
kakaomobility

Report 2018

CEO's Message

After the first publication last year, Kakao Mobility Corp. issued the second kakaomobility Report. Since its launch of Kakao T Taxi in March 2015, Kakao Mobility Corp. established its independent entity in August 2017, and introduced Kakao T by consolidating Kakao Taxi, Kakao Driver, Kakao Navi, and Kakao Parking. A large amount of travel data has been collected while Kakao Mobility Corp. has been committed to pursuing innovation. This Report shows our society's dynamic aspects based on our collected mobility data.

Many people have contributed to the publication of this Report. First of all, I would like to express my sincere appreciation to Kakao T users who have provided real time travel data. I also would like to thank taxi drivers and designated drivers for responding to surveys and interviews for this Report. Such valuable information will become a meaningful foundation for Kakao Mobility Corp. to improve customer services and constantly pursue innovation.

With the age of digital transformation, the mobility industry worldwide has been experiencing a big change. In particular, travel innovation is considered as a meaningful innovation that can make many people's life safer and more convenient and create more chances for a happier life by broadening the sphere of living. This mobility business is rapidly growing in a world of borderless competition. However, I am very worried that Korea may fall behind global competition and lose a chance to take the lead in innovation due to several regulations and conflicts.

It's time to make a bold leap forward to innovative growth at the national level. If regulations on mobility services are reduced in a reasonable way, I think Korea has sufficient capability to achieve innovation. We will also make efforts to find a better way to travel, cooperate with more innovators, and make another future plan for innovation. I expect this Report to play a role in making a preparation for such a change.

Joowhan Jung
CEO of Kakao Mobility Corp.

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About 2018 kakaomobility Report

Chapter 1 Kakao Mobility Corp.'s 3-yr History Records

Chapter 1 presents at-a-glance information including current status and relevant data of Kakao Mobility Corp.'s three key services: Kakao T Taxi, Kakao T Driver, and Kakao Navi. Detailed information on current status of subscribers and users by service, usage statistics, behavioral data, and top departure points/destination points is introduced.

Chapter 2 New Discoveries and Changes in Daily Life

Chapter 2 analyzes our social life based on mobility data. The first section Kakao T Taxi consists of six themes. Why you can't catch a taxi during rush hour and the underlying imbalances in taxi demand and supply are examined. What benefits passengers and taxi drivers derive from using the Kakao T Taxi app and how a newly implemented 52-hour work week is changing travel patterns are analyzed. In addition, smart tips for the Kakao T Taxi are included. The premium mobility service, Kakao T Black, is introduced at the end of the first section.

The second section Kakao T Driver consists of two themes. The behavior of people who call a designated driver during daytime unlike those who commonly call in the middle of the night is examined. In addition, a designated driver's unknown daily life is introduced.

The third section Kakao Navi consists of four themes. It introduces top restaurants and destinations are introduced and analyzes the propensity of visitors to different regional festivals that local governments nationwide are promoting competitively. The accuracy of its estimated time of arrival and time loss from course deviation are calculated based on collected data.

Introduction to Kakao Mobility's Key Services

Kakao T Taxi

Introduction to Kakao
Mobility's Key Services

Kakao T Taxi has become Korean No.1 mobility application that helps people's rapid and pleasant travel after only three and a half years since its launch in March 2015. People think that using Kakao T Taxi is the best way when they need to move or want to use a cab on the bad weather. In fact, the number of calls sharply increased during an unprecedented heatwave in August 2018.

Kakao T Taxi is evolving into a service that not only connects passengers and taxi drivers but also meets customers' different travel demands. Kakao Mobility Corp. launched its premium taxi service Kakao T Black in November 2015, Kakao T for Business for employees of companies or organizations in February 2018, and a Smart Call service that leverages AI-based taxi dispatch algorithms in April 2018. In addition, the users have been able to take a taxi easily without carrying their money once registering their credit card in the application from October 2018. This is a new service as called Automated Payment Call.

Kakao Mobility Corp. is also making efforts to enhance career value for taxi drivers by improving service efficiency to increase their income and applying high-tech dispatch algorithms to improve their working environment.

Despite such changes and efforts, many passengers still feel that the taxi is absolutely insufficient during rush hour and nighttime. Kakao T Taxi will continuously be trying to resolve the underlying imbalances in taxi demand and supply and make different efforts to create improved working environment for taxi drivers and enhance their benefits.

Kakao T Driver

Introduction to Kakao
Mobility's Key Services

Since its launch on June 2016, Kakao T Driver became the top designated driver service in Korea. In the past, passengers had to make a call to an agent who matched them with a driver. Kakao T Driver provided an innovative platform, where passengers could call a driver by themselves with just a few taps on a smartphone app. Today, Kakao T Driver has 2.4 million cumulative users and 120,000 authorized drivers.

The biggest selling point of Kakao T Driver is its convenience. Passengers can request a driver through the app without calling an agency or explaining your current location.

Kakao T Driver is also safe. Drivers need to meet certain requirements including mobile phone authentication, driver's license validation, and record checks in the insurance subscription process in order to be registered as a Kakao T Driver. Also, the driver's personal info such as name or picture is shared with the passenger. The passenger can send an 'on board' message to his/her friend or family while on the move.

Payment method is also very reasonable. Passengers can pay by traveled time and distance, Metered Payment, or enter the amount they wish to pay. Cash and credit card payment are all supported.

Kakao T Driver is working to develop various technology to increase the matching rate and fulfill the needs for varied types of designated driver services such as reservations, consignments, and corporate services.

Kakao Navi

Kakao Navi is a smartphone navigation service which was previously called 'Kim Gisa' before the acquisition in February 2016 from a startup company, Loc&All. Kakao Navi showed continuous growth and became one of the popular navigation services in Korea, marking 5.3 million net users and 150 million navigation guide starts per month.

Traffic data collected from 14 million cumulative users is the core asset of Kakao Navi. Huge amount of traffic data that covers almost all roads in Korea makes it possible to provide fast and precise navigation guides. Another key asset is the traffic data collected from Kakao T Taxi. Information collected from taxis running nationwide provides important data to improve the preciseness of traffic data by region and time.

Various efforts to link the mobility services are being made. Kakao Navi provides relevant technology and real time traffic data that are essential for Kakao Mobility Corp. services such as Kakao T Taxi, Kakao T Driver, and Kakao T Parking.

Now Kakao Navi is going beyond navigation guides. 'Expressway Emergency Alert Service' which Kakao Navi introduced in early 2018 with the collaboration of National Fire Agency shows that navigation technology can contribute to public interests. Recently it is rapidly expanding its platform to include connected cars, such as Android Auto and Apple Carplay.

Kakao T Parking

Introduction to Kakao
Mobility's Key Services

Kakao T Parking connects users with a parking place through mobile app. With the acquisition of 'Park Here' in early 2016 from a startup called Parking Square, Kakao T Parking began its service starting October 2017. Currently 1,400 parking lots in Seoul and key areas in Gyeonggi are affiliated with Kakao T Parking, and parking requests from 100,000 users are handled every month.

In a busy city, it is not easy for a user to find a place to park and vice versa. Kakao T Parking saw that empty parking lots could be sold as an inventory via mobile. Users can now search parking lots near their destination real time and pay their fee automatically with their pre-registered credit card. By linking with services such as Kakao Map, Daum Search, and Kakao Navi, users could not only search a parking lot, but also easily move to that point.

Kakao T Parking is working hard to provide high quality parking lot information and help people use parking space more efficiently. It is also joining government projects such as 'Building Real Time Parking Info System' which was initiated by Seoul City and Bucheon City in 2017.

Kakao T Parking is now focusing on the change of automotive industry and technology innovation. Connecting vehicles and parking lots is an important technological challenge to enhance the convenience of using parking lots. In this sense, Kakao T Parking is preparing for a number of innovations such as automatic fee payment and real time parking data, under the concept of 'Connected Parking'.

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Chapter 2

New Discoveries and Changes in Daily Life

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Chapter 1

Kakao Mobility's 3-yr History Records

Kakao T Taxi

Kakao T subscribers

Kakao T subscribers at the 20 million mark

Kakao T Taxi

In October 2017, Kakao Mobility Corp. launched Kakao T by consolidating Kakao Taxi, Kakao Driver, Kakao Navi and Kakao Parking into a single app. Then its subscribers keep increasing rapidly, reaching 20.2 million as of September 2018. This amounts to 39 percent of total population of 51.81 million people in Korea and 54 percent of the working age, 15-64 years old, population of 37.57 million people.¹

Total no. of Kakao T subscribers

20,196,547 subscribers

At the end of Sep. 2018

1) Total population and working age population in Korea are based on statistics from the Ministry of Interior and Safety as of the end of August 2018.

Kakao T Taxi

key records

No. of total operations at the 500 million mark

Kakao T Taxi key records

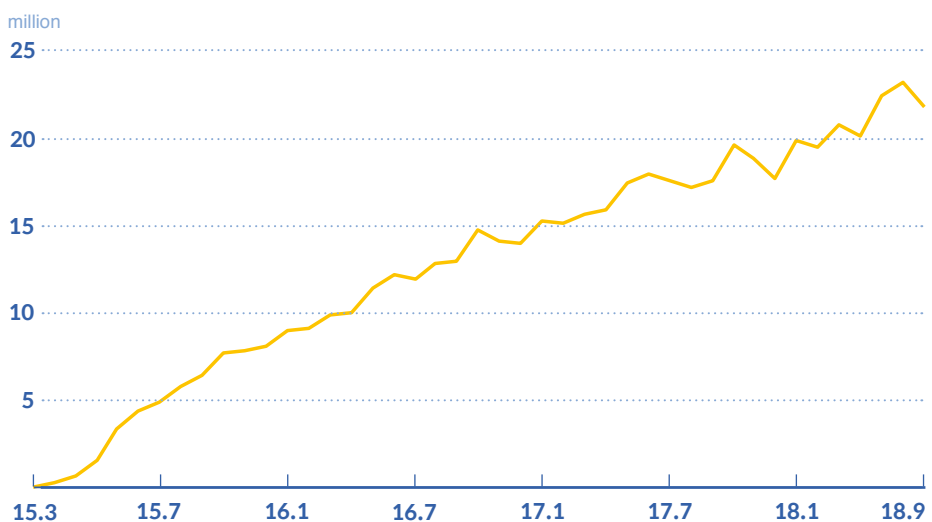
Since its launch in March 2015, the number of total taxi operations using Kakao T Taxi reached 556.8 million based on the services completed² on September 2018, generating 4.8 trillion won of income. Kakao T Taxi recorded 23.58 million operations a month in August 2018 and 0.9 million operations a day on September 21, 2018.

Total no. of Kakao T Taxi operations and generated income

555,679,310 = 4.8 trillion
operations won of income generated

Based on services completed from Mar. 2015 to Sep. 2018

No. of Kakao T Taxi monthly operations



Based on services completed from Mar. 2015 to Sep. 2018

2) Services completed means when a taxi driver picks up a passenger and arrives at the destination point.

9.2 million round trips from Seoul to Pyongyang

Total distance travelled by Kakao T Taxi reaches 4.6 billion kilometers from its launch in March 2015 to September 2018. This amounts to 9.2 million round trips from Seoul to Pyongyang. The road distance from Seoul to Pyongyang is 250km. Meanwhile, total time travelled by Kakao T Taxi is 155.39 million hours.

Total distance traveled of Kakao T Taxi

4,596,119,828_{km}

Mar. 2015 - Sep. 2018, Kakao T Black included

Total time traveled of Kakao T Taxi

155,390,941_{hours}

Mar. 2015 - Sep. 2018, Kakao T Black included

Kakao T Taxi passengers

17 million people use Kakao T Taxi

Kakao T Taxi passengers

From its launch in March 2015 to September 2018, 16.92 million people used Kakao T Taxi at least once to catch a taxi. This amounts to 33 percent of total population of 51.81 million people in Korea and 45 percent of the working age, 15-64 years old, population of 37.57 million people.³

Total no. of Kakao T Taxi passengers

16,921,462 passengers

Based on services completed from Mar. 2015 to Sep. 2018

³) Total population and working age population in Korea are based on statistics from the Ministry of Interior and Safety as of the end of August.

How far do you travel in a taxi on average?

Kakao T Taxi passengers

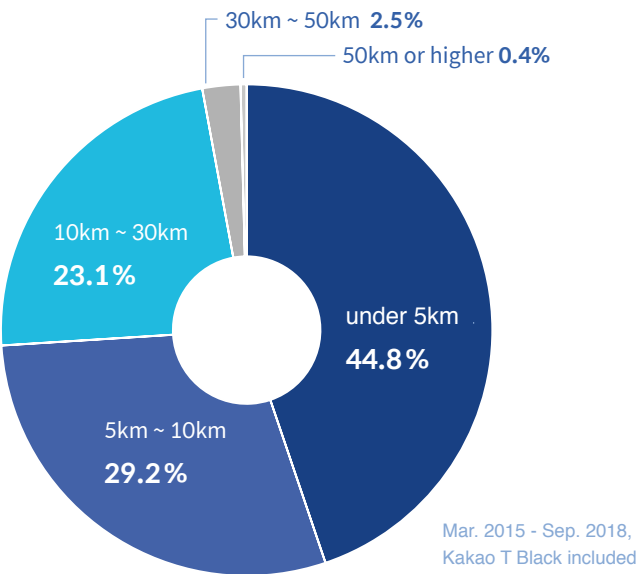
Average distance travelled by Kakao T Taxi passengers per operation is 8.3km. The most frequent distance is 5km or less. Compared to Kakao T Driver, the ratio of short distance travel is higher.⁴ For reference, the distance from Seoul City Hall to Itaewon Station, Gangnam Station, Migeum Station in Bundang and Yongin City Hall is about 5km, 10km, 30km and 50km.

Average travel distance of Kakao T Taxi passengers

8.3 km

Based on services completed from Mar. 2015 to Sep. 2018, Kakao T Black included

Kakao T Taxi passenger distribution by distance based



4) For Kakao T Driver, average travel distance is 15.2km and the most frequent distance is 10-30km.

Kakao T Taxi drivers

Most popular app among taxi drivers

Kakao T Taxi drivers

Kakao T Taxi drivers amount to 220,000 as of September 2018, which is 83 percent of total taxi drivers of 270,000 in Korea.⁵

No. of Kakao T Taxi drivers

224,838 drivers

No. of authorized & active drivers as of end of Sep. 2018

5) According to the Korea National Joint Conference of taxi Association, the number of total drivers nationwide amounts to 270,590 as of the end of April 2018.

Kakao T Taxi

top departure and destination points

AM 10:00 - PM 5:00











Top 10 departure points of
Kakao T Taxi in the daytime

No	Departure	Location
1	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
2	 Samsung Electronics Hwaseong Campus	Hwaseong, Gyeonggi
3	 KAIST	Yuseong, Daejeon
4	 Samsung Electronics Giheung Campus	Yongin, Gyeonggi
5	 Seoul National Univ.	Gwanak, Seoul
6	 Chungnam National Univ.	Yuseong, Daejeon
7	 Residence Likehome	Yeonsu, Incheon
8	 Gaon High School	Anseong, Gyeonggi
9	 Mirae Asset Center 1 BLDG	Junggu, Seoul
10	 Yeosu Woongcheon Sarangeuro Booyoung 2-cha	Yeosu, Jeonnam

Based on services completed from Sep. 2017 to Aug. 2018

PM 5:00 - 10:00

Top 10 departure points of
Kakao T Taxi in the evening

No	Departure	Location
1	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
2	 Cheonan Asan Station	Asan, Chungnam
3	 Seoul National Univ.	Gwanak, Seoul
4	 KAIST	Yuseong, Daejeon
5	 Samsung Electronics Hwaseong Campus	Hwaseong, Gyeonggi
6	 LG Twin Tower	Yeongdeungpo, Seoul
7	 Samsung Electronics Giheung Campus	Yongin, Gyeonggi
8	 Jeju International Airport	Jeju, Jeju
9	 Residence Likehome	Yeonsu, Incheon
10	 Conrad Seoul	Yeongdeungpo, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

PM 10:00 - AM 2:00

Top 10 departure points of Kakao
T Taxi in the middle of the night

No	Departure	Location
1	 Gangnam Finance Center	Gangnam, Seoul
2	 CGV Gangnam	Gangnam, Seoul
3	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
4	 Hongik Univ. Station Exit 9	Mapo, Seoul
5	 H Squire N Building	Seongnam, Gyeonggi
6	 Gasan Digital Complex Station Exit 6	Geumcheon, Seoul
7	 Itaewon Station Line 6	Yongsan, Seoul
8	 Hapjeong Station Exit 8	Mapo, Seoul
9	 KT&G Sangsangmadang	Mapo, Seoul
10	 Sinsa Station Exit 8	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

No.1 destination point is Gimpo Airport on Kakao T Taxi

Kakao T Taxi top departure
and destination points

Based on services finished for the recent one year, Gimpo Airport took the 1st place on Kakao T Taxi. It was followed by Cheonan Asan Station, which is a KTX station with limited public transportation access, and KT&G Sangsangmadang located right in the middle of the Hongik Univ. streets.

Seoul National Univ. and KAIST with a huge campus and relatively inconvenient access were in the upper ranks. Main buildings and stations exit in Gangnam, Itaewon, and Hongik Univ. streets and offices of large companies including Samsung and LG were in the list.

1. Gimpo International Airport Domestic Terminal




























2. Cheonan Asan Station



3. KT&G Sangsangmadang



Top 50 departure points of Kakao T Taxi

No	Departure	Location
1	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
2	 Cheonan Asan Station	Asan, Chungnam
3	 KT&G Sangsangmadang	Mapo, Seoul
4	 Itaewon Station Line 6	Yongsan, Seoul
5	 Seoul National Univ.	Gwanak, Seoul
6	 Gangnam Finance Center	Gangnam, Seoul
7	 Hongik Univ. Station Exit 9	Mapo, Seoul
8	 Giheung Campus	Yongin, Gyeonggi
9	 KAIST	Yuseong, Daejeon
10	 Residence Likehome	Yeonsu, Incheon
11	 H Square N Building	Seongnam, Gyeonggi
12	 CGV Gangnam	Gangnam, Seoul
13	 Conrad Seoul	Yeongdeungpo, Seoul
14	 LG Twin Tower	Yeongdeungpo, Seoul
15	 Samsung Electronics Hwaseong Campus	Hwaseong, Gyeonggi
16	 Mirae Asset Center 1 BLDG	Junggu, Seoul
17	 Sadang Station Exit 5	Gwanak, Seoul
18	 Itaewon Station Exit 4	Yongsan, Seoul
19	 Hapjeong Station Exit 8	Mapo, Seoul
20	 Itaewon 119 Safety Center	Yongsan, Seoul
21	 Gasan Digital Complex Station Exit 6	Geumcheon, Seoul
22	 Giordano Corporation Gangnam	Seocho, Seoul
23	 Yeosu Woongcheon Sarangeuro Booyong 2-cha	Yeosu, Jeonnam
24	 Jungheung S-Class Sky 31	Seogu, Gwangju
25	 Sangam Hanwha Obelisk 1-cha	Mapo, Seoul

No	Departure	Location
26	 Chungnam National Univ.	Yuseong, Daejeon
27	 Jonggak Station Exit 12	Jongno, Seoul
28	 Signature Tower	Junggu, Seoul
29	 Sinsa Station Exit 8	Gangnam, Seoul
30	 One IFC	Yeongdeungpo, Seoul
31	 CGV Dongsuwon	Suwon, Gyeonggi
32	 Hongik Univ. Station Exit 8	Mapo, Seoul
33	 Seoul Square	Junggu, Seoul
34	 CJ O Shopping	Seocho, Seoul
35	 The National Assembly Building	Yeongdeungpo, Seoul
36	 Dongtan Station	Hwaseong, Gyeonggi
37	 Samsung Electronics Hongdae Service Center	Mapo, Seoul
38	 Hamilton Hotel	Yongsan, Seoul
39	 Seoul National University Bundang Hospital	Seongnam, Gyeonggi
40	 The MVL Hotel Yeosu	Yeosu, Jeonnam
41	 Jeju International Airport	Jeju, Jeju
42	 State Tower Namsan	Junggu, Seoul
43	 Suseo Station SRT Exit 3	Gangnam, Seoul
44	 Yongsan Station Square	Yongsan, Seoul
45	 KGIT Center	Mapo, Seoul
46	 Naver Green Factory	Seongnam, Gyeonggi
47	 Ramada Plaza Jeju Hotel	Jeju, Jeju
48	 Gangnam Station Exit 5	Seocho, Seoul
49	 Samsung Display Asan2 Campus	Asan, Chungnam
50	 Itaewon Tourist Information Center	Yongsan, Seoul

Based on services completed from Sep. 2017 to Aug. 2018


Top destination points were airports, railroad stations, subway stations, and bus terminals nationwide


Kakao T Taxi top departure and destination points


Gimpo International Airport took the 1st place again. U Square Gwangju Bus Terminal and Jeju International Airport followed. KTX stations including Daejeon Station, Busan Station, Seoul Station, Gwangmyeong Station, and Dongdaegu Station, airports and bus terminals nationwide were mostly in the upper ranks.

Most top destination points were stopover places including airports, railroad stations, subway stations, and bus terminals. Data shows that there are many people who travel only from home or offices to these destination points by taxi and then use public transportations.

1. Gimpo International Airport Domestic Terminal



























2. U Square Gwangju Bus Terminal


3. Jeju International Airport



Top 50 destination points of Kakao T Taxi

No	Destination	Location
1	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
2	 U Square Gwangju Bus Terminal	Seogu, Gwangju
3	 Jeju International Airport	Jeju, Jeju
4	 Daejeon Station	Donggu, Daejeon
5	 Busan Station	Donggu, Busan
6	 Suwon Station Line 1	Suwon, Gyeonggi
7	 Seoul Station	Yongsan, Seoul
8	 Gwangmyeong Station	Gwangmyeong, Gyeonggi
9	 Dongdaegu Station	Donggu, Daegu
10	 Wonju Intercity Bus Terminal	Wonju, Gangwon
11	 Gwangju Songjeong Station	Gwangju Gwangsan
12	 Daejeon Bus Terminal	Donggu, Daejeon
13	 Cheonan Asan Station	Asan, Chungnam
14	 Cheongju Intercity Bus Terminal	Cheongju, Chungbuk
15	 Yongsan Station	Yongsan, Seoul
16	 Gumi Station	Gumi, Gyeongbuk
17	 Suwon Station	Suwon, Gyeonggi
18	 Galleria Department Store Timeworld	Seogu, Daejeon
19	 Suseo Station	Gangnam, Seoul
20	 Suwon Bus Terminal	Suwon, Gyeonggi
21	 Cheonan Express Bus Terminal	Cheonan, Chungnam
22	 Beomgye Station Line 4	Anyang, Gyeonggi
23	 Gimpo International Airport International Terminal	Gangseo, Seoul
24	 Jeonju Express Bus Terminal	Jeonju, Jeonbuk
25	 Hongik Univ. Station Line 2	Mapo, Seoul

No	Destination	Location
26	 Jeju City Hall	Jeju, Jeju
27	 Bupyeong Station Line 1	Bupyeong, Incheon
28	 Seoul Express Bus Terminal	Seocho, Seoul
29	 Osong Station	Cheongju, Chungbuk
30	 Dong Seoul Terminal	Gwangjin, Seoul
31	 Ansan Bus Terminal	Ansan, Gyeonggi
32	 Incheon International Airport Terminal 1	Junggu, Incheon
33	 Sangnoksu Station Line 4	Ansan, Gyeonggi
34	 Jungang Station Line 4	Ansan, Gyeonggi
35	 Incheon Bus Terminal	Namgu, Incheon
36	 Gangnam Station Line 2	Gangnam, Seoul
37	 Sillim Station Line 2	Gwanak, Seoul
38	 Jeonju Intercity Bus Terminal	Jeonju, Jeonbuk
39	 Cheonan Terminal	Cheonan, Chungnam
40	 Indeogwon Station Line 4	Anyang, Gyeonggi
41	 Hyundai Department Store Ulsan	Namgu, Ulsan
42	 Seohyeon Station Bundang Line	Seongnam, Gyeonggi
43	 Gangneung Intercity Bus Terminal	Gangneung, Gangwon
44	 Bucheon Station Line 1	Bucheon, Gyeonggi
45	 Jamsil Station Line 2	Songpa, Seoul
46	 Jeonju Station	Jeonju, Jeonbuk
47	 Suseo Station SRT Exit 1	Gangnam, Seoul
48	 Iksan Station	Iksan, Jeonbuk
49	 Pyeongtaek Station	Pyeongtaek, Gyeonggi
50	 Gimhae International Airport	Gangseo, Busan

Based on services completed from Sep. 2017 to Aug. 2018








Departure points are different between daytime and nighttime

Kakao T Taxi top departure and destination points

In the early morning, hot places in Seoul including Itaewon, Hongik Univ., and Gangnam were dominant in the list. In the morning, residential areas and office buildings around stations were used as departure points by many passengers. In the daytime and evening, many passengers took a taxi at the airports, universities, and office buildings of large companies. Meanwhile, in the middle of the night, calls from Itaewon, Hongik Univ., and Gangnam increased again.

