The background of the slide features a city skyline. On the left, a tall, slender skyscraper is visible, partially obscured by a light grey semi-transparent overlay. On the right, a more detailed view of a city skyline is shown, with a prominent skyscraper under construction, its top section still being built. The sky is a mix of light blue and pinkish-purple, suggesting a sunset or sunrise. The overall image has a modern, urban feel.

IMPACT OF MARKET MIX MODELLING ON SALES OF ELECKART

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AGENDA

01

Business Objective

02

Action Plan

03

Data Preparation

04

KPI's Derived

05

EDA- Insights

06

Model Building &
Evaluation

07

Recommendations &
Takeaways

BUSINESS OBJECTIVE

- ✓ To build a **Market Mix Model** for 3 product sub-categories:
 - Camera Accessory
 - Gaming Accessory
 - Home Audio
- ✓ To analyse factors affecting revenue and provide recommendations



ACTION PLAN



Performance Driver Analysis



Impact Analysis on Marketing ROI



Optimizing Marketing Spends

4P's Of Marketing



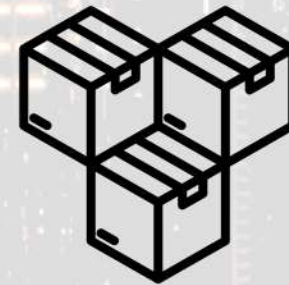
Price

- GMV
- Product MRP



Place

- Pin code
- Order payment type
- Seasonality
- Holidays/Event
- Sale Calendar



Product

- Number of units sold
- Delivery days and SLAs
- Categories
- Subcategories
- Verticals procurement SLAs



Promotion

- Marketing channel investments
- Customer Sentiments
- Adstock

Data Preperation

1. Incorrect values in some columns
2. De-duplication of data
3. Dropping insignificant columns
4. Outlier treatment
5. Limiting the data for the year
6. Aggregating data on weekly basis
7. Preparing the data for modelling



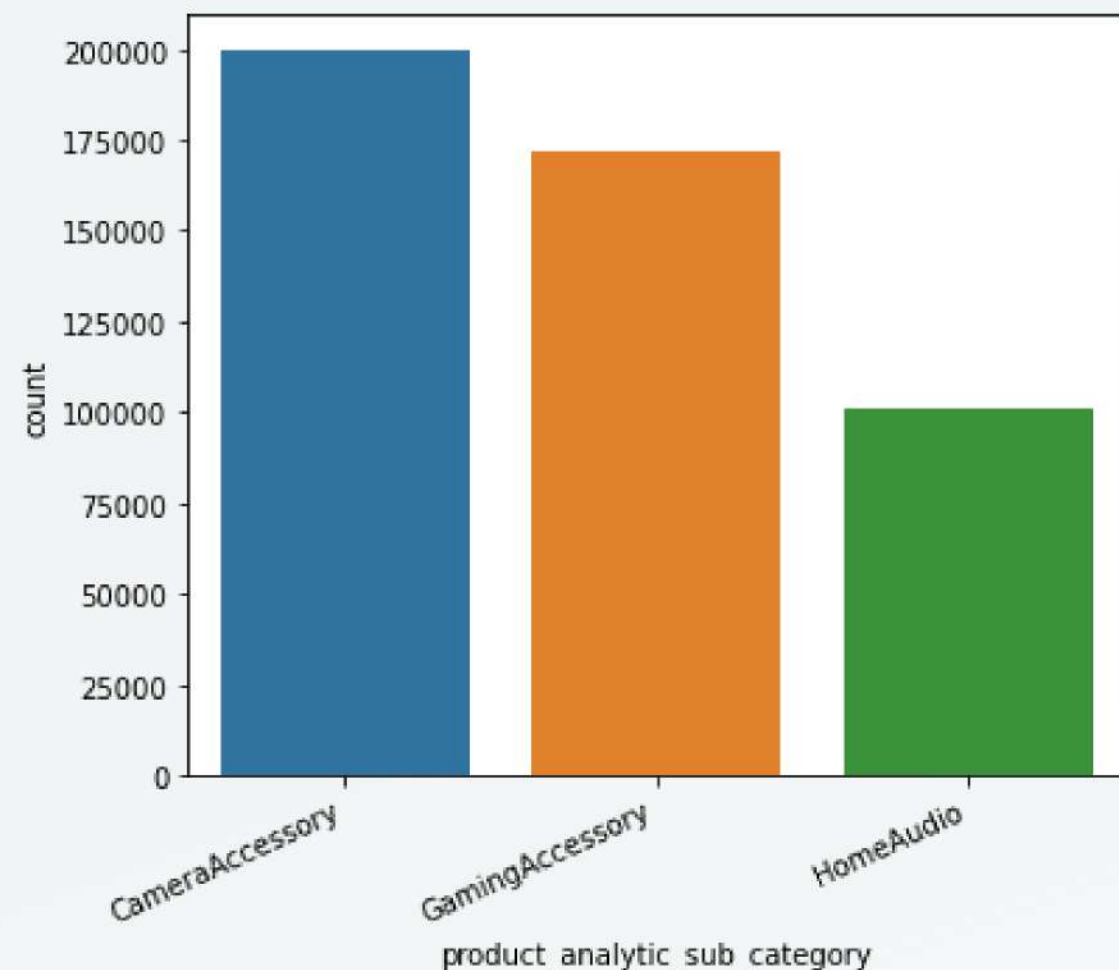
Derived KPIs:

1. Creation of Weeks
2. Holiday and Pay day weeks.
3. Product Categories: Luxurious and Mass market product.
4. Selling price of each product
5. Discount
6. Adstock Function for marketing levers.



