INNOMATICS®
RESEARCH LABS

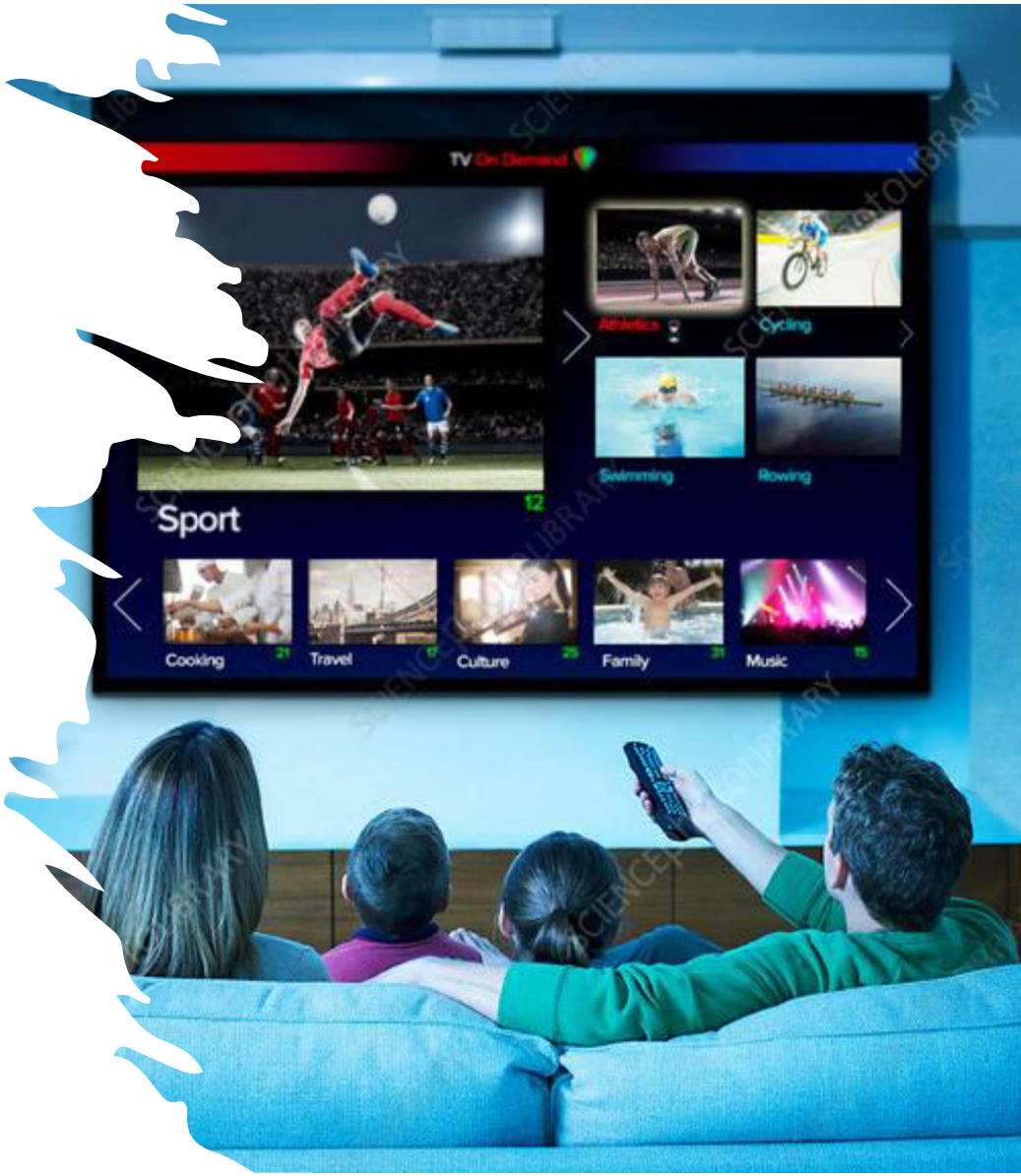
INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

Analysis of Ecommerce Product From Flipkart

About

- Name:-Pratiksha Shubham Sanap
- Education :- MSC in Biophysics
- www.linkedin.com/in/pratiksha-sanap-4b2b86259
- https://github.com/dashboard



Business problem

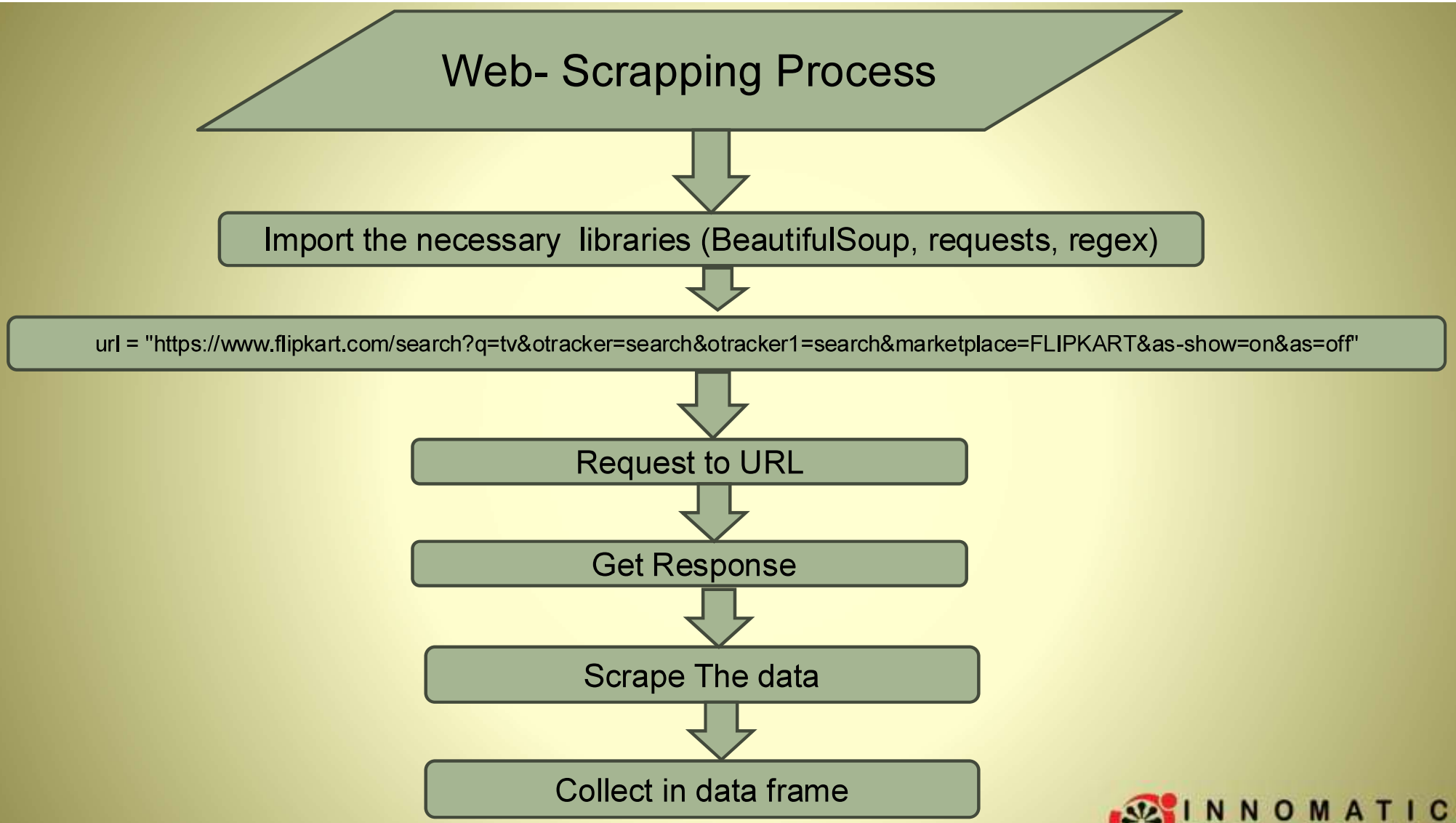
Customers struggle to choose the best TV's on the Flipkart due to overwhelming options and lack of clear comparison data.