AM 2:00 - 7:00











Top 10 departure points of Kakao T Taxi in the early morning

No	Departure	Location
1	 Itaewon Station Line 6	Yongsan, Seoul
2	 KT&G Sangsangmadang	Mapo, Seoul
3	 Itaewon 119 Safety Center	Yongsan, Seoul
4	 Itaewon Station Exit 4	Yongsan, Seoul
5	 Hongik Univ. Station Exit 9	Mapo, Seoul
6	 Giordano Corporation Gangnam	Seocho, Seoul
7	 Itaewon Tourist Information Center	Yongsan, Seoul
8	 Hamilton Hotel	Yongsan, Seoul
9	 Itaewon Street	Yongsan, Seoul
10	 Twosome Place Bupyeong	Bupyeong, Incheon

Based on services completed from Sep. 2017 to Aug. 2018

AM 7:00 - 10:00

Top 10 departure points of Kakao T Taxi in the morning

No	Departure	Location
1	 Residence Likehome	Yeonsu, Incheon
2	 Lotte Castle Campus Town	Yeonsu, Incheon
3	 Sangam Hanwha Obelisk 1-cha	Mapo, Seoul
4	 Giheung Campus	Yongin, Gyeonggi
5	 Yeosu Woongcheon Sarangeuro Booyoung 2-cha	Yeosu, Jeonnam
6	 Jungheung S-Class Sky 31	Seogu, Gwangju
7	 Cheonan Asan Station	Asan, Chungnam
8	 Songpa Prugio 3-cha	Songpa, Seoul
9	 Dujeong Mart	Cheonan, Chungnam
10	 Jamsil LILs West Gate	Songpa, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Destination points are similar between daytime and nighttime

Kakao T Taxi top departure and destination points

Many destination points were stopover places including airports, railroad stations, subway stations, and bus terminals in most times. In the middle of the night, there were many calls going to main streets in Seoul including Itaewon, Silim, Hongik Univ., Gangnam, and Konkuk Univ.

AM 2:00 - 7:00

Top 10 destination points of Kakao T Taxi in the early morning

No	Destination	Location
1	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
2	 Jeju International Airport	Jeju, Jeju
3	 Seoul Station	Yongsan, Seoul
4	 U Square Gwangju Bus Terminal	Seogu, Gwangju
5	 Gimpo International Airport International Terminal	Gangseo, Seoul
6	 Busan Station	Donggu, Busan
7	 Gwangmyeong Station	Gwangmyeong, Gyeonggi
8	 Incheon International Airport Terminal 1	Junggu, Incheon
9	 Daejeon Station	Donggu, Daejeon
10	 Gwangju Songjeong Station	Gwangju Gwangsan

Based on services completed from Sep. 2017 to Aug. 2018

AM 7:00 - 10:00











Top 10 destination points of Kakao T Taxi in the morning

No	Destination	Location
1	 Jeju International Airport	Jeju, Jeju
2	 U Square Gwangju Bus Terminal	Seogu, Gwangju
3	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
4	 Gwangmyeong Station	Gwangmyeong, Gyeonggi
5	 Daejeon Station	Donggu, Daejeon
6	 Suwon Station Line 1	Suwon, Gyeonggi
7	 Busan Station	Donggu, Busan
8	 Seoul Station	Yongsan, Seoul
9	 Dongdaegu Station	Donggu, Daegu
10	 Gwangju Songjeong Station	Gwangju Gwangsan

Based on services completed from Sep. 2017 to Aug. 2018

AM 10:00 - PM 5:00











Top 10 destination points of
Kakao T Taxi in the daytime

No	Destination	Location
1	 U Square Gwangju Bus Terminal	Seogu, Gwangju
2	 Daejeon Station	Donggu, Daejeon
3	 Wonju Intercity Bus Terminal	Wonju, Gangwon
4	 Suwon Station Line 1	Suwon, Gyeonggi
5	 Cheonan Asan Station	Asan, Chungnam
6	 Gwangju Songjeong Station	Gwangju Gwangsan
7	 Busan Station	Donggu, Busan
8	 Dongdaegu Station	Donggu, Daegu
9	 Galleria Department Store Timeworld	Seogu, Daejeon
10	 Jeju City Hall	Jeju, Jeju

Based on services completed from Sep. 2017 to Aug. 2018

PM 5:00 - 10:00











Top 10 destination points of
Kakao T Taxi in the evening

No	Destination	Location
1	 Jeju International Airport	Jeju, Jeju
2	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
3	 U Square Gwangju Bus Terminal	Seogu, Gwangju
4	 Gwangmyeong Station	Gwangmyeong, Gyeonggi
5	 Daejeon Station	Donggu, Daejeon
6	 Seoul Station	Yongsan, Seoul
7	 Busan Station	Donggu, Busan
8	 Suwon Station Line 1	Suwon, Gyeonggi
9	 Gimpo International Airport International Terminal	Gangseo, Seoul
10	 Dongdaegu Station	Donggu, Daegu

Based on services completed from Sep. 2017 to Aug. 2018

PM 10:00 - AM 2:00

Top 10 destination points of Kakao
T Taxi in the middle of the night

No	Destination	Location
1	 Itaewon Station Line 6	Yongsan, Seoul
2	 Sillim Station Line 2	Gwanak, Seoul
3	 Hongik Univ. Station Line 2	Mapo, Seoul
4	 Gangnam Station Line 2	Gangnam, Seoul
5	 Konkuk Univ. Station Line 2	Gwangjin, Seoul
6	 Suwon Station Line 1	Suwon, Gyeonggi
7	 Seoul Nat'l Univ. (Gwanak-gu Office) Line 2	Gwanak, Seoul
8	 Galleria Department Store Timeworld	Seogu, Daejeon
9	 Bupyeong Station Line 1	Bupyeong, Incheon
10	 Yeonsinae Station Line 3	Eunpyeong, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Kakao T Black

Premium mobility service

Kakao T Black

Kakao T Black

Total number of Kakao T Black operations reached 1.31 million based on service completed⁶ from its launch in November 2015 to September 2018, generating 29.7 billion won of income. Total number of passengers of Kakao T Black is about 650,000 and authorized drivers are 484 as of the end of September 2018.

Total no. of Kakao T Black operations

1,308,862 operations

Nov. 2015 - Sep. 2018

No. of Kakao T Black passengers

646,025 passengers

Nov. 2015 - Sep. 2018

No. of Kakao T Black drivers

484 drivers

No. of authorized & active drivers as of end of Sep. 2018

6) Services completed means when a taxi driver picks up a passenger and arrives at the destination point.

Kakao T Driver

Kakao T Driver key records

Number of total operations reaching 20 million

Kakao T Driver key records

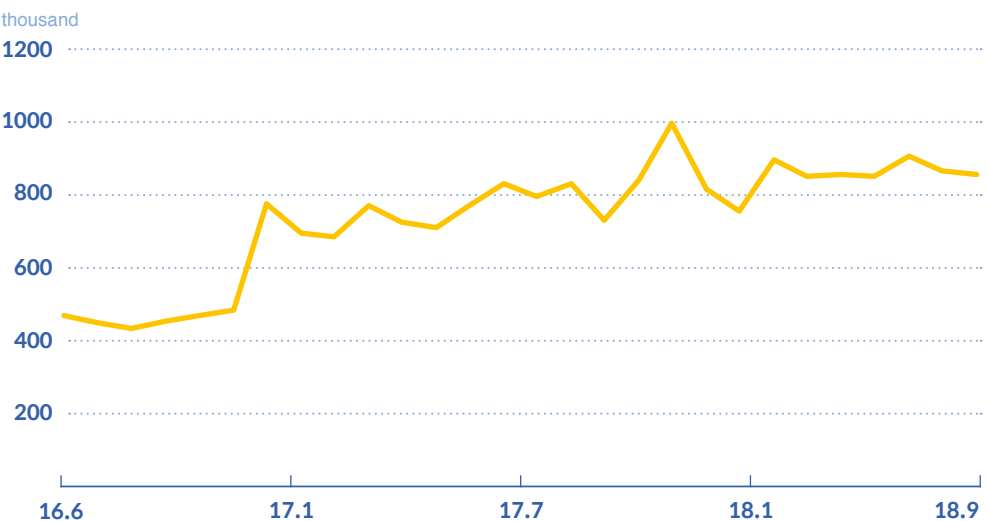
The number of total operations of Kakao T Driver was 199.3 million, based on services completed⁷ from June 2016 to September 2018. As a result, a total of 812.5 billion won of income was generated. Considering the nature of designated driver service, demands were high in December due to year-end meetings and the number reached a whopping 990,000 operations in December alone.

Total no. of Kakao T Driver operations

19,934,160 operations

Based on services finished from Jun. 2016 to Sep. 2018

No. of Kakao T Driver monthly operations



Based on services finished from Jun. 2016 to Sep. 2018

⁷) Services finished means when a taxi driver picks up a passenger and arrives at the destination point.

Kakao T Driver passengers

Number of passengers who handed over their keys to Kakao T Driver was 2.43 million

Kakao T Driver passengers

Total number of people who have used the Kakao T Driver at least once was 2.43 million from June 2016 to September 2018.

Total no. of kakao T Driver passengers

2,434,841 passengers

Jun. 2016 - Sep. 2018

Designated drivers' operation distance is longer than that of taxi drivers

Kakao T Driver passengers

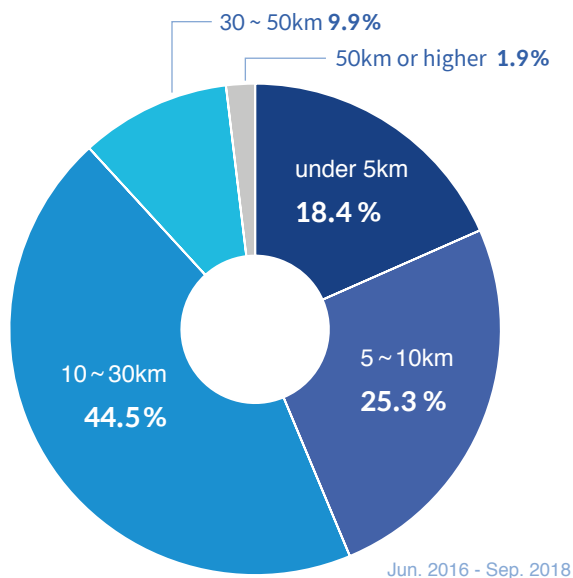
Average travel distance per Kakao T Driver passenger was 15.2 km, while most frequently travelled distance was 10 km to 30 km. Overall, the travel distance was longer than that of Kakao T Taxi.

Average travel distance of Kakao T Driver passengers

15.2 km

Jun. 2016 - Sep. 2018

Kakao T Driver passengers' distribution by travel distance



Regions with little access to designated driver service

Kakao T Driver passengers

We found out which regions had little or no access to Kakao T Driver service - low call response rate and call demands - based on regional unit (eup/myeon/dong). Most of them were residential area far away from downtown.

Top 30 locations with little access to designated driver service

No	Location	No	Location
1	Duma-myeon, Gyeryong-si, Chungcheongnam-do	16	Woongcheon-dong, Changwon-si, Gyeongsangnam-do
2	Wirye-dong, Hanam-si, Gyeonggi-do	17	Samgaksan-dong, Gangbuk-gu, Seoul
3	Siheung-2-dong, Geumcheon-gu, Seoul	18	Chirwon-eup, Haman-gun, Gyeongsangnam-do
4	Nanhyang-dong, Gwanak-gu, Seoul	19	Gireum-1-dong, Seongbuk-gu, Seoul
5	Heongeop-myeon, Wonju-si Gangwon-do	20	Seonghyeon-dong, Gwanak-gu, Seoul
6	Eungam-2-dong, Eunpyeong-gu, Seoul	21	Dong-eup, Uichang-gu, Changwon-si, Gyeongsangnam-do
7	Gajeong-2-dong, Seogu, Incheon	22	Gupyeong-dong, Saha-gu, Busan
8	Bonggae-dong, Jeju-si, Jeju-do	23	Maehwa-dong, Siheung-si, Gyeonggi-do
9	Donam-3-dong, Seongbuk-gu, Seoul	24	Oseong-myeon, Pyeongtaek-si Gyeonggi-do
10	Seoseohak-dong, Wansan-gu, Jeonju-si, Jeollabuk-do	25	Gajeong-3-dong, Seogu, Incheon
11	Dasan-myeon, Goryeong-gun, Gyeongsangbuk-do	26	Namil-myeon, Sangdang-gu, Cheongju-si, Chungcheongbuk-do
12	Pungse-myeon, Dongnam-gu, Cheonan-si, Chungcheongnam-do	27	Gungnae-dong, Gunpo-si, Gyeonggi-do
13	Hoecheon-4-dong, Yangju-si, Gyeonggi-do	28	Wolgae-2-dong, Nowon-gu, Seoul
14	Nam-myeon, Yangju-si, Gyeonggi-do	29	Sinhyeon-dong, Siheung-si, Gyeonggi-do
15	Naesu-eup, Cheongwon-gu, Cheongju-si, Chungcheongbuk-do	30	Nami-myeon, Seowon-gu, Cheongju-si, Chungcheongbuk-do

Sep. 2017 - Aug. 2018, excluded locations where the number of yearly net calls⁸ is less than 1,000

8) In case of repeated calls made from one user, the first call was calculated only

Kakao T Driver designated drivers

No. of Kakao T Driver drivers

Kakao T Driver designated drivers

As of September 2018, the number of designated drivers who are authorized for operation as a Kakao T Driver reached 120,000.⁹

No. of Kakao T Driver drivers

123,962 drivers

No. of authorized & active drivers as of end of Sep. 2018

9) No. of authorized but inactive drivers may be included































Kakao T Driver top departure and destination points

Yeongtonggu Office is the most popular departure point

Kakao T Driver top departure and
destination points

During the recent year, the most popular departure point of Kakao T Driver was Yeongtonggu Office in Suwon, based on service completed. Gangnam Finance Center and Garak Mall (Songpa, Seoul) followed. Main street in Gangnam and regions where raw fish restaurants were concentrated in the metropolitan area were in the upper ranks. On the other hand, hot places in Seoul such as Itaewon and Hongik Univ. were not in the list. Meanwhile, Heungdeokgu Office (Cheongju, Chungbuk) was the most popular departure point among the locations outside the metropolitan area.

Top 30 popular departure points of Kakao T Driver

No	Departure	Location	No	Departure	Location
1	 Yeongtonggu Office	Suwon, Gyeonggi	16	 Heungdeokgu Office	Cheongju, Chungbuk
2	 Gangnam Finance Center	Gangnam, Seoul	17	 Coex ASEM Tower	Gangnam, Seoul
3	 Garak Mall	Songpa, Seoul	18	 Nonhyeon Elementary School Public Parking Lot	Gangnam, Seoul
4	 Giheunggu Office	Yongin, Gyeonggi	19	 Jinan-dong Public Parking Lot	Hwaseong, Gyeonggi
5	 Hannamdong Parking Lot	Yongsan, Seoul	20	 Mapo Public Parking Lot	Mapo, Seoul
6	 Unam Parking Lot	Osan, Gyeonggi	21	 Songdo Prugio Worldmark 8-danji	Yeosu, Incheon
7	 Dream City	Yeosu, Incheon	22	 Ramada Hotel Dongtan	Hwaseong, Gyeonggi
8	 Suwon City Hall	Suwon, Gyeonggi	23	 POSCO Center	Gangnam, Seoul
9	 Noryangjin Fish Market	Dongjak, Seoul	24	 Dongtan North Square	Hwaseong, Gyeonggi
10	 Janghang Public Parking Lot 2	Goyang, Gyeonggi	25	 Jeongja Prugio 3-cha	Seongnam, Gyeonggi
11	 Janghang Public Parking Lot 3	Goyang, Gyeonggi	26	 Jukjeon-nuri-ea-ttle Residential	Yongin, Gyeonggi
12	 Sorae Fish Market	Namdong, Incheon	27	 Hotel Prima Seoul	Gangnam, Seoul
13	 Mirae Asset Center 1 BLDG	Junggu, Seoul	28	 Homeplus Dongsuwon	Suwon, Gyeonggi
14	 Gangseo Hangang Xi Tower	Gangseo, Seoul	29	 Noryangjin Fish Market Parking Lot	Dongjak, Seoul
15	 Seohyeon Transfer Station Public Parking Lot	Seongnam, Gyeonggi	30	 Dongnae Public Parking Lot	Dongnae Busan































Sep. 2017 to Aug. 2018, based on completed services

Banpo Xi is the most popular destination point

Kakao T Driver top departure and destination points

Most popular destination point was Banpo Xi in Seocho, Seoul. Godeok Raemian Hillstate in Gangdong, and Hangang Central Xi 1-danji in Gimpo followed. Many apartment complexes located in Gangnam area in a broad sense (Gangnam, Seocho, Songpa and Gangdong) were in the upper rank while apartments in Gwacheon, Euiwang, and Anyang were also included. On the other hand, large sized apartment complexes in Gangbuk area could not be found in the list.

Top 30 popular destination points of Kakao T Driver

No	Destination	Location	No	Destination	Location
1	 Banpo Xi	Seocho, Seoul	16	 Acro River Park	Seocho, Seoul
2	 Godeok Raemian Hillstate	Gangdong, Seoul	17	 SK View Park	Hwaseong, Gyeonggi
3	 Hangang Central Xi 1-danji	Gimpo, Gyeonggi	18	 Gwanak Humansia 2-danji	Gwanak, Seoul
4	 Dogok Rexle	Gangnam, Seoul	19	 Tangjeong Samsung Trapalace	Asan, Chungnam
5	 Raemian Sur Apt.	Gwacheon,	20	 Wi City 2-danji Xi	Goyang, Gyeonggi
6	 Gyeonggi	Osan, Gyeonggi	21	 Bisan Samsung Ramian	Anyang, Gyeonggi
7	 Suwon Hanil Town	Suwon, Gyeonggi	22	 Geumgang Exllu Tower	Daedeok, Daejeon
8	 Raemian Firstage	Seocho, Seoul	23	 Jamsil Lls	Songpa, Seoul
9	 Poil Xi	Uiwang, Gyeonggi	24	 Doan Sumokto Apt.	Seogu, Daejeon
10	 Ricenz	Songpa, Seoul	25	 Incheon SK Skyview	Namgu, Incheon
11	 Seolleung Station Line 2	Gangnam, Seoul	26	 Ilsan Yojin Y-City	Goyang, Gyeonggi
12	 Pungmu Prugio	Gimpo, Gyeonggi	27	 Migeum Station Bundang Line	Seongnam, Gyeonggi
13	 Raemian Anyang Megatria	Anyang, Gyeonggi	28	 Wirye Lotter Castle	Hanam, Gyeonggi
14	 Gwanggyo maeul 40-danji	Suwon, Gyeonggi	29	 Jamsil Lls West Gate	Songpa, Seoul
15	 Cheoncheon Prugio	Suwon, Gyeonggi	30	 Sinbong Maeul LG Xi 1-cha	Yongin, Gyeonggi

Sep. 2017 to Aug. 2018, based on completed services

Kakao Navi

Kakao Navi

key records

A navigation loved by the whole nation

Kakao Navi key records

Total number of Kakao Navi subscribers was over 14 million as of September 2018. This amounts to 27 percent of total population of 51.81 million people in Korea and 37 percent of the working age, 15-64 years old, population of 37.57 million people.¹⁰ Number of monthly net users was about 5.34 million as of September 2018.

Total no. of Kakao Navi subscribers¹¹

14,080,527 subscribers

Apr. 2016 - Sep. 2018

No. of monthly net users of Kakao Navi

5,341,280 users

Apr. 2016 - Sep. 2018

10) Total population and working age population statistics provided by the Ministry of Interior and Safety of Korea, as of the end of Aug. 2018.

11) Key statistics of Kakao Navi including total number of subscribers and the number of monthly net users only counts Kakao Navi app users and does not include the number users of Kakao T or Kakao Map which have Kakao Navi navigation as a built-in feature As of Sep. 2018.

150 million navigation guides per month

Kakao Navi key records

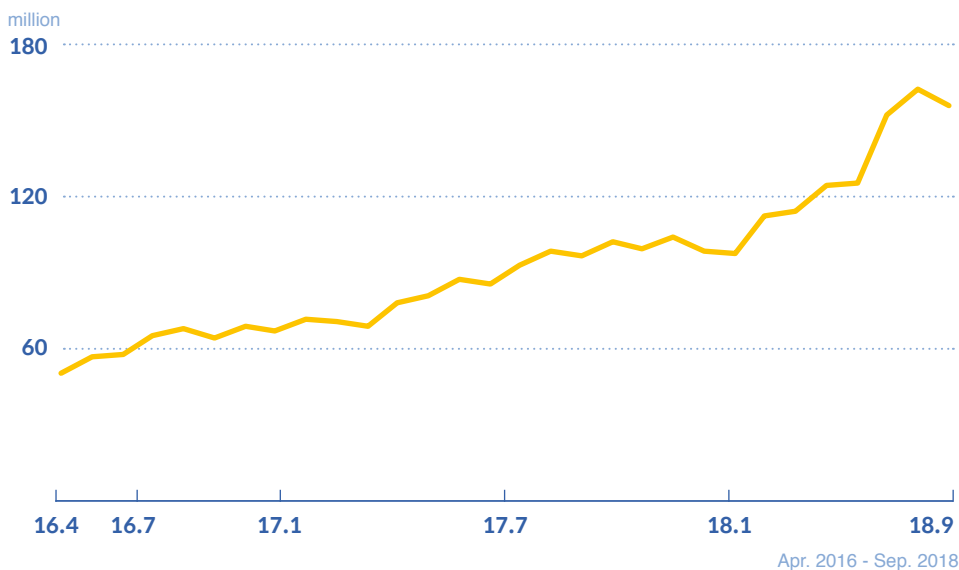
The number of navigation guide starts increased since Kakao Navi was rebranded from 'Kim Gisa' in February 2016. In September 2018, the number reached 150 million per month and 2.7 billion in total as of September 2018. As the number of navigation guide increases, the real-time traffic info becomes more precise.

Total number of Kakao Navi guide starts¹²

2,710,843,628 guides

Apr. 2016 - Sep. 2018

No. of Kakao Navi guide starts per month



12) Number of navigation guide starts is collected from Kakao Navi app as well as Kakao T and Kakao Map which have Kakao Navi navigation as a built-in feature.

Kakao Navi

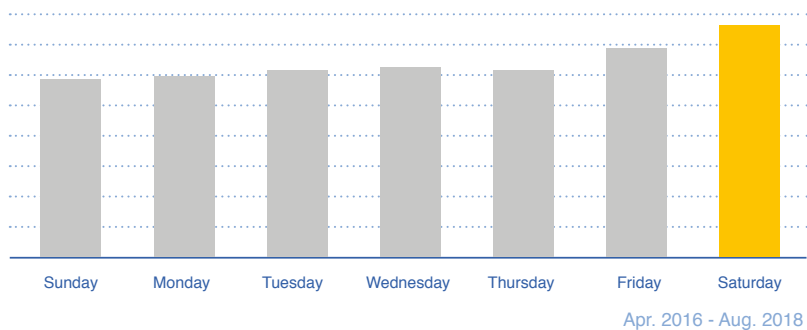
usage patterns

Busiest in Saturdays

Kakao Navi usage patterns

For Kakao Navi, the busiest day of the week was Saturdays, and Fridays came next. Sundays and Mondays showed the lowest usage rate.

