Kakao Platform

Anipang

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Kakao Background

Anipang

Kakao Platform since 1995
- Early innovation in 2012
  - Kakao Talk
  - Kakao Story
  - Kakao Game

Anipang since July 2012
- One of first Kakao games
- Can share results and game money with friends through platform

"Innovating the way we connect for a better tomorrow"

-   Kakao

Research Questions

1. Does Anipang have an **impact on the overall game time of users** (within Kakao and on other platforms) and **influence their game apps selection**?

2. Does Anipang, as a gaming app within the Kakao platform, contribute to the **usage of communication** and **social network** on the Kakao platform?

Question 1 - game

General game market:

✗ Users can **influence others** in their network to consume certain content or adopt a particular product (Trusov et al., 2009) .

✗ Integration and releasing of new application will **benefit the complementary market** (Li & Agarwal, 2017).

"spillover"

✗ H1: Launch of the Anipang would **boost the usage time of game apps** both within platform and in the overall game industry.
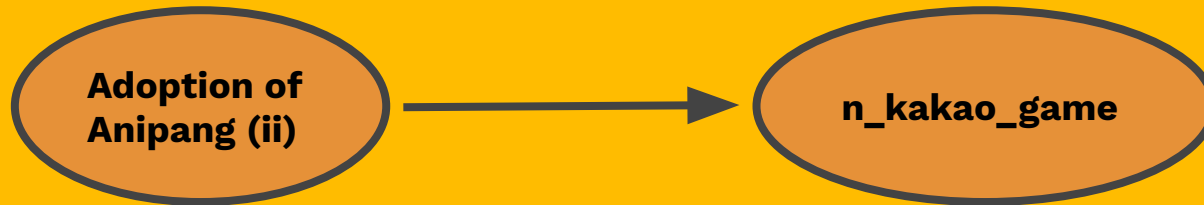
Adoption of Anipang (ii) → t_kakao_game, t_total game

Question 1 - game

Game variety within platform:

✗ Integration and releasing of new application can also **cause small third-party developers to exit the platform** , which may reduce the variety of products (Li & Agarwal, 2017).

✗ H2: Launch of the Anipang would **reduce the number of game apps played** within platform.

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Question 2 -
communication + social network

✗ **Exploratory research:** Given the **social functions of Anipang**, we wonder: Does Anipang impact the usage of communication and social network apps within and outside of Kakao, even though we only have 2 weeks of data?

✗ **Related dependent variables:**

t_kakao_talk, t_non_kakao_talk;

t_kakao_story, t_non_kakao_story, t_total_story,

percentage = t_kakao_story / t_total_story

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Data
and
Variables

Data and Descriptive Statistics

Demographics
- **Avg. Age:** 30-39
- **Avg. Education:** Undergraduate or Graduate level
- **Avg. Income:** $3K - $5K
- **Gender:** 468 male, 381 female

Weekly panel data
- **N** = 849
- **Time periods**: 7/23/12 - 8/5/12 (T=2 weeks)

