



Analysis of Google Playstore Apps

DS102/DS104 Final Project
Yeo Siew Ping



Content

1. Introduction of the Dataset
2. Goals to be Addressed
3. Analysis Results
4. Recommendations for App Development

1. Dataset Introduction

- Dataset is obtained through Kaggle , contributed by author Gautham Prakash
- Dataset was scraped online and accurate as of June 2021
- Contains Google PlayStore Android App Data for 2.3 mil applications

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2312944 entries, 0 to 2312943
Data columns (total 24 columns):
#   Column              Dtype
---  -
0   App Name            object
1   App Id              object
2   Category            object
3   Rating              float64
4   Rating Count        float64
5   Installs            object
6   Minimum Installs    float64
7   Maximum Installs    int64
8   Free                bool
9   Price              float64
10  Currency            object
11  Size                object
12  Minimum Android     object
13  Developer Id        object
14  Developer Website   object
15  Developer Email     object
16  Released            object
17  Last Updated        object
18  Content Rating      object
19  Privacy Policy      object
20  Ad Supported        bool
21  In App Purchases    bool
22  Editors Choice      bool
23  Scraped Time        object
dtypes: bool(4), float64(4), int64(1), object(15)
memory usage: 361.8+ MB
```

1. Dataset Introduction

Dependent Variables	Independent Variables
Rating	Category
Rating Count	Free
Installs no.	Price
	Size
	Minimum Android Required
	Last Updated
	Content Rating
	Privacy Policy
	Ad Supported
	In – App Purchases
	Editors Choice

- **Purpose of analysis :**
 - For App Development
- **Success of an app will be based on 2 main metrics:**
 - App Rating
 - App Install No.
- **A successful app =**
 - High Rating (4.0 – 5.0)
 - High Install No. (> 1 million installs)

2. Goals to be Addressed

- **How do the features of an application affect its success?**

1. What are the top app categories in the market?
2. How do the ratings and install numbers differ between the application categories?
3. How does the application price influence the application rating and installation numbers?
4. How does the application size influence the application rating and installation numbers?
5. What is the optimal minimal android system supported for an application to achieve high ratings and high installation numbers?
6. Would a well-maintained application achieve higher ratings and installation numbers?
7. What is the most popular content rating for successful applications?
8. Does having a privacy policy enhances the success of an application?
9. How does being listed as an Editor's Choice affect the success of an applications?
10. Are there applications with high installs and yet low ratings , translating to possible user disappointment?

3. Goals to be Addressed

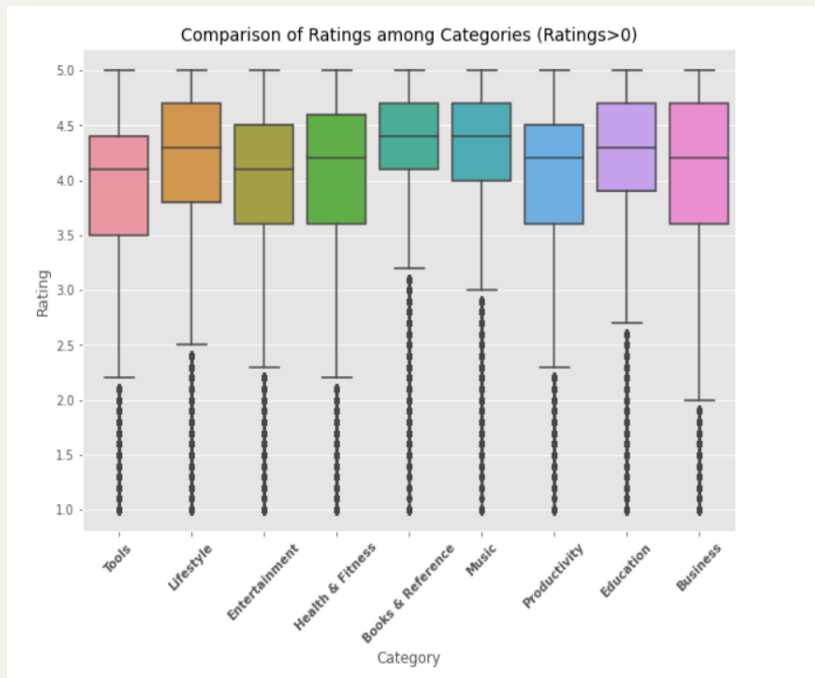
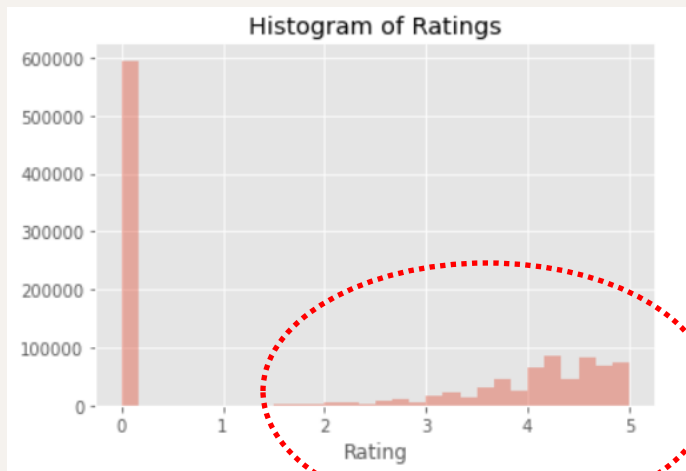
- **What is an optimal business model of a successful application?**
 1. Are successful applications usually free or paid ?
 2. How do ad-supported applications and applications with in-app purchases differ in terms of ratings and installation numbers?

The slide features two horizontal lines, one at the top and one at the bottom. Each line has a decorative, curved end on the left and right sides, resembling a stylized 'S' or a wave.

