Analyzing the Impact of User Behavior and Paid Advertising on App Revenue: A Case Study of Reelshort

Yang Wei

School of Management Universiti Sains Malaysia (USM)
Email: yangwei@student.usm

Abstract

Background Information: In early 2022, Chinese online short dramas, known for their low costs and quick production cycles, entered the international market. By mid-2022, Crazy Maple Studios (CMS) launched Reelshort, a global short drama app, which quickly established itself as a market leader. By October 2023, Reelshort surpassed TikTok in North American downloads, and as of April 2024, its net revenue exceeded $80 million. **Research Question:** This research centers on Reelshort and examines several key factors that affect its total revenue, including the amount of paid ad placements, user behavior, downloads, pricing strategy, and the impact of revenue in North America on total revenue. **Research Methodology:** This research employed both qualitative and quantitative methods. The qualitative analysis explored Reelshort's pricing strategies and revenues, while the quantitative approach used ridge regression to assess the relationship between key variables. Reelshort's total revenue was the dependent variable, with user behavior, advertising, downloads, and North American revenue as independent variables. Additionally, a mediated effects model examined how advertising and daily user activities influenced revenue through downloads. **Research Findings:** The North American market significantly boosted revenues, while advertising expenditures negatively impacted Reelshort's revenues. Overpricing can negatively impact long-term revenue. Additionally, increased user engagement and advertising spend could lead to more downloads, which could increase revenue.

Keywords: Reelshort, Advertising, User Activity, North American Market, Global Geographical Differences, Pricing Strategy.

Introduction

A seemingly unremarkable App called Reelshort has leapt to become a global phenomenon on the download charts. According to the App Store: Reelshort became TOP1 on the IOS Entertainment Chart in the United States and landed at the top of Google Play in 2024. At one point, it surpassed headline entertainment mobile apps such as Tiktok and Netflix (Tang, 2023). In this paper, we will present the advertising strategy behind Reelshort's success, user

behaviour, and the role of global geographic differences in influencing a film and TV short drama App.

Short dramas are a form of short video that refers to short, focused film and television dramas that convey information (Obiechina, 2023). Its advantage lies in the low production cost and the fact that it can be distributed through online media. Paid short drama is a form of short drama that users have to pay to watch, which has emerged in China since 2018 and realized rapid growth in China and globally in 2023. According to Sensor Tower, the paid short drama market is expected to reach $36 billion in the long term (Sensor Tower, 2024). The advantage of paid short dramas is the low production cost and short cycle. For example, the production cost of a full-length drama in the U.S. can be in the tens of millions or even hundreds of millions of dollars, whereas the cost of a short drama is only $150,000 to $300,000 (Guohai Securities Research Institute, 2024). In contrast, more than half of the single shows on Netflix cost $20 million to produce, significantly higher than Reelshort's single show production costs (Jenner, 2018).

Reelshort is a paid short drama app launched by Crazy Maple Studio (CMS), which is affiliated with Chinese Online. Launched overseas in August 2022, the app has entered the mobile app market in over 160 countries by 2024 and has topped the entertainment free list in the US, Canada, UK, and the Philippines (Guohai SecuritiesResearch Institute, 2024).Reelshort's single episodes are 1-3 minutes in length and are played on a Reelshort's single episodes are 1-3 minutes long, played on vertical screens, tightly paced, and feature mostly existing scripts starring European and American-faced actors and actresses, with topics that primarily include romance, vampires, and werewolves.

Reelshort's creative team consists of more than 400 people, and the entire process from scriptwriting, filming to operation and promotion is undertaken by CMS (Soochow Securities, 2023).Reelshort's ability to open up the North American market quickly is due to the North American backgrounds of CMS's production and operation teams, which enables it to achieve localization and break through regional cultural differences. Reelshort was able to open up the North American market quickly thanks to the North American background of the CMS production and operations team, which enabled it to "localize" its short dramas and break through the barriers of regional cultural differences. According to the data purchased through data.ai and statistically analyzed through Excel, Reelshort reached a total revenue of 69% in the US region in 2023 (data.ai, 2023). Reelshort's success stems from its low cost, short lead time and its localized operation strategy, which have led to its rapid rise in the global market, especially in North America, and it is worthwhile to delve deeper into the reasons behind its success.

Table 1.1

Comparison of Short Dramas, Long Dramas, and Movies in the USA

Chart: Overseas (U.S.) Short Drama, Long Drama, Film

Category	Short Drama	Long Drama	Film
Screen Type	Vertical	Horizontal	Horizontal
Duration	1-3 minutes	>30 minutes	2 hours
Episodes	80-100	20	1
Cost	$0.01M-$0.3M per	$1M-$100M	Over $100 million
Production Timeline	Short (1-2 months)	Long (several months)	Long (several months)
Content Source	User-generated	Traditional media	Traditional media
Monetization Model	Single Pay + Ads	Subscription + Advertising	Pay-per-view

Sources: Wind Information, Flush (Aastocks), Time Weekly, Entertainment Capital Theory, Poster News, IMDb, Box Office Mojo, Screen Rant, Guohai Securities Research Institute.

