

Unlocking App Appeal: A Consumer-Centric Exploration of App Store Optimisation and Social Media Ad Influences on Game App Downloads

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ABSTRACT

The research explores the impact of App Store Optimisation (ASO) and social media promotions on mobile game app downloads. Using descriptive statistics, factors influencing app optimisation were ranked, including game app screenshots, size, ratings, and app icons, with the highest ranks given to game app screenshots and app size. In terms of social media promotion Instagram ads, specifically, those in stories and reels were found to be most influential in driving downloads. A multiple regression analysis revealed that both ASO and social media promotion explained the variance in game app downloads with the overall model being statistically significant. Further analysis of demographic variables uncovered significant differences in user engagement and retention across gender and age groups. The findings suggest that app optimisation and social media ads, particularly on Instagram, play a crucial role in attracting users and highlight the importance of demographic targeting in enhancing user engagement and retention. These insights offer valuable guidance for developers and marketers aiming to boost game app visibility and downloads through optimised strategies.

Keywords: App Store Optimisation (ASO), Game App Downloads, Instagram Ads, Social Media Promotion, Customer Engagement

INTRODUCTION

Mobile applications have become an integral part of contemporary existence, with millions depending on them daily to fulfil a variety of crucial tasks (Mahmood, 2020). The increasing demand from users has led to a surge in the number of mobile applications available in major app stores (Malik et al., 2017). In the first quarter of 2020, the world's two biggest app marketplaces, Google's Play Store and Apple's App Store, collectively provided more than 4.4 million mobile applications (Statista, 2024). In 2018, the global app download total was 194 billion, and individuals dedicated approximately three hours daily to mobile apps, contributing to over 100 billion USD in app stores from paid downloads, in-app purchases, and subscriptions (Zee Media Bureau, 2019). Despite substantial growth in the mobile app industry, fierce competition in major app stores has left numerous

developers struggling for visibility (Thomas, 2021; Lim et al., 2013; Michahelles, 2010). A significant proportion, around 70% of mobile apps in the Play Store, garnered fewer than one thousand downloads, with only 1% achieving the one million download milestone (Comino et al., 2015). This challenge has prompted extensive research into success factors for mobile apps in major app stores. A crucial inquiry arises: why do certain apps in the app store capture the interest of smartphone and tablet users, while others fail to do so? This study investigates the impact of two key factors, App Store Optimisation (ASO) and social media advertisements, to boost app downloads.

ASO refers to the process of enhancing the visibility and discoverability of a mobile app within an app store. It involves various strategies and techniques to improve the app's ranking in search results, increase its downloads,

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and attract more users. ASO includes optimising elements such as the app's title, keywords, description, icon, screenshots, and reviews to make it more appealing and relevant to potential users browsing the app store (Karagkiozidou et al., 2019). The goal is to maximise the app's visibility, increase organic downloads, and enhance its overall performance in the app marketplace. Similarly, social media advertising on apps refers to promotional campaigns on social media platforms specifically designed to encourage users to download and install mobile applications. In such campaigns, advertisements are placed on social media platforms like Facebook, Instagram, Twitter, or others, where users can discover and engage with the content in their feeds. The advertisements include compelling visual and textual content to showcase the app's features, benefits, and value proposition. The aim is to grab the attention of users and prompt them to download the app. The advertisements typically include a link or button that directs users to the app store, where they can download and install the advertised app.

In essence, ASO and social media advertisements create a synergistic effect. Optimising the app store listing enhances organic discoverability, while social media ads proactively reach a targeted audience, amplifying the overall impact on app downloads. Both strategies provide valuable data and insights. ASO analytics and social media advertising metrics help app developers to understand user behaviour, allowing for continuous improvement and optimisation of their strategies.

OBJECTIVES OF THE STUDY

- To assess the influence of app optimisation and social media promotion on game app downloads.
- To determine the user engagement and retention of game apps downloaded.

CONCEPTUAL DEFINITIONS

App Store

An App Store is a type of digital distribution platform for computer software known as applications usually in the context of mobile devices. App stores usually classify the

apps they offer according to the device for which the app was created, the operating system on which the program will operate, and the function(s) offered by the app, such as games, multimedia, or productivity. App store usually take the shape of an online store where consumers can peruse these various app categories, read about each app (including reviews or ratings), and download the app. The chosen app installs itself after being made available for automatic download. To shield users against harmful software, some app stores may also provide a feature that allows installed programs to be automatically removed from devices under specific circumstances. More than 300 app stores are available today, and that number is continually increasing. But the most used marketplaces for mobile apps are the Google Play Store for Android users and the Apple App Store for iOS, providing nearly universal access to a vast potential user base. These app stores contain millions of apps which are classified as hedonic or utilitarian mobile apps.