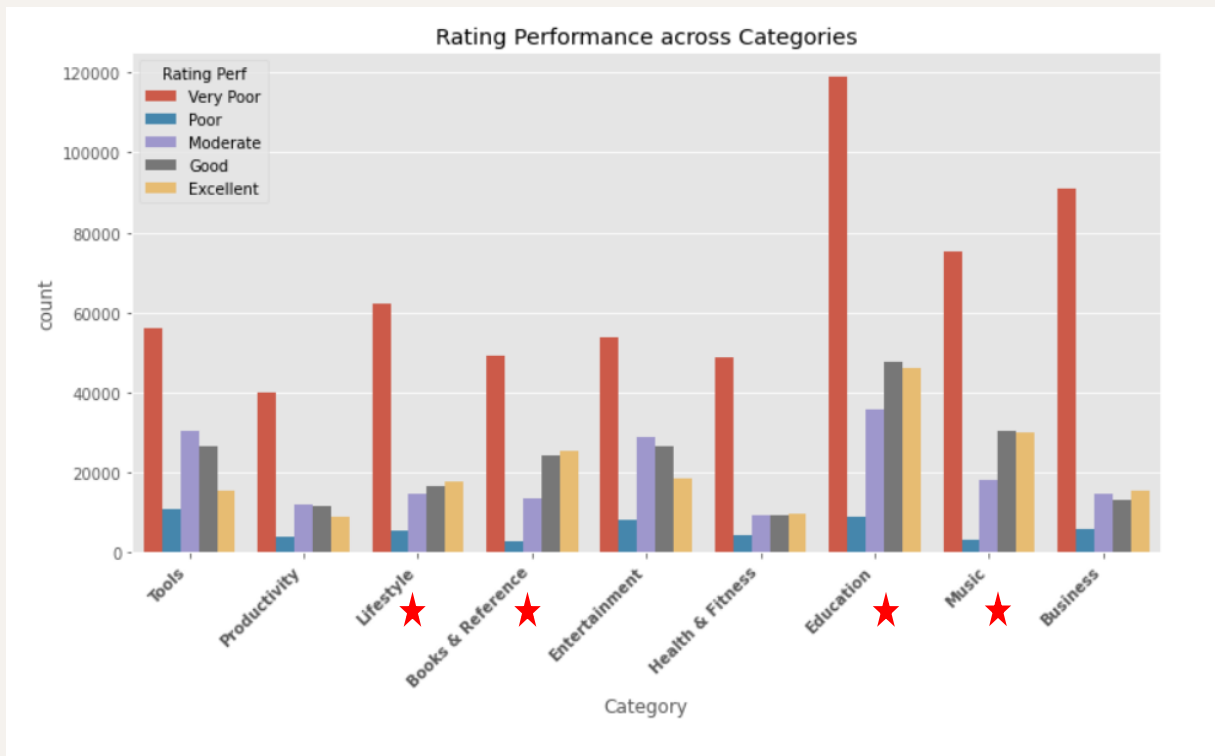
4. Analysis Findings

1. Category

- What are the top app categories in the market?
- How do the ratings and install numbers differ between the application categories?

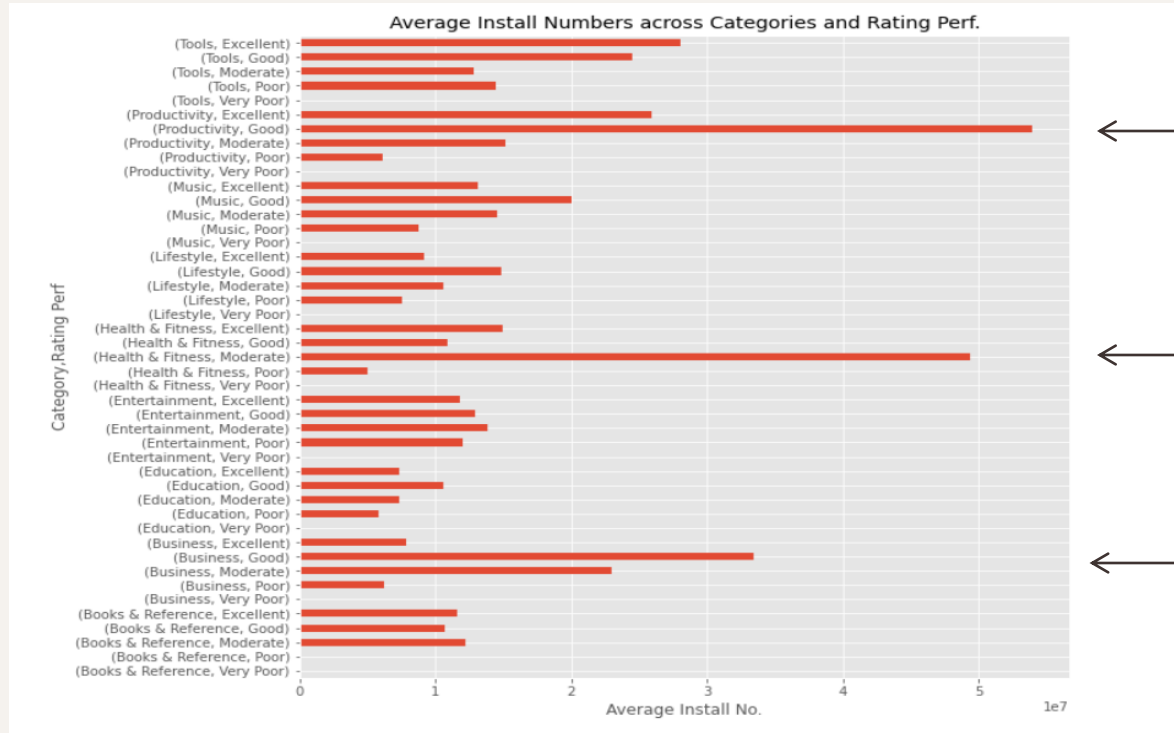


1. Category



- Lifestyle, Books & Reference, Education and Music have more good/excellent (4.0 -5.0) ratings compared to poor ratings

1. Category



For successful apps – high installs and good rating performance

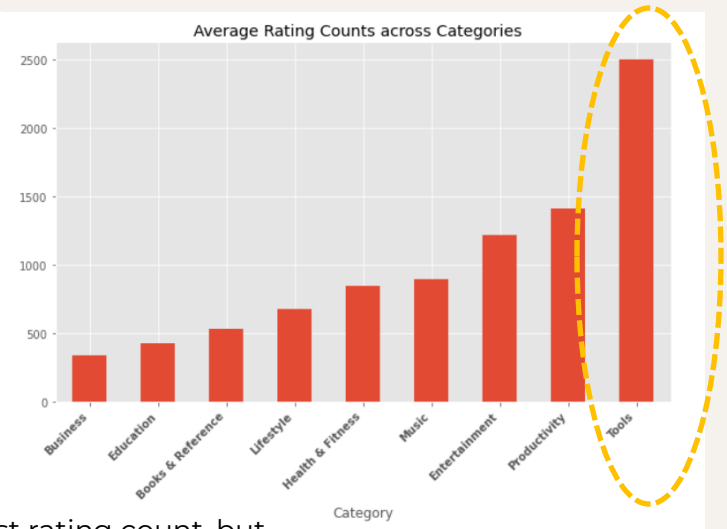
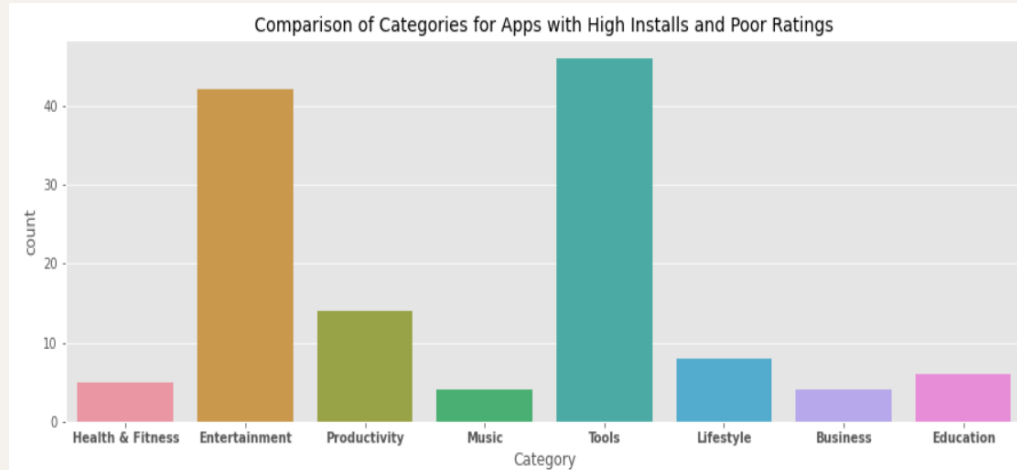
← Productivity , Good Rating Perf.