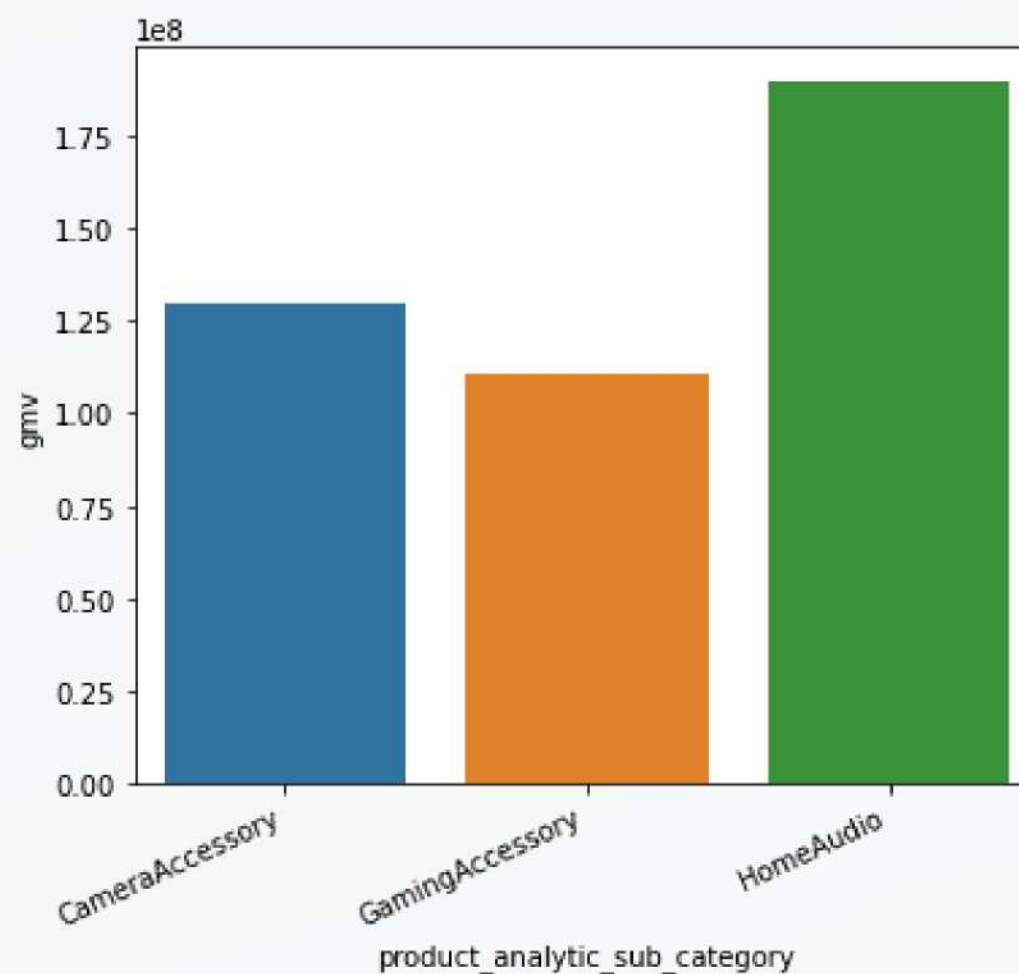


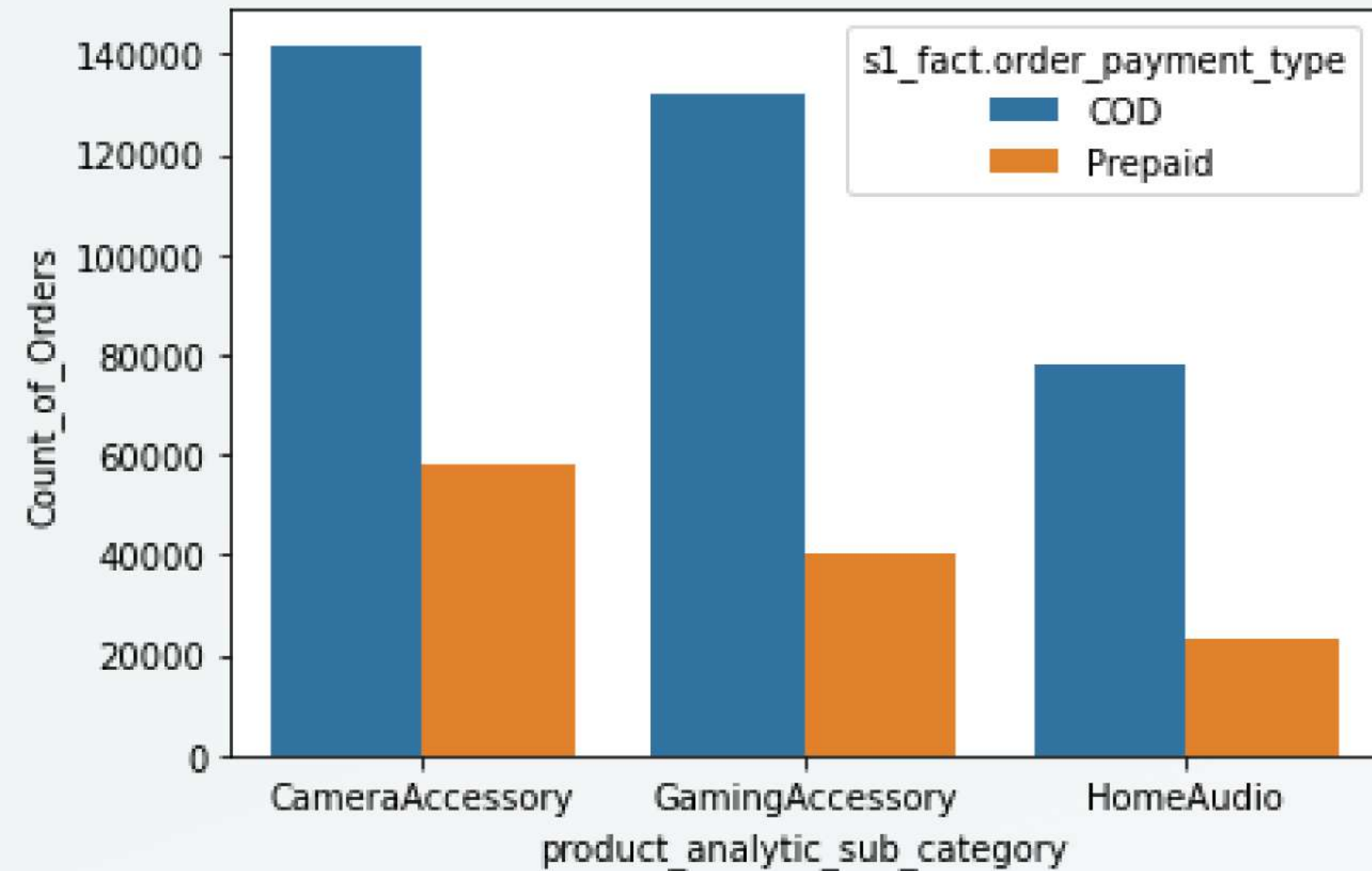
EXPLORATORY DATA ANALYSIS- INSIGHTS



Maximum orders were placed for products under camera accessories category.