Hedonic and Utilitarian Mobile App

Utilitarian apps are those that are effectively used by consumers. For example, apps that are downloaded to track finances, and medical records are all classified as utilitarian apps: apps that are used to achieve specific tasks. Hedonic apps, on the other hand, are apps that are used for fun and playfulness vs. task completion (Hazarika, 2019; Hirschman & Holbrook, 1982). Hedonic applications are mostly used by users for escapism, arousal, increased engagement, perceived independence, and the fulfilment of fantasy (Tafesse, 2021).

Gaming Apps

With their ability to provide immersive experiences and engaging adventures to a wide range of worldwide audiences, gaming apps have emerged as a key component of digital entertainment. The way people interact with technology has been dramatically transformed as a result of gaming apps' cutting-edge graphics, captivating narratives, and innovative gameplay. There are millions of gaming apps available in the app store (Google Play Store and Apple App Store) and identifying the best gaming app is almost a difficult task for the users. Visibility

in the app store is of paramount importance due to its direct impact on user app downloads. Through attention-grabbing images, a thoughtfully written description, and encouraging user feedback, increased visibility enables an app to create a great first impression and persuade consumers to download it.

App Store Optimisation

The strategic process known as App Store Optimisation (ASO) aims to improve mobile apps' discoverability and visibility in app marketplaces like the Google Play Store and Apple App Store (ASO Stack, 2017). ASO entails improving many aspects of an application's listing to raise its search engine position and boost user downloads. Optimising the app's title, keywords, description, images, and icons are essential elements of ASO. Developers can greatly increase an app's visibility by using attention-grabbing images, intriguing descriptions, and relevant keywords. ASO enhances an app's likelihood of being discovered naturally and makes a favourable first impression, which persuades consumers to select and download the app (Strzelecki, 2020). Effective product Store Optimisation is a critical component for developers looking to optimise the reach and impact of their product in the fiercely competitive app market. Several factors influence the ASO including:

App Title

A vital element of ASO that improves a mobile app's discoverability and visibility is the app title. This is because it appears in the search results as the first item that users will view. It is also one of the most important ranking criteria in both major app stores. App names and titles can have a maximum length of 30 characters. Developers carefully consider the pertinent keywords people are likely to use while looking for apps in the app store when creating the title for their apps. These keywords ought to be related to the main attributes, features, or goals of the app.

Keywords

Keywords refer to the terms or expressions that users enter into the search field to find applications they wish

to download. These combinations of words and phrases are also known as search queries or search keywords. App related information, such as the title, subtitle, and keyword field, can be strategically integrated to improve search ranks and draw in users who are looking for terms.

App Description

Search engine optimization and app rankings are influenced by an engaging and informative app description that clearly highlights important features and benefits. They provide more open-ended opportunities to describe an app and its features.

Icon

An application icon—or app logo—is a unique image used to represent the app on a user's device. To make a good first impression, an app icon needs to be distinctive and memorable. It must reflect the goal of the app and have a pleasing visual design.

Screenshots and Preview Videos

To provide user with a visual insight and to encourage downloads, the app's functionality and user interface are showcased in high-quality images and preview videos.

Rating and Reviews

Ratings and reviews serve as indicators of an app's popularity and quality. The legitimacy and exposure of the app are enhanced by positive reviews and high ratings. The app's reputation can be improved by encouraging users to submit reviews and by responding positively to their comments.

App Size and Performance

Reducing the size of the software and making sure it runs smoothly both contribute to improve users' experiences, which can affect search engine results and user feedback.

Social Media Promotion

Social networking platforms provide developers with targeted marketing options that allow them to customise

their promotional efforts to target specific demographics, thereby increasing the likelihood that users will be interested in the app. Images and videos are examples of visual content that may be used to highlight an app's benefits and draw in users effectively. Users are encouraged to explore and download the app via active participation through polls, comments, and direct conversations, creating a sense of community.