In addition, this study will examine the effect of the amount of advertisement placement on the amount of downloads and test the mediating effect of downloads in the revenue model. It is hypothesised that the amount of advertisement placement and user activity indirectly affect the total revenue of Reelshort by influencing the amount of downloads. This study aims to provide theoretical support and practical guidance for the operation strategy of Reelshort short drama app.

Purpose and Motivation

Sketch apps are a new segment of entertainment apps that are inexpensive to produce yet can realize significant revenue. What are the drivers behind this? The purpose of this study is to explore the key factors affecting the total revenue of Reelshort short-form dramas, including five metrics: pricing strategy, volume of paid ad placements, North American revenue, user behavior, and downloads. It aims to analyze how low-budget apps overcame the odds and became "dark horses" in terms of downloads, and to identify the key success factors affecting app revenue.

This study aims to provide new ideas for movie and TV apps to go overseas. In the face of the emergence of "phenomenal" film and television forms, we should seize the opportunity to lower the threshold, change the way of content production and dissemination, and innovate the payment model. For the globalization of short dramas, it is necessary to deeply consider the regional cultural differences, and the film and television dramas should fully integrate the local characteristics and understand the personal viewing preferences brought by the differences between countries. Film and TV short drama apps need to pay attention to advertising, user behavior and product pricing if they want to generate high revenues and maintain long-term competitiveness.

This study not only helps more people understand the newest form of film and television, short skits, but also provides readers with new perspectives through an in-depth analysis of Reelshort, which demonstrates how low-cost production entertainment apps can successfully buck the trend. At the same time, this paper also points out the problems of short drama apps and serves as a risk warning to the industry.

Literature Review

This part of the literature examines the theoretical underpinnings of the model, including ridge regression and mediation effect testing for PROCESS.

Mountain Ridge Regression

According to Kibria and Banik (2016), According to Kibria and Banik (2016), ridge regression is a method used to address the problem of multicollinearity between predictor variables in multiple regression models by penalizing the magnitude of the coefficients to reduce the standard error and thus improve the accuracy of the model. Ridge regression is particularly effective in high-dimensional settings, where it includes a penalty term to limit the complexity of the model, effectively avoiding overfitting and helping to manage multicollinearity and improve prediction accuracy (Dobriban & Wager, 2018). Nguyen, Chen, and Lee (2020), also added that ridge regression can improve the predictive accuracy of models in situations where traditional regression models may fail. Ridge regression is more advantageous in research methods. The authors, TIRINK et al (2020), specifically interested in solving the problem of multicollinearity in children's body measurements, compared the ridge regression (RR) method with the least squares (LS) method. They found that ridge regression is more reliable than the least squares method when multicollinearity is present.Arashi et al. (2021) emphasize that ridge regression solves the covariance problem better, but also introduces bias in the estimation. When predictors are highly correlated, this bias requires a trade-off between reducing variance and improving model stability. The main limitation is the challenge of choosing the optimal ridge parameter, which can greatly affect model performance. Choosing this parameter usually requires cross-validation or other methods to strike a balance between bias and variance, but this does not always guarantee optimal model performance across different datasets or conditions.

Theory of Intermediary Effects

A comprehensive description of mediation effects is provided by Sürücü, Şeşen, and Maslakçı (2023), who emphasize that mediation analysis helps to elucidate how the independent variable affects the dependent variable through one or more mediating variables. They advocate the use of the PROCESS in SPSS as an effective tool for conducting mediation, moderation, and conditional process analyses, which helps in testing and interpreting model interactions.In the study by Igartua and Hayes (2021), it is mentioned that mediation analysis helps to reveal how the explanatory independent variables affect the dependent variable through the intermediate variables, and also highlights the value of mediation analysis in enhancing the understanding of the relationship between the variables, and also endorses the use of modern tools, such as PROCESS, for statistical.A study by Sarstedt et al (2020), criticised the limitations of PROCESS, arguing that it tends to assess the impact of variables in isolation, but fails to capture the complexity of reality. This is particularly the case in models where latent variables play a significant role. Purwanto et al (2021), also argued that there are limitations to using PROCESS for mediation analyses, although PROCESS allows for simple mediator reconciliation due to its availability in SPSS. However, it does not fully accommodate the complexity of some models, especially those involving multiple mediators or moderating the mediator framework.