Variables: New variables

Game

Total gametime across all apps

t_total_game =t_anipang+t_kakao_game+t_non_kakao_game

Game market share of Kakao

percentage = (t_anipang + t_kakao_game)/t_total_game

Social Network

Total social network usage across all apps

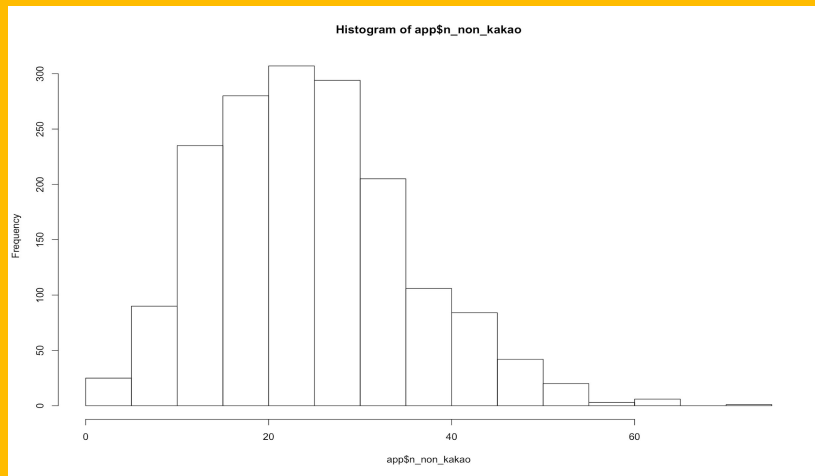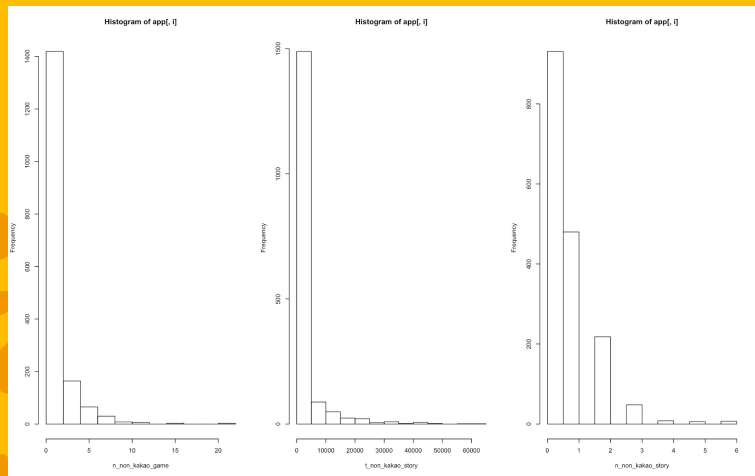t_total_story=t_kakao_story+t_non_kakao _story

Social network market share of Kakao

percentage = t_kakao_story/t_total_story

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Variables -
Distribution and Transformation

All the time related dependent variables are highly skewed data, so we **transformed the skewed dependent variables** by using **log**.

MODELS

Models

	Ratio	Replacement	Caliper	N
PSM Model 1	1	Yes	0	90
PSM Model 2	1	No	0	112
PSM Model 3	1	Yes	0.2	95
PSM Model 4	1	No	0.2	98

Models

	Dummy	FD	FE	NB
t_kakao_game	✔️	✔️	✔️	
t_kakao_story	✔️	✔️	✔️	
t_total_game	✔️	✔️	✔️	
....	✔️	✔️	✔️	
n_kakao_game				✔️
n_non_kakao_game	✔️			✔️

RESULTS
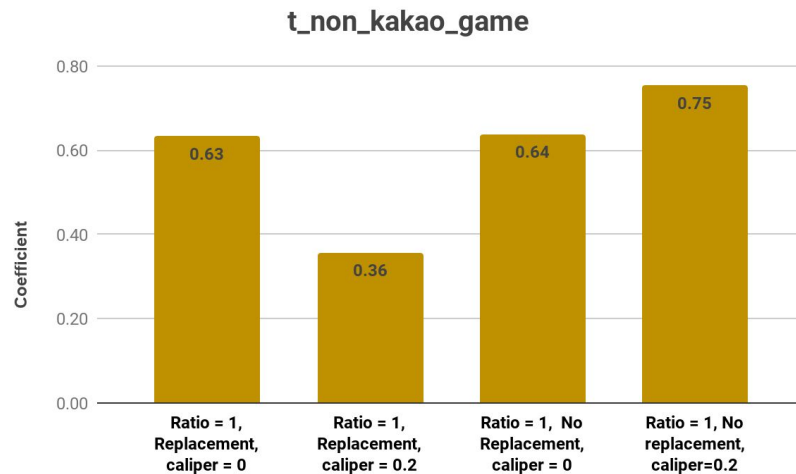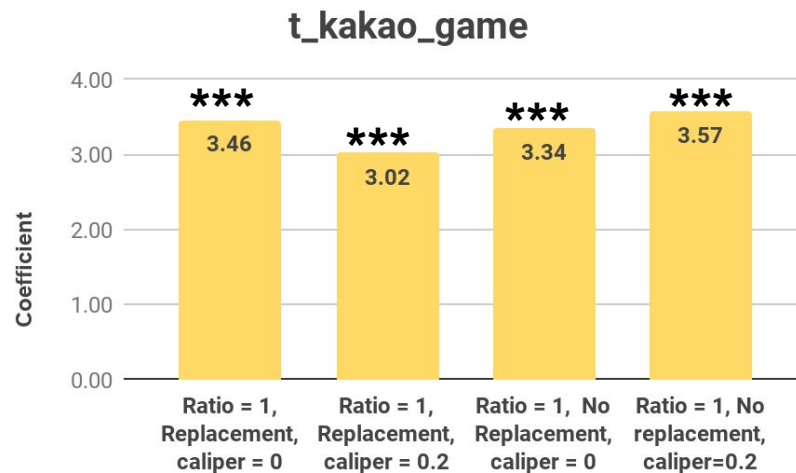
Results - Game