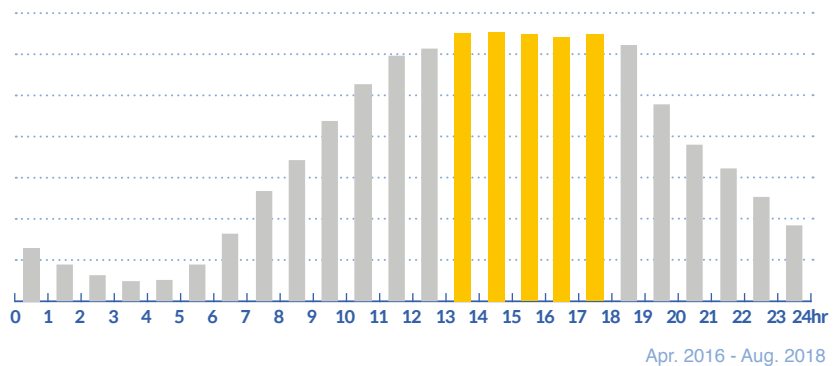
No. of Kakao Navi guide starts on each day of the week



Working hard during daytime

Kakao Navi usage rate was higher in the afternoon, compared to morning and late night. In particular, the rate was highest between 1pm to 6pm.

No. of Kakao Navi start guides for each time slot



Kakao Navi

hot places

Hot places on Kakao Navi are airports nationwide


























Kakao Navi hot places


























The most popular search term on Kakao Navi was Jeju International Airport. Newly opened Incheon International Airport Terminal 2 and existing Terminal 1 took 2nd and 3rd place.

In Seoul metropolitan area, top search terms include big shopping malls like Starfield, Lotte Premium Outlet, Ikea, and Hyundai Premium Outlet. For tourist attractions, Eurwangni Beach, Yeouido Hangang Park, Everland, Heyri Art Valley, etc. were included in top search terms.

In places besides the metropolitan area, famous tourist destinations in Jeju and Gangwon were in the upper rank. In Jeju, places including Seongsan Ilchulbong Peak, Supji-coji, Hyeopjae Beach, and Monsant de Aewol were in the list. In Gangwon, Nami Island, Gyeongpodae, Anmok Beach, and Sokcho Tourist & Fishery Market were listed. Kkotji Beach in Taean (Chungnam), Hyangiram Hermitage in Yeosu (Jeonnam), Chaeseokgang in Buan (Jeonbuk), and Windy Hill in Geoje (Gyeongnam) were also in the hot search term list.

Top 50 hot places in Kakao Navi

No	Search Term	Location
1	 Jeju International Airport	Jeju, Jeju
2	 Incheon International Airport Terminal 2	Junggu, Incheon
3	 Incheon International Airport Terminal 1	Junggu, Incheon
4	 Starfield Goyang	Goyang, Gyeonggi
5	 Starfield Hanam	Hanam, Gyeonggi
6	 Seongsan Ilchulbong Peak	Seogwipo, Jeju
7	 Eulwangni Beach	Junggu, Incheon
8	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
9	 Supji-coji Parking Lot	Seogwipo, Jeju
10	 Lotte Premium Outlet Paju	Paju, Gyeonggi
11	 Hyeopjae Beach	Jeju, Jeju
12	 Ikea Goyang	Goyang, Gyeonggi
13	 Monsant de Aewol	Jeju, Jeju
14	 Yeoido Hangang Park	Yeongdeungpo, Seoul
15	 Kkotji Beach	Taeon, Chungnam
16	 Gwangmyeong Station	Gwangmyeong, Gyeonggi
17	 Woljeongri Beach	Jeju, Jeju
18	 Everland	Yongin, Gyeonggi
19	 Hamdeok Seoubong Beach	Jeju, Jeju
20	 Yongsan Station	Yongsan, Seoul
21	 Heyri Art Valley	Paju, Gyeonggi
22	 Hyangiram Hermitage	Yeosu, Jeonnam
23	 Pyeongtaek Station	Pyeongtaek, Gyeonggi
24	 Chaeseokgang	Buan, Jeonbuk
25	 Windy Hill	Geoje, Gyeongnam

No	Search Term	Location
26	 IFC Mall	Yeongdeungpo, Seoul
27	 Juknokwon	Damyang, Jeonnam
28	 Bomunsa Temple	Ganghwa, Incheon
29	 Hyundai Premium Outlet Gimpo	Gimpo, Gyeonggi
30	 Dongtan Station	Hwaseong, Gyeonggi
31	 Ikea Gwangmyeong	Gwangmyeong, Gyeonggi
32	 Nami Island	Chuncheon, Gangwon
33	 Busan Station	Donggu, Busan
34	 Lee Sung Dang	Gunsan, Jeonbuk
35	 Cheomseongdae Observatory	Gyeongju, Gyeongbuk
36	 Hanok Village Parking Lot	Jeonju, Jeonbuk
37	 Saebyeol Oreum	Jeju, Jeju
38	 Suwon Station	Suwon, Gyeonggi
39	 Wolmido	Junggu, Incheon
40	 The Garden of Morning Calm	Gapyeong, Gyeonggi
41	 Gyeongpodae	Gangneung, Gangwon
42	 Provence Town	Paju, Gyeonggi
43	 Gwakji Beach	Jeju, Jeju
44	 Anmok Beach	Gangneung, Gangwon
45	 Sokcho Tourist & Fishery Market	Sokcho, Gangwon
46	 Damyang Metasequoia-lined Road	Damyang, Jeonnam
47	 Sokcho Tourist & Fishery Market Parking Lot	Sokcho, Gangwon
48	 Cheonan Asan Station	Asan, Chungnam
49	 KINTEX Exhibition Hall 2	Goyang, Gyeonggi
50	 Gyeongpo Beach	Gangneung, Gangwon

Sep. 2017 - Aug. 2018, search basis

Chapter 2

New Discoveries & Changes in Daily Life

Kakao T Taxi

Why cannot catch a taxi when it's really necessary

Imbalance in taxi supply and demand

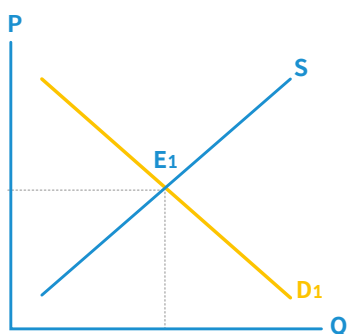
Why cannot catch a taxi
when it's really necessary

Many people are having difficulties in catching a taxi at main streets of downtown during rush hour and in the middle of the night. In order to resolve this problem, the local government has been implementing various policies including establishment of taxi stands, enforcement of passenger refusal, and extended service hours of public transportation. However, it failed to achieve significant effects.

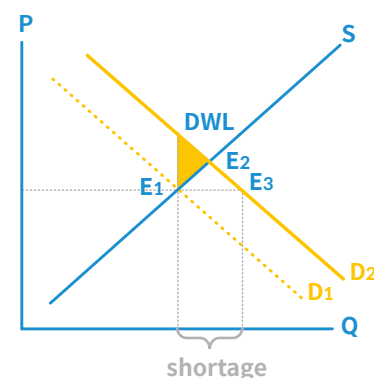
Economically, all services' price and quantity are determined at the point where supply and demand curves meet. For taxi services, supply and demand patterns significantly depend on time, location, and weather conditions. However, current fixed fare system does not properly reflect such patterns. Accordingly, oversupply or short supply of taxi is inevitable structurally.

For example, during rush hour, while taxi demand significantly increases from D_1 to D_2 , its limited supply to S leads to E_1E_3 shortage in the figure below. Economically, this system results in the Dead Weight Loss (DWL) that amounts to the area of the triangle as compared with a flexible fare system.

**Supply and demand curves
under normal conditions**



**Supply and demand
curves during rush hour**



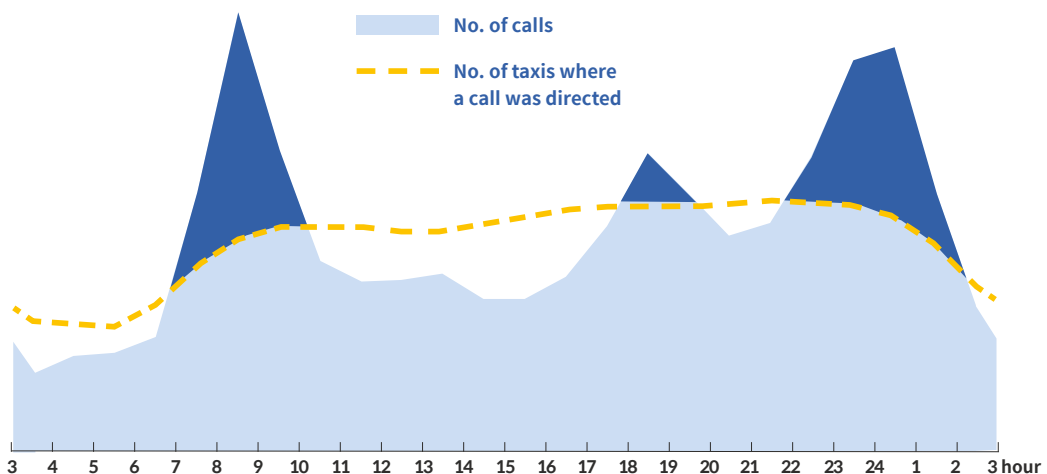
It's hard to catch a taxi when it's most necessary

Why cannot catch a taxi
when it's really necessary

Above all, in order to examine time-based imbalance in supply and demand, taxi supply and demand status was analyzed at Seoul Metropolitan area¹³. Taxi demand is defined as the number of taxis calls from passengers; supply is defined as the number of Kakao T Taxis which receive call cards, by hour respectively¹⁴. Data was collected from September 2017 to August 2018.

The result found short supply during rush hour (7-10am and 6-8pm) and in the middle of night (10pm-2am).

Time-based taxi supply and demand at Seoul Metropolitan area



13) Seoul, Incheon, Gyeonggi

14) Since passengers who grabbed a taxi on the road or requested a call taxi and drivers who didn't use Kakao T Taxi were not included in this analysis, this data cannot be seen as overall taxi supply and demand. It is the limitation of this analysis. In addition, please note that although a distance between a passenger and a driver is far, this driver can be included as an available driver.

It's harder to catch a taxi under bad weather conditions

Why cannot catch a taxi when it's really necessary

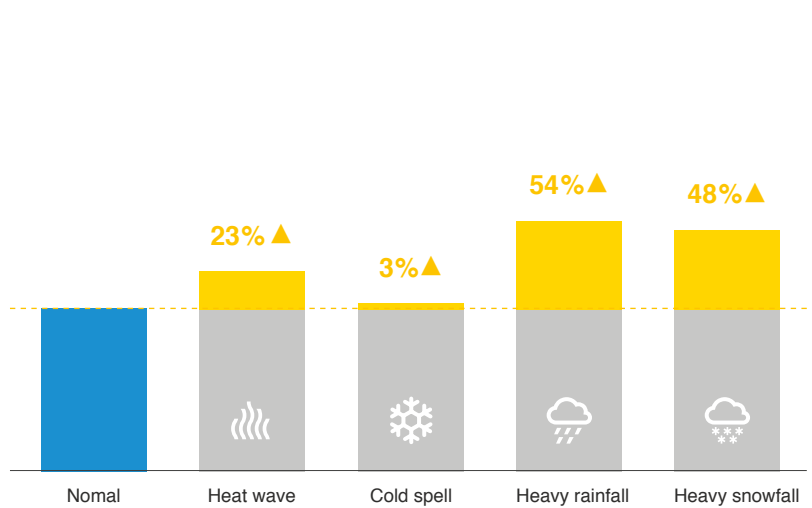
When weather conditions get worse due to heat wave, cold spell, heavy rainfall, or heavy snowfall, much more passengers want to take a taxi. On the other hand, taxi drivers don't want to drive a taxi. Therefore, imbalance in taxi supply and demand becomes higher. Extreme weather events in Seoul for the last one year based on information provided by the Korea Meteorological Administration are listed as follows.

Extreme weather events in Seoul for the recent one year

Weather conditions		No. of Days	Criteria
	Heat wave	22 days	Daily max. temp: 33°C or higher
	Cold spell	21 days	Daily min. temp: -10°C or lower
	Heavy rainfall	9 days	Rainfall: 30mm or higher
	Heavy snowfall	4 days	Snowfall: 3cm or higher

Source: Korea Meteorological Administration (Sep.2017 - Aug.2018)

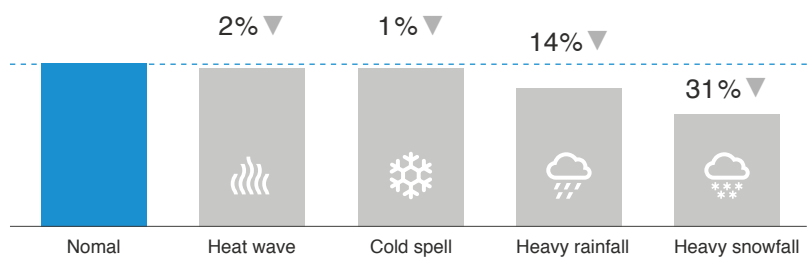
Why cannot catch a taxi
when it's really necessary



Sep. 2017 - Aug. 2018

Increased taxi demand under bad weather conditions

Daily calls on average increased under bad weather conditions compared to normal conditions as shown above. Calls resulting from heat wave, cold spell, heavy rainfall, and heavy snowfall increased by 23 percent, 3 percent, 54 percent, and 48 percent, respectively.



Sep. 2017 - Aug. 2018

Decreased taxi supply under bad weather conditions

On the other hand, the number of working drivers decreased by 2 percent, 1 percent, 14 percent, and 31 percent due to heat wave, cold spell, heavy rainfall, and heavy snowfall, respectively. Taxi supply decreased at a small margin compared to increased demand.

It's harder to catch a taxi when there is a big event

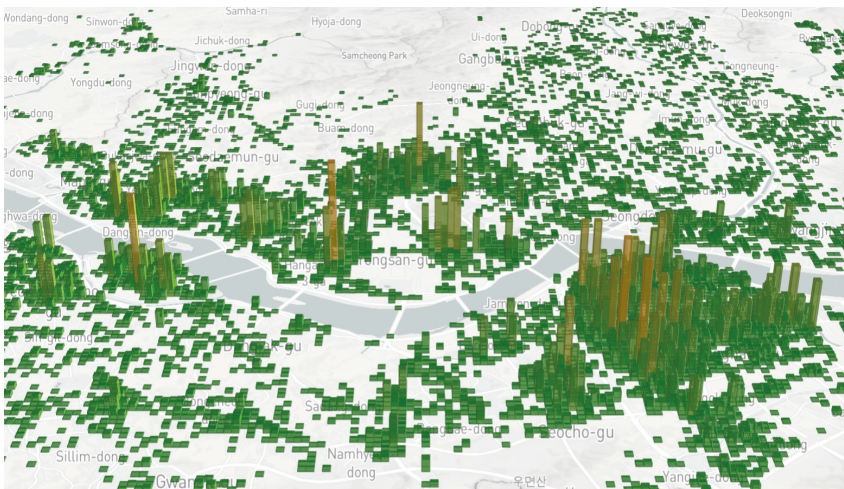
Why cannot catch a taxi when it's really necessary

Meanwhile, when there is a special event like World Cup, Olympics, Fireworks Festival, and concerts, taxi demand explosively increases in a specific region. In fact, under traffic congestion at such a region, taxi drivers have no reason to move to this region because the fare is the same.

The following figures show changes in taxi calls in the event of street cheering for World Cup and Yeouido Fireworks Festival. As for Kakao T Taxi calls at 11pm-0am on June 18, 2018, in Seoul right after Russia World Cup South Korea vs. Sweden was finished, a clear increasing trend was found compared to the calls during the same time period one week after the event.

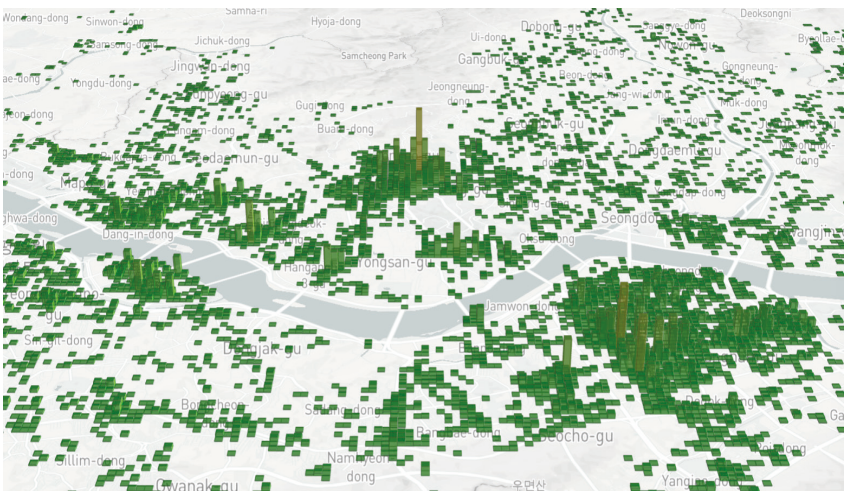
Kakao T Taxi calls during World Cup street cheering event

11pm-0am on June 18, 2018



Kakao T Taxi average calls during the same time period

11pm-0am on June 25, 2018



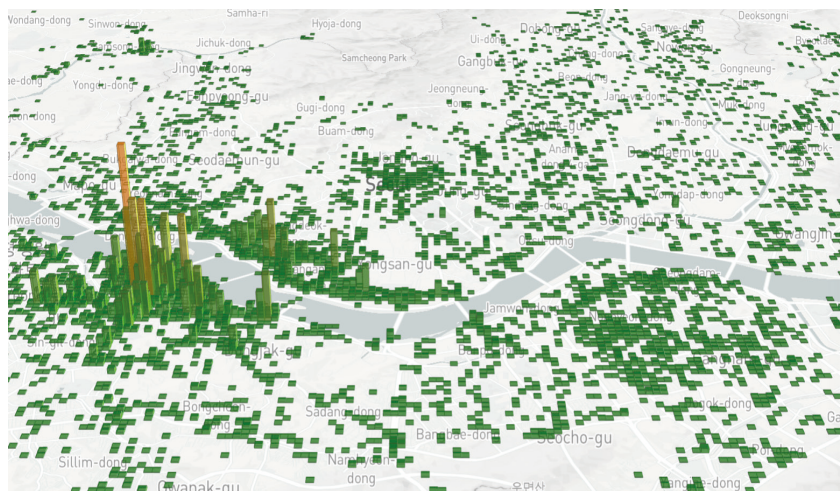
Why cannot catch a taxi
when it's really necessary

In addition, as for Kakao T Taxi calls at 9-10pm on September 30, 2017, in Seoul right after Yeouido Fireworks Festival was finished, a clear increasing trend was found compared to the calls during the same time period one week after the event.

Meanwhile, Kakao Mobility Corp. is working to at least mitigate such supply shortages by giving a prior notice to taxi drivers when there is an event.

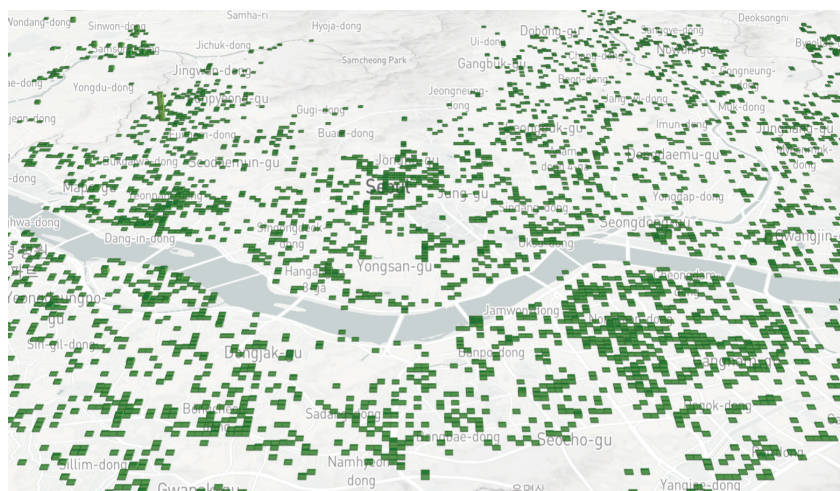
Kakao T Taxi calls during Yeouido Interna- tional Fireworks Festival

9-10pm
on September 30,
2017



Kakao T Taxi average calls during the same time period

9-10pm
on October 7, 2017



Low fares and short supply

Why cannot catch a taxi
when it's really necessary

Lower taxi fare level in Korea than in other major cities abroad is also identified as the cause of short supply. If fares are raised, more drivers would find a reason to operate a taxi. A global travel information provider Price of Travel found that taxi fares in Seoul amounted to US\$ 2.8-5.4 based on the 3km distance traveled, which is very low considering Korea’s GDP per capita.

Taxi fares in global cities

City	Seoul	Rome	Washington DC	Tokyo	Berlin	London	Paris
Taxi fares (3km distance traveled)	\$2.8 ~\$5.4	\$7.1 ~\$11.2	\$7.5 ~\$11.0	\$9.1 ~\$11.8	\$10.4 ~\$15.6	\$10.4 ~\$15.6	\$11.2 ~\$16.9
GDP per capita (By country)	\$29,891	\$31,984	\$59,501	\$38,440	\$44,550	\$39,735	\$39,869
Taxi fares (Median) ÷ GDP per capita ×1,000	2.7	5.7	3.1	5.4	5.3	6.5	7.0

Source: Price of Travel (2017) and International Monetary Fund (2017)

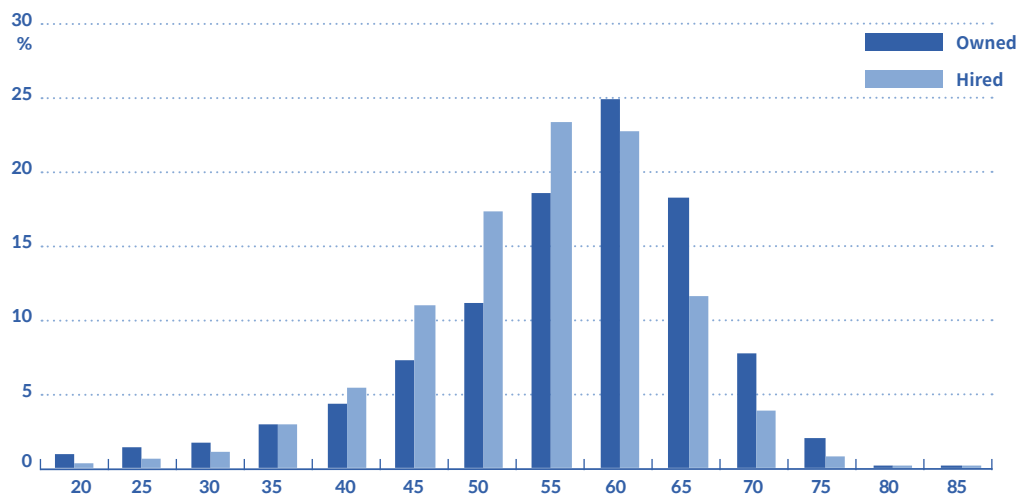
Taxi drivers' aging and low attendance rate in the middle of the night

Why cannot catch a taxi when it's really necessary

As low taxi fare level leads to taxi drivers' low income, their career value remains low. Less young drivers are entering into taxi services and overall age of taxi drivers are getting higher, especially among owner drivers.

The average age of Kakao T Taxi drivers is 53.4. Most owner taxi drivers are in the 60-65 age group and most hired taxi drivers are in the 55-60 age group.