Objective

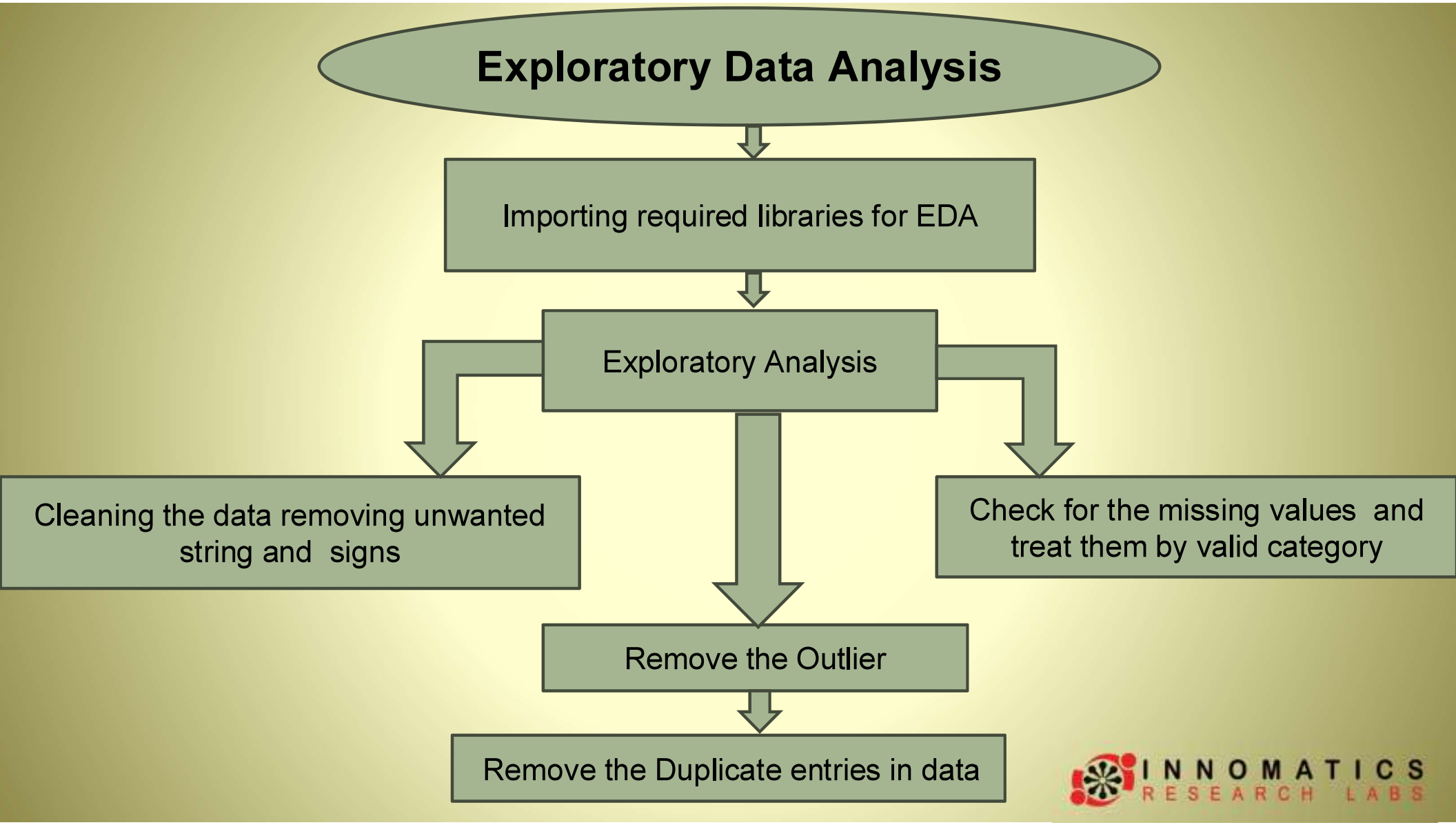
To collect and analyse TV's data from Flipkart to help consumers compare features, prices reviews for better purchase decisions.