Because of the Launch of Anipang:

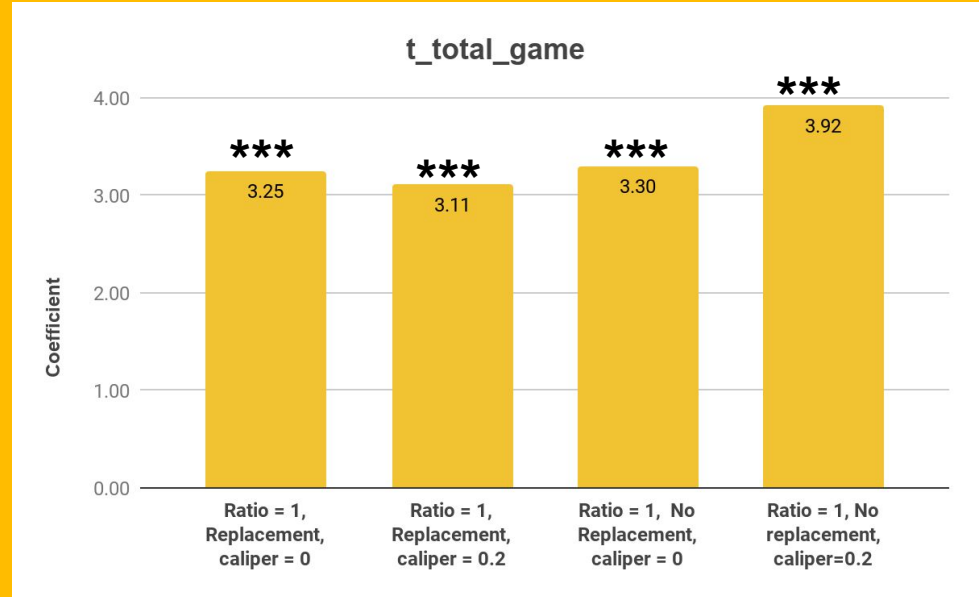✗ **Usage time of other kakao games** has significantly increased by **2750.2%**

✗ **Usage time of non kakao game** has increased by **81.3%** (but none of the coefficient is significant)

Results - overall game industry

- The launch of Anipang has **very significant positive impact** on the **total usage time of the overall game industry**

- Because of the launch of Anipang, **the total usage time of the overall game industry increases** by **2796.4%**