← Health & Fitness , Moderate Rating Perf.

← Business, Good Rating perf.

1. Category

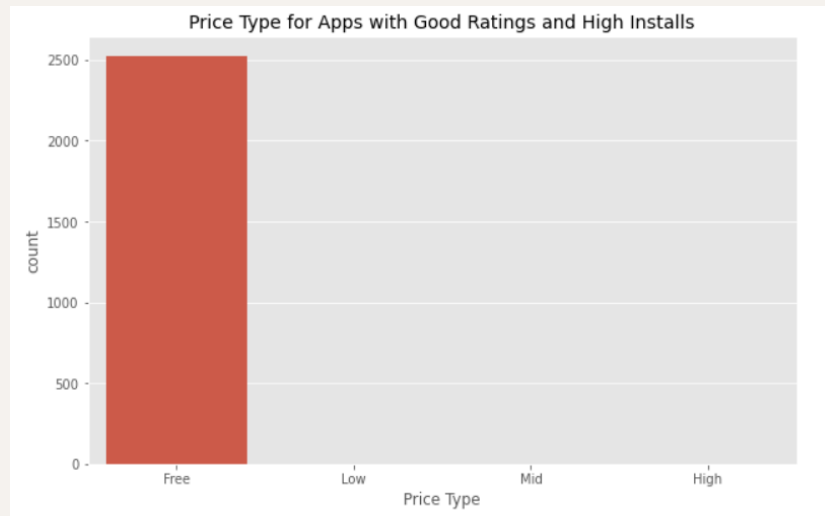
- Are there applications with high installs and yet low ratings , translating to possible user disappointment?



- Tool and Entertainment apps have a large user base and the highest rating count, but yet poor rating performance (< 3.0)
- Users are more critical of Tool apps – slight bug/lag can lead to poor ratings

2. App Price

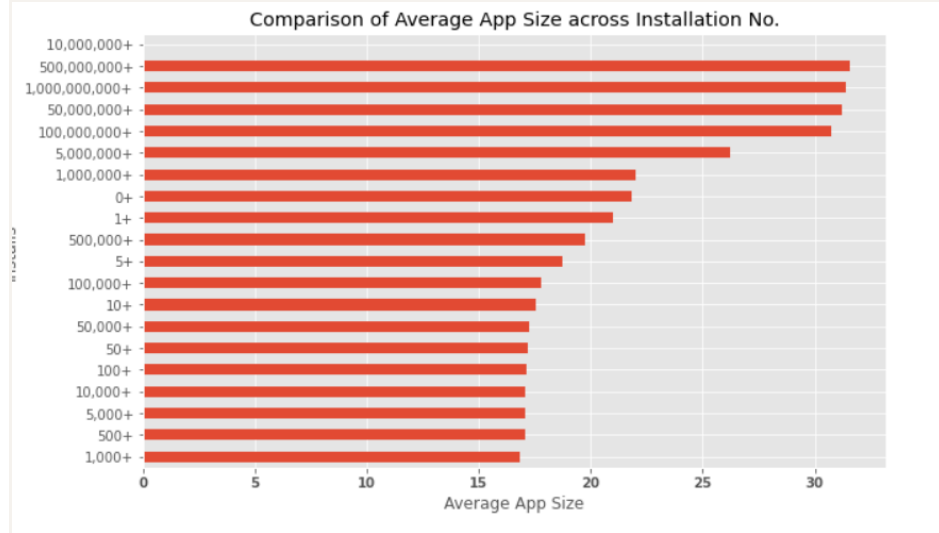
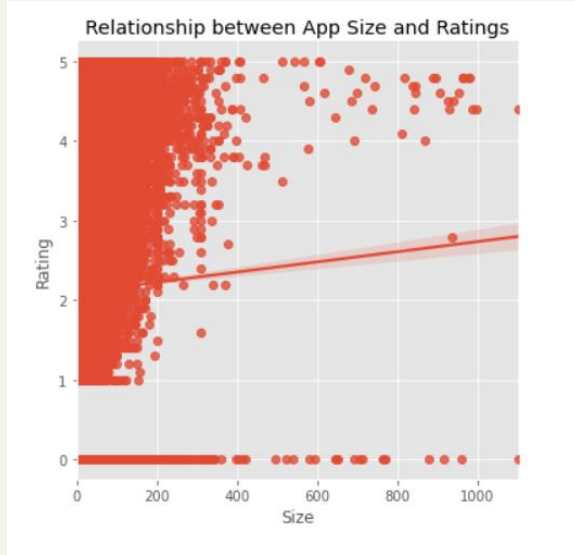
- How does the application price influence the application rating and installation numbers?