Research Gaps

Although the existing literature explores the impact of user behavior and paid advertisements on app revenue, there are still some research gaps. First, most studies focus on traditional social media platforms and large apps, with limited research on small apps such as Reelshort. In addition, existing studies have focused on analyzing single-region data. Reelshort, as a skit app that is rapidly gaining popularity in North America, provides an opportunity to analyze such overseas apps from a global perspective. In addition, current research has not adequately addressed the impact of differences in user behavior and paid advertising across cultures.

This study aims to fill these gaps by analyzing Reelshort's user behavior and paid advertising data in the North American market, exploring how these factors specifically affect app revenue. We will use a mixed-methods approach that combines quantitative data analysis with qualitative comparisons to gain a more comprehensive understanding of user behavior patterns and advertising effectiveness. The study will not only enhance theoretical understanding of applet advertising effectiveness, but also provide empirical evidence for app developers to formulate region-specific marketing strategies.

Theoretical Background

This part of the literature is an overview of variables, including user behaviour and, advertising and revenue, Cultural differences of TNCs and Revenue, Application Success Factors and Application Revenue Model.

User Behavior and Revenue

User engagement refers to non-corporate and brand behaviours, driven by intrinsic user motivation, which influences app downloads and purchases. The success of mobile apps is influenced by user engagement. In (Luna & Kim, 2020), it is mentioned that companies should actively maintain user behaviours that are used to increase repeat purchases and revenue. In (Lee & Raghu, 2017) it continues to refine that user behaviour varies depending on the category of mobile apps that users choose to use, with instrumental apps being driven by rationality and utility, and hedonic apps being driven by emotion. While in (Lee & Raghu, 2014) it is mentioned that user ratings have a positive impact on apps, but more competitiveness is gained by lower user search costs and continuous high quality content updates. (Geronimo et al (2020) designed perception experiments and the results showed that user ratings influence the success of mobile apps and that understanding user behaviour and preferences through analytics is beneficial to improve the performance of mobile apps. (Lin et al., 2020) used survival analysis to quantify the app's user retention rate among observed residents on a monitored app and found that doctors who worked longer hours used the app more frequently, suggesting that it is the target user that is a factor in the app's success.

Paid Advertisements and Revenue

In order for apps to find their target users, companies often increase users by means of paid advertisements, which in turn increases app revenue (Aslam & Karjaluoto, 2017). A comprehensive review of past literature on relevant advertising shows that paid advertising on social media and other digital platforms can significantly increase user acquisition and revenue for apps. This is also illustrated by Liu-Thompkins (2019), study, which states that paid advertising plays a key role in driving revenue through strategic deployment across various digital platforms. However, the study by Almestarihi et al (2024), suggests that while paid

advertising may be costly, its ability to increase revenues depends on the advertising ROI. Kelley et al (2021), take the opposite view, arguing that the advertising ROI is a controllable factor, and have a positive view of paid advertising, emphasizing its effectiveness in driving revenue growth. Precision advertising allows companies to accurately target specific consumer segments, and a study by Alsharif et al (2024), states that precision advertising improves targeting accuracy by utilizing data analytics and consumer insights to increase advertising effectiveness and impact revenue. In addition to precision advertising, the frequency of advertising also affects revenue; a study by Shapiro et al (2021), mentions that high-frequency advertising can lead to diminishing returns, so there is a need to balance the optimal frequency and ROI to bring in better revenue.

Cultural Differences of TNCs and Revenue

The entrepreneurial orientation and innovation capabilities of multinational corporations (MNCs) are crucial for exploring international markets. These companies often exhibit high levels of proactivity and adaptability, enabling them to effectively leverage international opportunities (Cavusgil & Knight, 2015). Beugelsdijk et al (2018), found that cultural distance negatively impacts the performance of foreign subsidiaries, but does not significantly affect the overall performance of MNCs. However, Elia, Petruzzelli, and Piscitello (2019), hold a different view, arguing that cultural diversity and differences in cultural backgrounds pose communication barriers, making dual cultures more challenging for subsidiaries, thereby reducing their revenues.

Pieterse (2019), also discusses how globalization promotes cultural integration, but notes that cultural differences can lead to misunderstandings and conflicts. These cultural conflicts can hinder business operations, affect employee morale, and increase costs, ultimately negatively impacting revenues. Cohen (2018), further explores the dual impact of cultural differences, stating that global integration fosters innovation through the cross-fertilization of ideas from different cultural backgrounds. This integration can facilitate the development of new products and services, thus enhancing overall revenue. However, cultural conflicts and complex urban hierarchies present significant challenges.