INNOMATICS RESEARCH LABS

Web- Scrapping Process



INNOMATICS RESEARCH LABS


Exploratory Data Analysis
Importing required libraries for EDA
Exploratory Analysis
Cleaning the data removing unwanted string and signs
Check for the missing values and treat them by valid category
Remove the Outlier
Remove the Duplicate entries in data
INNOMATICS RESEARCH LABS

Raw Data Frame Of Product

	Unnamed: 0	MODEL	OPERATING_SYSTEM	SCREAN_SIZE	LAUNCH_YEAR	DISPLAY_TYPE	RATING	NUM_RATING	PRICE	ORG_PRICE	DISCOUNT
0	0	InnoQ Spectra	NaN	32 inch	2024	LED	4.0	6,037 Ratings & 687 Reviews	₹6,990	₹24,990	72% off
1	1	realme TechLife	Google	43 inch	2025	QLED	4.3	153 Ratings & 22 Reviews	₹20,499	₹52,999	61% off
2	2	Infinix	Linux	32 inch	2024	LED	4.2	55,202 Ratings & 5,606 Reviews	₹7,999	₹16,999	52% off
3	3	Coocaa	Coolita	43 inch	2024	LED	4.2	28,046 Ratings & 3,205 Reviews	₹13,499	₹29,999	55% off
4	4	Foxsky	Android	32 inch	2023	LED	4.1	6,693 Ratings & 1,574 Reviews	₹6,999	₹22,499	68% off
...	...	...	...	...	...	...	...	...	...	...	...
523	523	Thomson FA Series	Android	40 inch	2023	LED	4.3	1,24,961 Ratings & 21,730 Reviews	₹14,499	₹26,999	46% off
524	524	MOTOROLA	Google	43 inch	2025	QLED	4.1	32 Ratings & 8 Reviews	₹18,499	₹43,999	57% off
525	525	InnoQ Spectra	Android	43 inch	2024	LED	4.0	6,037 Ratings & 687 Reviews	₹12,790	₹39,990	68% off
526	526	Thomson Alpha	Linux	24 Inch	2023	LED	4.3	46,820 Ratings & 6,154 Reviews	₹5,999	₹9,999	40% off
527	527	iFFALCON by TCL U65	Google	43 inch	2025	LED	4.2	77,885 Ratings & 8,435 Reviews	₹18,999	₹50,990	62% off

528 rows × 11 columns

Clean Data Frame of Product

	MODEL	OPERATING_SYSTEM	SCREAN_SIZE	LAUNCH_YEAR	DISPLAY_TYPE	RATING	PRICE	ORG_PRICE	DISCOUNT	count_rating	count_review
0	innoq spectra	unknown	32	2024	LED	4.0	6990	24990	72	6037.0	687.0
1	realme techlife	Google	43	2025	QLED	4.3	20499	52999	61	153.0	22.0
2	infinix	Linux	32	2024	LED	4.2	7999	16999	52	55202.0	5606.0
3	coocaa	Coolita	43	2024	LED	4.2	13499	29999	55	28046.0	3205.0
4	foxsky	Android	32	2023	LED	4.1	6999	22499	68	6693.0	1574.0
...	...	...	...	...	...	...	...	...	...	...	...
523	thomson fa series	Android	40	2023	LED	4.3	14499	26999	46	124961.0	21730.0
524	motorola	Google	43	2025	QLED	4.1	18499	43999	57	32.0	8.0
525	innoq spectra	Android	43	2024	LED	4.0	12790	39990	68	6037.0	687.0
526	thomson alpha	Linux	24	2023	LED	4.3	5999	9999	40	46820.0	6154.
527	iffalcon by tcl u65	Google	43	2025	LED	4.2	18999	50990	62	77885.0	8435.

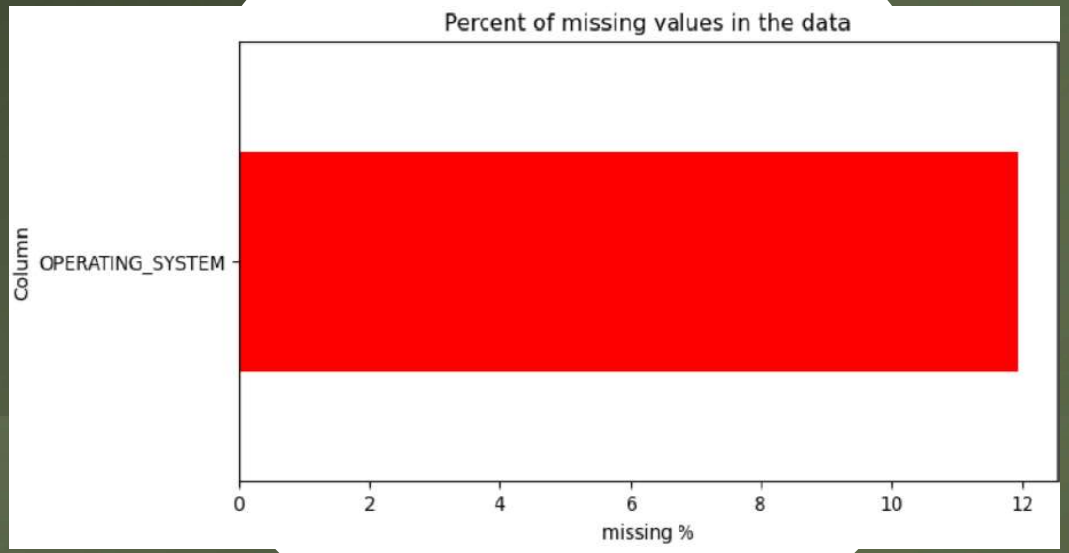
528 rows × 11 columns

- Shape of raw data frame (528 rows 11 columns)
  - Missing values in operating system 11%

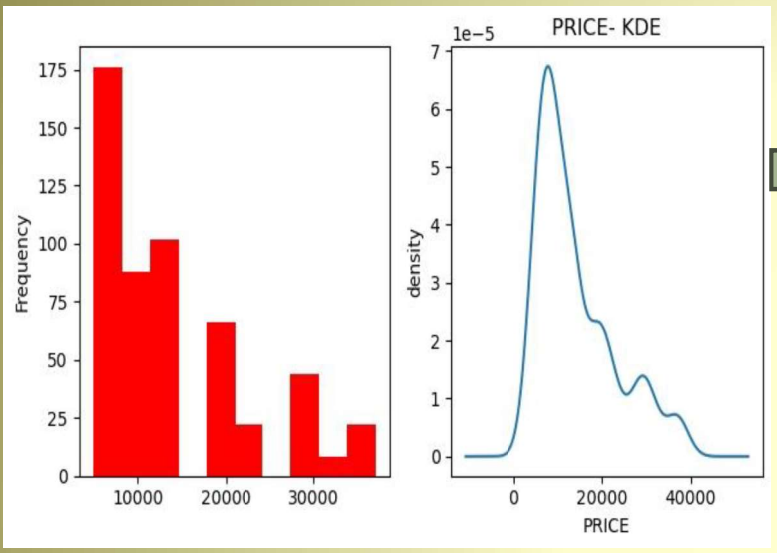
- Shape of clean data frame (481 rows 11 columns)
  - There is no Missing values in operating system