- Free apps tend to have better rating performance and high installs
- Users are more inclined to get free apps than paid apps

3. App Size

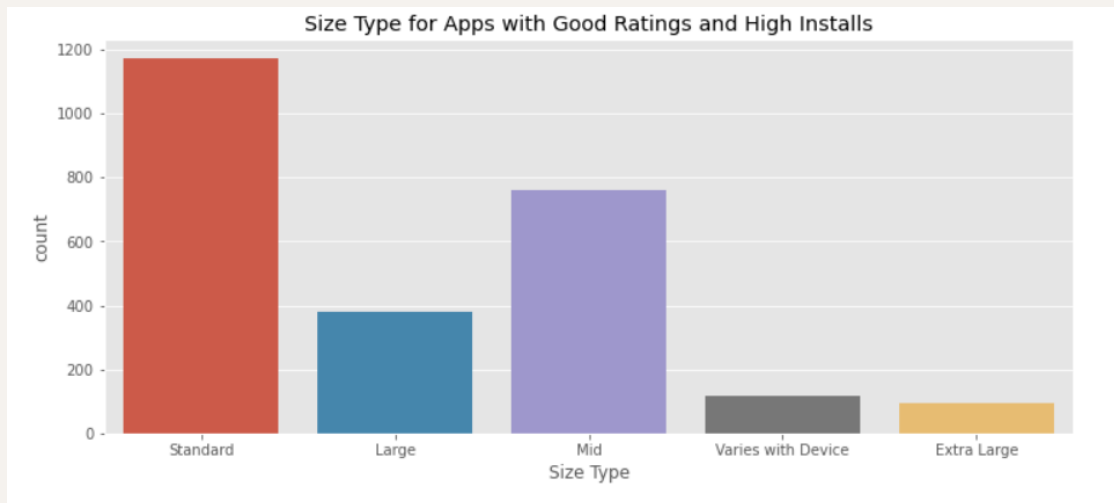
- How does the application size influence the application rating and installation numbers?



- Apps with large sizes tend to have better rating performance and higher installs

3. App Size

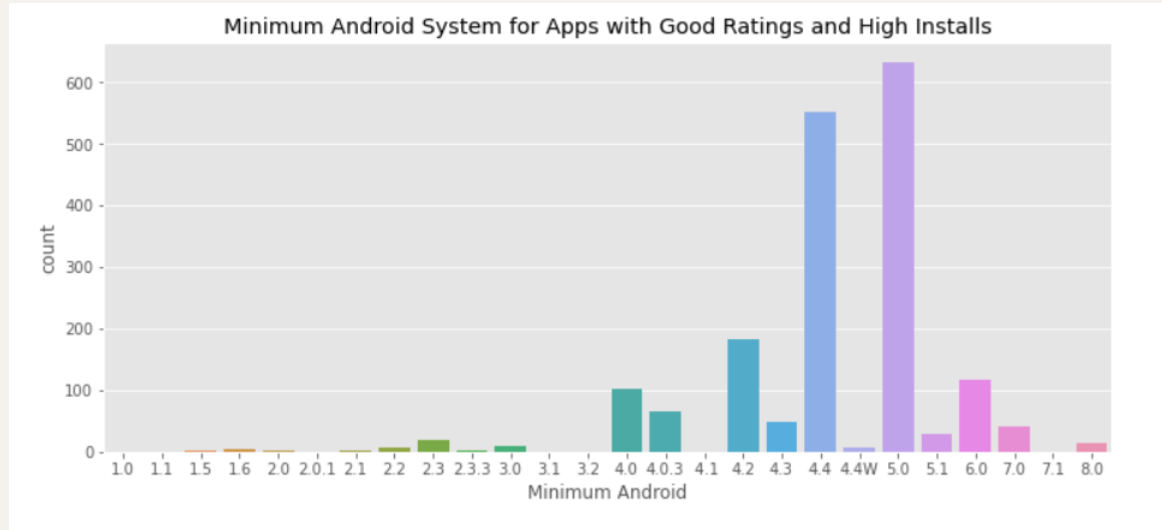
- How does the application size influence the application rating and installation numbers?



- Standard app size (<16 MB) is still the optimal size

4. Minimum Android Required

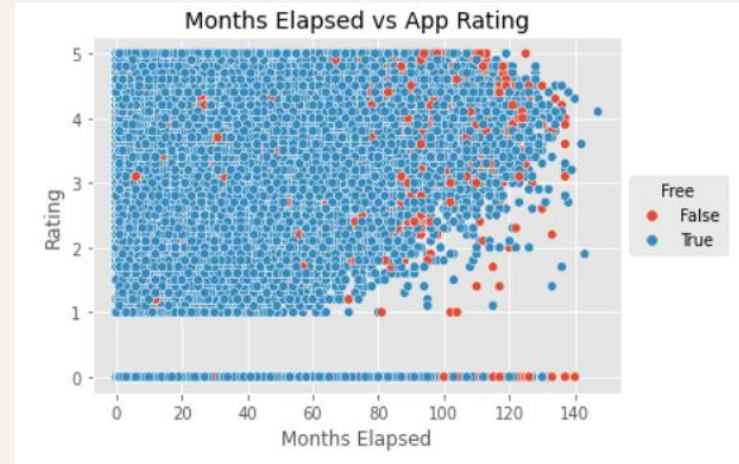
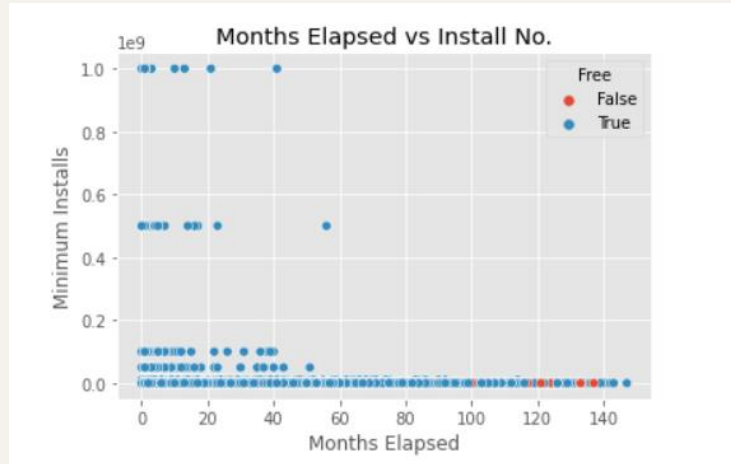
- What is the optimal minimal android system supported for an application to achieve high ratings and high installation numbers?