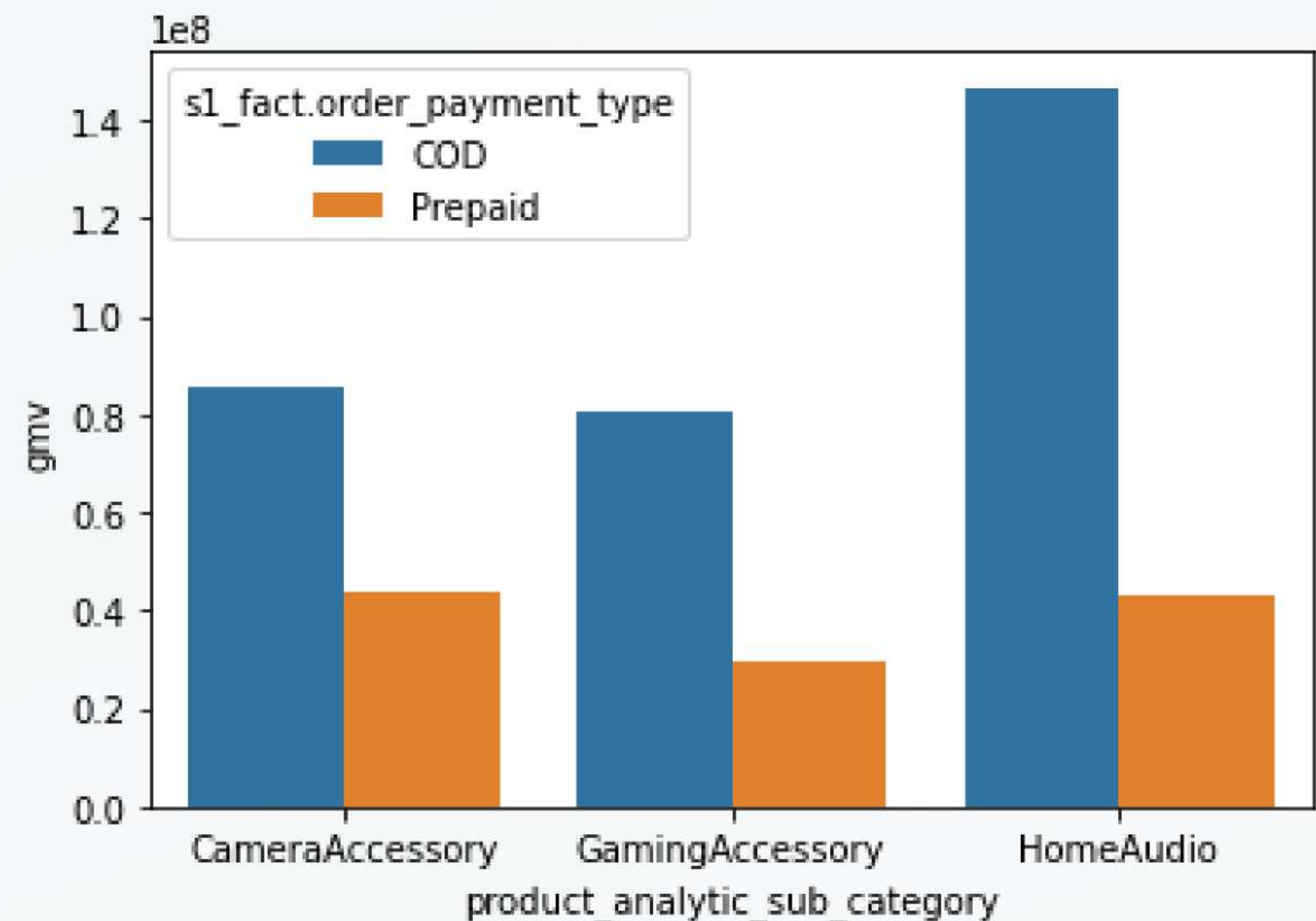
Home Audio category is the most revenue generating category.



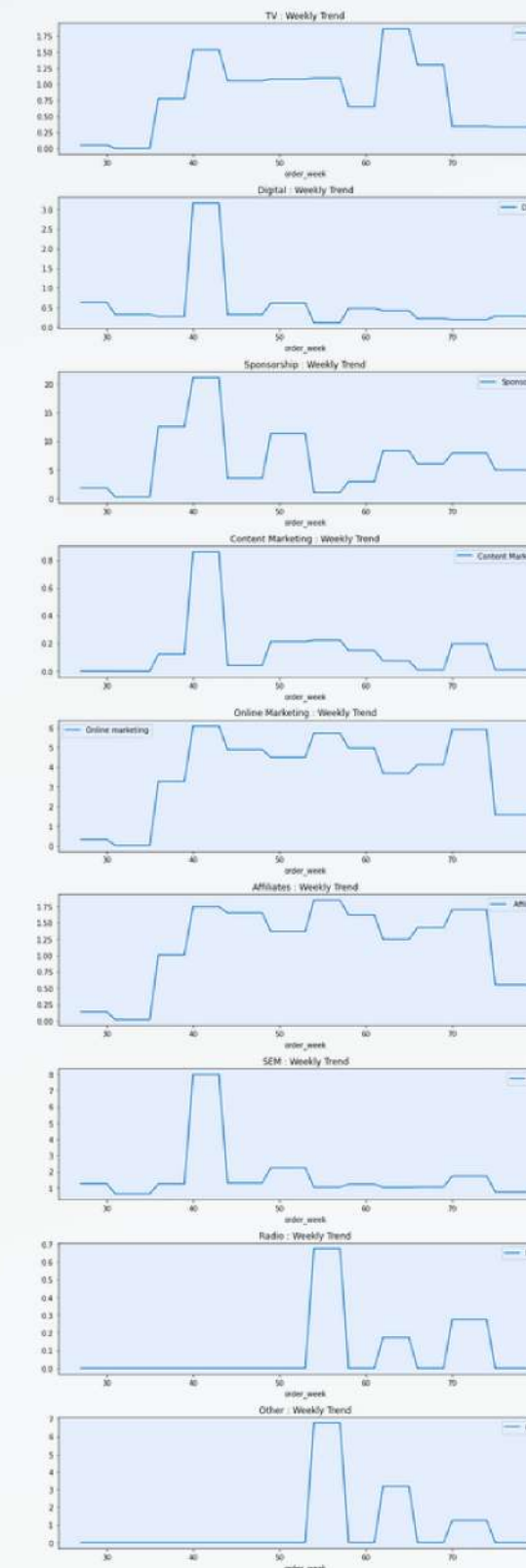


- Camera Accessory has generated highest revenue through prepaid orders.
- Home Audio has generated highest revenue through COD orders.

Cash on Delivery is the most preferred mode of payment for all three categories.



- Majority of the investments were done from week 39 to 50.
- Among all marketing levers, maximum investment was done in sponsorship medium.
- Investment in TV, online and affiliates marketing was consistently high between week 30 to 70.
- Radio and other marketing shows same pattern having hikes in between week 50 - 60, 60-70 and 70-80.