Owner vs. hired taxi drivers' age distribution

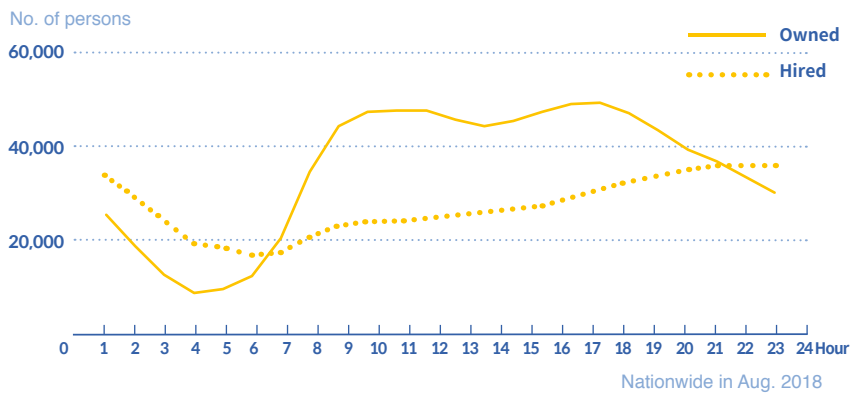


Nationwide in late Aug. 2018

Why cannot catch a taxi
when it's really necessary

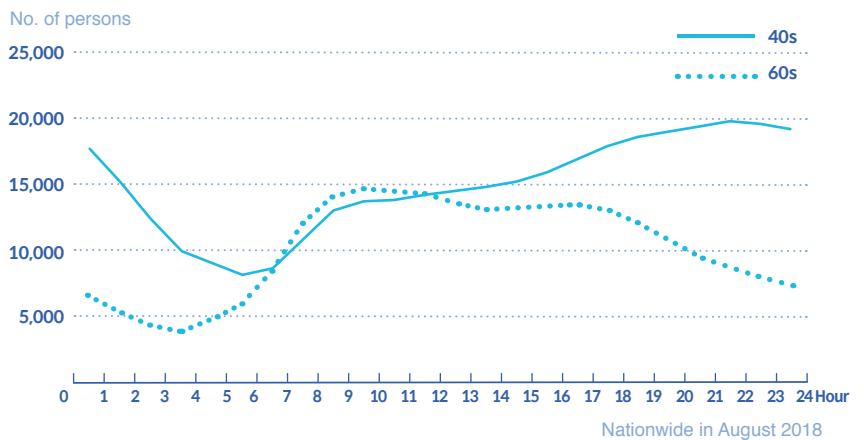
Owner vs. hired taxi drivers' time-based working patterns¹⁵

While hired taxi drivers are evenly distributed across a day, most owner drivers tend to work from 8am to 7pm.



40's vs 60's time-based working patterns

While many drivers in their 40's work in the middle of night or early morning, most 60's work mainly in the morning or daytime.



15) Please note that since this is based on the average number of drivers per day by hour, these figures are different from cumulative from the 2017 Kakao Mobility Report.

Problem-solving alternatives

Why cannot catch a taxi
when it's really necessary

Flexible fare system depending on demand is one of the basic solutions for supply-demand imbalance. Different factors, including time, weather conditions, and events, which affect supply and demand, can be reflected in fares.

Another solution is to mitigate limitations on service area. Licensed taxi drivers should operate taxi services only in designated areas. For regular medium size taxis, their service areas are based on a metropolitan city and si/gun province. For Gangju and Hanam, Guri and Namyangju, Anyang, Gwacheon, Gunpo, and Uiwang, however, their local governments consolidated service areas. If such limitations are mitigated, short taxi supply can be partially resolved in the spatial aspect, making passengers more convenient.

Alternatively, since such imbalance is not shown in every time zone, a carpool service for a limited time can increase taxi supply. According to the Passenger Transport Service Act, a person may provide with compensation for transportation purpose where people share the use of a passenger vehicle for commuting. Kakao Mobility Corp. is preparing to introduce a carpool service for citizens' better travel convenience.

New taxi culture with Kakao T

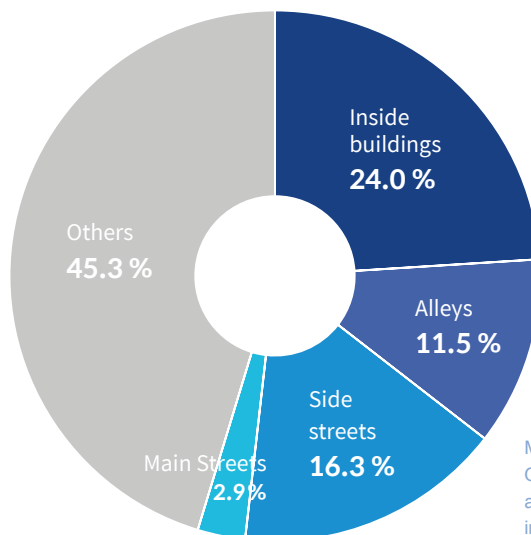
Call a taxi where I want

New taxi culture with Kakao T

It was inconvenient to wait for a taxi on the main street in the past. However, Kakao T Taxi has made it possible to catch a taxi inside buildings, alleys, and side streets, contributing to passengers' convenience.

In particular, catching a taxi inside buildings on the app has been changing taxi culture. It's possible to catch a taxi on the app before leaving and then go to a pickup area. Such a change minimizes taxi waiting time and is very useful especially under bad weather conditions like heat wave, cold spell, heavy rainfall, and heavy snowfall.

Kakao T Taxi calling spots



Mar. 2015 - Aug. 2018

Others include unclear types of call spots like apartment complexes, university campuses, industrial facilities, and farmland.

Taking a taxi where I want

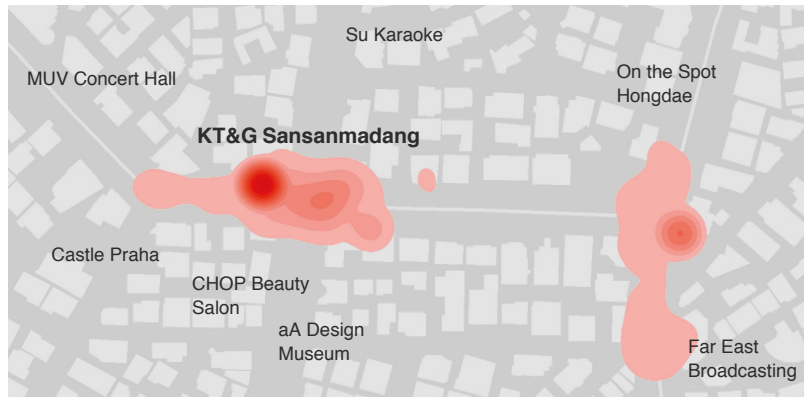
New taxi culture with Kakao T

Since passengers can easily call a taxi on Kakao T Taxi, they can get into a taxi right away where they want. This is Kakao T Taxi's selling point. While most boarding spots were landmark buildings on main streets in the past, small buildings, side streets, and narrow streets are included these days. This change is accelerating year after year. If people can get into a taxi where they want without travelling on foot, they would have fewer reasons to own a car.

In this section, the diversification effect of boarding spots in Itaewon and around Hongik Univ. Station where most frequent taxi calls are being made in downtown Seoul is examined. A change in boarding spots distribution from January to August 2018 is compared with the same period a year ago. The areas highlighted in dark colors are frequent boarding spots in the following figures. A clear diversification effect of boarding spots is found after only one year.

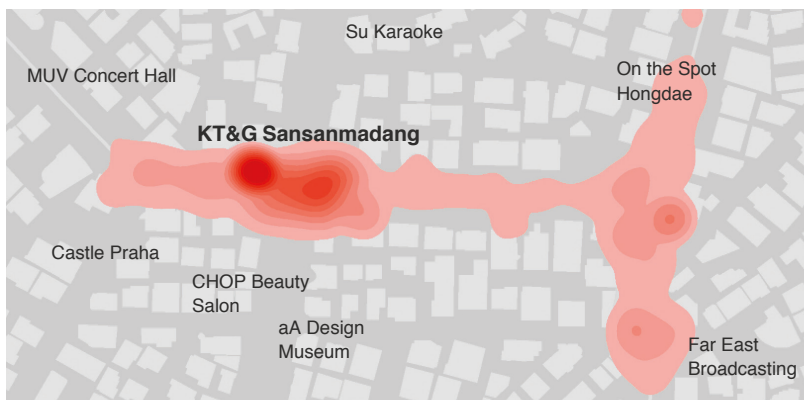
Hongik Univ. Station's frequent boarding spots in 2017

— Jan. 2017 - Aug. 2017



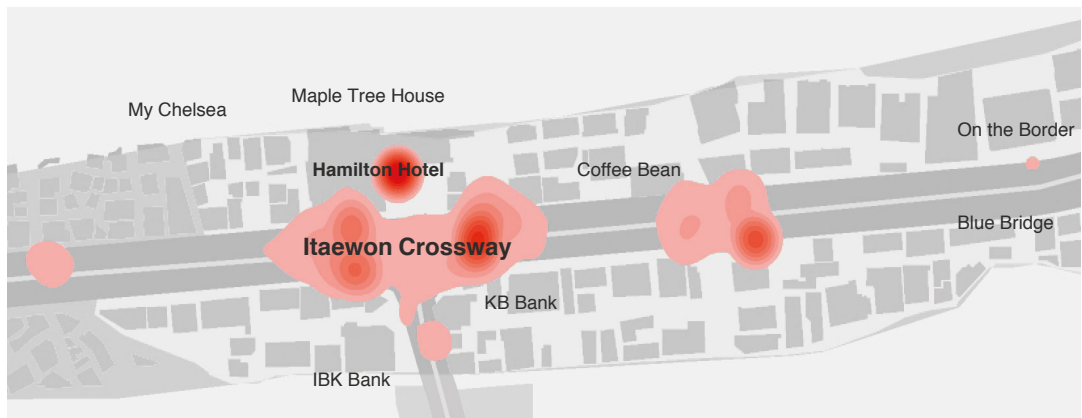
Hongik Univ. Station's frequent boarding spots in 2018

— Jan. 2018 - Aug. 2018



Itaewon's frequent boarding spots in 2017

Jan. 2017 - Aug. 2017



Itaewon's frequent boarding spots in 2018

Jan. 2018 - Aug. 2018



On board notification for families and lovers

New taxi culture with Kakao T

Kakao T Taxi provides different add-ons for passengers' safety and convenience. Its on-board message feature is one of these add-ons. Passengers can send an on-board message to their friend. The message including departure point, destination point, boarding time, taxi info, estimated time on arrival, and more info are being sent to their family, lover, or friends. Total number of messages sent from its launch in March 2015 to August 2018 amounts to 182.7 million which is one third of total Kakao T Taxi operations.

No. of Kakao T Taxi on-board messages sent

182,703,021 messages

Mar. 2015 - Aug. 2018

92 percent passengers rated Kakao T Taxi as five-star

New taxi culture with Kakao T

Passengers can evaluate satisfaction of taxi drivers after using taxi services. Total number of such evaluations made by passengers from its launch in March 2015 to August 2018 reaches 135 million. Average score is 4.8 out of 5 points.

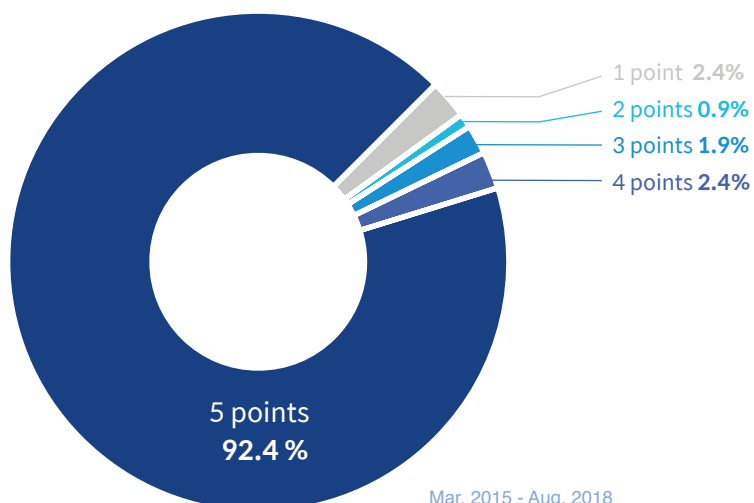
This evaluation result can not only be viewed by drivers but also is considered in prioritizing and matching drivers. This is contributing to providing better services for passengers.

No. of satisfaction evaluations of Kakao T Taxi drivers

135,039,442 cases

Mar. 2015 - Aug. 2018

Satisfaction evaluation distribution of Kakao T Taxi drivers



What if you forgot belongs in a taxi

New taxi culture with Kakao T

Meanwhile, Kakao T Taxi provides a service history view feature that allows passengers to view their boarding history. Passengers can view one-year history including departure point/destination point, boarding time, driver's name, taxi info, and amount paid. They can also call relevant driver within three days after boarding. By using these services, passengers can view their consumption history and find lost belongings or resolve conflicts, if any.

Total number of service history views from its launch in March 2015 to August 2018 reaches 9 million.

No. of Kakao T Taxi service history views

9,072,409 views

Mar. 2015 – Aug. 2018

Kakao T growing with taxi drivers

Kakao T's VIP is taxi drivers

Kakao T growing with taxi drivers

Kakao T Taxi is a platform that connects a passenger with a driver. A platform shows its true value when it increases both parts' benefit. When a passenger can easily catch a taxi and a taxi driver can easily reach a passenger, the overall market size for taxis grows and the economic value added is generated.

For this reason, Kakao Mobility Corp. puts great value on better convenience for taxi drivers as well as for passengers. This section examines how much Kakao T Taxi is contributing to increasing taxi drivers' income and what kind of efforts Kakao T Taxi is making for more efficient taxi driving.

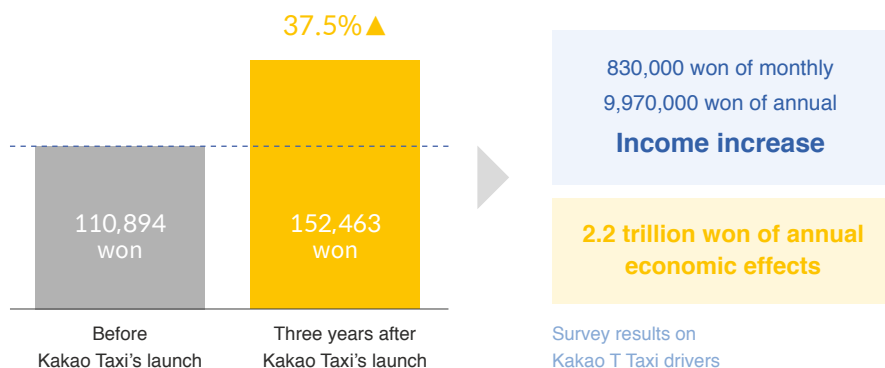
Taxi drivers' income increased by 37 percent since Kakao T Taxi was introduced

With Kakao T Taxi, passenger can easily call a taxi and taxi drivers can easily reach passengers. Accordingly, taxi drivers' overall income has increased.

Taxi drivers' average income per day remained at 110,894 won before Kakao T Taxi was launched.¹⁶ However, according to the recent survey on Kakao T Taxi drivers, their average income per day increased to 152,436 won.¹⁷ Considering no taxi fare rise between two surveys, it is estimated that Kakao T Taxi has contributed to a 37.5 percent increase in their income.

Suppose a driver works for 20 days a month, such an increase means a monthly income rise by 830,000 won and yearly income rise by 9,997,000 won. If this is multiplied by the number of drivers using Kakao T Taxi, it is interpreted that it has generated economic benefits amounting to about 2.2 trillion won on a yearly basis.

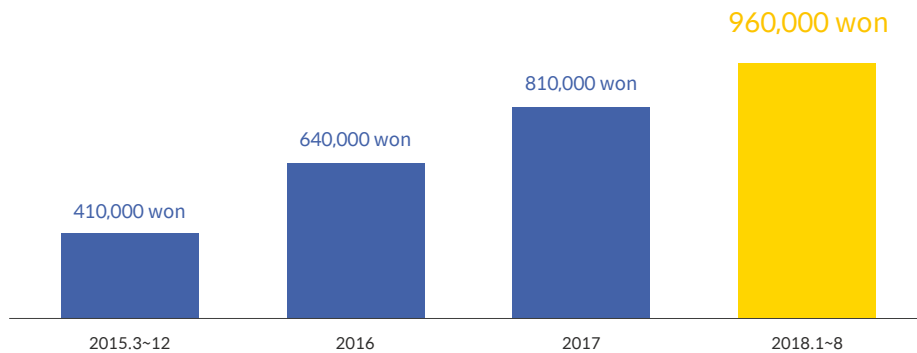
A change in drivers' average daily income before and after using Kakao T Taxi



16) Survey conducted on 9,730 drivers via the Kakao T Taxi app for drivers from March 22 to 23, 2016.

17) Survey conducted on 13,783 drivers via the Kakao T Taxi app for drivers from September 21 to 22, 2018

Average annual income of drivers from Kakao T Taxi



Since its launch, Kakao T Taxi has been rapidly increasing users from passengers and drivers. As Kakao T Taxi has been getting popular, drivers' income from the app has also increased year by year.

In 2015 when it was introduced, monthly income per driver from Kakao T Taxi based on medium size taxis, remained at 410,000 won on average. However, it increased to 640,000 won in 2016, 810,000 won in 2017, and 960,000 won on average from January to August in 2018.

Efficient driving made drivers less tired and consumed less gas

Kakao T growing with taxi drivers

With Kakao T Taxi, fewer taxis have been hanging around waiting for a passenger. This has made drivers less physically tired, has consumed less gas, and has lessened environmental pollution resulting from exhaust fumes.

According to the survey conducted in September,¹⁸ 85 percent of the total Kakao T Taxi drivers responded that they had less time in hanging around waiting for a passenger after using the app; 23.3 percent responded “much less” and 61.7 percent responded “less”.

A change in drivers’ time spent hanging around before and after using Kakao T Taxi

Division	Much less	Less	No change
No. of respondents	3,207	8,503	2,073
Percentage	23.3%	61.7%	15.0%

18) Survey conducted on 13,783 drivers via the Kakao T Taxi app for drivers from September 21 to 22, 2018

Drivers can set favorite destination districts

Kakao T growing with taxi drivers

All Kakao Taxi T drivers can set their favorite destination districts by si/gun/gu in advance and receive additional calls from passengers. This feature is popular because this makes drivers choose where they work by themselves.

As of May 2018, 130,000 drivers are using this feature. This is more than a half of total Kakao T Taxi drivers of 220,000 drivers. Favorite destinations vary depending on a driver's garage, home, geographically familiar locations, etc.

Kakao T Taxi drivers' top favorite destination districts

No	Favorite destination	No	Favorite destination
1	Junggu, Incheon	6	Nowon, Seoul
2	Gangnam, Seoul	7	Uijeongbu, Gyeonggi
3	Bundang, Seongnam, Gyeonggi	8	Mapo, Seoul
4	Gangseo, Seoul	9	Namyangju, Gyeonggi
5	Songpa, Seoul	10	Bucheon, Gyeonggi

Based on May 2018

Machine learning algorithm-based matching

Kakao T growing with taxi drivers

Although drivers choose and set favorite destination districts on the app, there can be patterns that he or she may have not known. Still, almost a half of drivers are not using this feature.

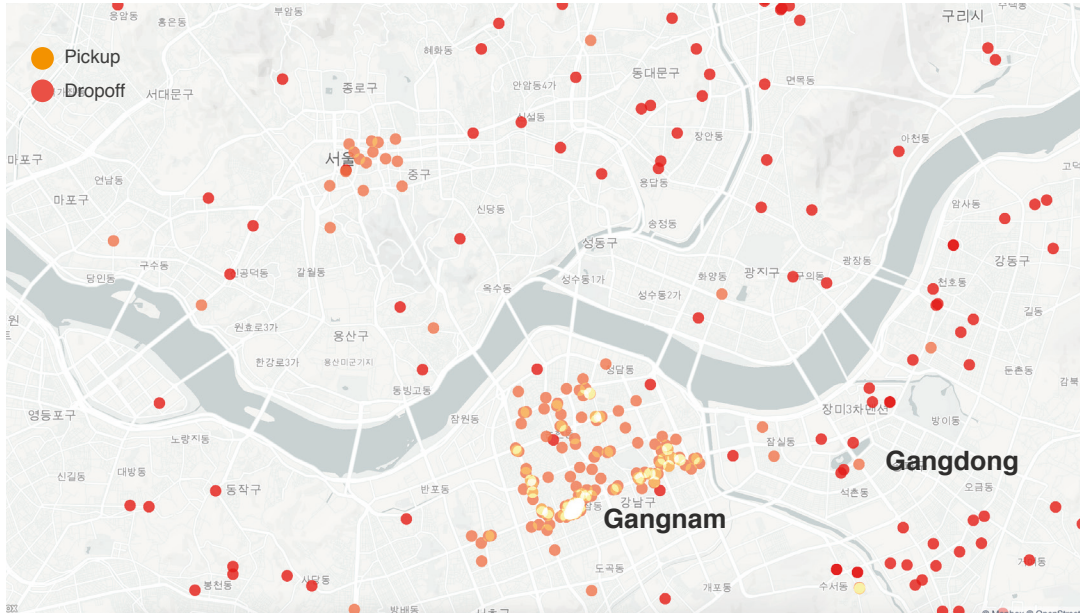
In order to make up for this situation, Kakao Mobility Corp. automatically figures out a driver's own favorite locations and applies this to matching algorithms by using a machine learning method based on drivers' driving data. For example, when the machine learning result found that a driver preferred Gangnam-Gangdong course, more calls for Gangdong were directed to relevant driver. More calls for Gwanak were also directed to a driver who preferred Gangnam-Gwanak course.

Such a trial has been proven to be very efficient for a higher matching rate under fixed taxi fares and limited taxi supply in the current market. This has been applied to matching algorithms of Kakao T Taxi Smart Call feature.

What is Machine Learning?

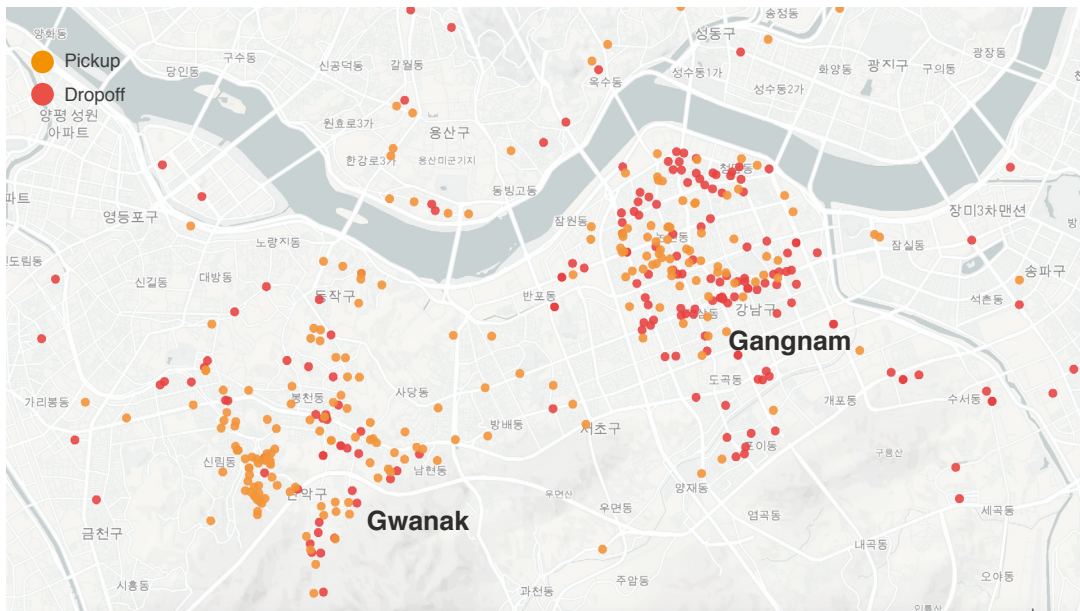
Machine learning is a field of artificial intelligence that give computer systems to progressively learn from data patterns. In a mobility field, computer systems learn a huge amount of driving data, figure out new driving patterns, and apply these patterns for driving optimization.