- Optimal minimum android system required – 4.4/ 5.0

5. Last Updated

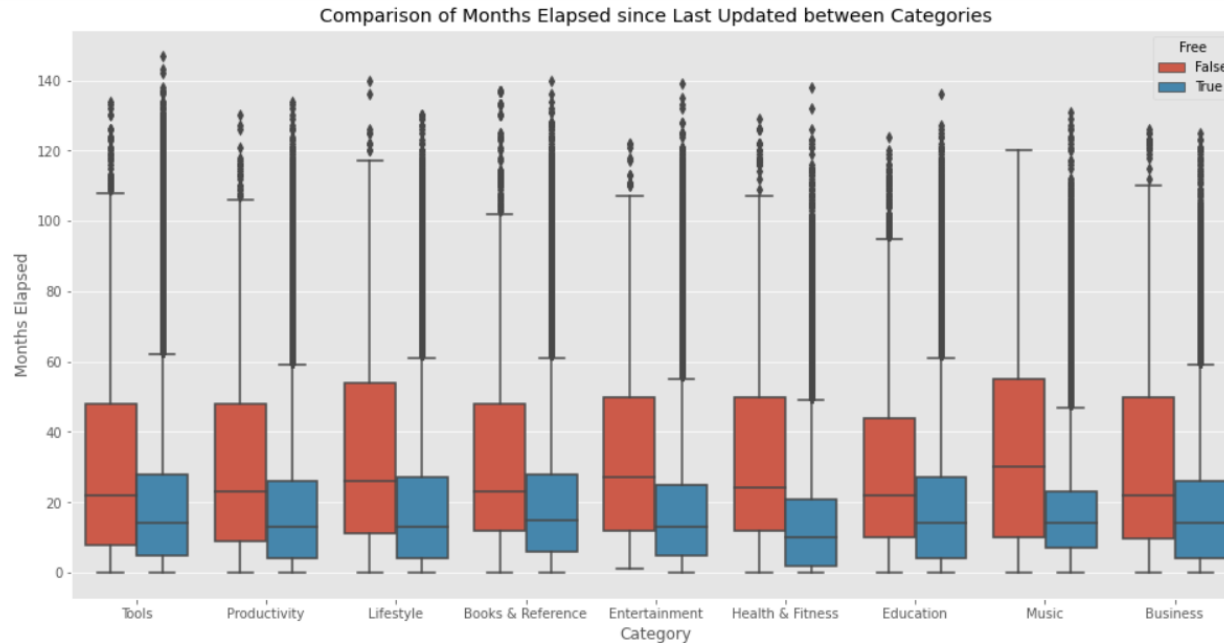
- Would a well-maintained application achieve higher ratings and installation numbers?



- Well-maintained apps tend to have higher installs
- Ratings are not affected by the frequency of maintenance

5. Last Updated

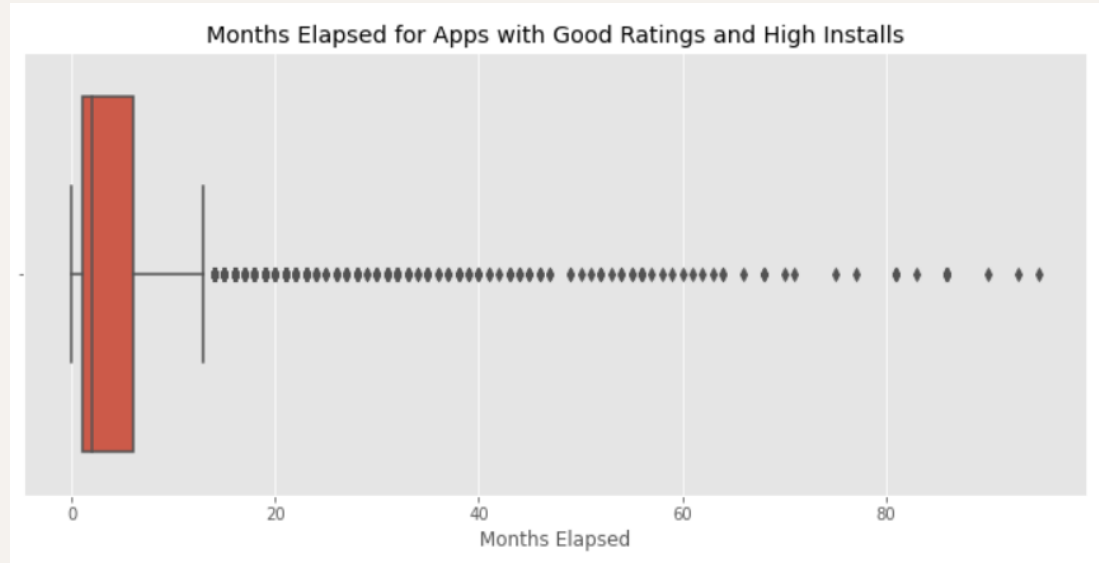
- Would a well-maintained application achieve higher ratings and installation numbers?



- Free apps are more well-maintained compared to paid apps across all top 10 categories

5. Last Updated

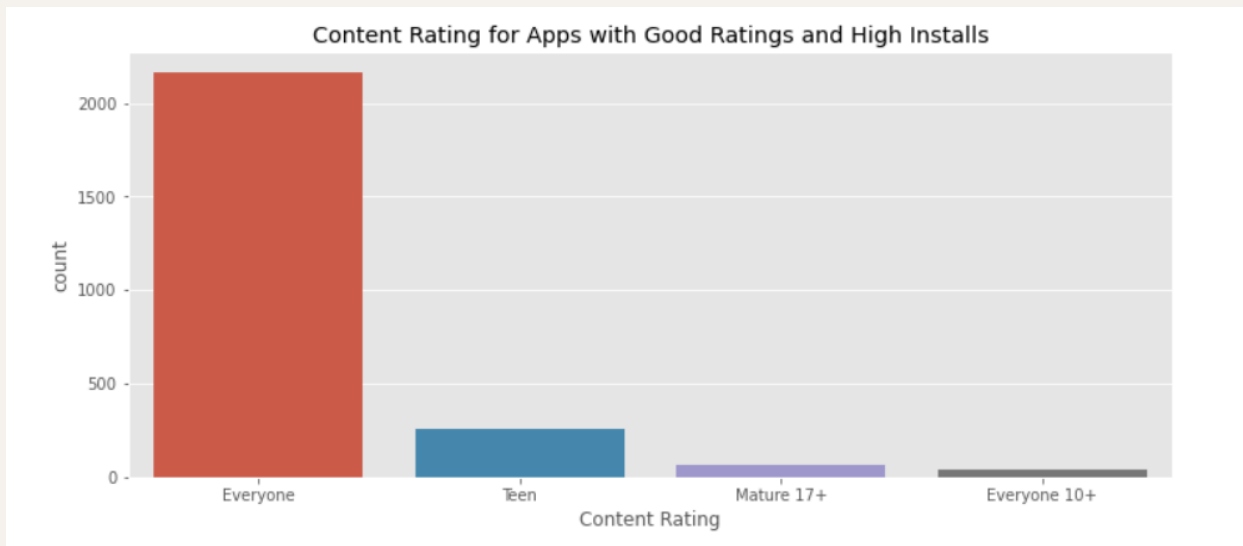
- Would a well-maintained application achieve higher ratings and installation numbers?