Instagram

Instagram allows app developers to showcase their apps to a relevant audience based on factors like demographics, interests, behaviours, and more. Instagram offers various ad formats such as photo ads, video ads, carousel ads, and story ads, providing flexibility in how apps are promoted. By leveraging visually appealing content and compelling messaging, app advertisers can capture the attention of Instagram users and drive them to download their app.

Game App Ads on Instagram

Game app advertisements on Instagram, particularly through reels, posts, and stories, present a compelling opportunity for app developers to showcase their games to a wide audience. Reels, with their short and engaging video format, allow developers to capture users' attention quickly and showcase gameplay highlights or key features of their games. Instagram posts offer a more static but visually appealing way to promote games, allowing developers to craft eye-catching visuals and compelling captions to entice users to learn more. Stories, with their ephemeral nature, create a sense of urgency and exclusivity, encouraging users to take immediate action, such as downloading the app. Game app ads on Instagram provide insights on new game features etc., which will save the time and effort of users in identifying new game apps (Fig. 1).

Conceptual Framework

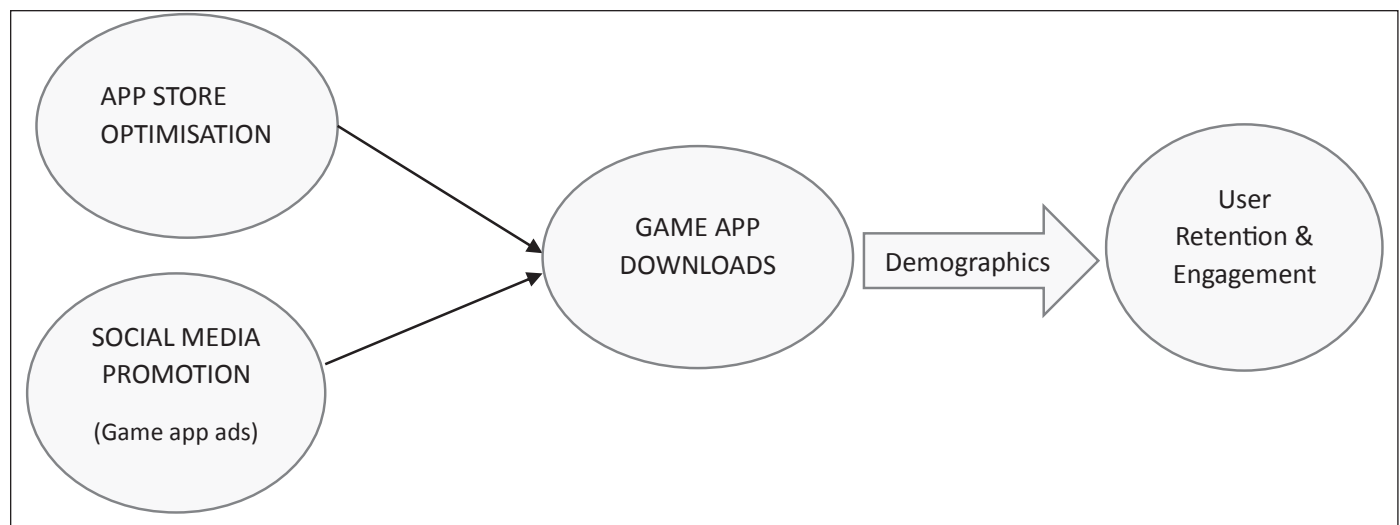


Fig. 1: Conceptual Framework

MATERIALS AND METHODS

The notable surge in the downloads of gaming applications in the past several years is indicative of how user preferences are changing in the digital space. This study offers valuable data for both users and app developers, as users weigh a variety of aspects before downloading apps. Through an extensive analysis of the impact of

social media marketing and ASO on app downloads, the study provides developers with a more profound comprehension of user behaviour and preferences. With this knowledge, developers may more effectively use social media advertising and app optimisation to increase the visibility of their apps. Consequently, this strategy may help consumers by making it simpler for them to access a wide variety of gaming apps tailored to their interests.

The goal of this study is to identify the different aspects of social media marketing and app optimisation that sway users' decisions to download gaming apps. The project will specifically investigate how these factors affect the youth and young adults, providing insight into the dynamics of app downloads. The study is descriptive and analytical in nature. A sample of 110 youth from Kerala were taken as a sample from the population using purposive sampling. The data were collected from youth who are aged between 14–29, and those who download and use the game apps were selected as per the purpose of the study. As the data were collected non randomly, a significant portion, 76.40% of the respondents were students, followed by 29.90% who were employed, and a mere 2.7% who were not employed. Data for this study were collected through a structured Questionnaire.