Machine learning based driving patterns of a driver who prefers Gangnam and Gangdong regions



Jan. 2018 – Aug. 2018

Machine learning based driving patterns of a driver who prefers Gangnam and Gwanak regions



Jan. 2018 - Aug. 2018

“Efforts to increase taxi driving efficiency”

—
Ph.D. Seongil Yoo

Head of Datalab, Kakao Mobility

Q *What does the Datalab do for Kakao Mobility Corp.?*

A The Datalab works on better services and business model development support based on data from different services of Kakao Mobility Corp.

Q *In many cases, taxi calls made late at night have not been matched. What's the problem from the perspective of data?*

A Kakao T Taxi is a platform that efficiently connects supply and demand for travel. Such supply and demand continuously change depending on time and place. The Datalab is making different efforts for a high matching rate for taxi drivers based on taxi supply and demand info nationwide. However, there are some structural problems.

For example, since during rush hour or in the middle of the night, taxi supply is absolutely short compared to demand, there is a limit to resolve this problem using advanced matching algorithms. Uber's flexible fare system depending on supply and demand situations or carpool services during rush hour can be a solution. However, under the current system, we need to persuade different interested parties.

Q *What kind efforts are you making to match a taxi more successfully based on data?*

A We are establishing different AI-based services using collected mobility data. We are learning real time supply and demand situations using machine learning and applying taxi drivers' driving patterns to matching algorithms. In addition, we predict regions where calls are expected to increase based on the past data and provide such info to drivers. We are also making preparations to estimate expected profit depending on their waiting places.

Q *What kind of experiences does the Datalab members have? Is a newcomer allowed to work for the Datalab?*

A We have experts with different backgrounds including a data engineer who develops a big data technology, a machine learning engineer who applies an AI based technology to services, and a data analyzer who helps management's strategic decision making. I previously worked for Google Research at Mountain View as a machine learning engineer and joined Kakao Mobility Corp. early this year.

Like internet services in the 2000s and mobile services in the 2010s, I believe mobility services will make a big change again in the

2020s. We welcome a newcomer as long as he or she is willing to join us with data and AI technologies in a new era.

Q *What is the Datalab's future plan?*

A We are proceeding with different projects to apply data-based technologies to real services. We are also working on taxi matching tech, exact location estimation of both a passenger and a driver from incorrect GPS info, and platooning platform technology development for autonomous vehicles. By doing so, I want to contribute to establishing Kakao Mobility platforms that are popular among more citizens.

A change in travel due to 52-hour work week

Improved work-life balance and a change in travel

A change in travel due to 52-hour work week

In July 1, 2018, the 52-hour work week took effect. This allows 40 hours of regular work and 12 hours of overtime per week. This cuts 16 hours off a regular work week according to a revision to the Labor Standards Acts. Government organizations, state-run entities, and large companies and their affiliates with 300 or more employees only implemented this revision. However, this will extend to smaller firms gradually. The 52-hour work week is expected to enhance quality of life, create new jobs through job sharing, and boost consumption in leisure, cultural and educational activities.

Effective date of 52-hour rule by company type

Company Type	2018.7	2019.7	2020.1	2021.7	2022.1
300+ employees					
300+ employees (exceptional)					
50-299 employees					
5-49 employees					

Source: Ministry of Employment and Labor

Meanwhile, this rule is also changing citizens’ travel pattern. As more people leave work in time and spend less time on a company dinner, taxi boarding time is changing especially on the regions where there are a lot of large companies. In this section, Kakao T Taxi call data from July to August 2018, when the 52-hour work week became effective, is compared with data during the same period a year ago and how this rule is having an effect is examined.

ng time in a region with many large companies is changing

A change in travel due to
52-hour work week

Jongno-1·2·3·4-ga-dong, Seocho-2-dong, Yeoui-dong, and Sampyeong-dong where there are many large companies were examined. In Jongno-1·2·3·4-ga-dong located in the east of Gwanghwamun and Sejong-daero, there are many headquarters of large companies, government offices, and media companies. In Seocho-2-dong, there are affiliates of Samsung, Korea's largest conglomerate. In Yeoui-dong, there are Korea's top financial companies and the National Assembly building. In Sampyeong-dong, there are large IT companies including Kakao.¹⁹

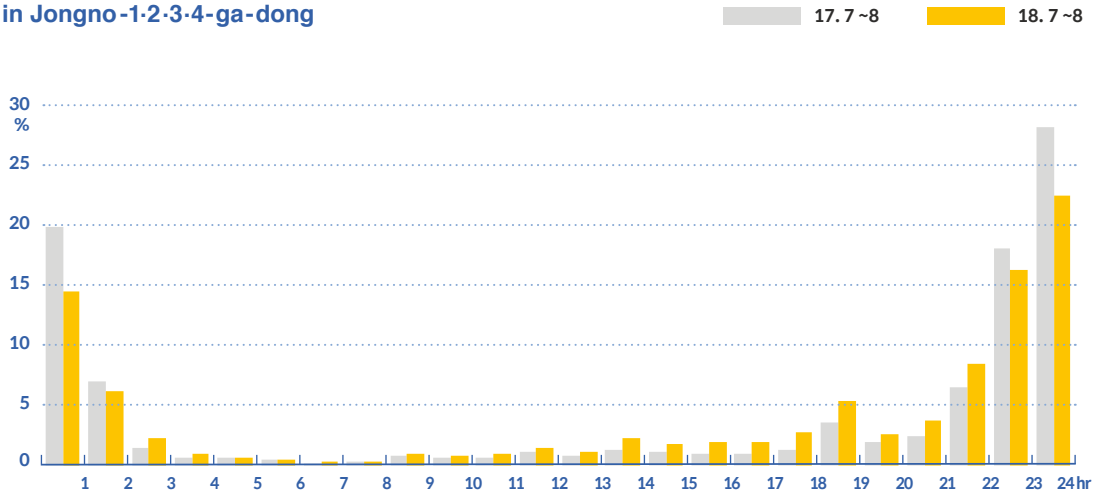
A change in time-based Kakao T Taxi calls in the above regions was examined. Time-based call rates were tracked to remove an absolute year-on-year increase in Kakao T Taxi calls.

As a result, since the 52-hour work week took effect in all target regions, while a slight increase in taxi boarding rates in the afternoon or evening was shown, a sharp decrease from 10pm to 2am was identified. This is interpreted that this new rule has contributed to leaving work earlier.

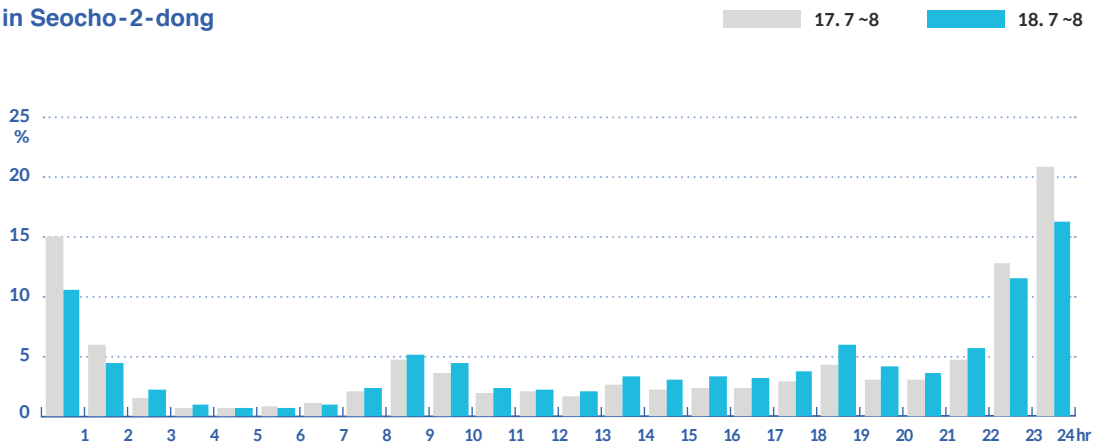
19) There are many large companies in these regions. However, small and medium sized companies, commercial districts, and residential districts are also located in these regions. For this reason, it's hard to see that this change directly resulted from a change in time to leave work at a large company. In addition, the cases, when a passenger caught a taxi in person or used a call taxi, were not excluded in this analysis.

A change in travel due to
52-hour work week

A time-based change in taxi call rates in Jongno-1·2·3·4-ga-dong

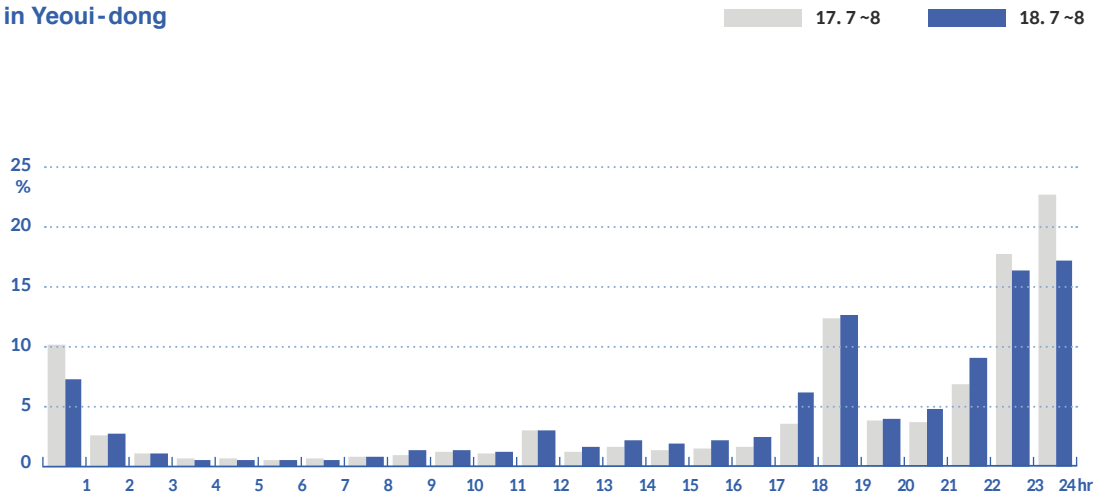


A time-based change in taxi call rates in Seocho-2-dong

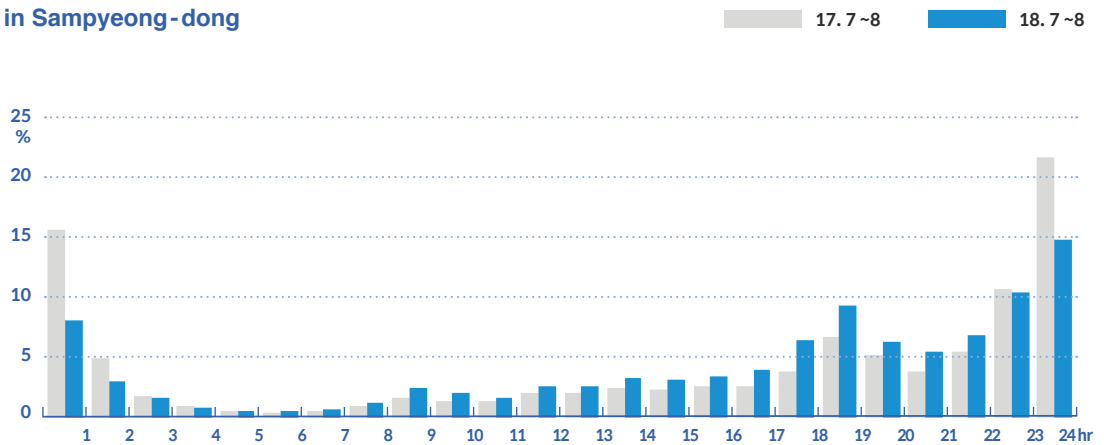


A change in travel due to
52-hour work week

A time-based change in taxi call rates in Yeoui-dong



A time-based change in taxi call rates in Sampyeong-dong



Any change in regions with many small and medium-sized companies?

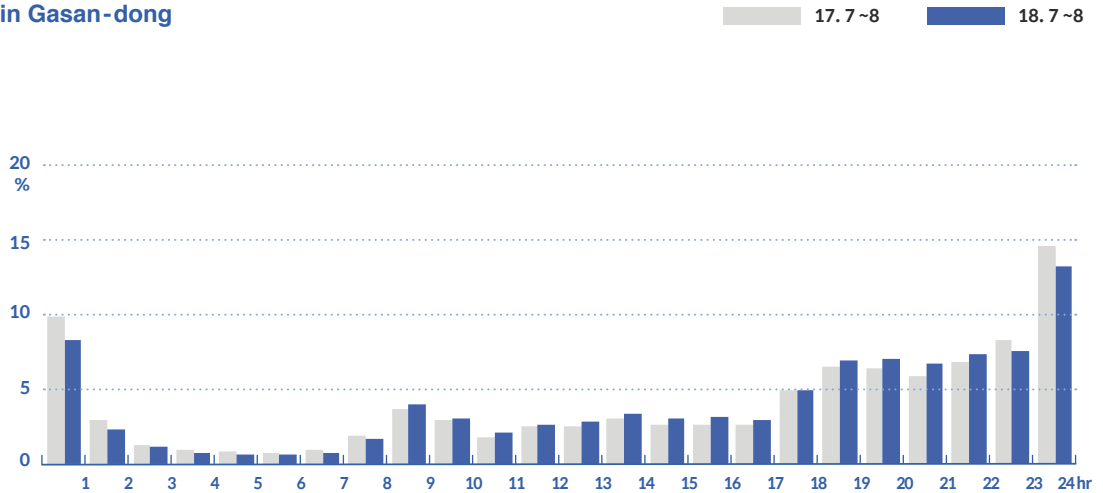
A change in travel due to
52-hour work week

In order to raise the credibility of analysis, Gasan-dong and Guro-3-dong were also analyzed. There are thousands of SMEs and venture companies at Gasan Digital Complex in Gasan-dong and Guro Digital Complex in Guro-3-dong.

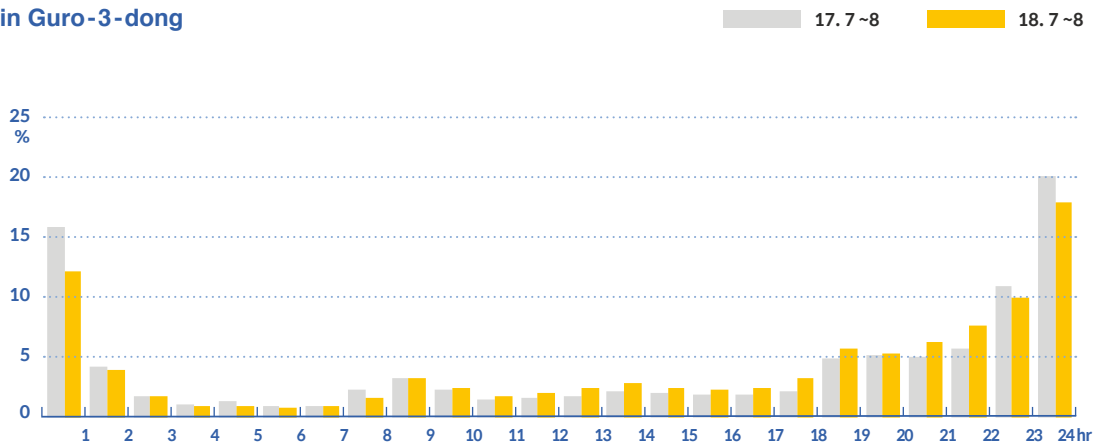
Compared to regions with many large companies, there was relatively not a big difference on a year-on-year basis. However, a slight decrease in rates after 10pm was found. Under the newly implemented 52-hour work week, there was limited, if any, change in time to leave work at SMEs.

A change in travel due to
52-hour work week

A time-based change in taxi call rates in Gasan-dong



A time-based change in taxi call rates in Guro-3-dong



No change in residential areas

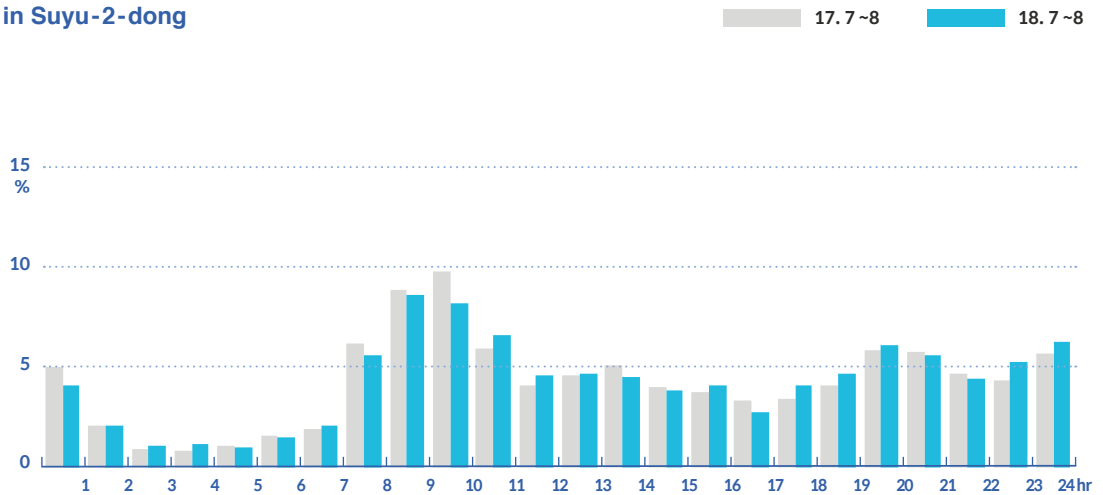
A change in travel due to
52-hour work week

In addition, Korea's representative residential areas Suyu-2-dong and Muak-dong were analyzed. Suyu-2-dong is a typical residential area mostly with apartment complexes, townhouses and multi-family houses. Muak-dong only consists of apartment complexes in the northeast region of the Independent Arch (Dong-nibmun).

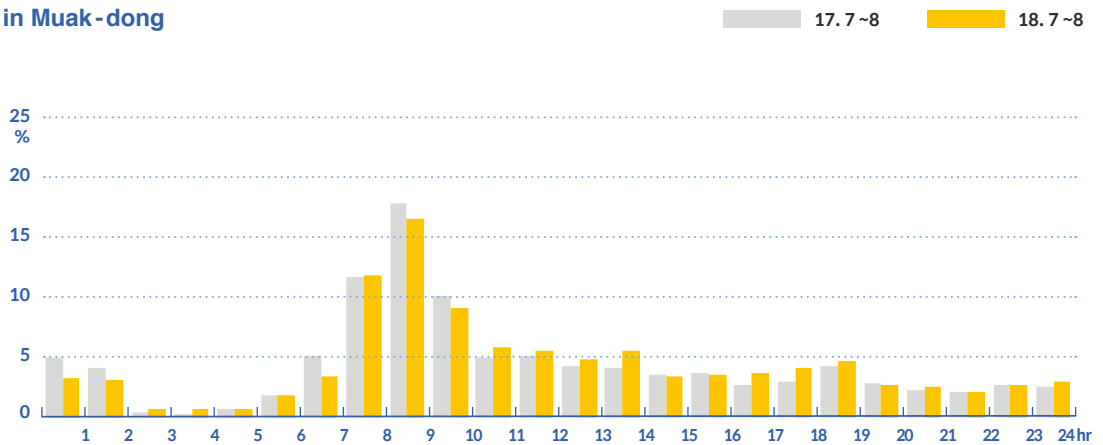
For two regions, there was no significant change in taxi boarding time on a year-on-year basis. There was also almost no change compared with regions with many large companies and regions with many SMEs. This means that there was a change in taxi boarding time only in company towns. There was also a change in travel patterns directly resulting from the 52-hour work week.

A change in travel due to
52-hour work week

A time-based change in taxi call rates in Suyu-2-dong



time-based change in taxi call rates in Muak-dong



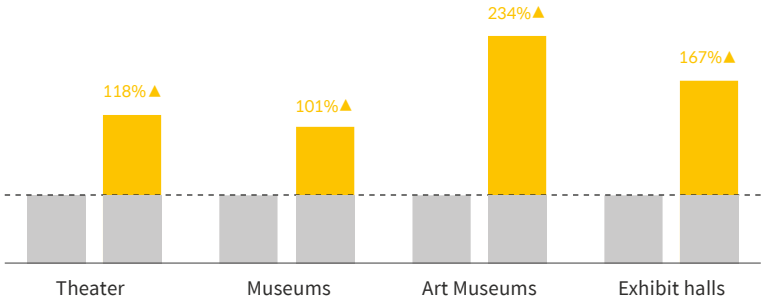
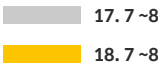
An increase in calls to cultural and sports facilities

A change in travel due to 52-hour work week

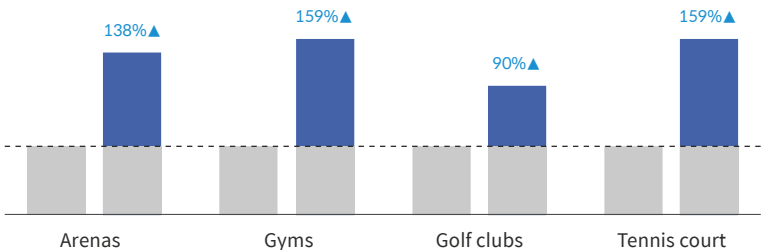
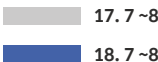
Whether a travel to cultural and sports facilities is actually increasing was analyzed based on destination data. Kakao T Taxi calls from July to August 2018 was analyzed on a year-on-year basis; whether calls to cultural facilities including theaters, museums, art museums, and exhibit halls and sports facilities including arenas, gyms, golf clubs, and tennis courts have increased was also examined. The number of destination-based calls was standardized by total number of calls during relevant period to maintain the fairness of analysis.

As a result, there was a big increase in travel to cultural and sports facilities in all fields since the 52-hour work week was introduced. Calls to theaters, museums, art museums, and exhibit halls increased by 118 percent, 101 percent, 234 percent and 167 percent, respectively. In addition, calls to arenas, gyms, golf clubs, and tennis courts increased by 138 percent, 159 percent, 90 percent, and 159 percent, respectively. A consumption boost in leisure, cultural, and educational fields, which is one of the purposes of the 52-hour work week, was identified from travel data.

An increase in taxi calls to cultural facilities



An increase in taxi calls to sports facilities



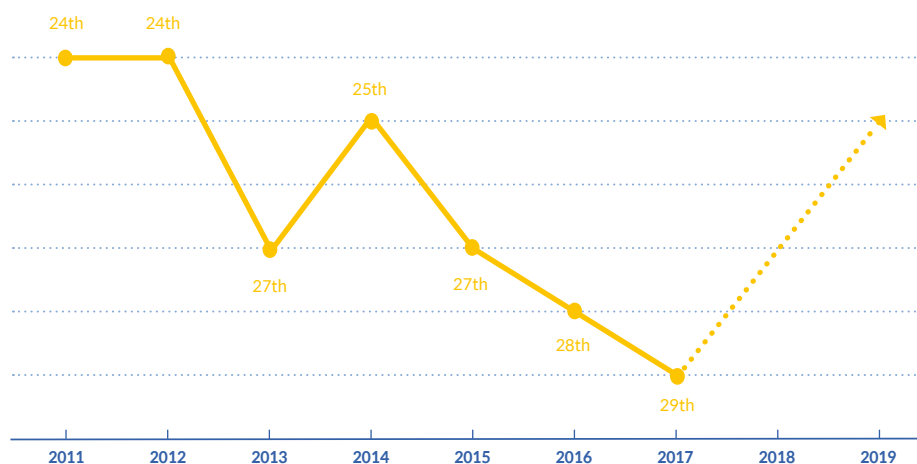
For a better life

A change in travel due to
52-hour work week

This analysis showed a remarkable change in travel data since the 52-hour work week was implemented. A clear decrease in taxi call rates in regions with many large companies in the middle of night and similar effects in regions with many SMEs were found. Data confirmed that more workers were going to cultural and sports facilities after leaving work early.