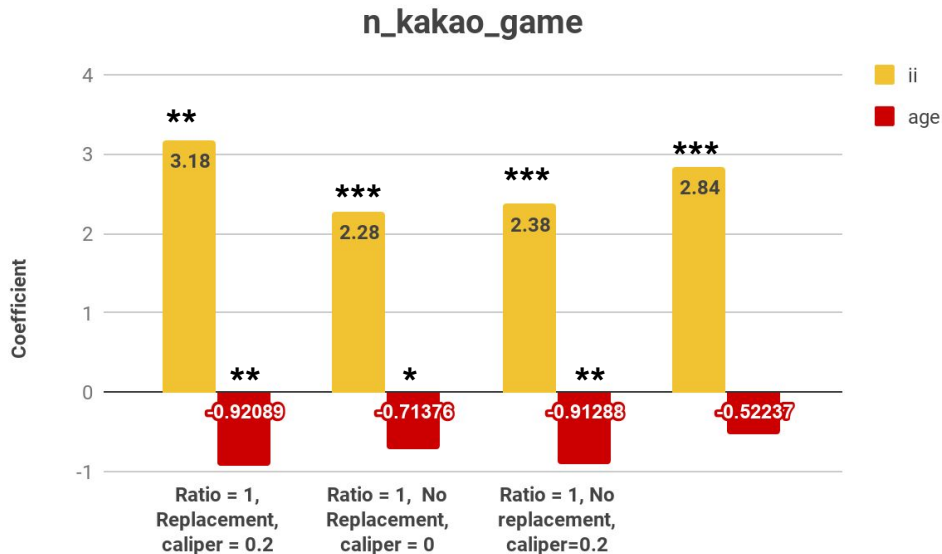

t_total_game

Ratio = 1, Replacement, caliper = 0	3.25 ***
Ratio = 1, Replacement, caliper = 0.2	3.11 ***
Ratio = 1, No Replacement, caliper = 0	3.30 ***
Ratio = 1, No replacement, caliper=0.2	3.92 ***

Results - game variety

Because of the launch of Anipang:

✘ **Number of Kakao game apps played** has increased by **1344.0%**

✘ **Older people** tend to play **less number** of games within Kakao platform.

n_kakao_game

	ii	age
Ratio = 1, Replacement, caliper = 0.2	3.18 **	-0.92089 **
Ratio = 1, No Replacement, caliper = 0	2.28 ***	-0.71376 *
Ratio = 1, No replacement, caliper=0.2	2.38 ***	-0.91288 **
	2.84 ***	-0.52237

	LR test
PSM Model 1	**34.89***
PSM Model 2	**27.16***
PSM Model 3	**37.28***
PSM Model 4	**34.76***

Results - game variety

Number of game apps from other platforms played has **slightly decreased** by **25.9%**

	LR test
PSM Model 1	267.28***
PSM Model 2	332.36***
PSM Model 3	333.94***
PSM Model 4	322.34***

n_non_kakao_game
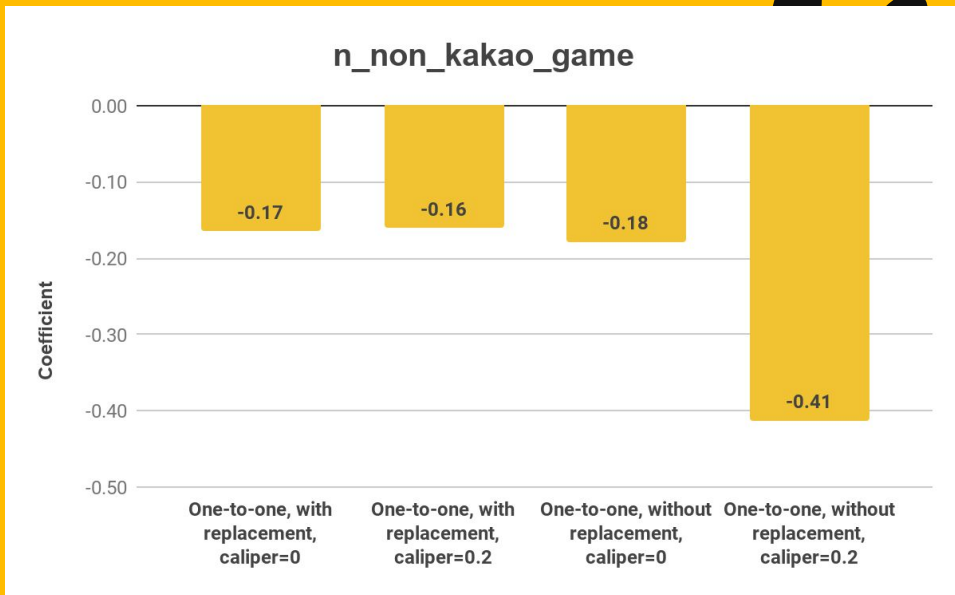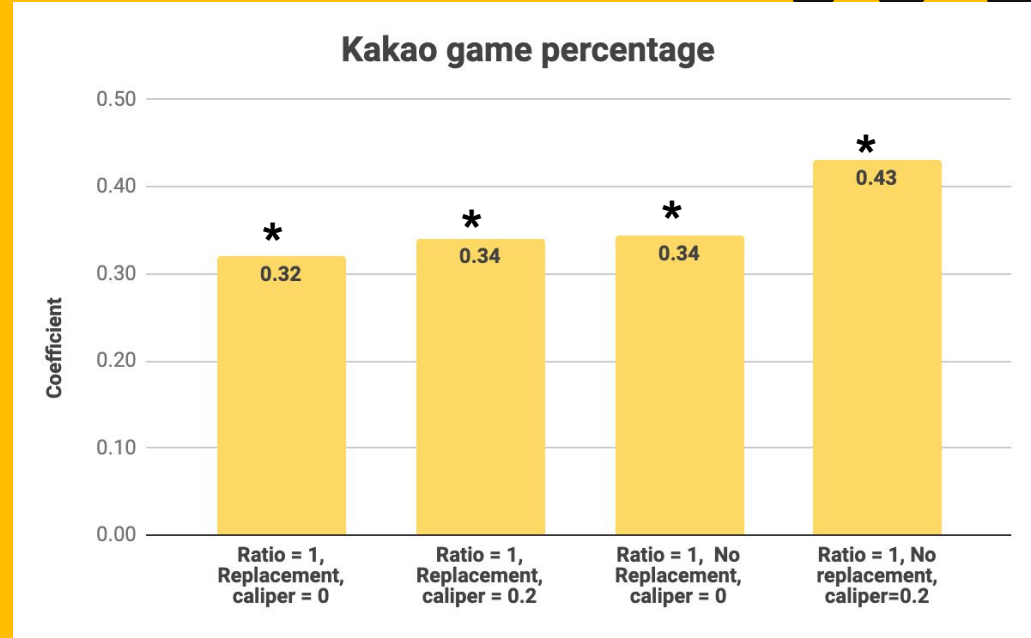
Results - game market share