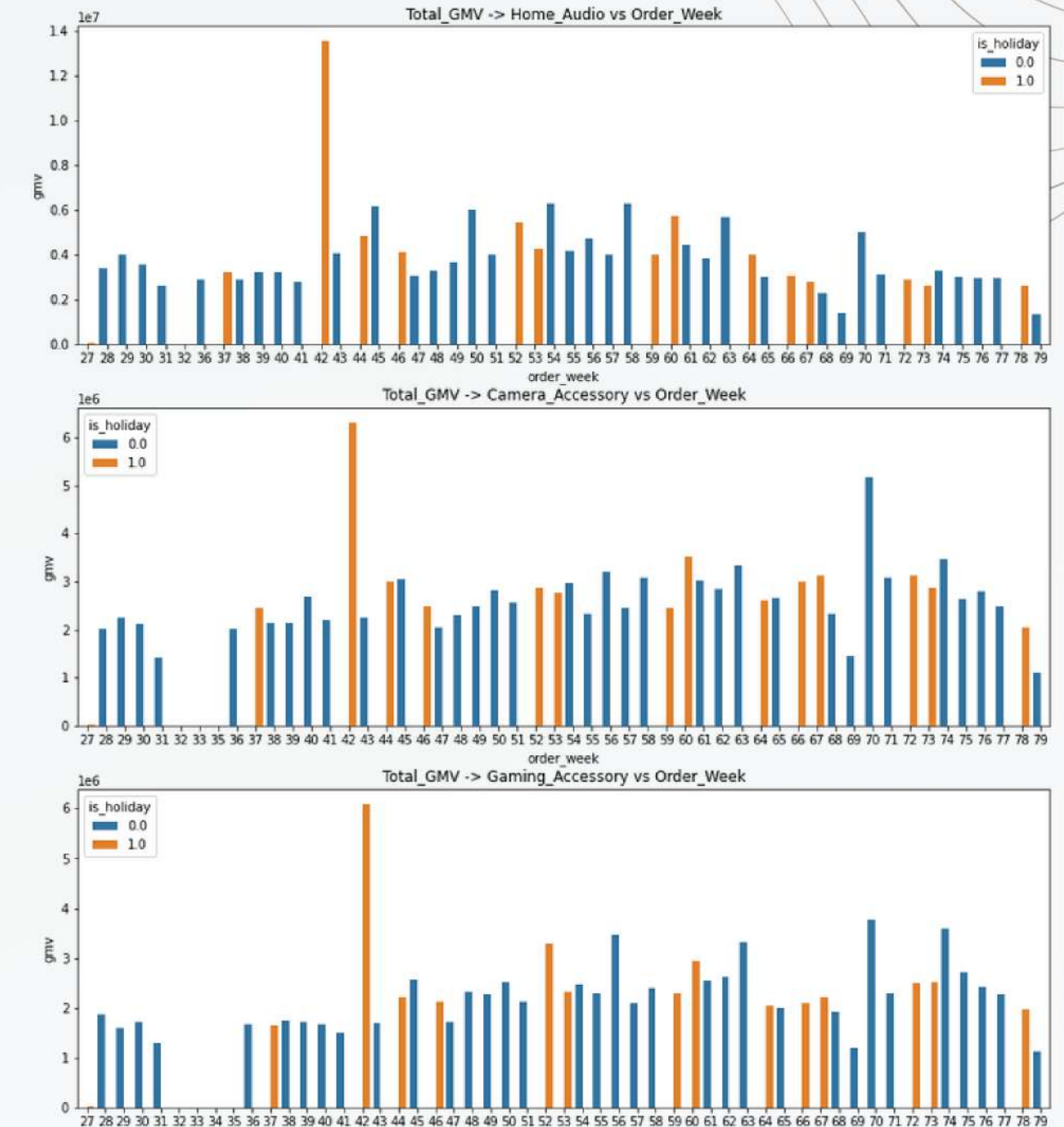
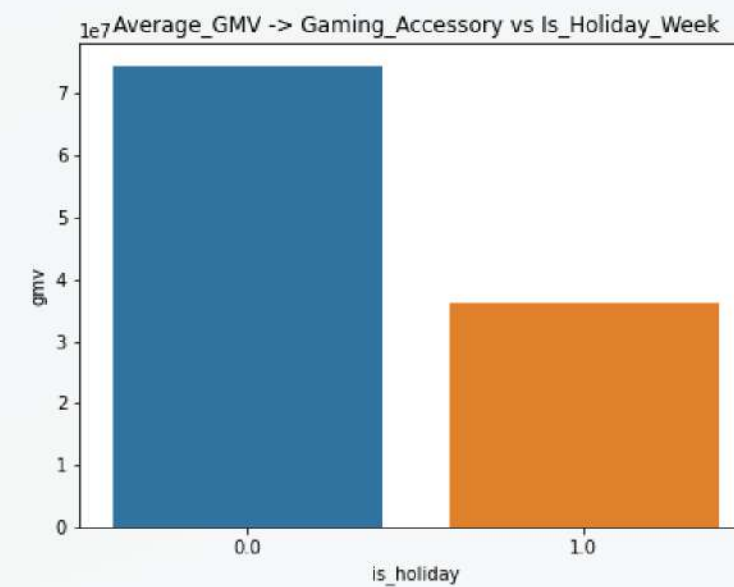
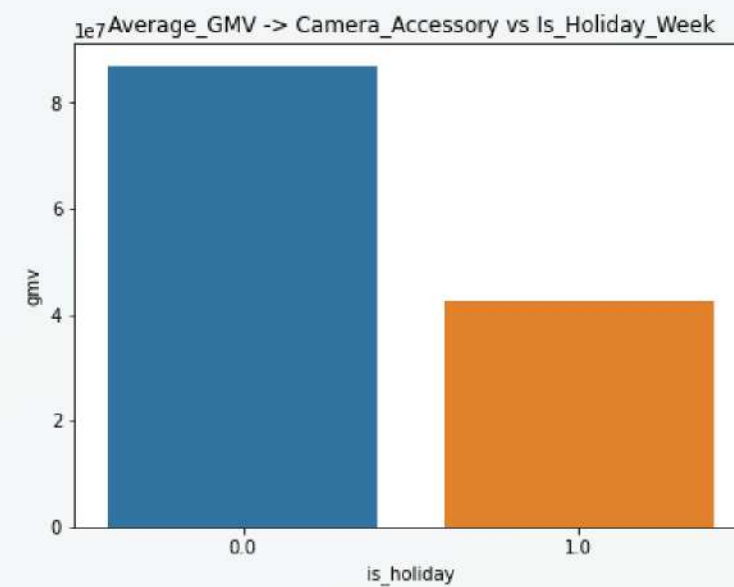
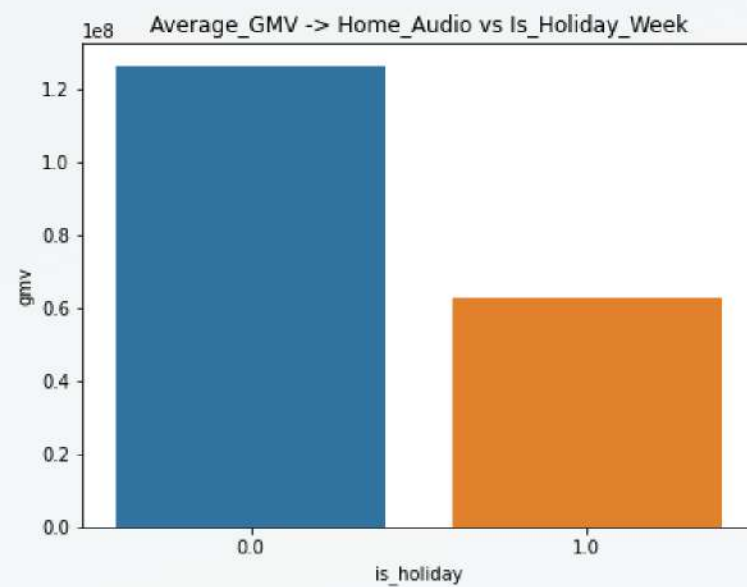


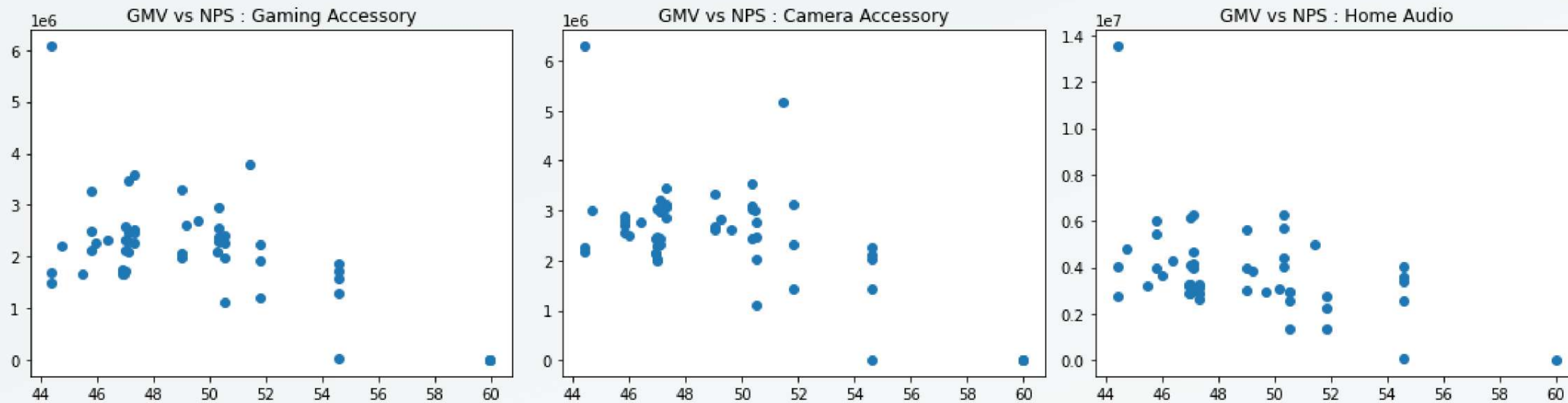
- The highest revenue was generated in week 42.
- Home audio has generated maximum revenue.



