](https://ourworldindata.org/explorers/co2?facet=none&hideControls=false&Gas+or+Warming=CO2&Accounting=Production-based&Fuel+or+Land+Use=)

[Change=All+fossil+emissions&Count=Per+capita&country=CHN~USA~IND~GBR~OWID_WRL](#) contains annual per capita CO2 emissions per country or region, excluding land-use change, measured in tonnes per person. Land use change can release carbon dioxide into the air mainly through the process of agricultural conversion. Similar to the wildfire data, it includes cumulative annual figures for Africa, Asia, Europe, North America, South America, Oceania, and the World (not included in wildfire data). As well as data for 252 countries spanning 1750 to 2022. I have selected only to examine the data from 2012 to 2022 for the cumulative figures mentioned above.

2.3 Global Average Temperature Data

The data set downloaded from <https://ourworldindata.org/grapher/average-monthly-surface-temperature> contains detailed information on the average recorded temperature for 195 countries from 1940 to 2024. There is both monthly and annual data, we focus on annual data in this paper. The temperature is recorded in Celcius and measured 2 meters above the surface of the land, sea, and in-land waters. We obtain global average annual temperatures by averaging the 195 countries' data in each year.

2.4 Global Population Data

3 Model

3.1 Model set-up

3.1.1 Model justification

4 Results

5 Discussion

5.1 First discussion point

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Appendix

A Additional data details

B Model details

B.1 Posterior predictive check

B.2 Diagnostics

References

- Annual Area Burnt by Wildfires*. 2024. Our World in Data. <https://ourworldindata.org/grapher/annual-area-burnt-by-wildfires>.
- R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.