Hypothesis

Hypothesis 1

H1_a: There is a significant difference between App store optimisation factor & social media promotion factors in game app downloading.

Hypothesis 2

H1_b: There is a significant difference between gender and user engagement & retention of game apps downloaded.

Hypothesis 3

H1_c: There is a significant difference between age and user engagement & retention of game apps downloaded.

RESULTS

The descriptive statistics of the ranking of factors influencing app optimisation, the mean and standard deviation are used as the indicators (Table 1). The first rank is given for the factor 'Game app screenshot' (mean 4.17, SD .947). The second rank is given for the factor 'App size' (mean 4.14, SD 0.933). The third rank is given for the factor 'Ratings and reviews' (mean 3.94, SD 1.016). The fourth rank is given for the factor 'App icons' (mean 3.72, SD 1.102). The fifth rank is given for the factor 'App description' (mean 3.57, SD 1.104). And the sixth rank is given for the factor 'App title' (mean

3.41, SD 1.168).

Table 1: Descriptive Statistics Ranking of App Optimisation Factors

Source	N	Mean	Std. Deviation
Game app screenshots	110	4.17	.947
App size	110	4.14	.933
Ratings and reviews	110	3.94	1.016
App icons	110	3.72	1.102
App description	110	3.57	1.104
App title	110	3.41	1.168

Source of data: Primary data.

Table 2: Descriptive Statistics Ranking of Social Media Factors

Source	N	Mean	Std. Deviation
Game app ads on Instagram stories	110	4.30	.873
Game app ads on Instagram reels	110	4.21	.847
Game app ads within Instagram post	110	3.63	.947

Source of data: Primary source SPSS.

The descriptive statistics of the ranking of factors influencing social media promotion in app downloads. Here, the mean and standard deviation are used as indicators of descriptive statistics (Table 2). From the Table it is clear that the first rank is given for the factor 'Game app ads on Instagram Stories' (mean 4.30, SD 0.873). The second rank is given for the factor 'Game app ads on Instagram Reels' (mean 4.21, SD 0.847). The third rank is given for the factor 'Game app ads within Instagram posts' (mean 3.63, SD 0.947).

Influence of App Store Optimisation and Social Media Promotion in Game App Downloads

Multiple regression analysis is used to identify the influence of two independent variables, ASO and social media promotion in game app downloads (Table 3).

H1_a: There is a significant difference between App store optimisation factor & social media promotion factors in game app downloading.

$$\text{Model: } y = \alpha + \beta_1x_1 + \beta_2x_2 + e$$

Table 3: Summary of Multiple Regression

Variable	Unstandardised Coefficient	Standardised Coefficient Beta	Standard Error
App Optimisation	.118	.137	.077
Social media	.334	.379	.081

$r^2 = .184$ adjusted $r^2 = .169$, p value = .000 (source primary data analysis)

Source of data: Primary source SPSS.

The r^2 value in the above analysis is 0.184, this value represents the portion of the variance in game app downloads (y) that is predictable from the independent variables, app optimisation (x1) and social media promotion (x2). This indicates that approximately 18.4% of the variance in game app downloads (y) can be explained by the independent variables, app optimisation (x1) and social media promotion (x2). This means that

the combination of app optimisation and social media promotion accounts for 18.4% variability in game app downloads. The remaining variance in game app downloads is attributed to other factors. Even though the relationship may be weak the overall model is still statistically significant as the level of significance in ANOVA is 0.000, which indicates that the overall regression model is statistically significant (Table 4).

Table 4: ANOVA Test – Regression Fit

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	10.514	2	5.257	12.056	.000 ^b
Residual	46.658	107	.436		
Total	57.173	109			

a. Dependent Variable: app download.
b. Predictors: (Constant), Social media, App optimisation.

Source: Primary data, SPSS.

Demographic Variables on User Engagement and Retention in Game App Downloads

$H1_b$: There is a significant difference between gender and user engagement & retention of game apps downloaded.

Table 5: Mann Whitney U Test-Gender and User Engagement & Retention of Game Apps Downloaded

Group	Mean Rank	Mann Whitney U Test	P Value
Male	61.66	1190.500	.038
Female	50.18		

Source of data: Primary source, SPSS.