- Maximum number of orders were also placed in week 42 resulting highest revenue.
- Maximum orders were placed for products under gaming accessories.

- Considering effect of holiday week, the maximum revenue was generated by Camera Accessory during holiday week.
- It can be inferred that, holiday week shows significant impact on revenue.





- **NPS is a net promotor score; a metric to measure customer satisfaction, hence, the higher the better.**
- **From above plot it is observed that, there is somewhat negative correlation between NPS and total sales across all three categories.**



MODEL BUILDING AND EVALUTION

Camera Accessory Model

Model	Important Features	Test R2 Score
Simple Additive Model	Filter, Binoculars, Camera Battery, Adstock_online marketing, strap	96%
Multiplicative Model	Discount, CameraBatteryGrip, Camera Bag	93.3%
Distributed Lag Model	Camera Tripod, Adstock_TV_lag2, Adstock_other_lag2, adstock_other_lag3, cameraAccessory, flash, camera battery, camera bag	97.%

Gaming Accessory Model

Model	Important Features	Test R2 Score
Simple Additive Model	adstock_TV, GamePad, GamingHeadset, GamingMemoryCard, GamingMouse, JoystickGamingWheel, MotionControl	98.2%
Multiplicative Model	GamingHeadset, Joystick Gaming Wheel	94.3%
Distributed Lag Model	GamingHeadset, Mouse, Keyboard, MemoryCard, GamePad, NPS_lag3, product_procurement_sla_lag1, gmv_lag3	96.7%

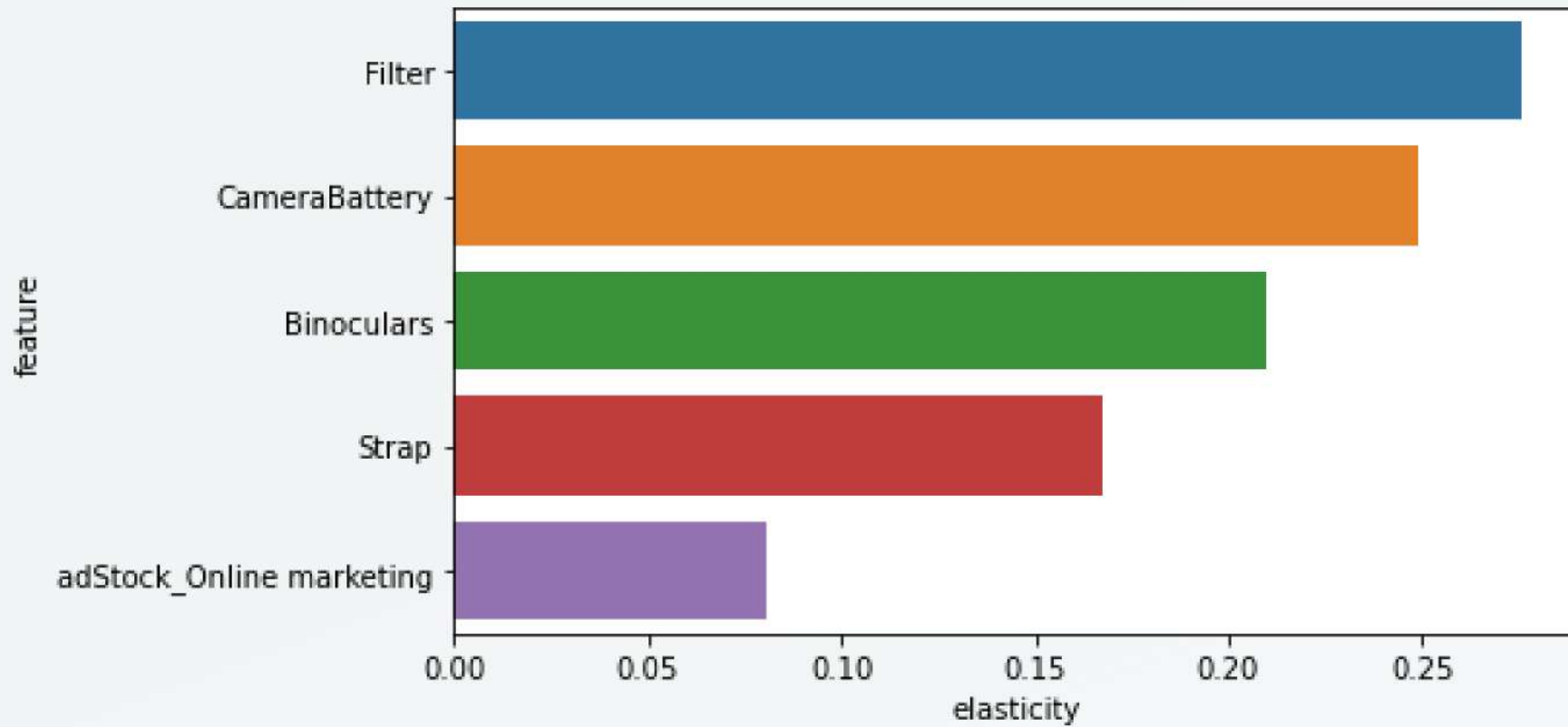
Home Audio Model

Model	Important Features	Test R2 Score
Simple Additive Model	FMRadio, HomeAudioSpeaker, voicerecorder	99.30%
Multiplicative Model	SLA, HomeAudioSpeaker, SoundMixer	99.40%
Distributed Lag Model	NPS_lag3, adstock_SEM_lag3, Dock, DockingStation, HomeAudio Speaker	98.60%