OECD announces the Better Life Index every year. Korea ranked the 24th in 2011 when quality of life was investigated first, and fell to 29th in 2017²⁰. Economic growth and better corporate management are important. However, a happier life of people is the most important. As the 52-hour work week expands, improved work and life balance and quality of life are expected.

Korea's Better Life Index Change



Source: OECD

20) Ranked among 36 countries until 2015 and 38 countries from 2016

Using Kakao T Taxi smartly

This section introduces different ways to use Kakao T Taxi more effectively from the perspective of users. This section also introduces where a taxi is matched with a passenger more successfully in major busy areas, calling a taxi instead of seniors or customers, calling a local taxi only, Kakao T for Business with which workers can easily take a taxi without bothering about payment, foreign users' status of use, and more.

Points with high matching rate in major busy areas

There are different ways to set departure and destination on Kakao T Taxi. Major buildings and subway stations can be set in person and street names or land lots can be also entered. In a call card exposed to taxi drivers, departure and destination info and administrative district entered by a passenger are only shown. Since drivers decide whether or not to accept a match only based on a call card, how to enter departure and destination info is important.

This section introduces some points with especially high matching rate when a passenger enters departure points around Itaewon, Gangnam station, Hongik Univ. streets, and Sadang station. This analysis is based on the period from September 2017 to August 2018 and only points with 1,000 or more calls were examined.

As a result, when a passenger provided an accurate location of a specific building as a departure point to prevent a driver's confusion, matching rate was high. For example, eTEC ville in Itaewon or Starbucks Seocho Paragon, even located at a small side street, showed relatively high matching rate. However, wide areas like Itaewon Station Line No. 6 as a departure point showed low matching rate.

Top 10 points with high matching rate in Itaewon

No	Departure
1	 Itaewon eTEC ville
2	 Munhwa Jujeom
3	 Ilsongjeong
4	 Embassy of Georgia
5	 King Club
6	 Itaewon Police Station
7	 GS25 Itaewon
8	 Itaewon 119 Safety □ Center
9	 Hamilton Hotel
10	 IBK Industrial Bank of Korea Itaewon

Sep. 2017 - Aug. 2018

Top 10 points with high matching rate in Gangnam Station

No	Departure
1	 Starbucks Seocho Paragon
2	 Samsung Electronics Seocho BLDG
3	 Woosung 5-cha Apt
4	 Samsung C&T Seocho BLDG
5	 Seocho Paragon
6	 Samsung Fire & Marine Seocho BLDG
7	 Gangnam Daesung Institute
8	 Poongrim I-won Magic
9	 Yeoksam Prius
10	 Sarihyeon Seocho



Sep. 2017 - Aug. 2018

Top 10 points with high matching rate in Hongik Univ. streets

No	Departure
1	 Aekyung Design Center
2	 Braka BLDG
3	 Daenggu Udon
4	 Ryse Autograph Collection
5	 Mr. Blue BLDG
6	 Seogyo Catholic Church
7	 Pungcheonjangeo Yeonnam
8	 Seil BLDG
9	 Donco Bossam
10	 Donggyo-dong IK2 BLDG

Sep. 2017 - Aug. 2018

Top 10 points with high matching rate in Sadang Station

No	Departure
1	 Donghwa BLDG
2	 Seocho Saturday Cultural Market
3	 Woongji BLDG
4	 Deokin BLDG
5	 Cheonbo BLDG
6	 Sungkwang BLDG
7	 Le Meilleur Gangnam Town
8	 Dongmyeong BLD
9	 Kodachaya Sadang
10	 Yong BLDG

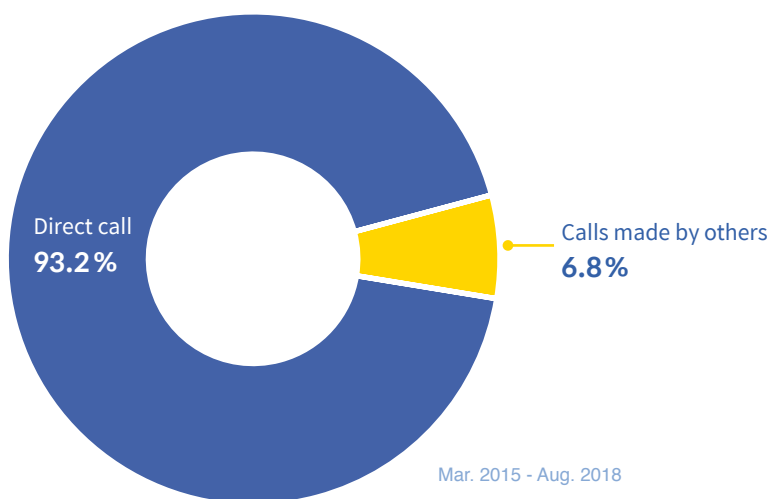
Sep. 2017 - Aug. 2018

Calling a taxi for other people

Using Kakao T Taxi smartly

Someone else can call a taxi instead of a passenger on Kakao T Taxi. In general, when a call was made more than 1 km away from a passenger, this presumed that a passenger did not call a taxi in person. This case amounts to 6.8 percent of total operations on Kakao T Taxi. It was estimated that a call was made by someone else for seniors or kids who are not familiar with smartphones or apps or by a company for important customers.

Calls made by others

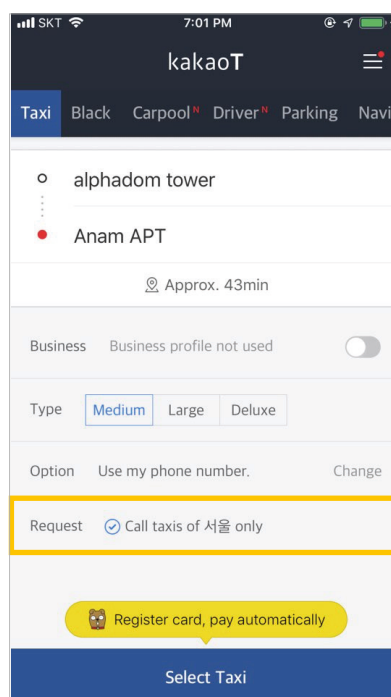


Local taxi only raises matching rate

Using Kakao T Taxi smartly

When departure and destination points cross a service district boundary, a passenger can call a local taxi only. For example, when a passenger travels from Bundang to Gangnam, Seoul taxi only is generated as optional. Due to a regulation on Taxi service districts, after a Seongnam taxi picks up a passenger in Seongnam then drops off in Seoul, this taxi must pick up only a passenger going back to Seongnam. A passenger going to other regions is not allowed. This rule was also applied to Kakao T matching algorithms. Accordingly, in some cases, when Seoul taxi only tab is selected, matching rate can be higher. In addition, when a local taxi only is called, extra charge on other regions is not applied, lowering taxi fares.

Local taxi only function on Kakao T Taxi

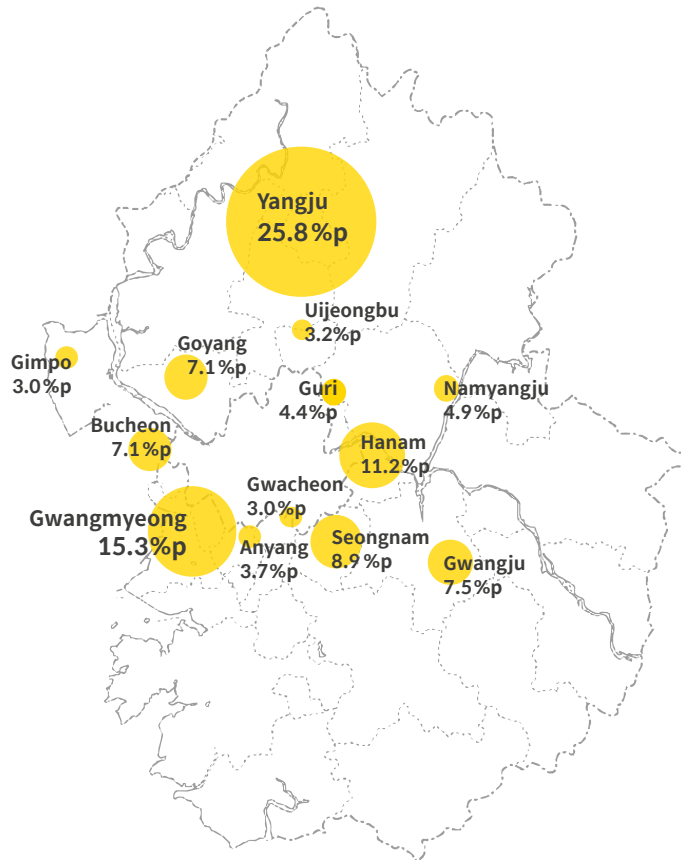


Local taxi only

High matching rate with local taxi only feature in Seoul Metropolitan Area

Based on travel from Seoul Metropolitan area to Seoul in August 2018

How higher matching rate of local taxi only compared to calling all taxis is shown.



Based on data, the cases when using a local taxi only feature especially raises matching rate. Among 1,000 or more calls with a local taxi only in August 2018, travel from Seoul Metropolitan area to Seoul was examined. As a result, in most cities including Yangju, Gwangmyeong, Hanam, Seongnam, Gwangju, Goyang, Bucheon, Namyangju, Guri, Uijeongbu, Gwacheon, and Gimpo in Gyeonggi-do, matching rate when a local taxi only was called became higher compared to regular calls.

Kakao T for Business

Using Kakao T Taxi smartly

In February 2018, Kakao T for Business was introduced for companies and organizations. In many cases, when they take a taxi due to outside work, a business trip, or overtime work, workers should receive each receipt and submit it to the general affairs team and this team also should handle all receipts. With Kakao T for Business, however, a passenger can get off on arrival without paying. In addition, payment is made by a pre-registered credit card. Kakao T for Business charges 1,000 won on each.

Kakao T for Business secured 1,124 customers as of the end of September 2018 only six months after its launch and recorded 190,000 calls in total.

Total No. of customer of Kakao T for Business

1,124 customers

Feb. 2018 - Sep. 2018

Total no. of calls of Kakao T for Business

189,254 calls

Feb. 2018 - Sep. 2018

Kakao T Taxi for foreigners











Using Kakao T Taxi smartly

Kakao T Taxi supports Korean, English, Japanese and more languages. When a language setting is changed on a smartphone, the same language is automatically applied to the Kakao T app. Accordingly, foreigners can also use the Kakao T Taxi easily. With Kakao T Taxi, a driver's refusal of foreigners' ride due to communication problem or price-gouging practices can be prevented.

When a foreign language is set on a smartphone, foreigners' favorite hot places in Korea can be figured out based on Kakao T Taxi's top departure and destination points. Since foreigners tend to use a taxi rather than public transportation compared with Koreans, their travel info can be used for boosting the tourism industry.

Top departure point among foreigners on Kakao T Taxi from September 2017 to August 2018 is Itaewon. Seoul downtown, Gangnam, and Yeouido are also included in top departure points. Meanwhile, top destination points include airports, railway stations, bus terminals, Itaewon, Hongik Univ. and Seoul National Univ.

Top 20 departures of Kakao T Taxi for foreigners

No	Departure	Location
1	 Itaewon 119 Safety Center	Yongsan, Seoul
2	 Itaewon Station Line 6	Yongsan, Seoul
3	 Itaewon Tourist Information Center	Yongsan, Seoul
4	 Mirae Asset Center 1 BLDG	Junggu, Seoul
5	 Itaewon Street	Yongsan, Seoul
6	 Conrad Seoul	Yeongdeungpo, Seoul
7	 State Tower Namsan	Junggu, Seoul
8	 CGV Gangnam	Gangnam, Seoul
9	 Gangnam Finance Center	Gangnam, Seoul
10	 Hamilton Hotel	Yongsan, Seoul

No	Departure	Location
11	 Itaewon Station Exit 4	Yongsan, Seoul
12	 Itaewon Station Exit 1	Yongsan, Seoul
13	 Cheil Worldwide	Yongsan, Seoul
14	 Signature Tower	Junggu, Seoul
15	 Giordano Corporation Gangnam	Seocho, Seoul
16	 Kakao Friends Store Gangnam	Seocho, Seoul
17	 Seoul Foreign School	Seodaemun, Seoul
18	 365PLUS Yongin Eunnam	Yongin, Gyeonggi
19	 Four Seasons Hotel	Jongno, Seoul
20	 Hongik Univ. Station Exit 9	Mapo, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Top 20 destinations of Kakao T Taxi for foreigners

No	Destination	Location
1	 Itaewon Station Line 6	Yongsan, Seoul
2	 Seoul Station	Yongsan, Seoul
3	 Jeju International Airport	Jeju, Jeju
4	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul
5	 Daejeon Station	Donggu, Daejeon
6	 U Square Gwangju Bus Terminal	Seogu, Gwangju
7	 Gangnam Station Line 2	Gangnam, Seoul
8	 Incheon International Airport Terminal 1	Junggu, Incheon
9	 Hongik Univ. Station Nine 2	Mapo, Seoul
10	 Seoul Nat'l Univ. Station Line 2	Gwanak, Seoul

No	Destination	Location
11	 Yongsan Station	Yongsan, Seoul
12	 Gimpo International Airport International Terminal	Gangseo, Seoul
13	 Dongdaegu Station	Donggu, Daegu
14	 Busan Station	Donggu, Busan
15	 Sillim Station Line 2	Gwanak, Seoul
16	 Suwon Station Line 1	Suwon, Gyeonggi
17	 Suseo Station	Gangnam, Seoul
18	 Mirae Asset Center 1 BLDG	Junggu, Seoul
19	 Seoul Express Bus Terminal	Seocho, Seoul
20	 Cheonan Asan Station	Asan, Chungcheongnam

Based on services completed from Sep. 2017 to Aug. 2018

Premium mobility

Kakao T Black

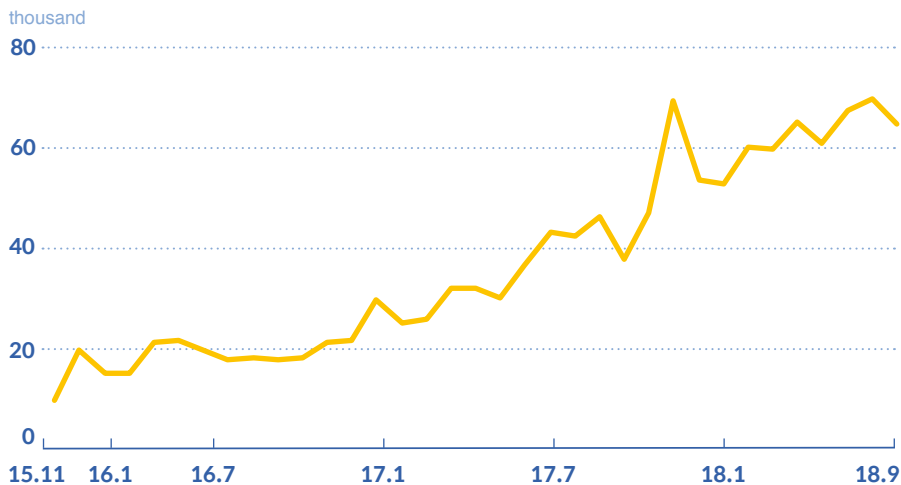
Kakao T Black's continuous growth

Premium mobility Kakao T Black

Kakao T Black, a premium taxi under the Passenger Transport Service Act, is Kakao Mobility Corp's premium taxi service using 2,800CC or larger premium vehicles. Since taxi drivers who completed courses for premium taxis provided by Kakao Mobility Corp. can provide services, a passenger can enjoy kinder and more comfortable services. In addition, a passenger can use a pre-registered credit card on arrival and taxi fares are calculated using GPS-based meters, instead of regular meters.

This premium taxi charges 2.5 times higher rates than regular medium size taxis. For this reason, there were concerns about limited market demand due to higher rates. However, Kakao T Black users have been continuously increasing since its launch in November 2015.

No. of Kakao T Black operations per month



Based on services completed from Nov. 2015 to Sep. 2018.

Who uses a premium taxi?











Premium mobility Kakao T Black

Time-based departure points and destination points based on services completed were examined to infer who, when and how of using Kakao T Black.

For departure points early in the morning, Seoul's representative hot place Itaewon was in upper ranks. In the morning, premium apartment complexes in Seocho, Gangnam, Seongdong, and Yongsan were in the top-ranked departure points. In the afternoon, department stores or plastic surgery clinics along with these premium apartment complexes were in the upper ranks. In the evening and at night, an increase in users was shown in business districts and hotels in Seoul.

AM 2:00 - 7:00

Top 10 departure points of Kakao T Black in the early morning

No	Departure	Location
1	 Itaewon Station Line 6	Yongsan, Seoul
2	 Itaewon 119 Safety Center	Yongsan, Seoul
3	 Itaewon Street	Yongsan, Seoul
4	 Itaewon Tourist Information Center	Yongsan, Seoul
5	 Itaewon Station Exit 4	Yongsan, Seoul
6	 Hamilton Hotel	Yongsan, Seoul
7	 Mirae Asset Center 1 BLDG	Junggu, Seoul
8	 Hanwha BLDG	Junggu, Seoul
9	 Itaewon Station Exit 1	Yongsan, Seoul
10	 Yeongil BLDG	Yongsan, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

AM 7:00 - 10:00

Top 10 departure points of Kakao T Black in the morning

No	Departure	Location
1	 Banpo Xi	Seocho, Seoul
2	 Raemian Oksu Riversen	Seongdong, Seoul
3	 Oksu Hyundai	Seongdong, Seoul
4	 Banpo Jugong 1-Danji	Seocho, Seoul
5	 Raemian Firststage	Seocho, Seoul
6	 Dogok Rexle	Gangnam, Seoul
7	 Ichon Samsung River Suite	Yongsan, Seoul
8	 Seoul Forest Prugio	Seongdong, Seoul
9	 The'Oville Gangnam	Gangnam, Seoul
10	 Geumho Xi 1-cha	Seongdong, Seoul









Based on services completed from Sep. 2017 to Aug. 2018

AM 10:00 - PM 5:00Top 10 departure points of
Kakao T Black in the daytime

No	Departure	Location
1	 Mirae Asset Center 1 BLDG	Junggu, Seoul
2	 Trimage APT	Seongdong, Seoul
3	 Acrovista	Seocho, Seoul
4	 Pie'n Polus Officetel	Gangnam, Seoul
5	 Banpo Xi	Seocho, Seoul
6	 Cheongdam Xi	Gangnam, Seoul
7	 Hanam The Hill	Yongsan, Seoul
8	 Hyundai Department Store Apgujeong	Gangnam, Seoul
9	 Banobagi Plastic Surgery	Gangnam, Seoul
10	 Tower Palace 1-cha	Gangnam, Seoul





Based on services completed from Sep. 2017 to Aug. 2018

PM 5:00 - 10:00Top 10 departure points of
Kakao T Black in the evening

No	Departure	Location
1	 Mirae Asset Center 1 BLDG	Junggu, Seoul
2	 City Airport	Gangnam, Seoul
3	 Seoul Finance Center	Junggu, Seoul
4	 Conrad Seoul	Yeongdeungpo, Seoul
5	 Grand InterContinental	Gangnam, Seoul
6	 Hanwha BLDG	Junggu, Seoul
7	 Four Seasons Hotel	Jongno, Seoul
8	 Galleria Department Store WEST	Gangnam, Seoul
9	 Pie'n Polus Officetel	Gangnam, Seoul
10	 Foresta Cheongdam	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

PM 10:00 - AM 2:00Top 10 departure points of Kakao
T Black in the middle of the night

No	Departure	Location
1	 Gangnam Finance BLDG	Gangnam, Seoul
2	 Signature Tower	Junggu, Seoul
3	 State Tower Namsan	Junggu, Seoul
4	 Mirae Asset Center 1 BLDG	Junggu, Seoul
5	 Seoul Finance Center	Junggu, Seoul
6	 Four Seasons Hotel	Jongno, Seoul
7	 CGV Gangnam	Gangnam, Seoul
8	 Hanwha BLDG	Junggu, Seoul
9	 Jonggak Station Exit 12	Jongno, Seoul
10	 Posco P&S Tower	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Where a premium taxi is going

Premium mobility Kakao T Black

For destination points in the early morning, main streets in Gangnam and major subway stations in Seoul were in the upper ranks. In the morning, downtown, major business districts, and railway stations were in the upper ranks. Meanwhile, during daytime, major department stores in Gangnam and Seocho were dominant in the upper ranks. In the evening, major hotels in Seoul were in the upper ranks. In the middle of the night, hot places in Itaewon and Gangnam and major residential districts were mixed in the upper ranks.

AM 2:00 - 7:00

Top 10 destination points of Kakao T Black in the early morning

No	Destination	Location
1	 City Airport	Gangnam, Seoul
2	 Arena Club	Gangnam, Seoul
3	 Nakseongdae Station Line 2	Gwanak, Seoul
4	 Sinsa Station Line 3	Gangnam, Seoul
5	 Itaewon Station Line 6	Yongsan, Seoul
6	 Seoul Station	Yongsan, Seoul
7	 Sinchon Station Line 2	Seodaemun, Seoul
8	 Gangnam Station Line 2	Gangnam, Seoul
9	 Sillim Station Line 2	Gwanak, Seoul
10	 Seoul Nat'l Univ. Station Line 2	Gwanak, Seoul

Based on services completed from Sep. 2017 to Aug. 2018











AM 7:00 - 10:00

Top 10 destination points of Kakao T Black in the morning

No	Destination	Location
1	 Mirae Asset Center 1 BLDG	Junggu, Seoul
2	 Seoul Station	Yongsan, Seoul
3	 City Airport	Gangnam, Seoul
4	 Gangnam Finance BLDG	Gangnam, Seoul
5	 Yongsan Station	Yongsan, Seoul
6	 Seoul Finance Center	Junggu, Seoul
7	 Daewoo E&C	Jongno, Seoul
8	 The Catholic Univ. Seoul St. Mary's Hospital	Seocho, Seoul
9	 Seoul Square	Junggu, Seoul
10	 Cheil Worldwide	Yongsan, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

AM 10:00 - PM 5:00Top 10 destination points of
Kakao T Black in the daytime

No	Destination	Location
1	 City Airport	Gangnam, Seoul
2	 Seoul Station	Yongsan, Seoul
3	 Shinsegae Department Store Gangnam	Seocho, Seoul
4	 Mirae Asset Center 1 BLDG	Junggu, Seoul
5	 Hyundai Department Store Trade Center	Gangnam, Seoul
6	 Hyundai Department Store Apgujeong	Gangnam, Seoul
7	 Galleria Department Store WEST	Gangnam, Seoul
8	 The Westin Chosun Seoul	Junggu, Seoul
9	 Hotel Shilla	Junggu, Seoul
10	 Gimpo International Airport Domestic Terminal	Gangseo, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

PM 5:00 - 10:00Top 10 destination points of
Kakao T Black in the evening

No	Destination	Location
1	 Grand Hyatt Seoul	Yongsan, Seoul
2	 Seoul Station	Yongsan, Seoul
3	 Imperial Palace Seoul	Gangnam, Seoul
4	 Hotel Shilla	Junggu, Seoul
5	 Gangnam Station Line 2	Gangnam, Seoul
6	 CGV Cheongdam Cine City	Gangnam, Seoul
7	 Sinsadong Garosu-gil Road	Gangnam, Seoul
8	 Trimage APT	Seongdong, Seoul
9	 The Westin Chosun Seoul	Junggu, Seoul
10	 Banpo Xi	Seocho, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

PM 10:00 - AM 2:00Top 10 destination points of Kakao
T Black in the middle of the night

No	Destination	Location
1	 Itaewon Station Line 6	Yongsan, Seoul
2	 Banpo Xi	Seocho, Seoul
3	 Raemian Oksu Riversen	Seongdong, Seoul
4	 Seolleung Station Line 2	Gangnam, Seoul
5	 Hamilton Hotel	Yongsan, Seoul
6	 Seoul Nat'l Univ. Station Line 2	Gwanak, Seoul
7	 Grand Hyatt Seoul	Yongsan, Seoul
8	 Nakseongdae Station Line 2	Gwanak, Seoul
9	 Gangnam Station Line 2	Gangnam, Seoul
10	 Namsan Town APT	Junggu, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Travel wherever you want outside the city

Premium mobility Kakao T Black

Kakao T Black provides services only in Seoul and Incheon. However, as long as a call is made in Seoul or Incheon, operations are allowed elsewhere. When destination points are in Seoul or Incheon, operations are also allowed elsewhere.