- Well- maintained apps that are successful tend to have maintenance at least once every 6 months

6. Content Rating

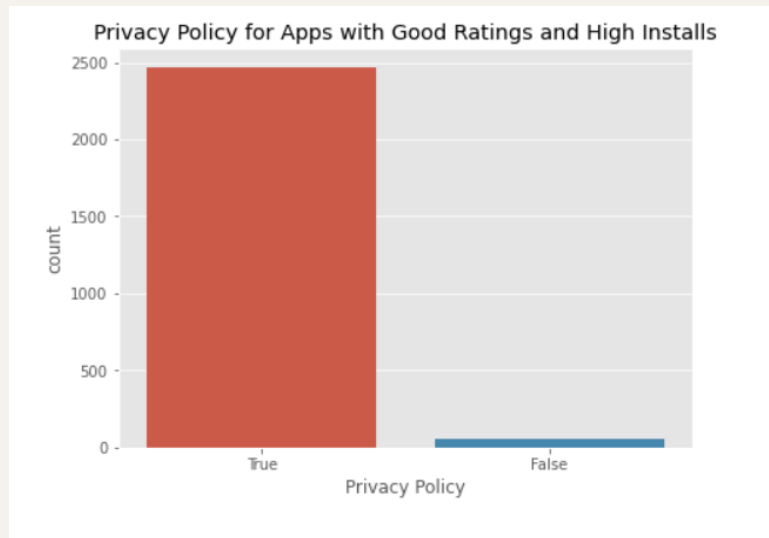
- What is the most popular content rating for successful applications?



- Most successful apps are rated 'Everyone'
- Larger target audience leading to higher installs and better rating performance

7. Privacy Policy

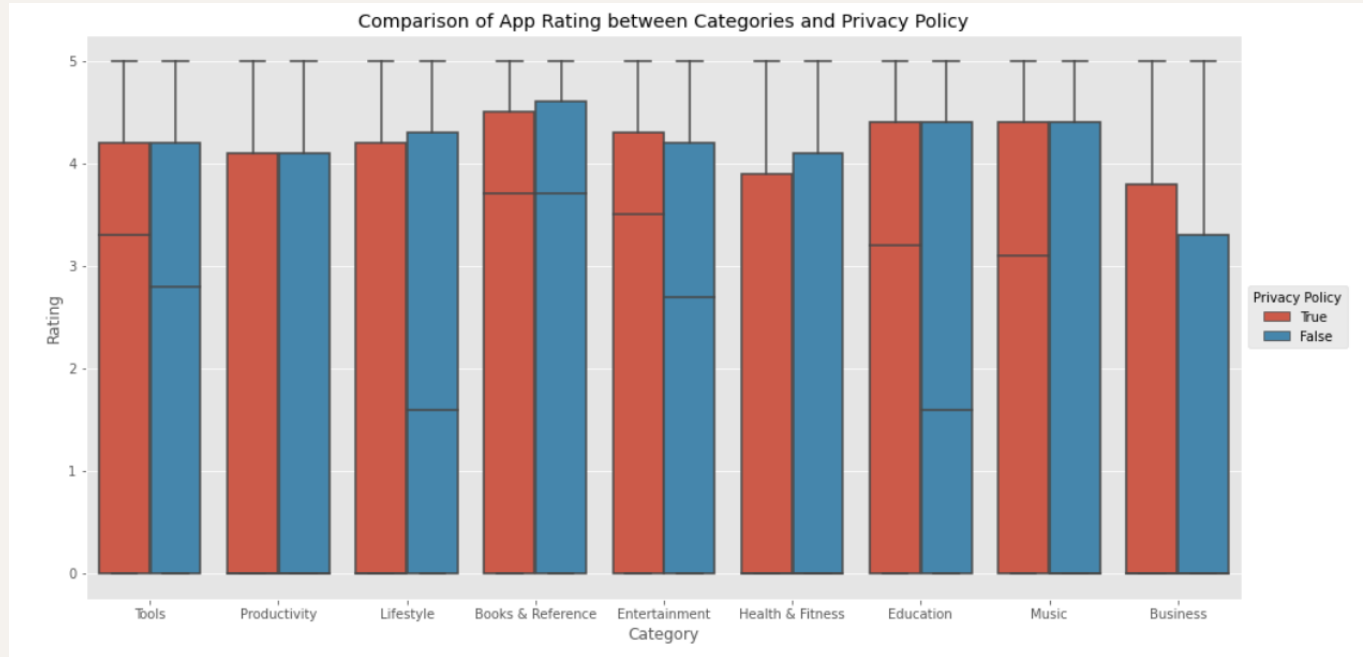
- Does having a privacy policy enhances the success of an application?