The launch of Anipang has **significant positive impact on Kakao's market share** in the game industry and has won **more competitiveness** for Kakao
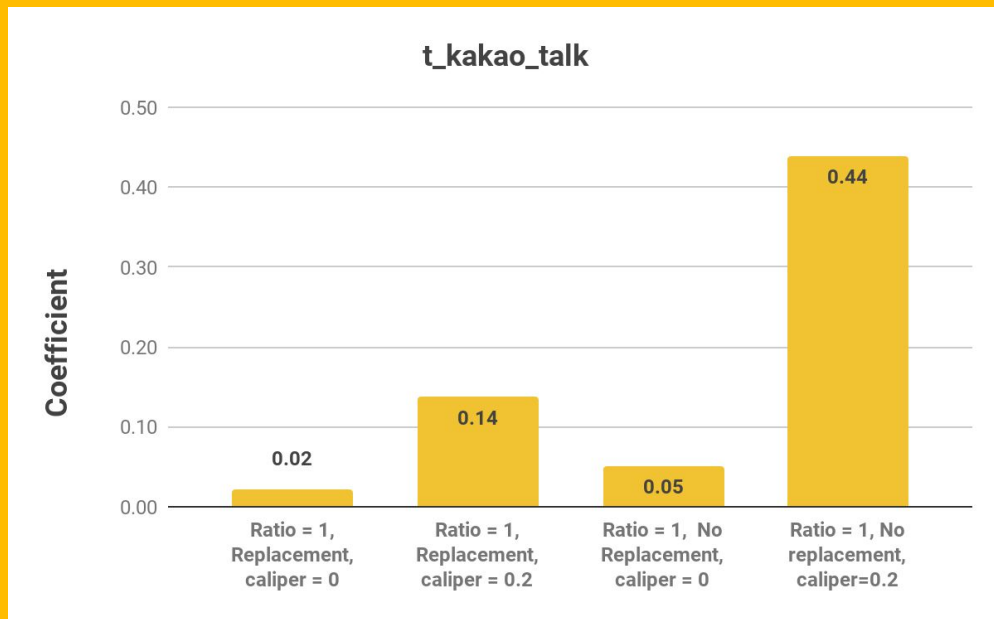
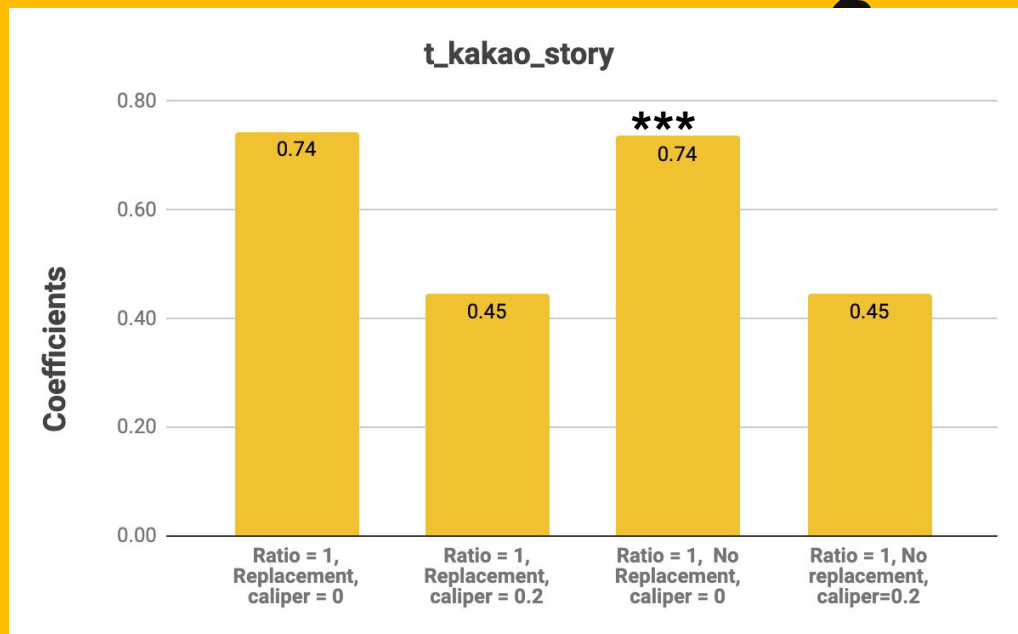**Kakao's market share in the game industry** increases by **35.8%**