Cases of traveling outside Seoul were tracked. The most remarkable and frequent travel was between Seoul and Incheon International Airport. Since passengers need to travel a long distance to the airport with many luggage in most cases, it seems that they chose Kakao T Black for convenience.

Kakao T Black fandom

Premium mobility Kakao T Black

Kakao T Black was an unfamiliar service when it was launched. However, it has secured users because it has a really strong fandom. Among regular users who have taken a Kakao T Black twice or more, almost 75 percent used this service again within three months. These regular users are the most important part of Kakao T Black growth.

Kakao T Black retention rate within three months among regular users

75 percent

Based on services completed from Jan. 2017 to May 2018

Future of premium mobility services

Premium mobility Kakao T Black

Kakao T Black's continuous growth shows that there are obvious passengers who put a value on convenient travel even at a higher price; the number of passengers is increasing.

In order to expand the taxi market, it is very important to make efforts to provide services that meet varied needs of passengers and more personalized travel services. Kakao T Black, a premium taxi service provided by Kakao Mobility Corp., is the beginning of such services.

Kakao T Black is making preparation to respond to unstructured taxi supply in the long term by introducing better features and efficient fare systems. Its ultimate goal is to meet varied travel demand and enhance drivers' income and career values.

“Why I chose Kakao T Black”

—
Kakao T Black Driver, Kim

Seoul, 57

Q *What did you do before you joined Kakao T Black?*

A I operated a medium sized taxi for a long time. My total experience as a taxi driver is 36 years including 16 years as a hired taxi driver and 20 years as an owner driver.

Q *Why did you decide to join Kakao T Black? What is the difference?*

A My coworkers strongly recommended. I am very happy with Kakao T Black. Above all, I have fewer business hours. When I drove a medium sized taxi, I had to conduct 25 operations for 15 hours on average. Since I joined Kakao T Black, I spend only 10 hours for 10 to 15 operations on average. For a medium sized taxi, I drove 250-300 km per day because I had to hang around waiting for a passenger. However, with Kakao T Black, I only drove 150-200 km. Kakao T Black's merit is higher income even with less business hours.

Q *Is there any difference in passengers?*

A There is a big difference. When I drove a medium sized taxi, some drunk passengers relieved stress against a driver. Although I have 36-year experience, violent passengers embarrassed me. After I joined Kakao T Black, I have never experienced such a passenger. Coworkers also almost never have such a case.

Relatively young people in their 30s and 40s, especially office workers, use Kakao T Black. Many passengers live in a premium apartment. For this reason, many calls are made in Gangnam or within the four main gates of old Seoul. Unfortunately, many calls are not made in Mokdong close to Gangseo where I live.

Q *What do you do while you are waiting for a call?*

A I also spend some time on my phone... (laughing) and stretching while waiting for a call because I personally take care of health. When I drove a medium sized taxi, I had no time to stretch because I needed to hang around. However, with Kakao T Taxi, I am happy to have such time. Coworkers sometimes gather while waiting for a call together. I spend some time on talking with drivers around Hannam where we took courses to join Kakao T Taxi. Also, we are contacting each other and sharing info in a Kakao Talk group chat room.

Q *When do you feel rewarded with Kakao T Black?*

A I feel rewarded when I am respected and treated nicely. As I learned from the courses for Kakao T Taxi drivers, I always provide a door service and do not turn on the radio. When I drove a medium sized taxi, I talked much. However, with Kakao T Black, I save my words in case a passenger feels uncomfortable. When a passenger talks to me, his or her words are valuable to me. In addition, when such words are with respect, I feel rewarded.

Q *Do you have anything else to talk about or anything that you want from Kakao?*

A I want Kakao to promote Kakao T Black more actively. I expect a synergic effect between drivers who provide quality services and Kakao that promote Kakao T Black more widely.

Kakao T Driver

**Why call a designated
driver in broad daylight?**

Is drinking the only reason for calling a designated driver?

Why call a designated driver
in broad daylight?

People tend to think that you call a designated driver when you had a drink and cannot operate your own vehicle. Thus the word 'designated driver service' brings up an image of a group of workers waiting for their drivers after a company meal that ended in the middle of the night. It is true that many calls are made at late hours by people who have had a few or more drinks. But the truth is, calls are made at any time of the day, and there are some people who call for a designated driver in broad daylight. Why would they?

This article starts from a question that there might be a new reason for using the designated driver service that goes beyond the fixed idea of 'night time' and 'drinking.' To find this out, we looked into the operation data to see if there was a difference between daytime and nighttime operations.

Reason for nighttime calls?

Yes, it's drinking

Why call a designated driver
in broad daylight?

We first checked the nighttime drivers' departure and destination points by looking at the Kakao T Driver operation data from 6 pm to 6 am.

Nighttime operation data clearly showed the pattern of departing from a city center to arriving at residential areas. Gangnam Finance Center where offices are concentrated, Uspace in Pangyo Techno Valley, Yeongtonggu Office where the Headquarters of Samsung Electronics is located, Hannamdong Parking Lot near Itaewon, and Unam Parking Lot near Unamteul Korean Food Street were the top departure

points. Noryangjin Fish Market and Garak Mall were also in the upper ranks. Most of these places are highly related to drinking.

Meanwhile, most of the destinations turned out to be apartment complexes. This is because most of the users called the designated driver service to get back home. As a result, we can infer that nighttime calls are made by users who are trying to go home after having a drink in city centers.

Top 10 departure points of designated driver service in the nighttime

No	Departure	Location
1	 Uspace	Seongnam, Gyeonggi
2	 Yeongtonggu Office	Suwon, Gyeonggi
3	 Gangnam Finance Center	Gangnam, Seoul
4	 Garak Mall	Songpa, Seoul
5	 Giheunggu Office	Yongin, Gyeonggi
6	 Hannamdong Parking Lot	Yongsan, Seoul
7	 Unam Parking Lot	Osan, Gyeonggi
8	 Noryangjin Fish Market	Dongjak, Seoul
9	 Dream City	Yeonsu, Incheon
10	 Suwon City Hall	Suwon, Gyeonggi

Based on services completed from Sep. 2017 to Aug. 2018

Top 10 destination points of designated driver service in the nighttime

No	Destination	Location
1	 Banpo Xi	Seocho, Seoul
2	 Godeok Raemian Hillstate	Gangdong, Seoul
3	 Hangang Central Xi 1-danji	Gimpo, Gyeonggi
4	 Dogok Rexle	Gangnam, Seoul
5	 Raemian Sur	Gwacheon, Gyeonggi
6	 Suwon Hanil Town	Suwon, Gyeonggi
7	 Gandong Lotte Castle First	Gangdong, Seoul
8	 Raemian Firststage	Seocho, Seoul
9	 Seolleung Station Line 2	Gangnam, Seoul
10	 Poil Xi	Uiwang, Gyeonggi

Based on services completed from Sep. 2017 to Aug. 2018

Daytime calls - what's the difference with nighttime?

Why call a designated driver
in broad daylight?

Although not as frequent as the nighttime calls, daytime calls are being made. In order to find out the departure and destination data of designated driver service users in the daytime, we looked at the Kakao T Driver operation data from 6 am to 6 pm.

There was a slight change in the upper ranks of the departure list, but most of the places were related to drinking. However, there was a distinct difference in the destination list - while most of the destinations were focused on apartment complexes in the nighttime, in the daytime it was

focused on office areas and city centers. No. 1 destination was LS Tower located near Anyang Kukje Yutongdanji and no. 2 was Pangyo Station where Pangyo Techno Valley is located at. Users were moving from one city center to another.

This shows that the purpose of daytime calls was not going home. Users who started drinking at an early hour or had their drinks until dawn were going to somewhere else than their homes. Departure and destination points were mostly Seocho and Gangnam, showing high operation rate within Seoul compared to nighttime calls.

Top 10 departure points of designated driver service in the daytime

No	Departure	Location
1	 LEX Tourist Hotel	Gangnam, Seoul
2	 Arena Club	Gangnam, Seoul
3	 The Riverside Hotel	Seocho, Seoul
4	 Hotel Prima Seoul	Gangnam, Seoul
5	 Hyundai 5-cha Apt.	Gangnam, Seoul
6	 Hannamdong Parking Lot	Yongsan, Seoul
7	 You and Me Karaoke	Seocho, Seoul
8	 Eco lab BLDG	Seongnam, Gyeonggi
9	 The Kunjip	Gangnam, Seoul
10	 Saebyeokjip Cheongdam	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Top 10 destination points of designated driver service in the daytime

No	Destination	Location
1	 LS Tower	Anyang, Gyeonggi
2	 Pangyo Station, Sinbundang Line	Seongnam, Gyeonggi
3	 Trimage APT	Seongdong, Seoul
4	 Banpo Xi	Seocho, Seoul
5	 Singeumho Park Xi	Seongdong, Seoul
6	 Gangnam Station Line 2	Gangnam, Seoul
7	 Yongmun Station Parking Lot 2	Yangpyeong, Gyeonggi
8	 The Riverside Hotel	Seocho, Seoul
9	 Raemian Firststage	Seocho, Seoul
10	 Seolleung Station Line 2	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

Interesting departures, hospitals and golf clubs

Why call a designated driver in broad daylight?

Top 10 departure and destination points did not give us any new ideas as to why daytime calls were made. Thus we looked at the lower ranks and found out interesting departure points that made us wonder the reason for calling a designated driver.

Hospitals, for example big sized hospitals, health examination centers, and plastic surgery centers, were one of them. It is clear that calling a designated driver at a hospital has nothing to do with drinking as alcohol is strictly prohibited in such places. We can easily imagine some situations where you took your car to the hospital, but could not drive back home due to a small

surgery, a conscious sedation endoscopy, or a drug injection. In this case calling a designated driver would be a safe and comfortable option for getting back home.

Golf clubs, airports, kindergartens, and elementary schools were also in the departure list. It could be possible that the user had a drink around these places and called a designated driver. However, it is more plausible to think that the calls were made because the user was too tired after exercising in the early morning, had a jet lag, or couldn't drive while taking care of little children.

Hospitals as departure points of designated driver service

No	Departure	Location
81	The Catholic Univ. Seoul St. Mary's Hospital	Seocho, Seoul
86	Seoul Hanyakbang	Hanam, Gyeonggi
123	Asan Medical Center	Songpa, Seoul
125	KMI Gangnam Center	Gangnam, Seoul
136	Yonsei Plastic Surgery Center	Gangnam, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

No	Departure	Location
155	Idea Clinic	Gangnam, Seoul
181	Samsung Medical Center	Gangnam, Seoul
215	Seoul National University Hospital	Jongno, Seoul
218	Asan Medical Center New Building Parking Lot	Songpa, Seoul
251	Seocho Sebarun Hospital	Seocho, Seoul

Based on services completed from Sep. 2017 to Aug. 2018

The future of designated driver service and innovation of moving

Why call a designated driver
in broad daylight?

Not everyone can afford to have a private driver, but there are times when you need one. As seen above, there could be various reasons aside from drinking.

More new ways to improve mobility and enhance people's lives are being introduced. There may be different stories as to why people can't drive on their own. If this problem could be resolved with the help of a designated driver service, this also could be called as an innovation of mobility. As mobility innovation spreads worldwide, designated driver service is also expanding its scope to increase the convenience of mobility as part of this innovation.

“I called a driver after conscious sedation endoscopy”

— Kakao T Driver user, Chae
Seongnam Gyeonggi, 34

Q *How did you first encounter Kakao T Driver and how are you using it?*

A I saw an ad and thought it was interesting, so I made a call. Most of the calls were made when I wanted to go home after having a drink.

Q *Do you have any specific standards when selecting a designated driver service?*

A Safety comes first. I don't know if it's because the brand image is good or my operation records are saved in the app, but Kakao T Driver seems safe to me. My female friends prefer Kakao T Driver because they think it's safe and drivers are friendly. I cannot forget one driver who ran in the pouring rain to meet me.

Q *Did you ever call a designated driver for a reason that is not drinking?*

A Yes, it may sound unusual, but I called a driver at a hospital. I had a medical check

up in Ajou University Hospital and took a conscious sedation endoscopy. I took my car to the hospital but the doctor said I shouldn't drive after the endoscopy, so I called a designated driver. It was around 2 pm and a driver was matched immediately. He came really fast and I went back home safely, thanks to him.

Q *Does it bother you to hand your car over to a stranger?*

A No, I trust that the drivers will be much more capable of driving than somebody who is drunk like me.

Q *What changes do you expect in the future of the designated driver service?*

A Based on my experience at the hospital, I think it's still difficult for the disabled to catch a taxi. So, I thought, wouldn't it be nice if they could move more easily with this designated driver service? It could be helpful to patients and caregivers as well.

“Women-only service could be an option”

—
Kakao T Driver user, Yang
Suwon Gyeonggi, 39

Q *Why did you start using Kakao T Driver?*

A I saw a lot of ads and I thought the drivers were really nice. Designated driver services that are run by telephone feel like they would send me a bunch of spams. And when you are drunk, you can't pronounce exactly so it's somewhat uneasy to call a driver by telephone.

Q *Tell me about your usage experience.*

A . I mostly called them to go home after having a drink near my office around 1-2am. Once I called a driver for a friend who visited my place and had a drink. Drinking was the only reason for calling a designated driver. While going home, I chat with the drivers and most of them had a history of running their own business.

Q *Did you ever call a designated driver for a reason that is not drinking?*

A No, but I heard about a couple who went to airport together and the husband went off a business trip while the wife came back with a designated driver because she couldn't drive. She could send off her husband and get back home safely.

Q *What would make a better designated driver service?*

A Additional options like 'women drivers only' or 'no chatting' would be nice. I saw a 'no small talk' option in one carpool service. 'Women drivers only' would have a high demand. I hope there would be more selections for users to choose from.

Lifestyle of a designated driver

A day as a designated driver

Lifestyle of a designated driver

Not much has been told about what ‘designated drivers’ do to ordinary people. What kind of working environment do they have? What changes are they going through now? In order to learn about the lives of designated drivers in depth, we conducted a survey to Kakao T Driver drivers.

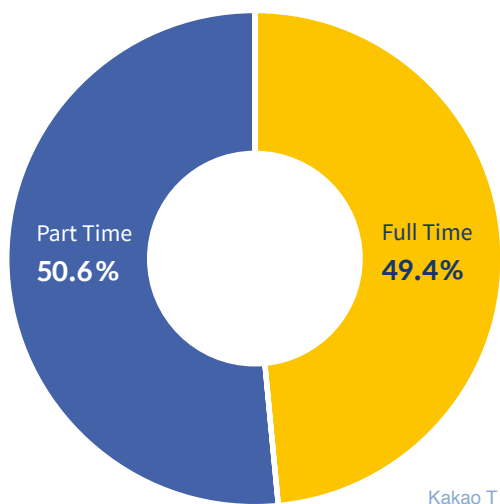
Survey was conducted for 4 days (from September 7 to 10, 2018) and the questionnaire was released in Kakao T Driver drivers’ application. Statistics shown in this chapter where the lives of designated drivers are illustrated comes from the answers of this survey. Additionally, some of the analysis derived from Kakao T Driver service data has been included.

Half of the designated drivers work ‘full time’

Designated driver is one of the prime examples that is mentioned when you describe a ‘two-job’ occupation. You might have heard from the media about some people who chose designated driver as their secondary job to raise additional income. But there are people who work full time as a designated driver. It is their primary occupation and source of income.

Through the survey we found out how many Kakao T Driver drivers were working as a full or part time driver and the result was shockingly even. Now designated driver service became a flexible means to earn additional income or make a living, depending on one’s choice.

Rate of full or part time designated drivers



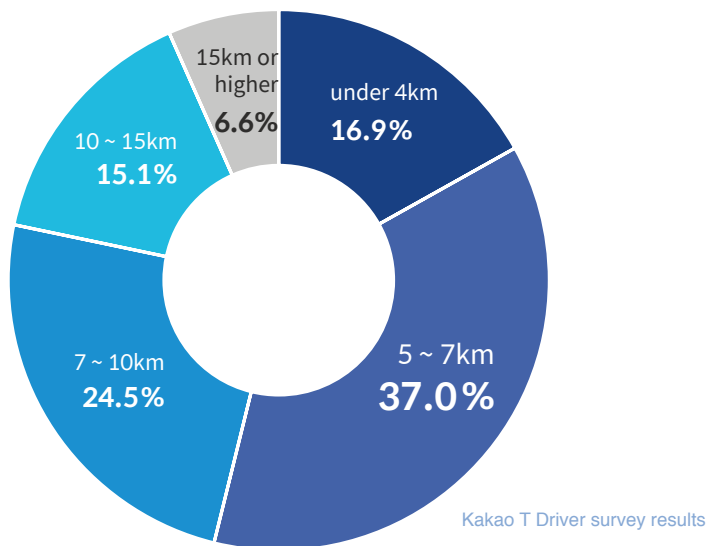
Kakao T Driver survey results

Walking is the fate of a designated driver

It is important for designated drivers to minimize walking or running hours. To get to the departure point and to go home after the operation when all public transportation services are closed, they walk or run.

When asked how long you walk in a day, 5~7km got the highest vote. Considering it's about 6km from Gangnam Station to Itaewon, 5~7 km is quite a journey. 24.5 percent answered 7~10 km a day, this is like walking from Gangnam Station to Myeongdong Station. Moreover, 6.6 percent of the drivers answered that they walk over 15 km everyday, which is a distance between Gimpo International Airport and the National Assembly Building in Yeouido. Means of transportation is always a big question for designated drivers.

Walking distance per day



Designated drivers' commute

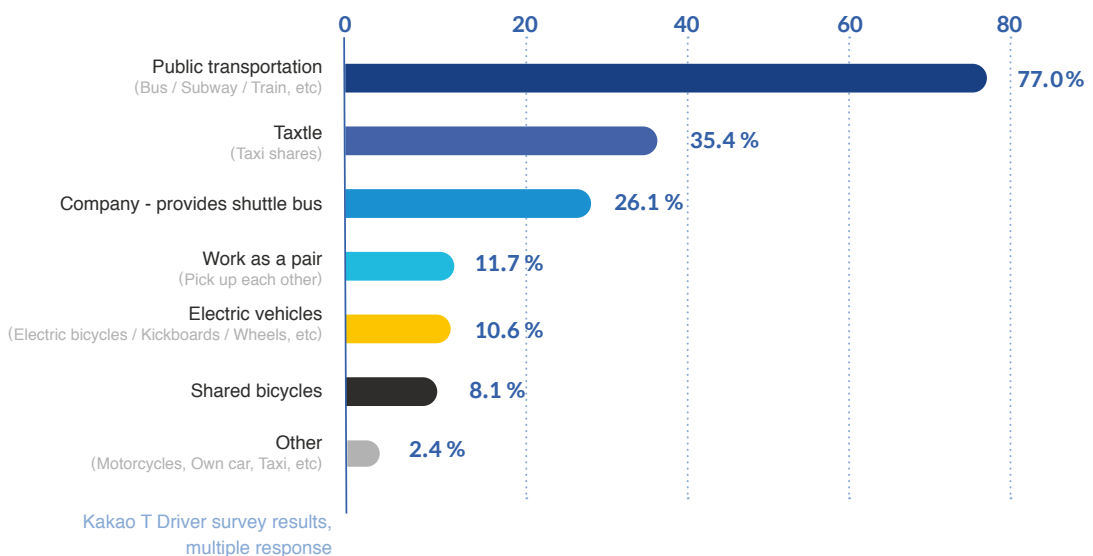
Lifestyle of a designated driver

When you call a designated driver with a smartphone app, the driver suddenly appears out of nowhere and takes you to your destination and leaves. Sometimes the destination is too remote for people to walk or run to. How does a designated driver move to another place when his or her operation ended at a quiet residence area at a time when all public transportation is out of service? In this survey, we asked the drivers their means of transportation.

According to the results, public transportation such as late-night bus or subway took 77 percent. Taxi shares, which is also called as 'Taxtle (a combination of 'taxi' and 'shuttle')' was 35.4 percent. Company-provided shuttle buses took 26.1 percent, while 11.7 percent answered that they work as pairs and pick up their teammate when needed.

We also noticed an interesting result - electric vehicles! 10.6 percent replied they use electric bicycles, electric kickboards, or electric wheels. 10.6 is high, even considering that you could choose multiple answers.

Designated drivers' means of transportation

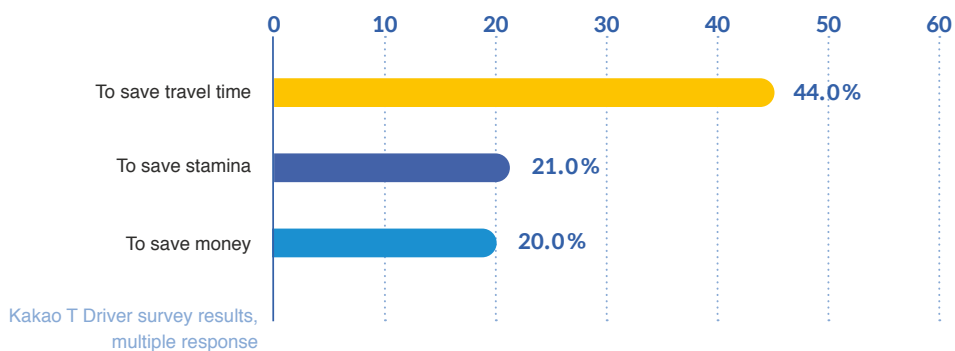


Designated drivers on electric wheels

Lifestyle of a designated driver

It is impressive that electric vehicles took over 10 percent of the means of transportation. In a following question we asked the drivers who are currently using or have intent to use an electric vehicle why they use or consider using it. 44 percent answered 'to save travel time,' while over 20 percent answered 'to save my energy and money.'

Reason for using electric vehicles



Electric kickboards allow you to answer calls made within 2~3 km, so it helps you to catch calls that you wouldn't be able to when you go on foot. It is also helpful when you come back from a destination where there is no means of transportation. Some of the drivers were using electric vehicles due to joint pains or difficulty in walking long distances after a surgery.

There were some objections to electric vehicles, because of the possibility of an accident or injury. Some customers don't want to load them in their car. High purchase cost was also a burden.

A full-time designated driver's highest income

Lifestyle of a designated driver

As previously mentioned, half of Kakao T Driver drivers work full-time. This may mean that the income is guaranteed to a certain extent when you work as a designated driver. We wanted to know how much top Kakao T Driver drivers make a month and it was 5.34 million won last year. Note that this is a net income, where platform usage fee is excluded from service charge.

Kakao T Driver driver's highest monthly net income

5,337,600 won

Highest amount in Sep. 2017 - Aug. 2018

5 million won per month is an unexpectedly high number. There aren't many drivers who can earn this money every month. But this number is important because it's an indication that it is possible to earn as much income as a large company worker when you work as a full-time designated driver. If technology develops further to increase speed and precision of matching, helping to enhance drivers' working efficiency, income will rise as well.

The gig economy and designated driver as a flexible job

Lifestyle of a designated driver

The so called 'gig economy' refers to a temporary labor economy where people work as an independent contractor, not as a permanent employee. As the gig economy is being diversified and expanded in the digital world, traditional concept of employment is changing. The concept of 'permanent job' is disappearing and more and more people are providing short-term labor and creating values based on their expertise. With the emergence of various platforms that connect service providers and users, this trend is being expanded to not only designated driver service or dispatch service, but also cleaning, security, designing, and beauty services.