INNOMATICS RESEARCH LABS

Missing values in Percentage



Visualization of insights

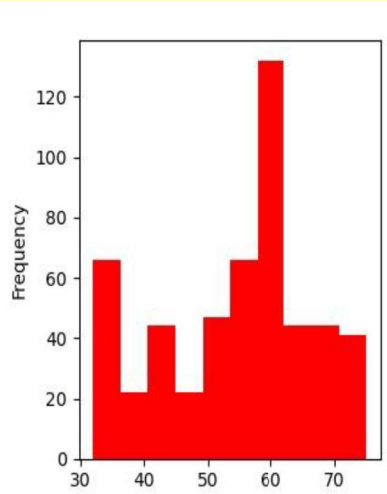


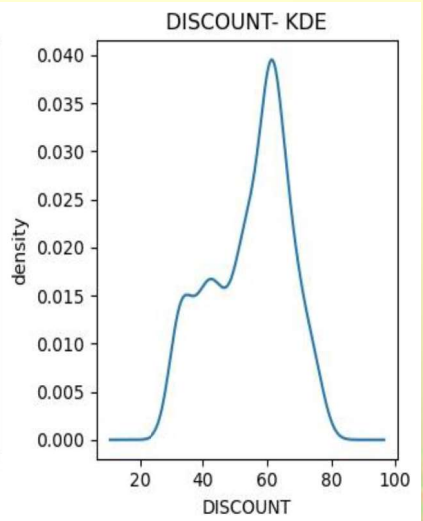
Most number of people prefer to buy product having price below 15K

Range of product having prices between 5k to 45k

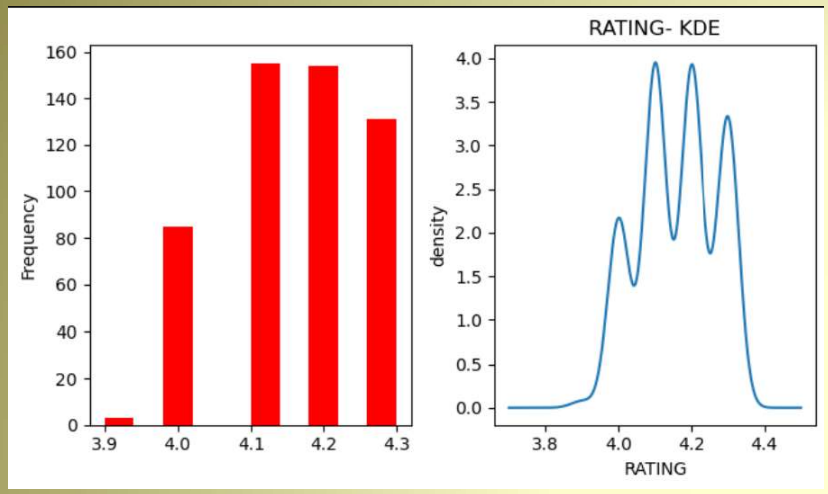
Most frequent discount are between 50 to 60%

Highest discount is 60 %





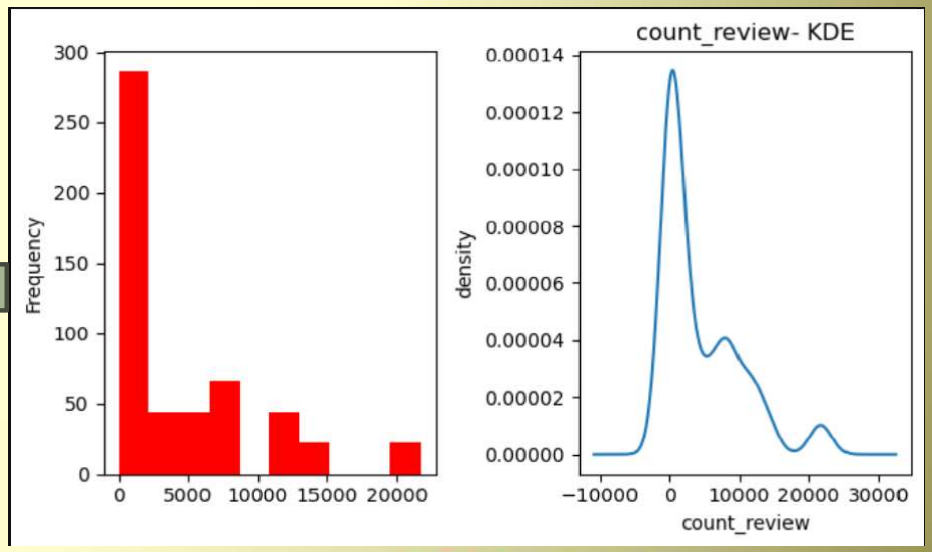
INNOMATICS RESEARCH LABS



Range of rating for product between 3.9 to 4.4

Highest rating for product is 4.1 to 4.2

Least rating is 3.9



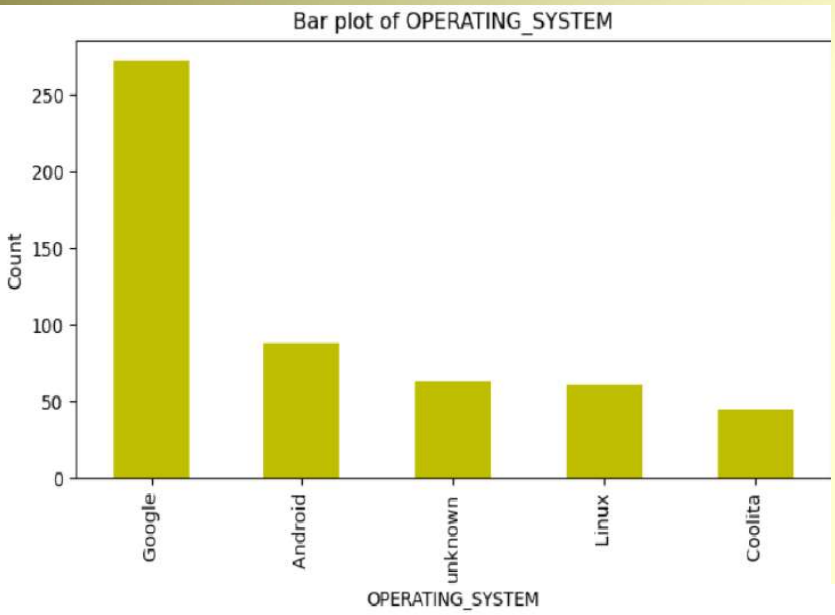
Product with higher price having low count review