Kakao game percentage

Results - Kakao Talk

- Because of the launch of Anipang, the **usage time of Kakao Talk increases by** **17.6%**
- **None of the coefficient is significant**
- The **communication** function of **other apps** has **no significant coefficient**, neither
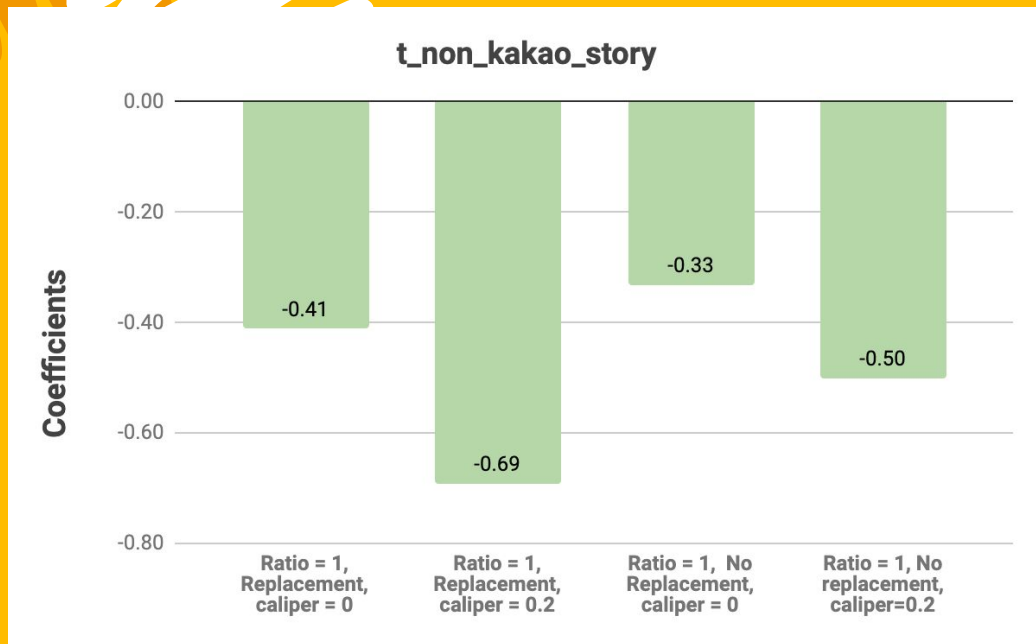
t_kakao_talk