Additionally, Cohen (2018), emphasizes the significant increase in industry concentration in the North American market, which strengthens the market power of dominant firms and creates a more challenging environment for startups. Stansel, Torra, and McMahon (2021) found that regions in the United States with higher economic freedom experienced better income growth.

Application Success Factors

In the North American market, applications that offer convenience and low development costs are more likely to succeed. Compared to established applications, smaller apps are more cost-effective (Elwalda & Benzaghta, 2021). Vahdat et al (2020), further explored the success factors of small applications, finding that perceived usefulness and ease of use significantly impact their success. Mehra et al (2020), also confirmed these factors' influence on applications, while additionally noting that perceived enjoyment is a significant factor among younger demographics.

In the study by Alqahtani and Orji (2020), on improving mental health applications through user feedback, it was found that poorly usable applications are often abandoned by users. Users prefer applications that offer customizable experiences and multiple options. Elwalda and Benzaghta (2021), also mentioned another success factor: adaptability. Small applications that allow users to adjust features according to their preferences are more likely to succeed. Another important factor is user reviews. Applications with positive user reviews and high ratings are more likely to attract new users and retain existing ones (Chen & Liu, 2020).

Application Revenue Model

The main sources of application revenue include in-app advertising, subscription models, in-app purchases, paid applications, and premium add-on services (Tang, 2019). Pricing strategies for applications directly impact revenue; setting appropriate price levels is crucial for achieving sustainable profits. Developing effective pricing policies based on customer expectations and behavior is key to long-term revenue generation (Nagle, Hogan, & Zale, 2016). Golrezaei et al (2021), suggest that pricing should consider advertising costs and propose a "threshold-based" bidding strategy that maximizes revenue while ensuring advertisers achieve their target ROI. Additionally, media applications generate revenue through fixed subscription fees. When content costs vary significantly, recommendation system biases can help platforms overcome these cost differences (Chi, Fan, & Wang, 2021). According to Van Angeren et al (2022), the impact of product uniqueness on performance varies significantly. The relationship between a product's uniqueness relative to its competitors and its market performance differs based on its revenue model (paid or free).

Research Models
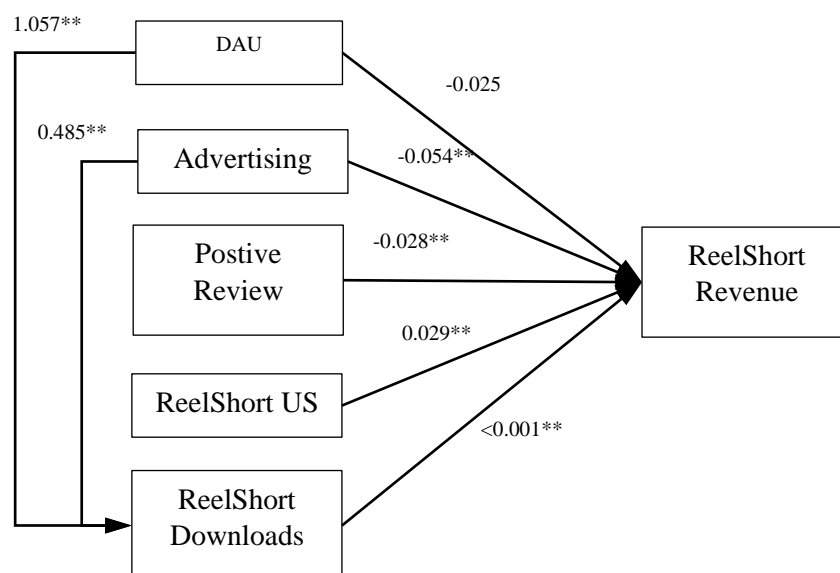
Hypothesis

H1: Daily Activity of Users (DAU) directly impacts ReelShort revenue.
H2: Positive reviews directly affect Reelshort's revenue
H3: The amount of advertisements placed directly affects Reelshort revenue
H4: Pricing of short episodes directly affects ReelShort revenue
H5: North American revenue directly impacts Reelshort revenue
H6: User activity affects Reelshort revenue by affecting the number of downloads

H7: Ad placement affects Reelshort revenue by affecting downloads

Methodology

Using a combination of qualitative and quantitative methods, this study aims to deeply analyze the key factors affecting Reelshort's total revenue. Among them, the dependent variable is Reelshort's total revenue, and the independent variables include skit pricing, user behavior (DAU and positive reviews), advertisements, and North American revenues, in addition to using downloads as a mediator value, where the number of advertisements placed and users' daily activities affect Reelshort's revenue by influencing downloads and then Reelshort's revenues. In terms of research design, we will use a qualitative research approach to investigate the impact of pricing strategy on total revenue. Specifically, the pricing characteristics of in-app skits will be analyzed, comparing the pricing strategy of Reelshort with that of the Netflix platform, and user ratings. Through these qualitative analyses, the aim is to reveal how pricing strategies affect Reelshort's revenue. The quantitative part uses VIF, ridge regression, and process to examine the relationship between the variables so as to study the relationship between user behavior (DAU and Postive review are), advertisements, North American revenue, and revenue.