- Majority of the successful apps have a privacy policy in place

7. Privacy Policy

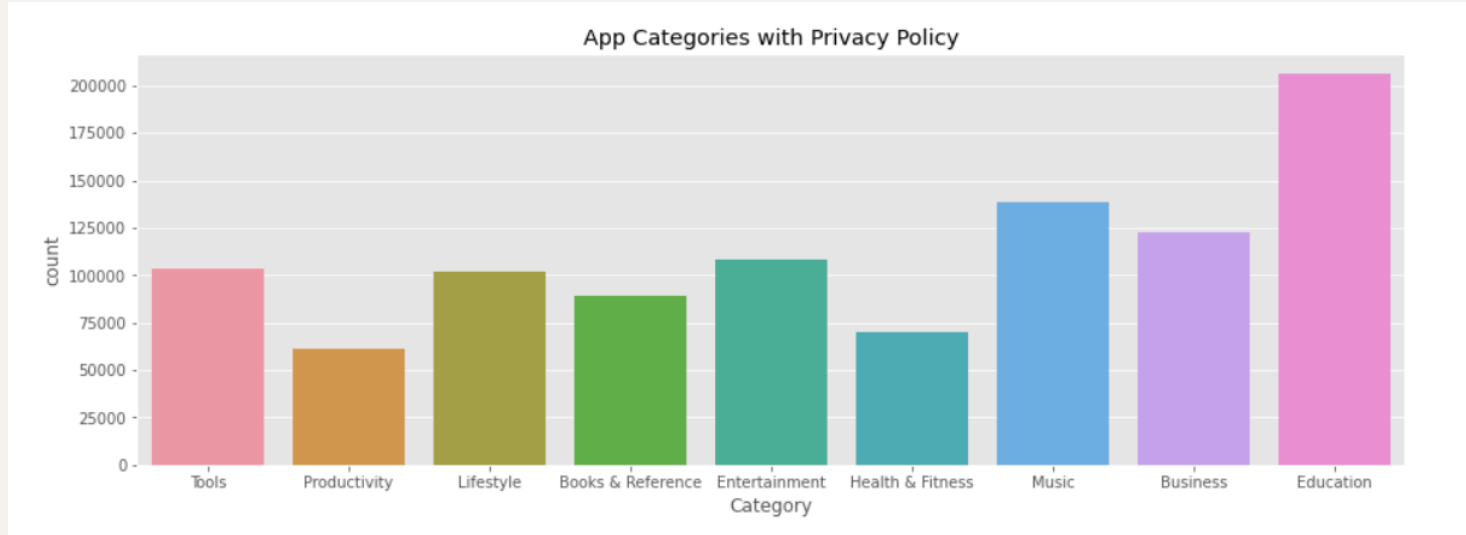
- Does having a privacy policy enhances the success of an application?



- Apps with a privacy policy tend to have higher ratings

7. Privacy Policy

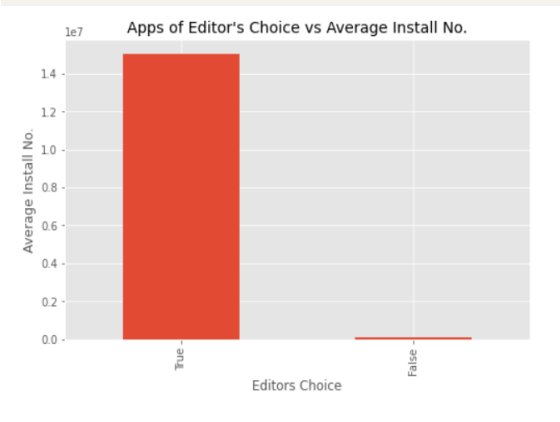
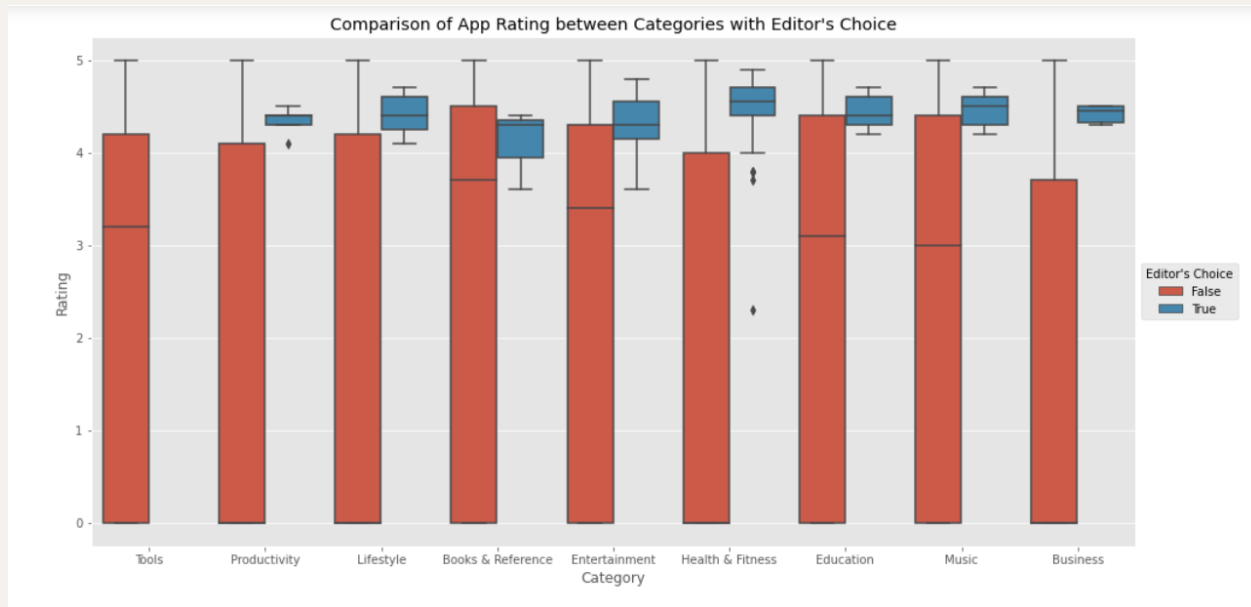
- Does having a privacy policy enhances the success of an application?



- Higher occurrences of apps under Education , Music and Business require collection of personal or financial data
- Users may feel more secure with a privacy policy in place – increased accountability

8. Editor's Choice

- How does being listed as an Editor's Choice affect the success of an applications?