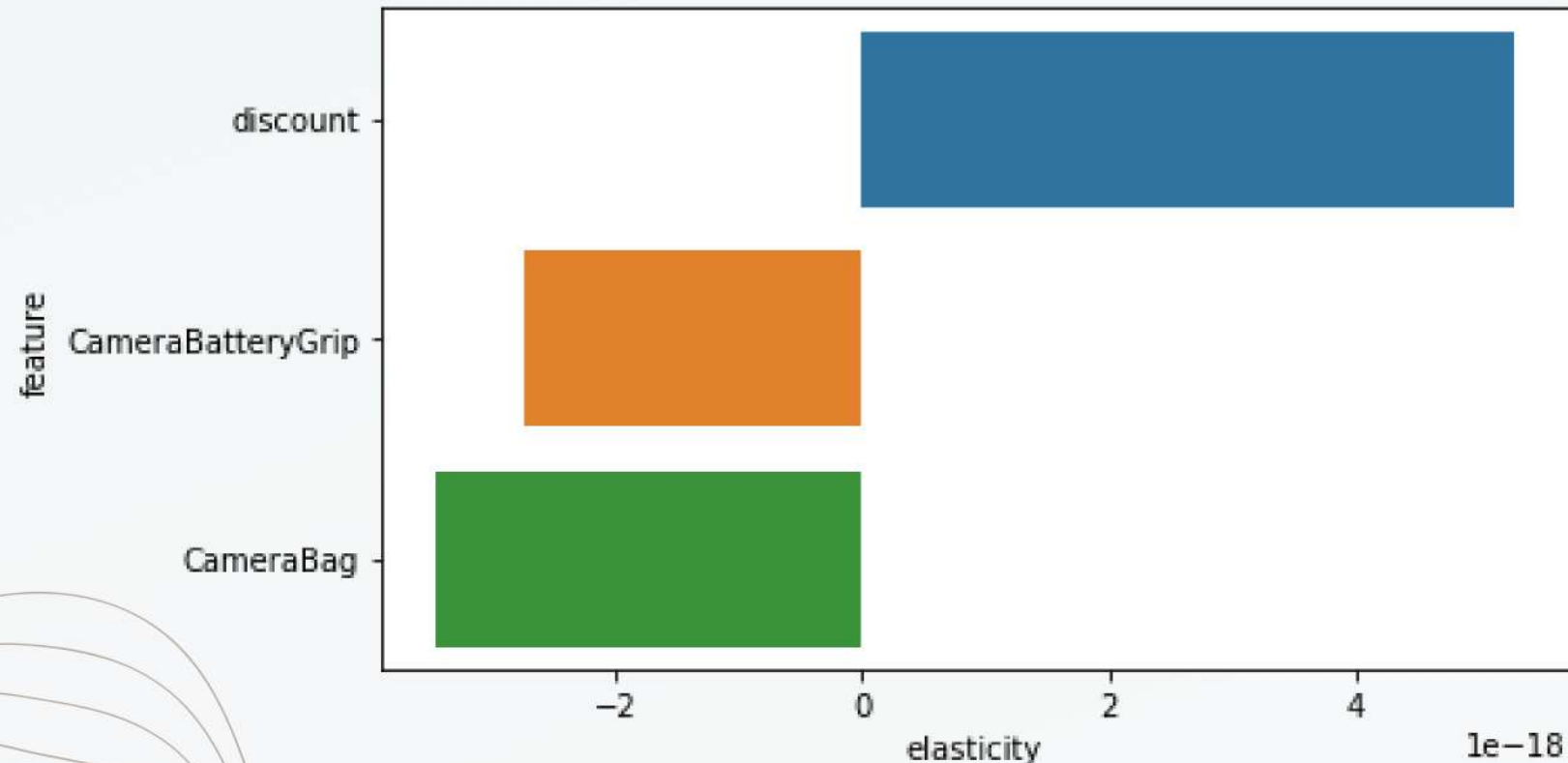


RECOMMENDATIONS

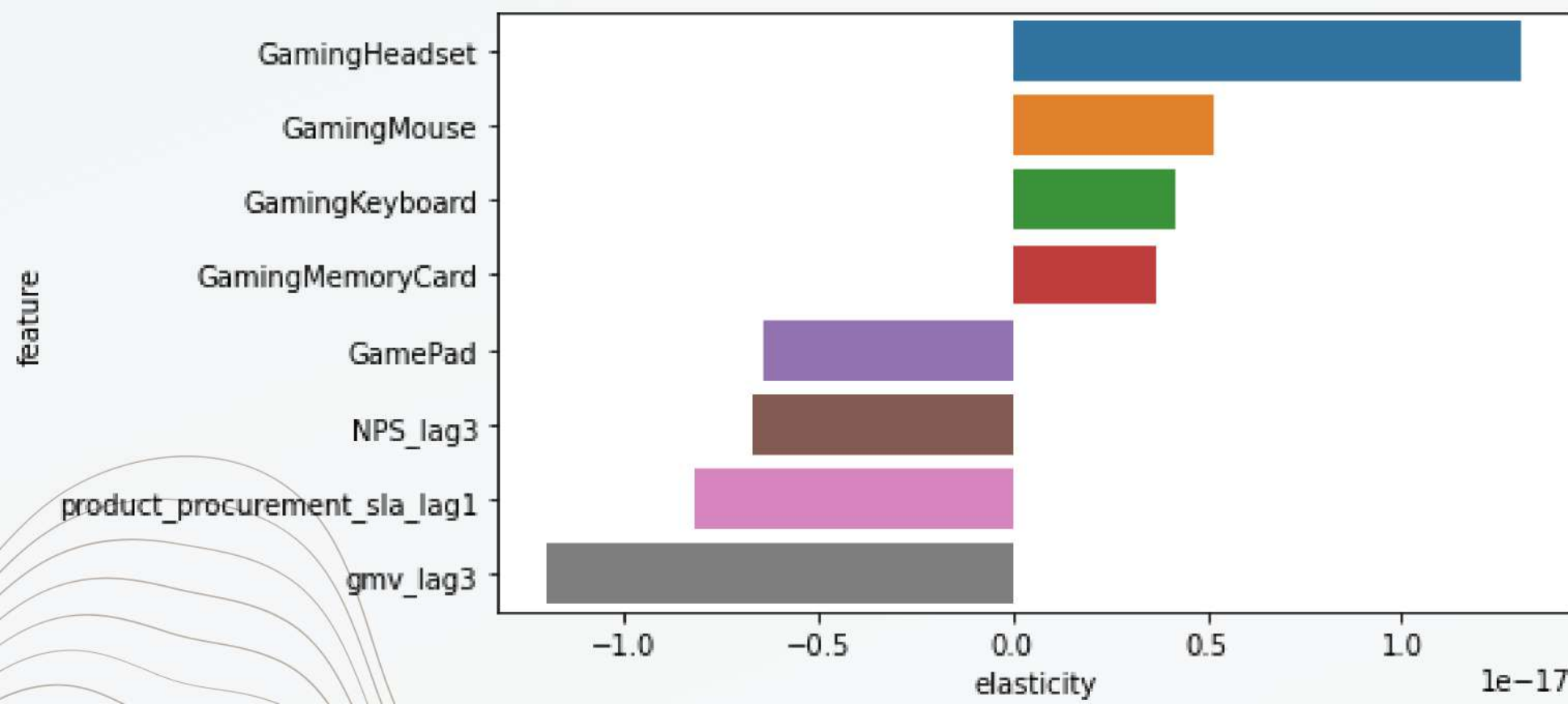
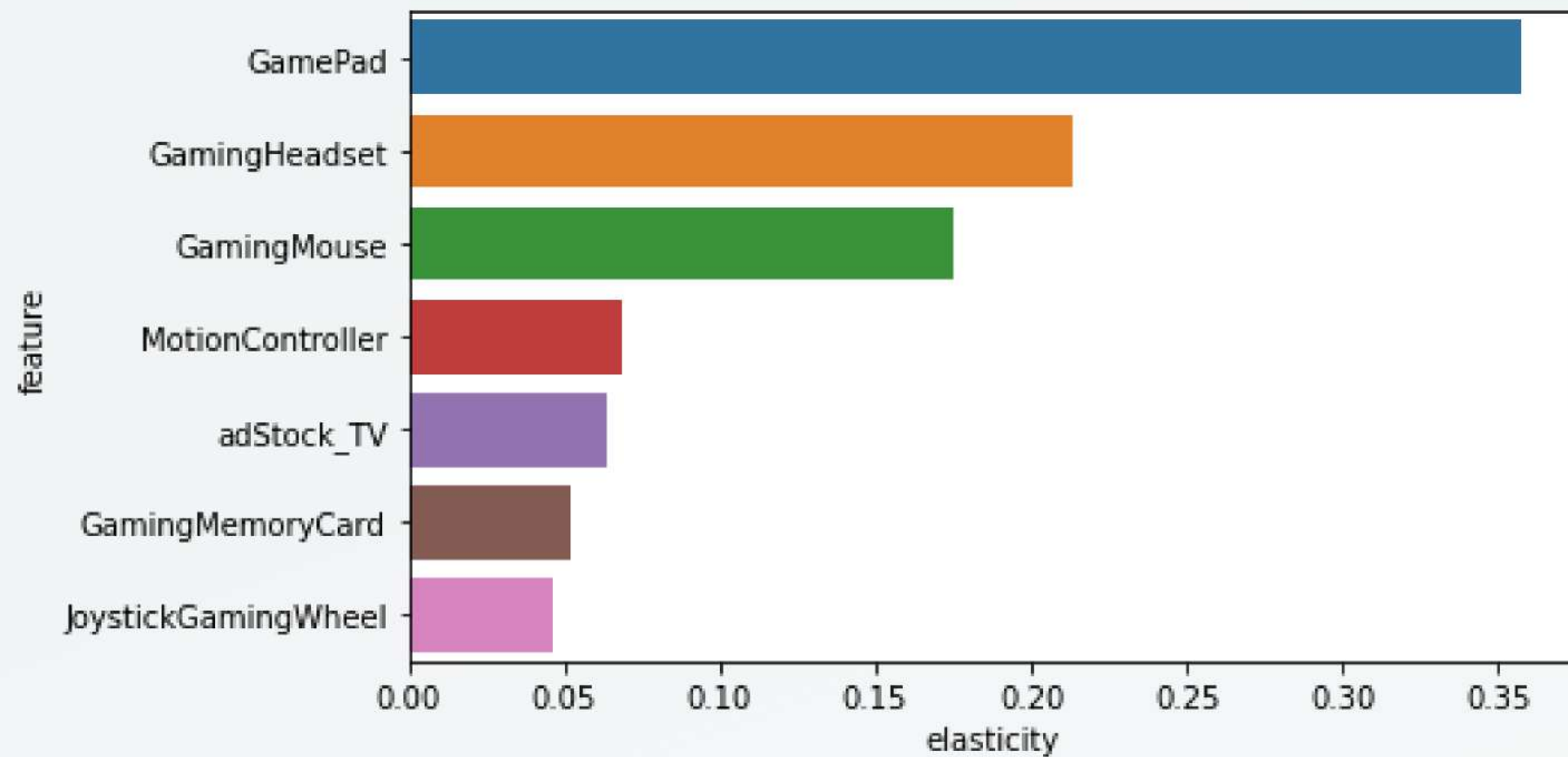
Camera Accessory