Qualitative Research

This section will use qualitative analysis to explore the relationship between pricing and total revenue, including an introduction to pricing strategies, an analysis of user ratings on pricing, and a comparison with Netflix.

Reelshort's Pricing Strategy

Reelshort, as a short drama app, adopts a hybrid cash model combining single-episode payment and ads as its main monetization method. According to TikTok for Business and Reelshort's official website, 71% of all sketches on the platform are currently watched through single-episode payment, and 21% are realized through advertisements. Users can recharge their accounts by purchasing virtual coins, with prices ranging from $4.99 to $99.99. Those who recharge more than $5 are eligible for additional bonuses, with giveaway percentages varying from 15% to 100%. This tiered bonus system is designed to encourage users to recharge higher amounts by offering increasingly generous rewards. Single episodes can be unlocked for between $0.36 and $1.11. Users can choose to unlock individual episodes by purchasing coins directly or by watching ads to unlock parts of the episode. Watching ads can unlock up to 20 episodes per day, and in this way, the platform is able to increase both ad revenue and user viewing hours. ReelShort adapts the top-up threshold to the spending power of different markets. For example, in the Philippines, the minimum top-up amount is 99 pesos (~$2). According to data.ai, there are significant differences in top-up preferences across markets. For example, the top top-up program in the U.S. market is $9.99, while in the Philippines it is 299 pesos (about $5).

Table 3.1.1
Reelshort Payment Interface
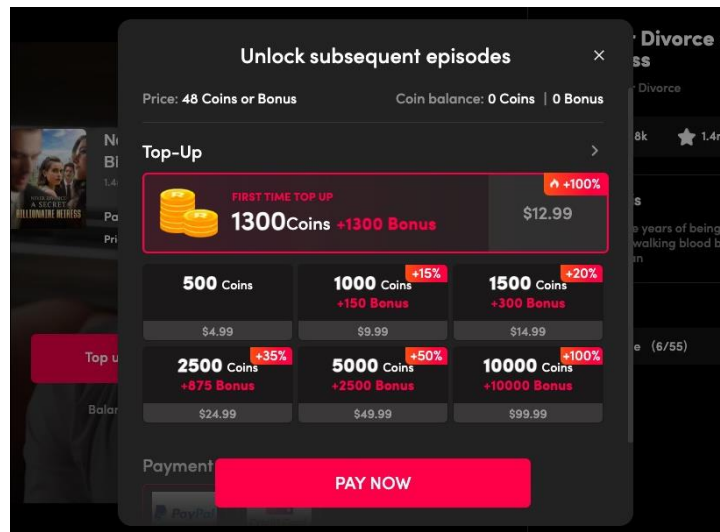
Source: Reelshort

User Reviews of Reelshort's Pricing

As of April 2024, there are 82,000 reviews on both Google Play and App Stores. Positive reviews are 58% and negative reviews are 27%. The overall rating is 3.8 out of 5. Users have a high overall rating for Short Drama App. The positive reviews mainly focus on the following aspects: interesting storyline, addictive plot and short story, which can make good use of fragmented time. On the other hand, the bad reviews mainly focus on the problems of too many advertisements and paying too much.

Table 3.1.2
User Reviews of Reelshort

Positive Reviews (5-Star)	Negative Reviews (1-Star)
"This book is really awesome, love it "	"Almost a scam, $33 per week to watch"
"I enjoyed watching it because it was an entertaining series"	"Great but pricey. To watch per episode will cost you a lot of money."
"The stories are beautiful, inspiring, entertaining"	"Expensive. €5.99 to watch like 3 episodes? First I thought it was for free, of course not."