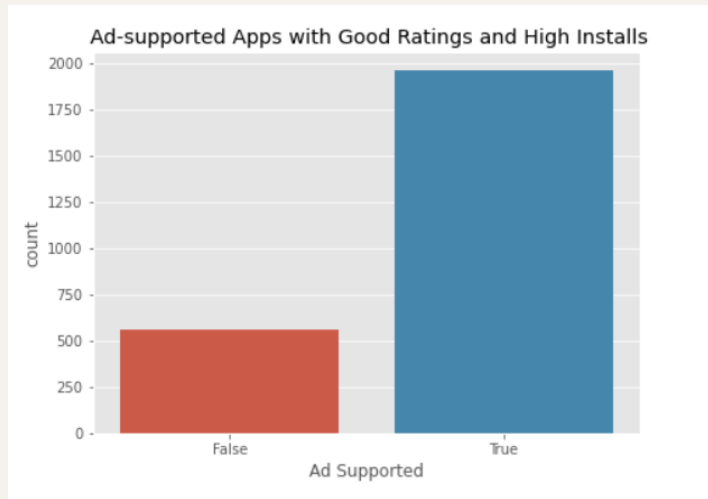


- Gaining a spot under Editor's Choice will most likely guarantee high installs and good ratings

What is an optimal business model of a successful application?

- Are successful applications usually free or paid ?
- How do ad-supported applications and applications with in-app purchases differ in terms of ratings and installation numbers?

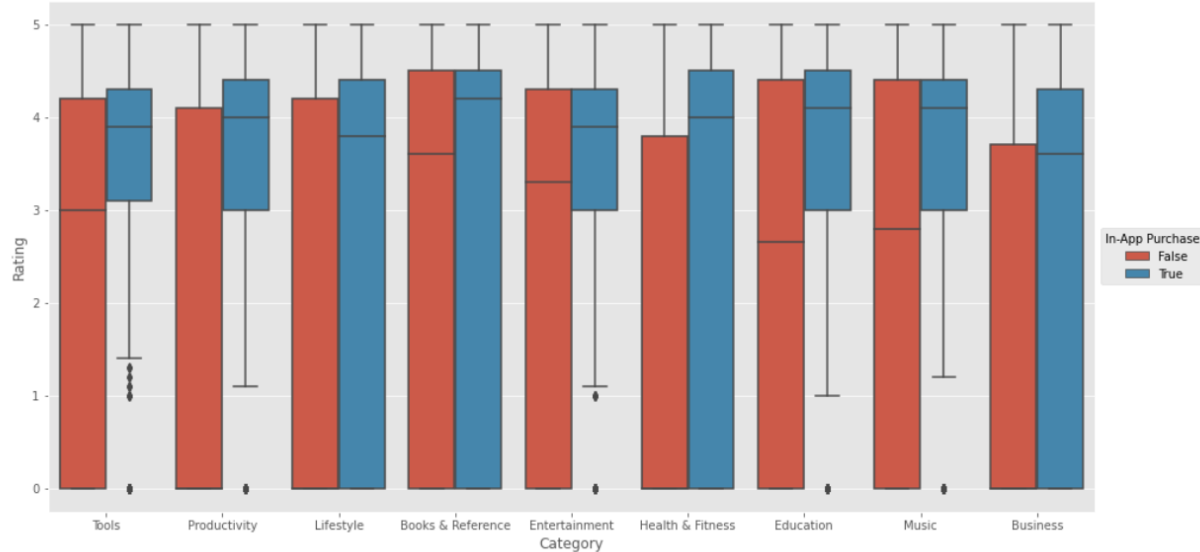
9. In- App Advertisements



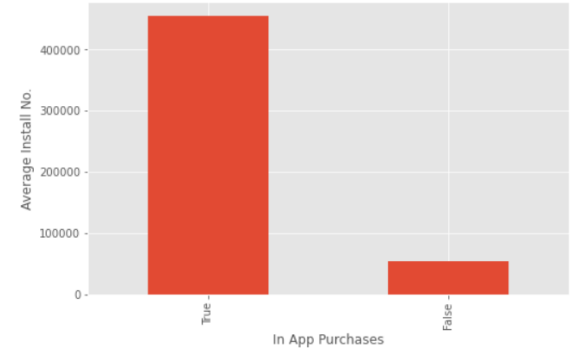
- Successful apps are usually free with in-app advertisements
- In-app advertisements are not a deal-breaker for users , they rather get a free app with in-app ads than paid apps
- “Try before you buy” mentality

10. In- App Purchases

Comparison of App Rating between Categories with In-App Purchases

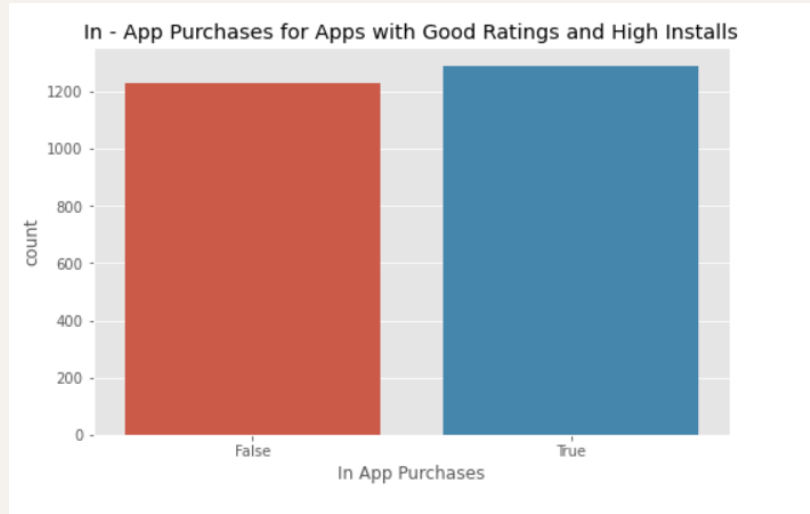


In-App Purchases vs Average Install No.



- Apps with in –app purchases tend to have better rating performance across all categories and higher installs

10. In- App Purchases



- Successful apps with in –app purchases are all free apps
- According to a Gartner survey, users are more willing to spend money on in-app features than to pay to download an app
- “Try before you buy” mentality

Recommendations for App Development

- **A successful app should ideally be:**

- Free
- Standard app size <16 MB
- Content rating for the general population (Everyone/Everyone 10+)
- Runs on minimal android system of 4.4 /5.0
- Well-maintained and updated at least once every 6 months
- Be an Editor's Choice
- Includes a privacy policy especially for categories like Tools, Entertainment, Education and Music where collection of personal and financial information is common

Recommendations for App Development

Categories to Consider	Categories to Avoid
Education	Tools
Music	Entertainment
Books & Reference	
Lifestyle	
Productivity	
Business	

- **Optimal business model for monetization can be:**
 - Free apps
 - Includes in-app purchases
 - Includes in-app ads
- <https://github.com/SiewPingYeo/Analysis-of-Google-Playstore-Apps-for-App-Development>