- Basic Additive linear model and Multiplicative model gives best results. However, there can be scope for other advanced ML models.
- Eleckart should promote products like Filter, Camera Battery, Binoculars as they show positive impact on revenue.
- Eleckart should invest more in online marketing - marketing lever.
- Availing more discounts can help increase in sales.
- Camera battery grip and camera bag affects revenue negatively. Hence, may be giving more discounts on these products or optimising their stock or price might help.

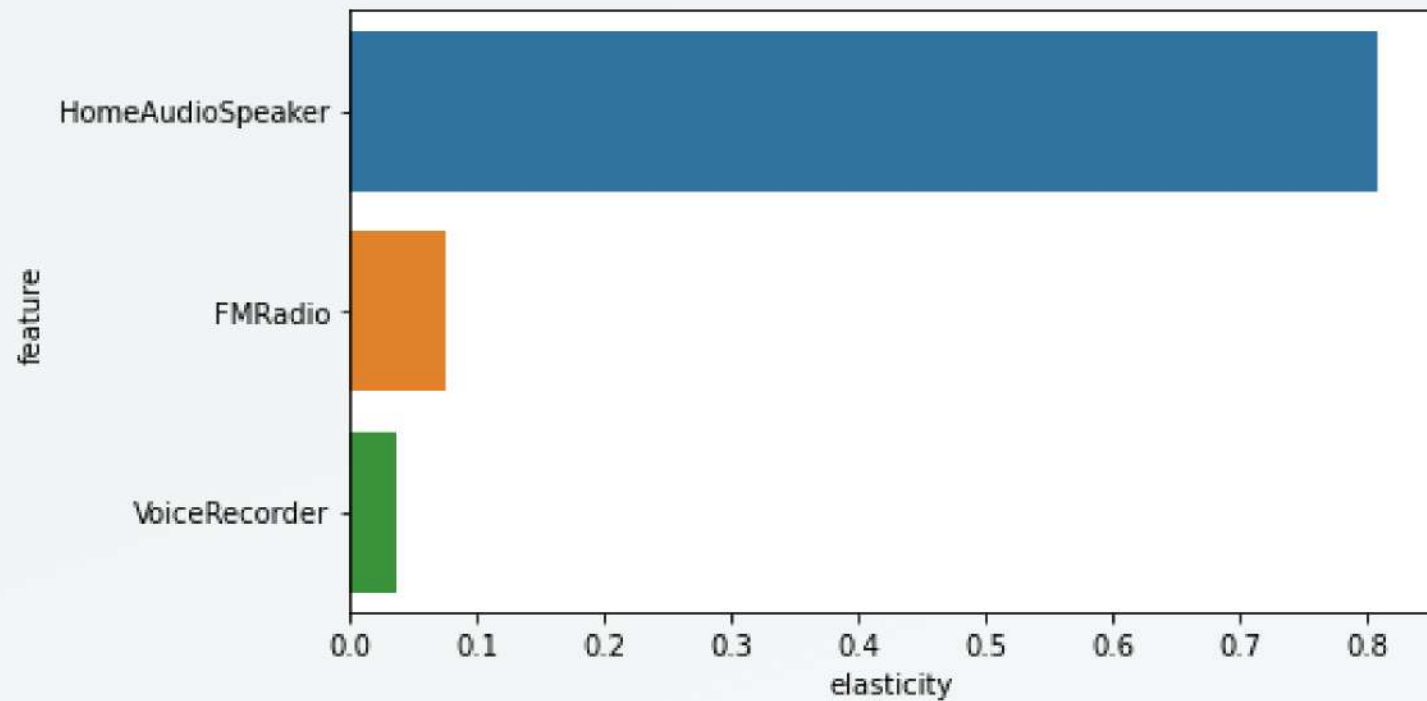


Gaming Accessory

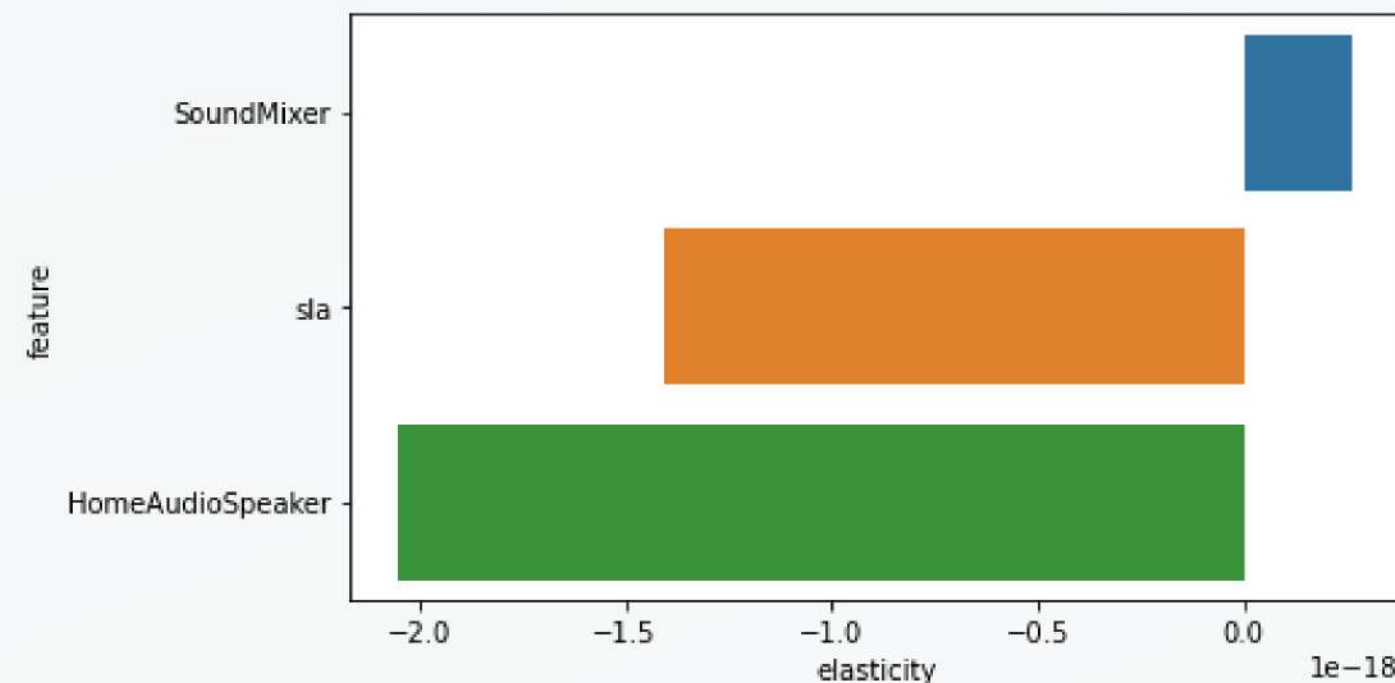
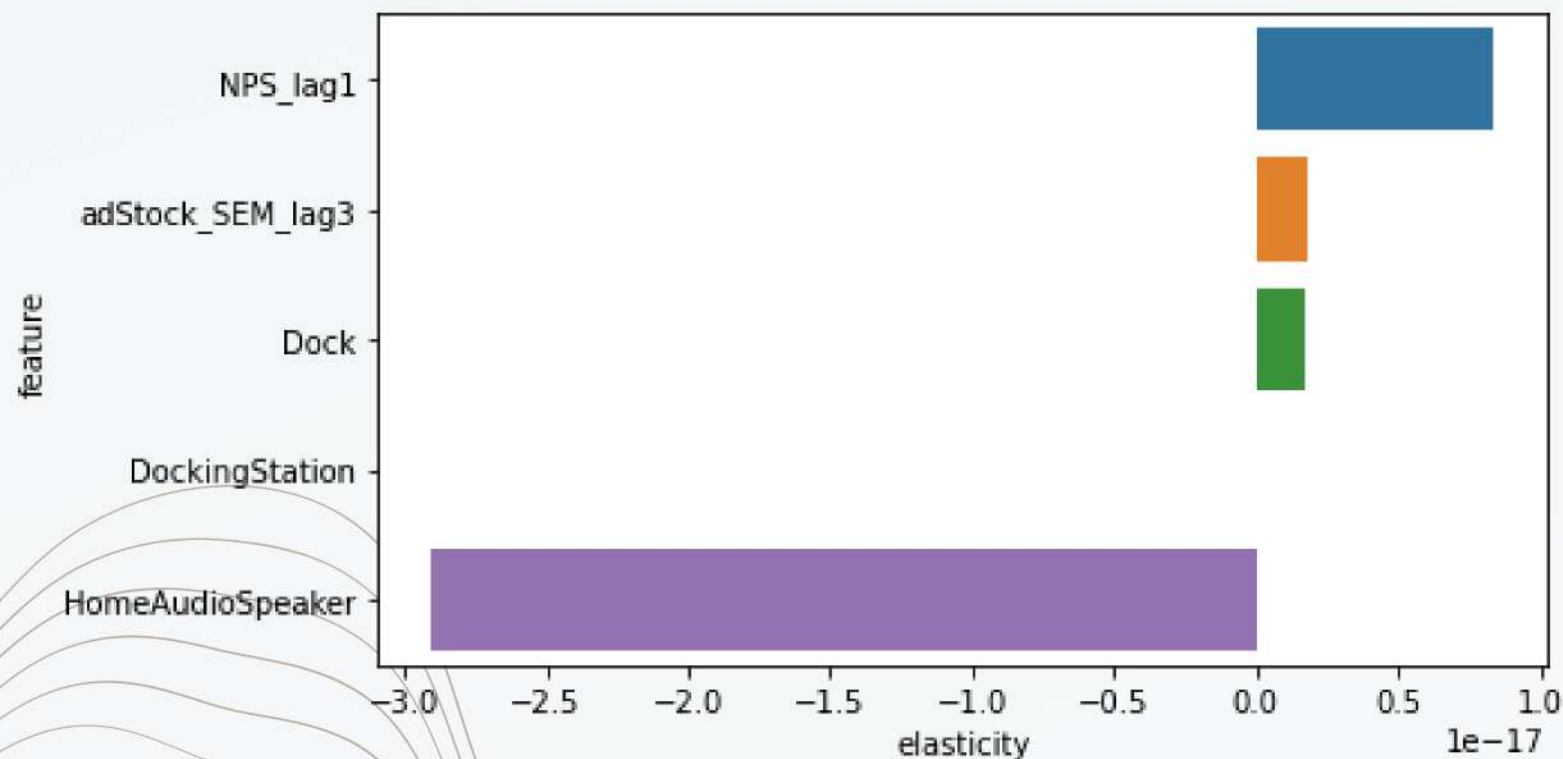


- Additive and Distributive lag model fits best for Gaming Accessory.
- Among all the products; game pad, headset, mouse, motion controller, memory card, joystick gaming wheel show a very good positive impact on revenue. Hence, promoting these products will improve revenue.
- Among all the marketing levers, adstock TV shows positive impact. Hence, promoting gaming accessory products through TV ads might improve the sale.
- Decrease in NPS for last 3 weeks show negative impact.
- Time taken to procure the product should be reduced for the last one week.

Home Audio



- All the three models fit well for Home Audio category.
- FM Radio, Voice Recorder, sound mixer and Dock show very positive impact on revenue. Hence, promoting these products will improve overall revenue.
- Home Audio Speaker shows positive impact in additive model whereas it shows negative impact in other two models. Hence, further analysis of this product might help arrive at a certain conclusion
- SEM marketing lever shows positive impact.



Key Takeaways

- ✓ Proper budget allocation & Better marketing strategy with help of Market Mix Modeling.
- ✓ A user-friendly shopping website & Mobile App
- ✓ Easy and less time consuming check out process.
- ✓ Proper Stock utilization & inventory management
- ✓ Price optimization for products.
- ✓ Proper product assortments



THANK YOU