Source: User reviews from the app store

Sample Survey of User Evaluations

To further investigate the percentage of users who are dissatisfied with pricing, negative user reviews on the App Store and Google Play were selected for sentiment analysis in this study between January and April. Three hundred reviews were randomly selected for analysis by month. The results of the analysis showed that the percentage of all negative reviews about expensive prices reached 48.7%, while the percentage of negative reviews not related to price was 51.3%. This data clearly shows that users are dissatisfied with the pricing strategy of the

Reelshort app. This analysis not only reveals the importance of pricing issues in user dissatisfaction, but also points out that nearly half of the negative reviews are related to high prices. This shows that while product features and performance may be recognized by users, the high price has become a key factor in user experience and satisfaction. Therefore, for Reelshort, reconsidering and adjusting the pricing strategy will be the key to improving user satisfaction and competitiveness in the market.
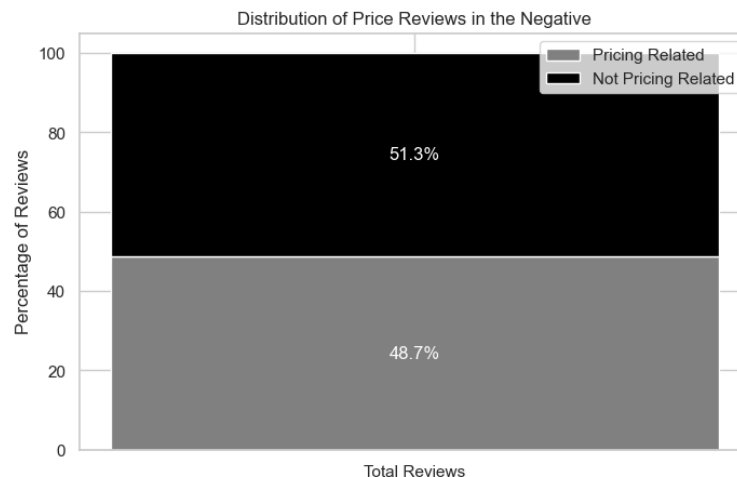

Figure 3.1.3. Distribution of Price Reviews in the Negative

Netflix and Reelshort Comparison
In this section we compare two streaming platforms netflix and reelshort, Reelshort uses a hybrid monetization strategy with a few free episodes + pay-per-episode, paying between $0.36 and $1.11 per episode, and users can unlock episodes by watching ads, with a cap of 20 ads per day, however, Reelshort's 30-day retention of users is only 2 percent.

Netflix uses a subscription-based, multi-tiered model, with the "Standard" plan costing $6.99 per month and offering most content with some ads. The "Standard" plan costs $15.49 per month for ad-free HD streaming on two devices, while the "Premium" plan costs $22.99 per month for ad-free Ultra HD streaming on four devices. Playback. This tiered approach allows Netflix to offer different levels of service and quality to accommodate a wider range of user preferences and budgets. Notably, Netflix's strategy has resulted in a significant increase in 30-day subscriber retention rates to 14.4%.

The stark contrast in retention rates highlights the effectiveness of the Netflix subscription model in maintaining user engagement compared to the Reelshort hybridd. Netflix's ability to provide a seamless, ad-free viewing experience at higher subscription levels may contribute to its higher retention rates. At the same time, Reelshort's reliance on ad-based revenue and micropayments may deter long-term user commitment due to perceived intrusiveness and higher cumulative costs.

Table 3.1.4
Netflix and Reelshort Comparison

APP	pricing strategy	30 day user retention
Reelshort	Watch the first few episodes for free, then pay per episode + ads at 36-111 cents per episode, ads capped at 20 episodes	2％
Netflix	Standard with ads*: $6.99 / month、Standard: $15.49 / month、Premium: $22.99 / month	14.4％

Source: Reelshort and Netflix

Quantitative Analysis
This section will use a multiple regression model to discuss the relationship between total revenue and user behavior (DAUs, positive reviews), downloads, North American revenue, and ad placements.

Data Collection Procedure
This study uses data from the ReelShort app including Daily Active Users (DAUs), ReelShort downloads, Paid Ads, North American Revenue, App Store User Positive Ratings, and Total ReelShort Revenue (expressed in USD). The dataset spans from September 2022 to April 2024, and due to the relatively short period of time the app was live, the data for this study is counted by days and contains 611 data points. All data were carefully cleaned and do not contain missing values. Below is a link to the dataset, data purchased from senor tower.

Online   Google   Form:
https://docs.google.com/spreadsheets/d/1e4_CCq5JR7sCsrQ35e6gk8FYCRJK0EmBnAAQhXI
y9-c/edit#gid=0

Methods of Analysis
Firstly, this study uses variance inflation ratio (VIF) to examine the problem of covariance, the problem of covariance is the problem of the regression coefficients of the independent variables deviating from the actual situation caused by high correlation between the independent variables, it can be seen by the value of the VIF that the covariance between the independent variables affects the accuracy of the regression analysis when constructing the regression model, and the independent variables with a VIF of more than 10 are the DAUs, therefore, this study continues to use the ridge regression analysis to examine the effect of the significance of the variables, so as to construct a regression model more in line with the real situation, to study the relationship between the variables, and then use the process plug-in to carry out the indirect effect analysis, to detect the mediating effect of the Reelshort downloads in the model, the indirect effect is the value of the independent variable through the mediator variable affects the dependent variable in the process of the role of calculating the value of the indirect effect of 95% confidence interval, if the confidence interval, if the confidence interval is higher than 10, the value of the indirect effect is higher than 10 Calculate the 95% confidence interval of the indirect effect value, if the confidence interval does not contain 0, it proves that the indirect effect exists.