The mean rank for males is slightly higher than that for females, indicating that, on average, Males (61.66) may have a slightly higher user engagement and retention for game apps downloaded as compared to females (50.18) (Table 5). This means that the hypothesis is upheld at the 5% level of significance, with a U statistics of 1190.500 and a significance value of 0.038. Subsequently, there exists a statistically significant difference in the mean

rank of user engagement and retention of app downloads according to males and females.

$H1_c$: There is a significant difference between Age and user engagement & retention of game apps downloaded.

Table 6: Mann Whitney U Test- Age and User Engagement & Retention of Game Apps Downloaded

Group	Mean Rank	Mann Whitney U Test	P Value
14-17	69.55	599.000	.012
18-29	51.73		

Source: Primary Data, SPSS.

The mean rank for the age group 14–17 is slightly higher than that for the age group 18–29, indicating that on average the age group 14–17 (69.55) may have a slightly higher user engagement and retention for game apps downloaded as compared to the age group 18–29 (51.73). The hypothesis is upheld at the 5% level of significance, with a U statistics of 599.000 and a significance value of 0.012. Subsequently, there exists a significant difference in the mean rank of user engagement and retention of app downloads according to the two age groups (Table 6).

DISCUSSION

The analysis of the survey results reveals several key insights into respondents' preferences regarding mobile game apps and the effect of instant ads on their download behaviour. The majority of the respondents were female, with the age group of 18 to 29 constituting the largest demographic. Notably, most respondents were students, highlighting the youthful nature of mobile gaming audiences. The preference for regularly playing mobile games is strong, with over 60% agreeing with the statement, and a similar trend was observed regarding the influence of trends and popularity when downloading apps. However, there was a noticeable reluctance to engage in deep searches for game apps on the Play Store, with nearly 45% of respondents disagreeing with this approach. Additionally, many respondents expressed a preference for downloading apps from the top charts on the Play Store, demonstrating a tendency towards convenience and trust in popular choices. When examining ASO factors, app icons, descriptions and ratings emerged as key considerations in user decision making. The role of Instagram in influencing game app downloads was also significant, with a large majority of respondents agreeing that Instagram ads, particularly through reels, stories, and posts, strongly effected their decisions. Furthermore, the results of multiple regression and ANOVA highlight the statistical significance of app optimisation and social media promotion in driving game app downloads. Gender and age differences in user engagement and retention were also significant, suggesting the need for tailoring marketing strategies based on demographic factors.

FUTURE IMPLICATIONS

The findings from this study present several key implications for future research and practical application in the mobile gaming industry. Firstly, the significant role of app screenshots in influencing download behaviour suggests that future app design strategies should focus heavily on optimising visual content in app stores. Developers can benefit from conducting A/B testing of different screenshot styles and layouts to determine what best communicates game features and entices users. This

opens a pathway for further research on the psychological and visual elements that make screenshots effective in driving downloads. Secondly, the strong influence of Instagram stories as a promotional tool highlights the growing relevance of short-form, visually engaging content in digital marketing. Developers and marketers are encouraged to explore deeper integrations with social platforms, particularly Instagram, by utilising influencers, targeted stories, and interactive features like polls and swipe-ups. This trend calls for further investigation into how various social media formats influence consumer behaviour differently across demographic groups and game genres.

Lastly, app size emerged as a critical factor in user decision-making, suggesting a need for optimisation in app development to ensure minimal file sizes without compromising performance. Future research could explore the technological and psychological trade-offs users are willing to make regarding app size, performance, and content quality. Developers may also consider creating lite versions of their games to appeal to users with storage constraints. The research emphasises consumer-focused development and marketing strategies. By integrating user preferences into design, promotion, and technical considerations, developers can significantly enhance app discoverability, user acquisition, and long-term engagement. Future studies could expand by incorporating cross-platform comparisons and the role of user reviews and ratings in download decisions.

CONCLUSION

It is evident from the study that while ASO and social media promotion play a role in game app downloads, their influence appears to be relatively minor compared to other factors. Several other aspects, such as app quality, recommendations, and personal preferences, seem to have a more significant influence on user's decisions to download game apps. Among the ASO factors, app screenshots and app size were found to have the most significant impact on users' decisions to download game apps. Additionally, within social media promotion, Instagram stories and reels were identified as the most influential channels, which facilitate app discovery and improve user engagement.

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