Most number of review for product with price less than 9K

Less number of people giving review for higher price product which shows less number of people buying this products

INNOMATICS RESEARCH LABS

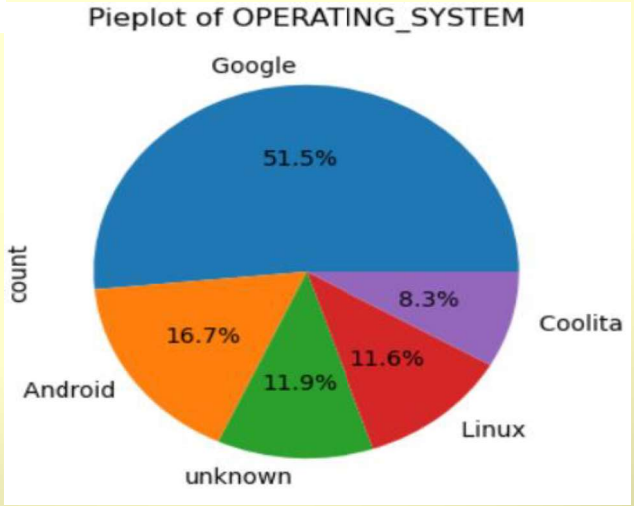
Univariant Categorical Analysis



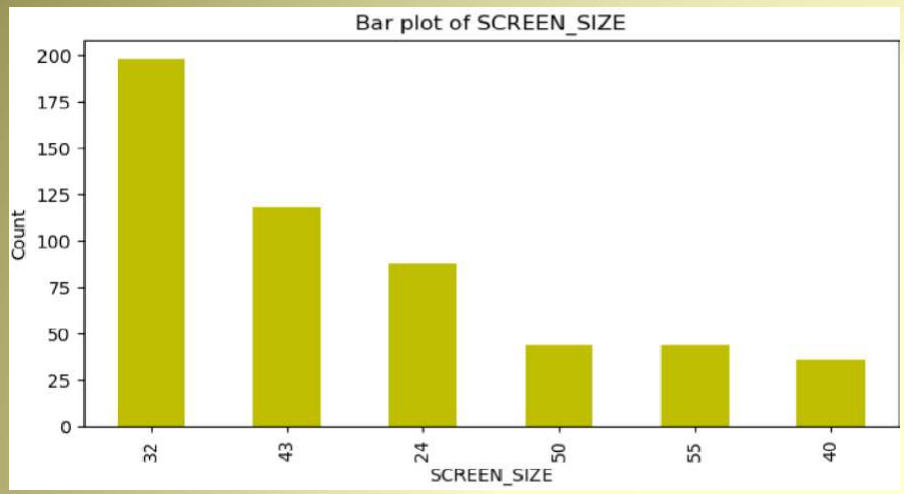
Google operating system has 300 (51%) of product contribution

2nd highest Contribution is Android operating system that is (16.7%)

Least contribution of product with operating system Coolita (8.3)



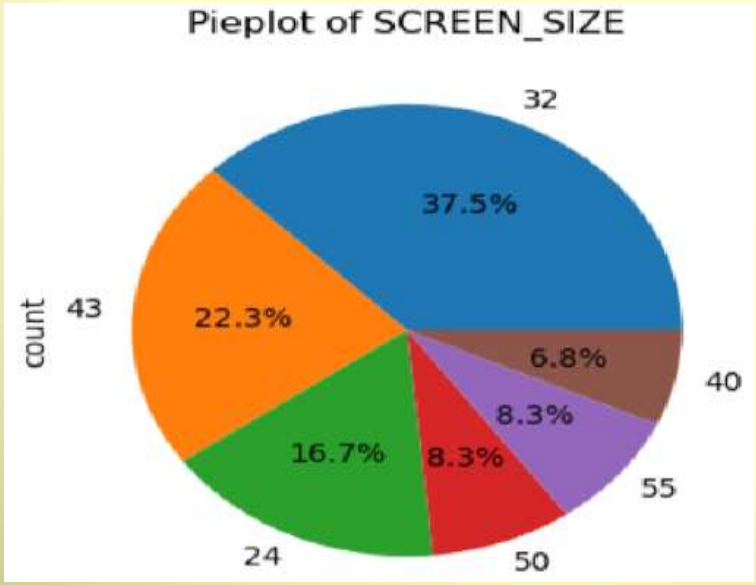
INNOMATICS RESEARCH LABS



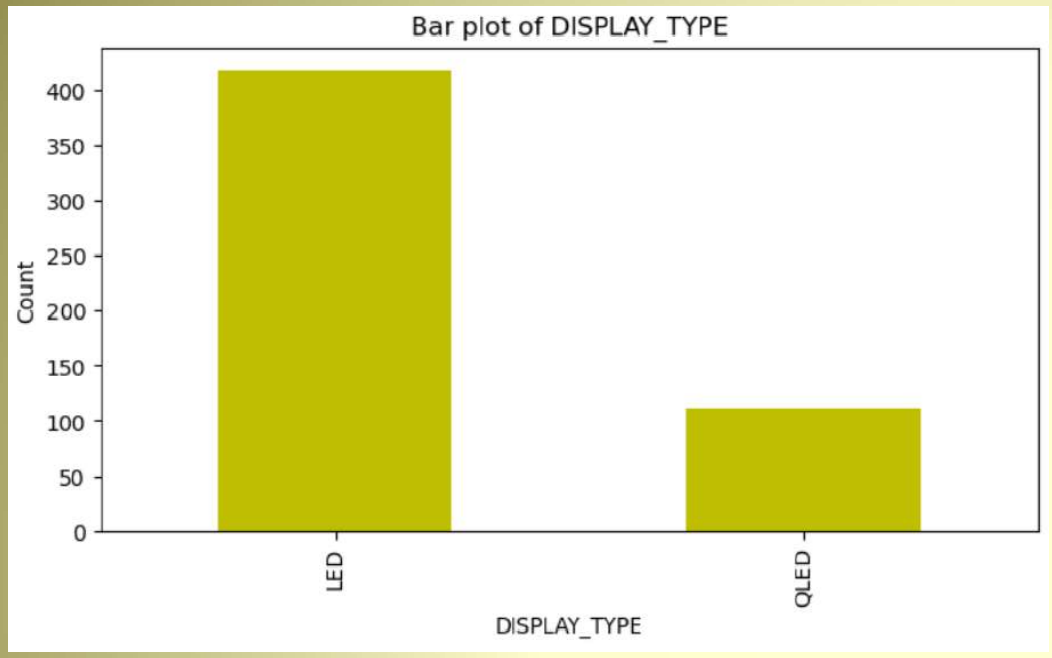
Product with screen size 32 inch has 37.5% (180) contribution which is highet