Results - Kakao Story

✗ The launch of Anipang has **some significant positive** impact on the **social network** function of Kakao platform, **Kakao Story**

✗ The **usage time of Kakao Story increases by 81.3%**

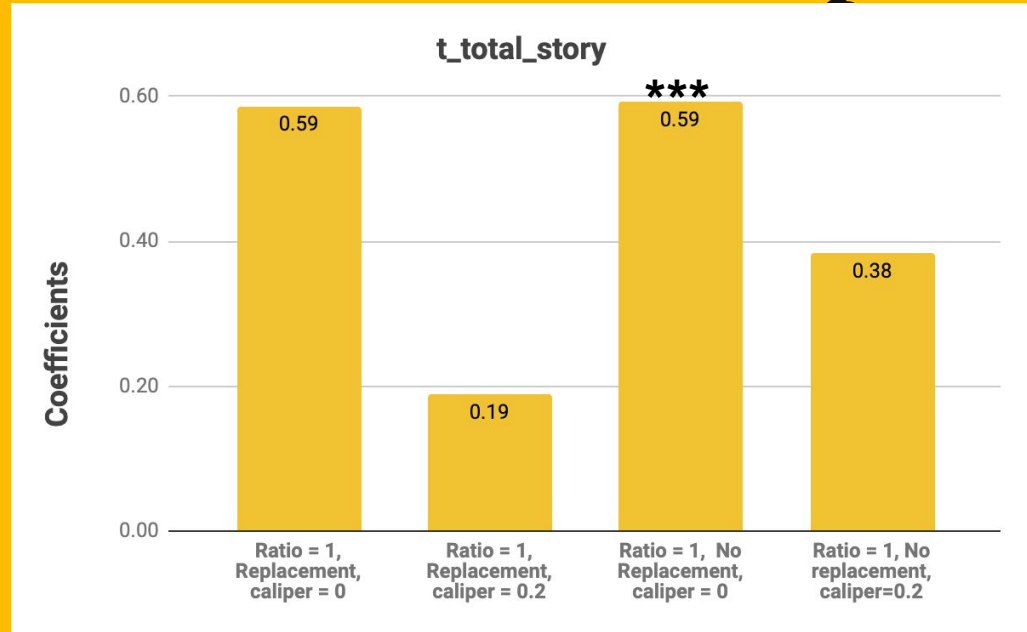**t_kakao_story**

Coefficients

Ratio = 1, Replacement, caliper = 0	Ratio = 1, Replacement, caliper = 0.2	Ratio = 1, No Replacement, caliper = 0	Ratio = 1, No replacement, caliper=0.2
0.74	0.45	*** 0.74	0.45

Results - other Story apps

t_non_kakao_story

✗ Because of the launch of Anipang, the **usage time of other Story apps decreases** by **62%**