Multi-Collinearity Detection

Collinearity Analysis	
Variable	VIF
DAU	22.214
Advertising	2.27
Postive Review	7.159
ReelShort US	6.079
ReelShort Downloads	8.258

Figure 3.2.3a. Variance Inflation Factor (VIF) check

From the figure, we can see that the VIF of DAU is 22.214, which is already more than 10, indicating that there is a problem of covariance, in order to solve this problem, the next step is to continue to use ridge regression.
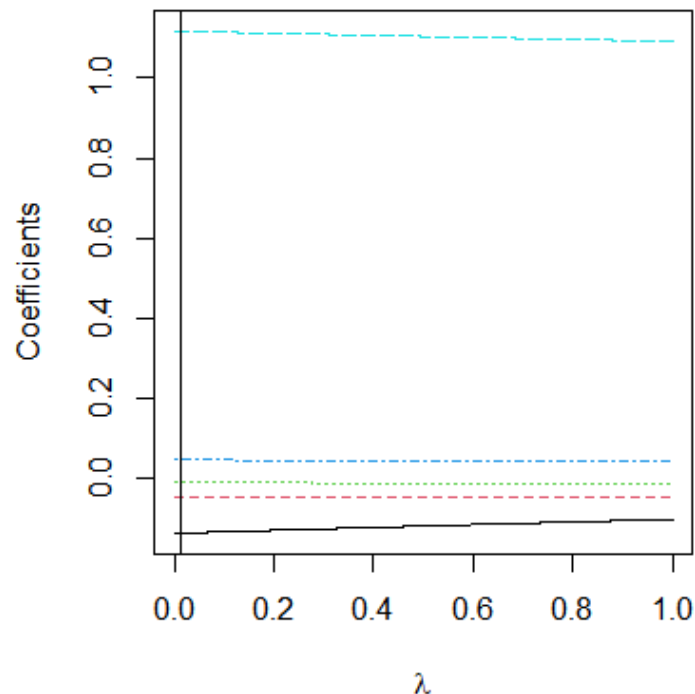

Figure 3.2.3b: Relationship Between Coefficients and the Penalty Parameter λ in Ridge Regression

Reduced Multicollinearity and Results
In the first step of performing the ridge regression analysis, this study first determines the value of the optimal penalty parameter λ. As shown in the figure above, by observing the trend of the value of generalized cross validation (GCV) with λ, the study found that GCV reaches its minimum value when λ is taken as 0.01. This indicates that at λ equal to 0.01, the change in regression coefficients tends to stabilize and the model minimizes the prediction error. Based on this finding, when constructing the ridge regression model, the choice was made to set the value of λ to 0.01. This method ensured that the model maintained good predictive performance while controlling overfitting.

Table 3.2.4

Ridge Regression Analysis Results - Factors Influencing Reelshort Revenue

Ridge regression analysis results				
Variables	**Beta**	**SE**	**T value**	**P value**
Intercept	-1.143	NA	NA	NA
DAU	-0.025	0.256	1.954	0.0507
Advertising	-0.054	0.102	10.552	<0.001**
Postive Review	-0.028	0.170	3.279	0.001**
ReelShort US	0.029	0.156	3.696	<0.001**
ReelShort Downloads	<0.001	0.169	121.549	<0.001**
Dependent variable：ReelShort Revenue				

The ridge regression shows that the regression coefficient of Postive Review in user behavior on total revenue is significant, but the Beta coefficient is -0.028, which indicates that positive review is negatively correlated with revenue, but this result may need to be analyzed further, and secondly, the p-value of the regression coefficient of paid advertisement placement on total revenue is also less than 0.05, which indicates that the significance of paid advertisement placement is also consistent with statistical significance; the Beta coefficient is -0.054, indicating that ad spending has a significant negative impact on revenue. This may mean that the advertising ROI (return on investment) is low, or the advertising strategy fails to effectively attract paying users. The p-value in DAU of user behavior is 0.0507. the Beta coefficient is -0.025 indicating that increased user activity failed to increase revenue as expected. Possible explanations are that the number of users increased, but the conversion rate or willingness to spend of these users did not increase, or the frequency of in-app purchases was low. The regression coefficient for North American revenue and total revenue is 0.029, and the p-value is also less than 0.05, indicating a significant impact relationship; the Beta coefficient is 0.029, suggesting that the performance of the North American market has a positive impact on total revenue. Finally downloads and total revenue also have a significant impact relationship in the statistical significance is very high (p-value less than 0.001), Beta coefficient is less than 0.001, but the actual impact is very small.