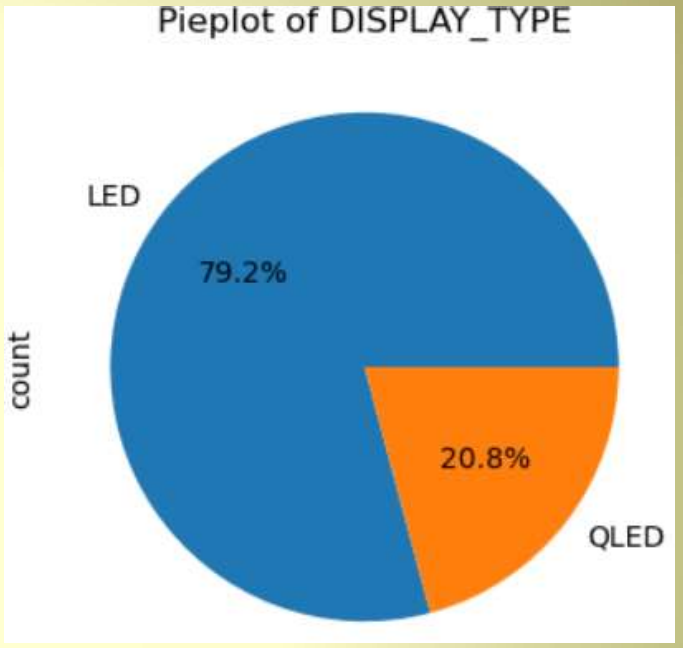
Product with screen size 40(7%) has least contribution

More people preferring product with screen size 32 to 24 inch



INNOMATICS RESEARCH LABS



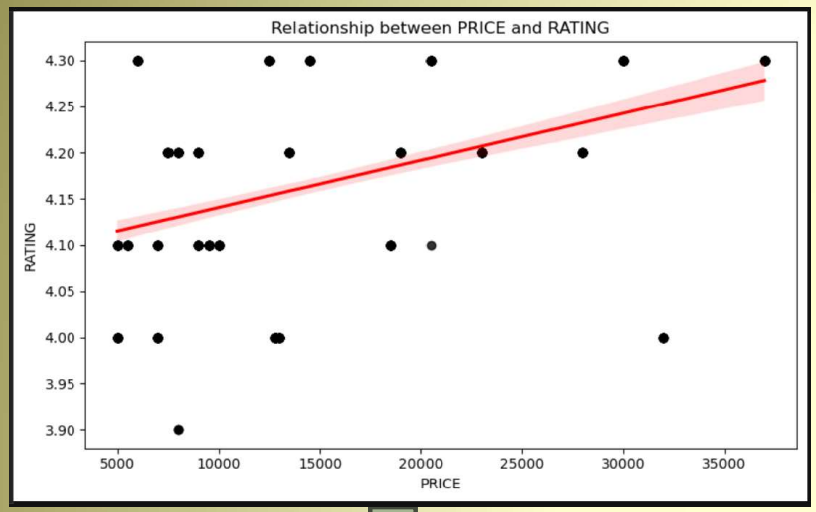


The product having LED display with more contribution (79%) that is nearly 400 products and QLED display has 21% contribution

No any product having OLED because of OLED product very costly

INNOMATICS RESEARCH LABS

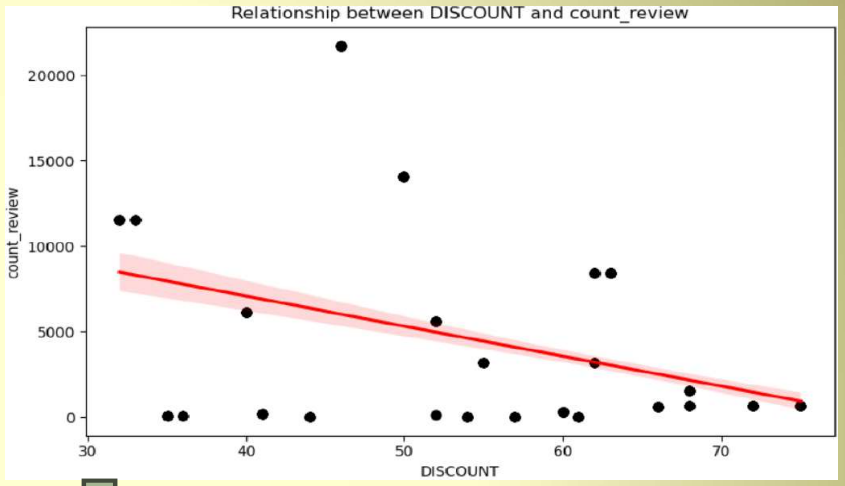
Bivariant Analysis Num vs Num



As price of TVs increases number of Rating also increases which shows that higher price of TVs give more features to the customer as a result customers giving more ratings.

It shows positive relation between price and ratings.

TVs having 5000 price have 4.10 rating and TVs of price 35000 have getting 4.30 rating.