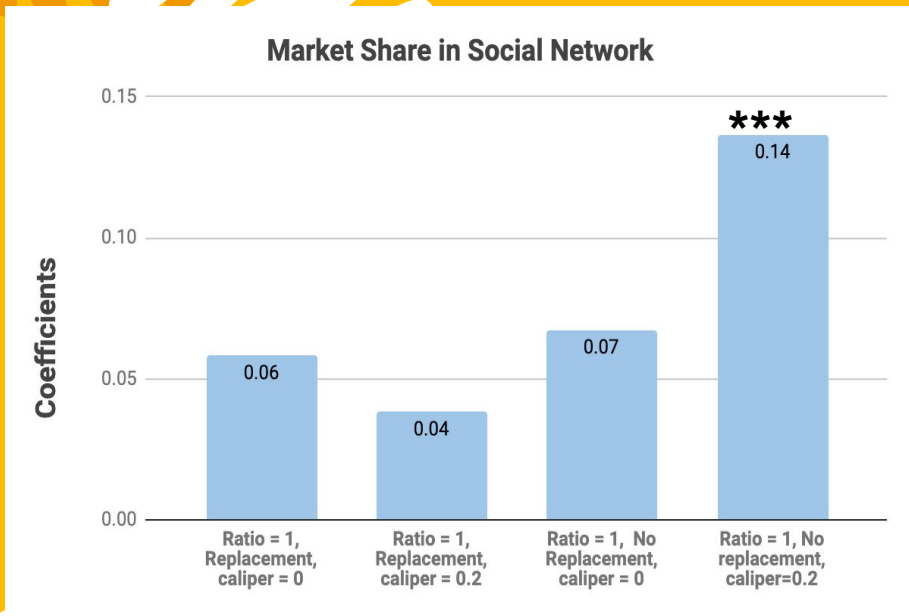✗ **None of the coefficient is significant**

Results -
overall social network industry

✖ The launch of Anipang has **some significant positive impacts** on the social network industry, and the **usage time of social network apps** increases by **54.9%**

t_total_story

***

	0.59	0.19	0.59	0.38

Coefficients

0.60
0.40
0.20
0.00

Ratio = 1, Replacement, caliper = 0 — Ratio = 1, Replacement, caliper = 0.2 — Ratio = 1, No Replacement, caliper = 0 — Ratio = 1, No replacement, caliper=0.2

Results
social network market share

Market Share in Social Network

✘ The launch of Anipang has **some significant positive impacts** on the Kakao's market share in the social network industry

✘ **Kakao's market share in the social network industry increases** by **8%**

Marketing Implications

For platform owner:

✗ **Encourage well-known companies to launch new applications within their own platforms** to attract more new users both to applications and the platform → **Network Theory** (Gawer & Cusumanao, 2014)

✗ **Integrate different applications within the platform** (e.g. game and social network apps) to <u>increase the overall usage time</u> and <u>facilitate users' content sharing journey</u>

Marketing Implications

For third party applications:

✗ **A better understanding of the competition** in the marketplace before launching a new app and consider **partnerships with more established platforms** before launching apps independently

For all applications:

✗ **Further investigation into user occasions,** illustrate the **trigger** for adopting new applications in the right time, at the right place (e.g. subway advertising for game apps)

Conclusion

✘ App launch within platform is likely to be more successful due to **network theory**

✘ **Integration of other apps' features within a platform** may lead to more user usage

✘ It is very important to understand **user occasion** and **user behavior** before and after launching a game app

Limitations & Future Research

✘ **Time period is too short**: need to investigate the **long-term effect** on the ecosystem and competitors.

✘ **Influence may differ** in terms of the **size and influence of the third-party**

  ✘ <u>Integration of platform</u> will cause small third-party applications face reduced demand, while big third-party applications experience a small increase in demand (Li & Agarwal, 2017)

✘ **Further research and analysis of competitors**

  ✘ Similar apps and business models v.s. Different apps and business models

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References

https://www.kakaocorp.com/kakao/introduce/vision

✗ Gawer, Annabelle, and Michael A. Cusumano. "Industry Platforms and Ecosystem Innovation." J Prod Innov Manag 31, no. 3 (September 4, 2013): 417–433.

✗ Li, Z. , & Agarwal, A. . (2016). Platform integration and demand spillovers in complementary markets: evidence from facebook's integration of instagram. Management Science,63(10)

✗ Trusov M, Bucklin RE, Pauwels K (2009) Effects of word-of-mouth versus traditional marketing: Findings from an Internet social networking site. *J. Marketing* 73(5):90–102.

Thanks!

Any questions?

Appendix: R Codes

✘ Please download our R codes here:

https://docs.google.com/document/d/1J3lVQpTWiQfaFoZBgs1ilgL6cK3TtMcxhWmL_C1ViXE/edit?usp=sharing