Intermediary Effect Detection

From the figure, we can see that in the path of the influence of user behavior (DAU) on the total revenue, the mediation effect of downloads in the mediation effect of 1.057, the confidence interval of 1.029~1.085, does not contain 0, indicating the existence of the indirect effect; at the same time, in the path of the influence of paid advertisements on the total revenue, the mediation effect of downloads in the indirect effect of the mediation effect of the mediation effect of 0.485, the confidence interval of 0.418~0.557, does not contain 0, the Therefore, it proves that the indirect effect exists.

Table 3.2.5
Mediation Analysis - Impact of DAU and Advertising on Reelshort Downloads and Revenue

Mediating analysis		
Path	Effect value	95% BootCI
DAU→ReelShort Downloads→ReelShort Revenue	1.057	1.029 ~ 1.085
Advertising→ReelShort Downloads→ReelShort Revenue	0.485	0.418 ~ 0.557

Findings and Concliusion
Results of the Experiment
The VIF shows that there is a problem of covariance between the variables in this study, especially Daily Activity of Users (DAU), which has a value of more than 10, so in order to solve this problem, ridge regression was used in this study to reduce the problem of covariance between the variables, and based on the minimum generalized cross validation (GCV) scores, the optimal lambda value for ridge regression was determined to be 0.01, to ensure that the regression coefficients stability of the regression coefficients.

The results of the ridge regression showed that the volume of advertising had a significant negative impact on revenue (β= -0.054, p<0.001), which indicates an unequal ratio of inputs to returns. Positive reviews (β = -0.028, p = 0.001) which suggests that although the app is well received, the expectations set by the positive reviews may not be met from a monetization standpoint.DAU shows almost a significant impact (p = 0.0507) suggesting that a re-evaluation of the user engagement strategy may be needed, and both Reelshort US and Downloads have a significant positive impact on Revenue had a significant positive impact, emphasizing the effectiveness of the US market strategy and the key role of downloads.

Detection of the mediating effect by PROCESS showed a significant indirect effect of DAU: via downloads on revenue (effect = 1.057, 95% CI [1.029, 1.085]), confirming the mediating role of downloads. The indirect effect of advertising: via downloads on revenue was also significant (effect = 0.485, 95% CI [0.418, 0.557]), suggesting that while advertising affects downloads, converting downloads into revenue requires strategic adjustments. Summary of hypotheses :

H1: Daily Activity of Users (DAU) directly impacts ReelShort revenue.
H2: Positive comments affect total revenue, but side effects need to be examined
H3: More advertising reduces total reelshort revenue.
H4: Overpricing affects reelshort's long-term revenue
H5: North American revenues significantly increase reelshort revenues
H6: DAU indirectly affects revenue by influencing downloads
H7: Advertising influences revenue through the mediation of downloads

Conclusions of the Experiment
The study highlights the importance of effective advertising, regional differences, user behaviour and increased downloads for low-cost apps aiming to penetrate international markets quickly. Specifically, while the North American market significantly increased Reelshort's revenues, the analysis showed that ad spend negatively impacted revenues due to a low return on investment (ROI). As a result, Reelshort should improve its advertising

strategy by increasing the quality of ads and optimising channels to increase ROI. The impact of positive reviews on such apps needs to be studied further, and user behaviour, especially daily active users (DAUs), plays a key role in increasing revenue both directly and indirectly. While adverts can drive downloads, they do not directly increase revenue, highlighting the need to focus on high quality, cost-effective advertising. Additionally, given that North America is Reelshort's primary international market, future film productions should prioritise local scripts and actors in order to increase downloads is another key factor; both DAUs and adverts contribute to revenue indirectly through increased downloads. However, companies must be wary of overpricing, which could have a negative impact on user sentiment and long-term sustainable revenue. For the short-form theatre industry entering the international market, focusing on advertising ROI and market differentiation is key to maintaining costs and achieving profitability.

Limitations and Future Research
In summary, this study highlights the critical role of user engagement and advertising in driving ReelShort revenue. The results suggest that focusing on increasing DAUs, optimizing advertising strategies, and increasing downloads can significantly improve revenue performance. Future research should build on these findings to further refine and expand the understanding of revenue drivers in the digital content industry. Despite the robust findings, the study still has limitations that should be addressed in future research:

Multicollinearity: although reduced, multicollinearity remains a potential problem. Future research could explore other techniques to address this issue.

Qualitative variables: the qualitative aspects of short-form pricing and the impact of the North American market have not been quantitatively analyzed and require further investigation.

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