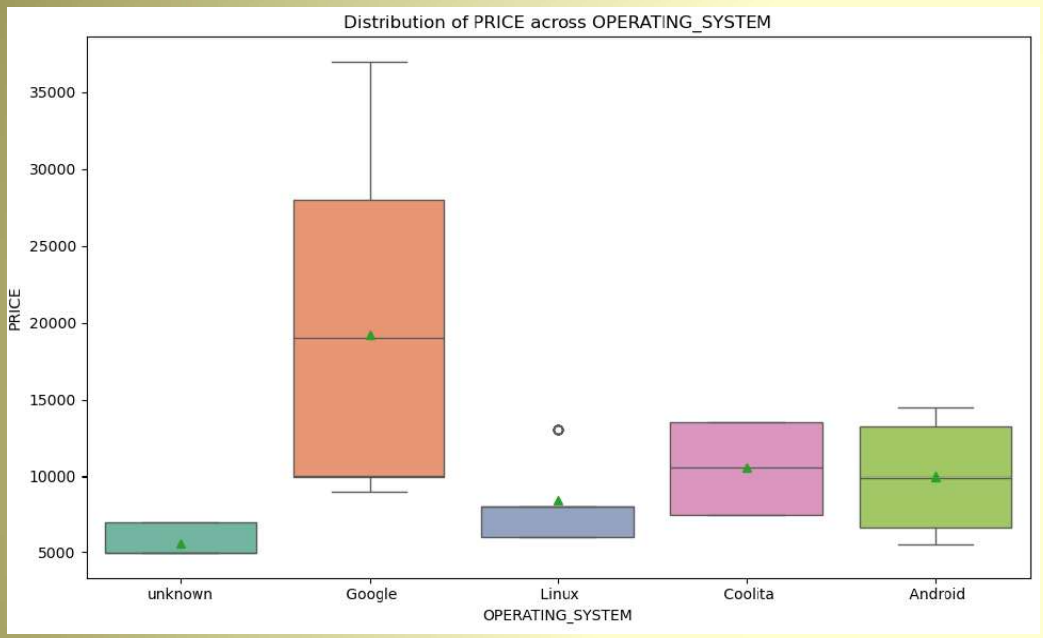
As Discount decreases count reviews on product Decreases.

Above plot shows negative relation between discount on product prices and count reviews from the costumers.

customers considers that by giving more discount product of older model are going to sell or not satisfying with features provided by that model.

INNOMATICS RESEARCH LABS

Numerical Vs Categorical

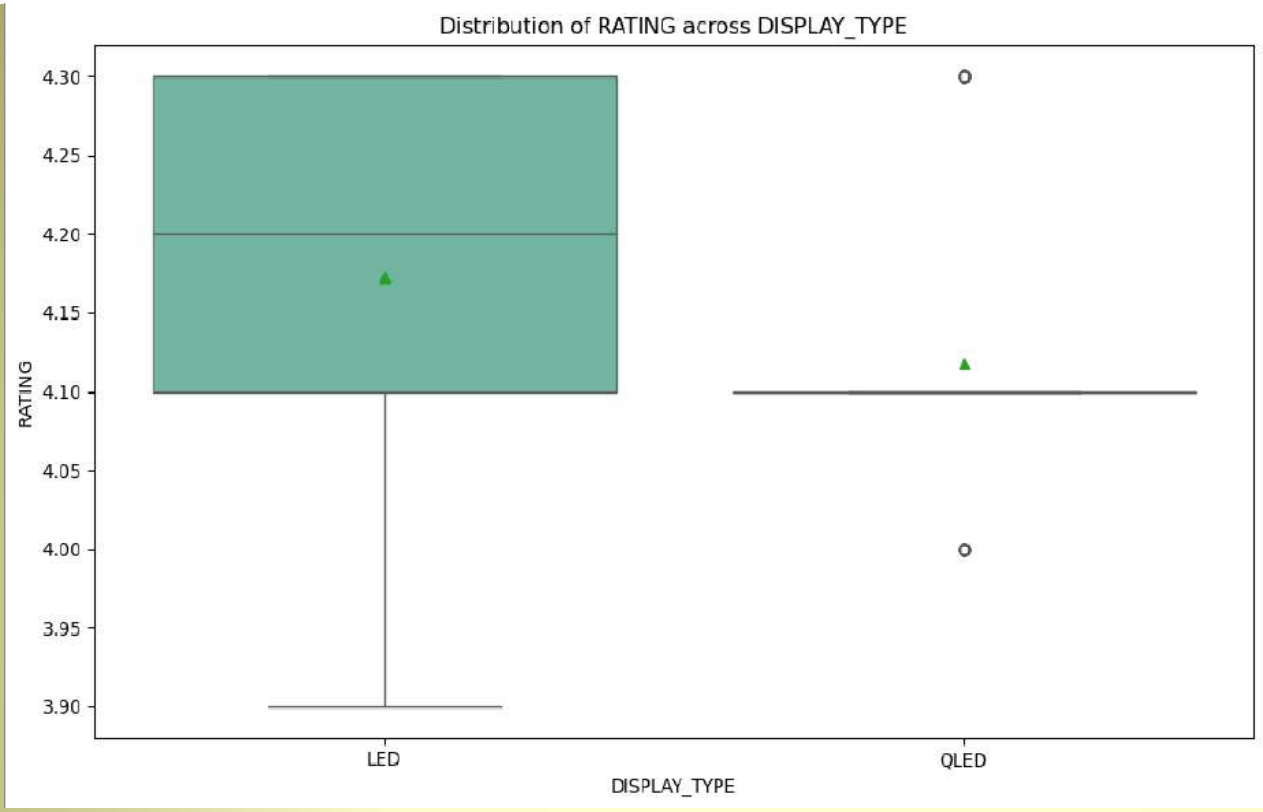


Product having Google operating system has highest prices distributed between 10000 to 28000 compared to Linux, Coolita and Android.

Product with linux operating system has list prices.

Product of operating system Coolita and Android has no difference in there TV prices.

INNOMATICS RESEARCH LABS

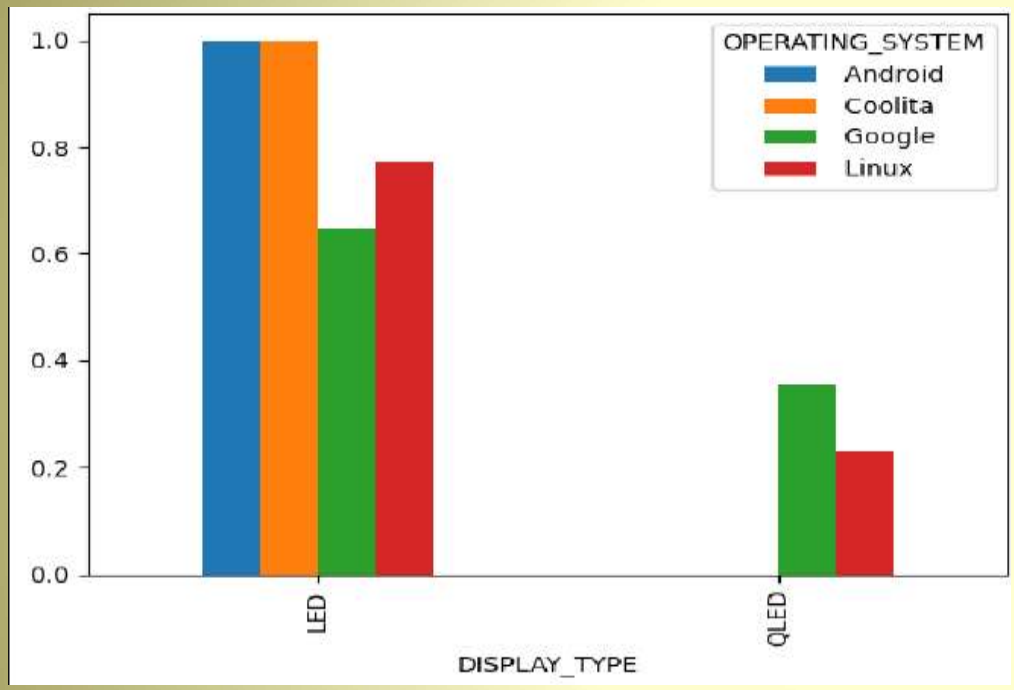


Least rating for QLED display type product

Product with LED display have high rating distribution between (4.10 -4.30) compared to Product having QLED and OLED

INNOMATICS RESEARCH LABS

Categorical vs categorical

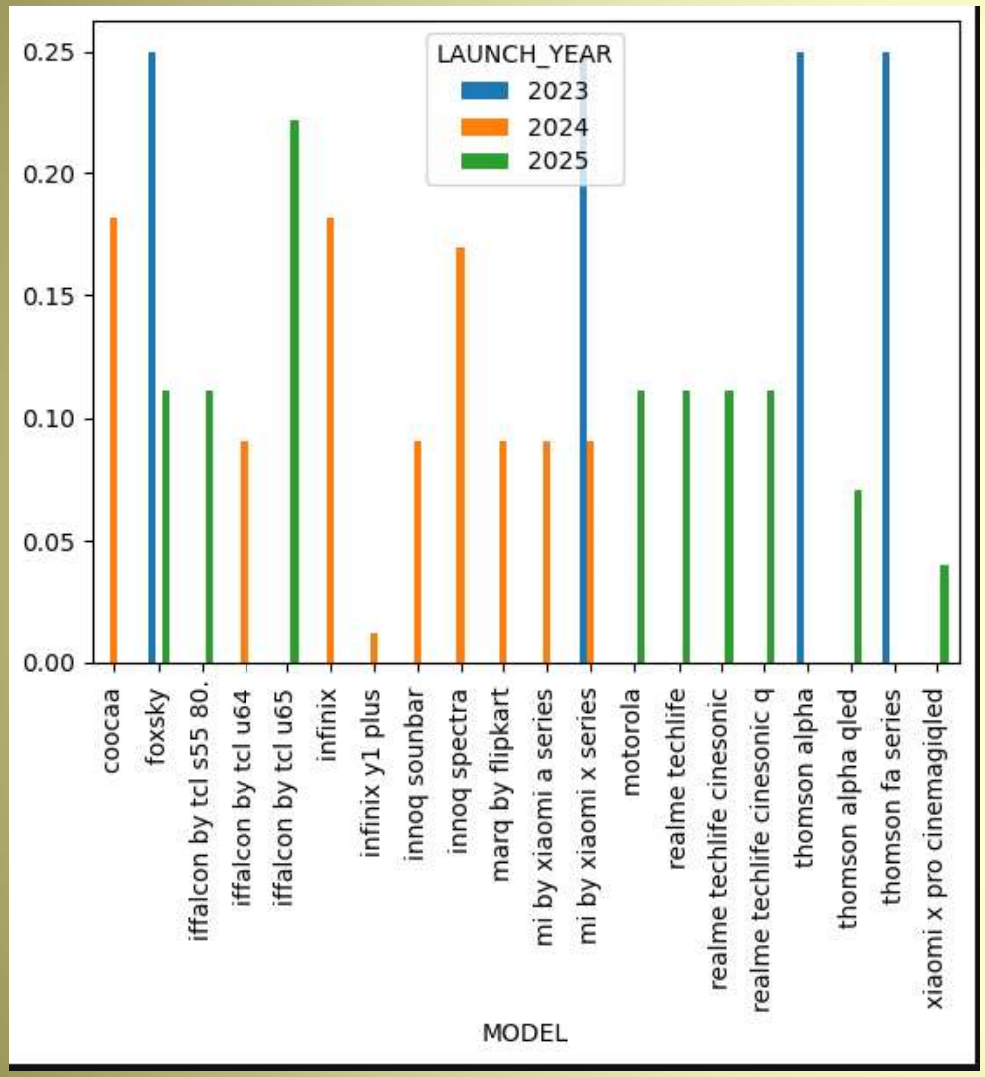


It shows that product having android and Coolita operating system possesses highest number of product with LED display compared to Google and Linux operating system.

Product with QLED displays are only operated by Google and Linux operating systems.

There is very less or no production of product having OLED display.

INNOMATICS RESEARCH LABS



In 2023 nearly 25% of tv launched are foxsky , mi by xiami x series, Thomson alpha, thomson fa series and in 2025product s by iffalcon by tcl u64 launched 22%

By Motorola , Foxsky , Realme Techlife, Realme Techlife Cinesonic, Realme Techlife Cinesonic q , iffalcon by tcl u64 have launched nearly 12% of product

Preference of product with different models are changing over the years

The launch year 2025 makes future prediction that iffalcon by tcl u64 is going to demand largest.

INNOMATICS RESEARCH LABS

Conclusion

- By scraping and analyzing TV data from Flipkart, this project helps us easily compare features, prices, and reviews, making it simpler for us to choose the best TV.

- It also provides useful market insights for businesses.

THANK YOU