Negative views on the gig economy exist, but there are some who see this as a positive change. Employment is changing, and the economy needs to change accordingly to meet flexible demands. Giving a chance to people who want to earn more or work more is not wrong. Also, easily connecting to people who need the service is a win-win. This is not expanding temporary jobs. Rather, it can be interpreted as providing an additional income to full-time employers, which is somewhat aligned with the government's income-driven growth policy.

Flexible demands in labor encourage creation and innovation of new markets. Kakao T Driver is a prime case of expanding access to designated driver service market by using a smartphone app. There are a lot of designated drivers in Kakao T Driver who provide flexible services, taking just one or two calls a day. If they are busy with their primary jobs and cannot spare more time for designated driving, they can take some time off or work less. Kakao T Driver provides more choice to drivers and users alike, based on friendly brand image and intuitive app.

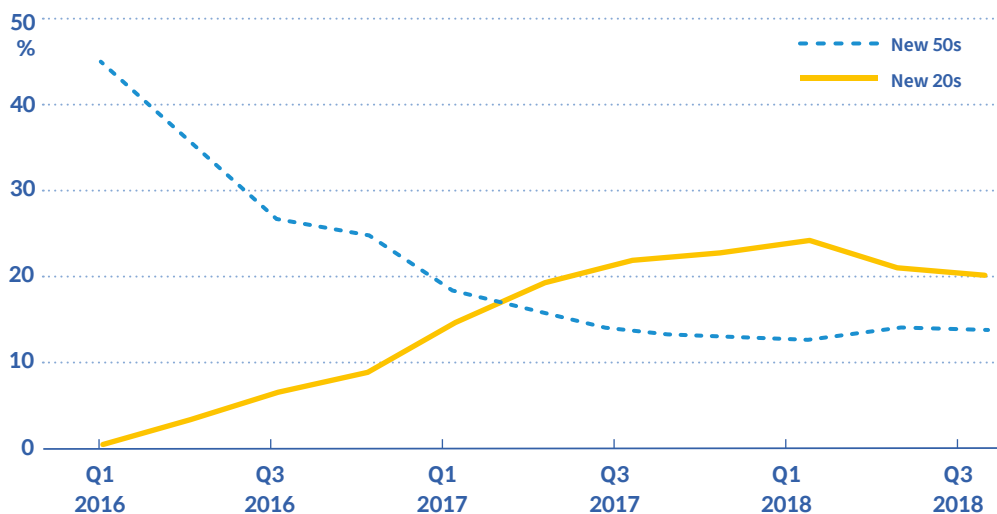
Young drivers coming ahead

Lifestyle of a designated driver

Young people who are short on money such as college students or those who just started a career are major participants of the gig economy. Designated driving can be a good opportunity for them, as it provides constant income without working full-time. The data also shows that more young people are getting into the designated driver service market.

When you look at the age distribution of new designated drivers registered to Kakao T Driver, the number of people in their 20s are increasing whereas those in their 50s are decreasing. When Kakao T Driver first launched, the number of 20s was very low, however it is now increasing steadily.

Registration rate of new designated drivers by age



If technology develops, drivers change

Lifestyle of a designated driver

Technology is developing rapidly. Designated driver service was unthinkable in the past unless you could afford a private driver. The emergence of such a service and being available to match users with designated drivers by phone itself were a big change. Now as smartphones are developed, users can have new experience in designated driving. You may see more and more young designated drivers riding an electric vehicle, with a smartphone on their hands.

‘Ways of moving’ is still an unsolved question for designated drivers. But there will be new changes and solutions with the development of technology. Designated drivers are suppliers of a mobility service and consumers of other forms of mobility services at the same time. On their smartphones we can find taxi calling apps, bicycle sharing apps, and vehicle sharing apps. As mobility services connect with each other, the role of supplier and consumer is changing and connecting. Way of mobility is becoming smarter.

**“As one sows,
so shall he reap...”**

— Kakao T Driver driver, Kim
Seoul, 48

Q Could you introduce yourself a little bit?

A I live with my wife and two children and worked as an administrator in the construction industry for 23 years. I started the job of designated driver from February 2017.

Q Why did you start designated driving?

A To make more money. It can be less than what you earn from working in a big company, but if you work diligently you can take about 3 million won a month in your hands. Working at night is hard, but if you can cope with that then there is nothing to complain with the income. Working hours is not long when compared to working at an office. When I worked at an office, I had to go there early and worked overtime. I even had to get some drink afterwards if my boss wanted it. But as a designated driver, I can earn this money by working just six days a week and I even get to go on a vacation, so it's not bad.

Q What's your working pattern?

A I work full-time. Normally I work from 7pm until 7am. My working area is Seoul and Gyeonggi, and I take about 200 calls a month.

Q How do you move between calls?

A I run most of the time, to take calls fast. I have a pedometer, and according to that I walk about 10 km a day. I lost 10 kilograms in three months, thanks to walking. No big change in the upper body, but huge change in my waist. I once joined a mountain climbing club to lose weight and it didn't work, but now I lost weight after running.

Q What do you do if it's too far to walk?

A In that case you need to be bold and take a taxi. A good tip is to take a taxi together with other designated drivers.

Q Did you ever get calls from a passenger who wasn't drunk?

A Yes, at Gangnam Station around 6 am. I was waiting for the subway to get home when I got the call. I called the passenger and he wanted me to come as soon as possible. The location was very close, so I ran. He was an office worker in his 50s and seemed very tired after nighttime work.

Q Do you have plans to go back as an office worker?

A When I worked in a small company I couldn't get paid for a few months. If that continues, you really suffer financially. If I wanted to go back as a manager in some small company I can, but I don't want to.

Q Any tips to make high revenues with Kakao T Driver?

A Once you get more experience, you have a knowhow of moving between calls, like whether you should take taxi or a shuttle, how to go back to Seoul when your previous destination was Gyeonggi, and so on. You can manage your path as well as the peak time. Calls are made differently depending on regions, Gangnam and Gangbuk are different. There are seasonal factors too. December is the busiest month of a year while it's quite free in August. In December, I earned 5 million won (before platform usage fee) but in August in my first year of designated driving, my earnings decreased by 30 percent compared to my average. In a vacation season you don't get much calls, but now I have some knowhow so this August it was OK.

[Interview]

“I work with a belief that innovation is possible.”

— Eunhyuk Jo,
Kakao Mobility Driver Team

Q *How did you start working on a designated driver service?*

A I came to Kakao 3 years and 3 months ago. It was when Kakao was preparing to launch a designated driver service, and I have been with Kakao T Driver since then. At first, I was interested in O2O (Online to Offline) business as a whole, and did not know much about the designated driver service. Now Kakao T Driver feels like a long companion who's gone through all the hardships with me.

Q *What was the most impressive experience while running the service?*

A A task force team was created when we were preparing the launch. I was also in that TF and met a lot of drivers to do a market research and they treated us as if we were government officers. They had high expectation on us and shared their difficulties. That was very impressive and awkward.

As we continued our conversation with the drivers I personally made a higher goal - although we are a for-profit company, we should provide better service to users and a better working environment for drivers. I think this is my personal calling.

Q *How do you get feedback from drivers or users?*

A In two ways. One is getting feedback directly, by going on the ground and listening to their voice. I call a designated driver on my way home and talk, or go for a 'blind' interview. I just go to a place where calls are concentrated and look for a driver and ask him how's it going and what he thinks about our service and stuff.

The other is by checking data. I read every feedback that comes through our app. Once we held an FGI (Focus Group Interview) to organize the drivers' opinions. I also try to check related articles and online posts whenever possible.

We recently conducted a survey through the app, and this is another way of gathering drivers' voices. Designated drivers' association sends us their opinions too. We are all ears to their complaints, difficulties, and improvement requests.

Q Any particular difficulties you face when dealing with designated driver service?

A I cannot solve every single complaint of a driver, even if I notice them. All drivers are in different situations and have different interests. On top of that, Kakao Mobility Corp. is a company, so I need to consider users and social impacts as well, so there's a limit to finding an answer that satisfies everyone.

Q How will Kakao T Driver change in the future?

A I believe Kakao T Driver has made the designated driver service more popular and contributed to growing the market, by linking users and drivers via a smartphone app. It's just a beginning and much more change will come. It has an advantage for Kakao Mobility to have the context of mobility.

Q Can you share us about the new service that is being considered in detail?

A For the record, this is not the company's opinion but my personal one. I think we could consider various types of designated driver services, for example, instant calls vs. reserved calls, standard service vs. premium service, corporate service, etc. We could also think about linking Kakao Mobility Corp.'s other services with the designated driver service. You can ask a designated driver to bring your car back home after when you parked it in an airport, or ask him to park it in a vacant parking lot by searching a space on the Kakao T Parking app. There is much more room to discuss and I dream of a future where everything is connected as mobility becomes stronger and diversified. I believe there is a way to make our lives and mobility much easier.

Kakao Navi

**Kakao Navi
tells you about national
hot places**

Kakao Navi reveals hot places in Korea

Kakao Navi tells you about
national hot places

When we go to a place we've never been to, we turn on the navigation. If you are visiting a hot place for the first time, like a hot bakery shop, then you would enter the shop's name in the navigation search bar. If you are just curious about a place then you could search it on a search engine or read SNS reviews, but when you are searching it on navigation it means you are determined to go there. Navigation search ranking shows the real hot places in Korea that people actually go to. Thus, we wanted to find out - where did people go most last year?

Top 30 restaurants selected, based on search data

Kakao Navi tells you about
national hot places

We first looked at the top 30 most searched restaurants in Korea. From September 2017 to August 2018, Lee Sung Dang in Gunsan took the first place. Considering that Gunsan is a small city with small population and far from Seoul, we can see how popular this bakery is when it took first place despite the access issue. Next came Bongpo Meoguri jip in Sokcho and Waveon Coffee in Gijang (Busan) as 2nd and 3rd place. Five places in Jeju such as Monsant de Aewol, Ujin Haejangguk, Ollae Guksu, Jamae Guksu, and Jeju Kimmanbok

Restaurant were included in the list, and restaurants in Gyeonggi and Gangwon were also included.

Nine restaurants were newly added to the list compared to the same period last year:

Starbucks Riverside Paldang, Donghwa Garden, Soksiwonhan Daegutang, Bongbread, Umjinae Pojangmacha, Ediya Coffee Lab, Ujin Haejangguk, Ollae Guksu and Gyeongnam Hotel Wedding Buffet.

Top 30 restaurants on Kakao Navi

No	Search term	Location
1	 Lee Sung Dang	Gunsan, Jeonbuk
2	 Bongpo Meoguri jip	Sokcho, Gangwon
3	 Waveon Coffee	Gijang, Busan
4	 Terarosa Coffee Seojong	Yangpyeong, Gyeonggi
5	 Sung Sim Dang Bakery	Junggu, Daejeon
6	 Chungchosoo Mulhoe & Seopguk	Sokcho, Gangwon
7	 Monsant de Aewol	Jeju, Jeju
8	 Starbucks Riverside Paldang	Namyangju, Gyeonggi
9	 Soksiwonhan Daegutang	Haeundae, Busan
10	 Songchoo Gamagoll	Yangju, Gyeonggi
11	 Manseok Dakgangjeong	Sokcho, Gangwon
12	 Donghwa Garden	Gangneung, Gangwon
13	 Bongbread	Sokcho, Gangwon
14	 Chuncheon Tongnamu jip Dakgalbi	Chuncheon, Gangwon
15	 Ilsan Kalguksu	Goyang, Gyeonggi

No	Search term	Location
16	 Kabojung	Suwon, Gyeonggi
17	 Ganggangsullae Neulbom	Goyang, Gyeonggi
18	 Sea Jeongwon	Goseong, Gangwon
19	 Yangjimal	Hongcheon, Gangwon
20	 Gyor Gimhap	Gyeongju, Gyeongbuk
21	 Bonsuwon Galbi Suwon	Suwon, Gyeonggi
22	 Mokhyangwon	Namyangju, Gyeonggi
23	 Umjinae Pojangmacha	Gangneung, Gangwon
24	 Ediya Coffee Lab	Gangnam, Seoul
25	 Ujin Haejangguk	Jeju, Jeju
26	 Onnuri Jangjakgui	Namyangju, Gyeonggi
27	 Ollae Guksu	Jeju, Jeju
28	 Gyeongnam Hotel Wedding Buffet	Dongdaemun, Seoul
29	 Jamae Guksu	Jeju, Jeju
30	 Jeju Kimmanbok Restaurant	Jeju, Jeju

Data from Sep. 2017 to Aug. 2018, search basis. Bolded names are newly included restaurants compared to previous year.

Seasonal changes affect the ranking

Kakao Navi tells you about national hot places

Does preference to restaurants change by season? We compared the top 10 navigation search ranking by each season. April, July, October, and January were selected as sample months and we could see very interesting changes that reflected the change of seasons.

In spring, Sung Shim Dang Bakery took the 1st place. Maybe it's because of dating couples, six coffee shops and bakeries were ranked in the list. But when the summer came, they all disappeared from the list and mulhoe, cold raw fish soup, restaurants and cart bars took the place. In particular, mulhoe restaurants took 1st and 2nd place. This could have been due to holidaymakers who visited the area during summer vacations. Among the list, four places were in Gangwon, one of the most popular destinations in summer.

Top 10 restaurants in Spring on Kakao Navi

No	Search term	Location
1	 Sung Sim Dang Bakery	Junggu, Daejeon
2	 Lee Sung Dang	Gunsan, Jeonbuk
3	 Waveon Coffee	Gijang, Busan
4	 Terarosa Coffee Seojong	Yangpyeong, Gyeonggi
5	 Soksiwonhan Daegutang	Haeundae, Busan
6	 Bongpo Meoguri jip	Sokcho, Gangwon
7	 Starbucks Riverside Paldang	Namyangju, Gyeonggi
8	 Jeju Kimmanbok Restaurant	Jeju, Jeju
9	 Songchoo Gamagoll	Yangju, Gyeonggi
10	 Monsant de Aewol	Jeju, Jeju

Apr. 2018, search basis

Top 10 restaurants in Summer on Kakao Navi

No	Search term	Location
1	 Bongpo Meoguri jip	Sokcho, Gangwon
2	 Chungchosoo Mulhoe & Seopguk	Sokcho, Gangwon
3	 Lee Sung Dang	Gunsan, Jeonbuk
4	 Waveon Coffee	Gijang, Busan
5	 Bongbread	Sokcho, Gangwon
6	 Umjinae Pojangmacha	Gangneung, Gangwon
7	 Sung Sim Dang Bakery	Junggu, Daejeon
8	 Songchoo Gamagoll	Yangju, Gyeonggi
9	 Terarosa Coffee Seojong	Yangpyeong, Gyeonggi
10	 Donghwa Garden	Gangneung, Gangwon

Jul. 2018, search basis

There was no big change in autumn and winter. We could see once again that LEE SUNG DANG and Bongpo Meoguri jip were all-time favorites. Soksiwonhan Daegutang was only out of the list in summer and came back in autumn.

Regardless of how ‘cool’ a daegutang, codfish soup, can be, it could not beat mulhoe and iced americano in summer.

Top 10 restaurants in Autumn on Kakao Navi

No	Search term	Location
1	 Lee Sung Dang	Gunsan, Jeonbuk
2	 Bongpo Meoguri jip	Sokcho, Gangwon
3	 Terarosa Coffee Seojong	Yangpyeong, Gyeonggi
4	 Waveon Coffee	Gijang, Busan
5	 Chungchosoo Mulhoe & Seopguk	Sokcho, Gangwon
6	 Umjinae Pojangmacha	Gangneung, Gangwon
7	 Gyori Gimbap	Gyeongju, Gyeongbuk
8	 Soksiwonhan Daegutang	Haeundae, Busan
9	 Starbucks Riverside Paldang	Namyangju, Gyeonggi
10	 Manseok Dak-gangjeong	Sokcho, Gangwon

Oct. 2017, search basis

Top 10 restaurants in Winter on Kakao Navi

No	Search term	Location
1	 Lee Sung Dang	Gunsan, Jeonbuk
2	 Bongpo Meoguri jip	Sokcho, Gangwon
3	 Monsanto de Aewol	Jeju, Jeju
4	 Terarosa Coffee Seojong	Yangpyeong, Gyeonggi
5	 Waveon Coffee	Gijang, Busan
6	 Sung Sim Dang Bakery	Junggu, Daejeon
7	 Soksiwonhan Daegutang	Haeundae, Busan
8	 Manseok Dak-gangjeong	Sokcho, Gangwon
9	 Starbucks Riverside Paldang	Namyangju, Gyeonggi
10	 Umjinae Pojangmacha	Gangneung, Gangwon

Jan. 2018, search basis

Historic Seoul and trendy central region











Kakao Navi tells you about national hot places

A comprehensive list that shows national hot places doesn't provide any data on regional uniqueness. If you want to see the regional trend, you need to separate the regions and make individual lists for each of them. So we investigated the most searched restaurant for each region. Let's move southwards and see the trend.

The most searched place in Seoul was Ediya Coffee Lab, a premium coffee shop and complex cultural space. Time-honored traditional restaurants such as Wooraeok, Samcheongdong Sujebi, Tosokchon Samgyetang, and Harimgak were also in the list.











In Gyeonggi, Terarosa Coffee Seojong took the 1st place, while traditional restaurants were also listed in high ranks. Various cities in the Gyeonggi area such as Yangpeong, Namyangju, Paju, Yangju, and Suwon were included the list, and it was unique to see that many grill restaurants were in the list.

Top 10 restaurants in Seoul on Kakao Navi

No	Search term	Location
1	 Ediya Coffee Lab	Gangnam
2	 Gyeongnam Hotel Wedding Buffet	Dongdaemun
3	 Todai Mokdong	Yangcheon
4	 Hanshin Pocha Nonhyeon	Gangnam
5	 Wooraeok	Junggu
6	 Saebyeok jip Cheongdam	Gangnam
7	 Samcheongdong Sujebi	Jongro
8	 Samwon Garden	Gangnam
9	 Tosokchon Samgyetang	Jongro
10	 Harimgak	Jongro

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Gyeonggi on Kakao Navi

No	Search term	Location
1	 Terarosa Coffee Seojong	Yangpeong
2	 Starbucks Riverside Paldang	Namyangju
3	 Songchoo Gamagoll	Yangju
4	 Ilsan Kalguksu	Goyang
5	 Kabojung	Suwon
6	 Ganggangsullae Neulbom	Goyang
7	 Bonsuwon Galbi Suwon	Suwon
8	 Mokhyangwon	Namyangju
9	 Onnuri Jangjakgui	Namyangju
10	 Galilee Farm	Paju

Sep. 2017 - Aug. 2018, search basis

While Masirang Café took the 1st place in Incheon, it was interesting to see a fast food franchise Burger King and other franchises such as QooQoo and Ashley in the ranking.











In Gangwon, Bongpo Meoguri jip was the most searched place. Many restaurants that were famous to tourists visiting Sokcho and Gangneung were included in the list.

Top 10 restaurants in Incheon on Kakao Navi

No	Search term	Location
1	 Masirang Café	Junggu
2	 Hwanghaehaemulkalguksu Restaurant	Junggu
3	 Haesong Ssambap	Junggu
4	 Bulmal Maeuntang Restaurant	Gyeyang
5	 Seonnyeopung	Junggu
6	 Burger King Songdo Hyundai Outlet	Yeonsu
7	 QooQoo Incheon Guwol	Namdong
8	 Dore Dore Ganghwa	Ganghwa
9	 Ashley Incheon Cheongna Homeplus	Seogu
10	 Emart Traders Food Court	Donggu

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Gangwon on Kakao Navi











No	Search term	Location
1	 Bongpo Meoguri jip	Sokcho
2	 Chungchosoo Mulhoe & Seopguk	Sokcho
3	 Manseok Dakgangjeong	Sokcho
4	 Donghwa Garden	Gangneung
5	 Bongbread	Sokcho
6	 Chuncheon Tongnamu jip Dakgalbi	Chuncheon
7	 Sea Jeongwon	Goseong
8	 Yangjimal	Hongcheon
9	 Umjinae Pojangmacha	Gangneung
10	 Santorini	Chuncheon

Sep. 2017 - Aug. 2018, search basis

In Daejeon, Sung Sim Dang Bakery and Sung Sim Dang DCC each took 1st and 4th place, respectively. Famous buffet restaurants and cafes were also in the list.

In Sejong, QooQoo Sejong took the 1st place. Grill restaurants and coffee shops were evenly included in the list, while Burger King showed up once again as it has in Incheon.

Top 10 restaurants in Daejeon on Kakao Navi

No	Search term	Location
1	 Sung Sim Dang Bakery	Junggu
2	 Vesta Premium Buffet	Seogu
3	 Pangson Restaurant	Donggu
4	 Sung Sim Dang Bakery DCC	Yuseong
5	 O ssi Kalguksu	Donggu
6	 Omunchang Sundae Gukbap	Daedeok
7	 The Lee's	Donggu
8	 Shabu Well Tanbang	Seogu
9	 Bcc Kingdom	Seogu
10	 The J Buffet	Yuseong

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Sejong on Kakao Navi











No	Search term	Location
1	 QooQoo Sejong	Sejong
2	 Sanjang Garden	Sejong
3	 Ido Coffee	Sejong
4	 Dwiwoongbak Village	Sejong
5	 Greenery	Sejong
6	 Burger King Sejonghaengboksaeom	Sejong
7	 Every Sunday	Sejong
8	 Sinan-gol Bunsik	Sejong
9	 Classic	Sejong
10	 The Party Sejong	Sejong

Sep. 2017 - Aug. 2018, search basis

Cafes took the 1st place in both Chungbuk and Chungnam. Cafe Sann in Danyang has a beautiful view and is recommended by not only the locals but also tourists. In Chungbuk, two restaurants that serve 'garlic specialty' were in the list - one is Jandari Sikdang that serve black garlic jeongsik and the other is Maneulseok Galbimakguksu. Dukkeobi Sikdang in Jecheon was on television once for its famous yangpoon galbi.

At Haeoreum in Danjin which is the most searched place in Chungnam you can have tea while enjoying the Seohaedaegyo Bridge view. Danjin's Wooreongyi Baksa was also in the list. Meanwhile, a famous bakery in Cheonan, Tou Jours Dolgama and Tou Jours Sungjung, each marked 8th and 10th in the list. What especially caught our eyes was rank no.5, Gaenari Hoegwan in Gyeryong Military Base.

Top 10 restaurants in Chungbuk on Kakao Navi

No	Search term	Location
1	 CafeE Sann	Danyang
2	 Greenery	Cheongju
3	 Samoseu	Cheongju
4	 Jandari Sikdang	Danyang
5	 Tree J the Terrace	Cheongju
6	 Maneulseok Galbimakguksu	Danyang
7	 Chongsolsageori Pocha	Cheongju
8	 Starbucks Ochang Science Industrial Complex	Cheongju
9	 Dukkeobi Sikdang	Jecheon
10	 Bongyong Bulgogi	Cheongju

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Chungnam on Kakao Navi

No	Search term	Location
1	 Haeoreum	Dangjin
2	 Madeullen Buffet	Asan
3	 Parksunja Aune Sundae	Cheonan
4	 Wooreongyi Baksa	Dangjin
5	 Gaenari Hoegwan	Gyeryong
6	 Chungnamjipsundae	Cheonan
7	 Jangwon Makguksu	Buyeo
8	 Tou Jours Dolgama	Cheonan
9	 Donghaewon	Gongju
10	 Tou Jours Sungjung	Cheonan

Sep. 2017 - Aug. 2018, search basis

Trending dining places in Gyeongsang and Jeolla

Kakao Navi tells you about
national hot places

As we go southwards, we could see strong regional characteristics in food. It is fun to compare Gyeongsang and Jeolla, in particular. Many of the famous bakeries have put their names in the list, for example Hwangnam Bread (Gyeongju, Gyeongbuk), Mammoth Bakery (Andong, Gyeongbuk), Gwangju Kungjeon Bakery, and Columbang (Mokpo, Jeonbuk). Local cafes like Brown Hands in Masan and Heymer in Ulsan were newly included.

In Gyeongbuk, seven restaurants in Gyeongju, which is one of the famous tourist destinations in Korea, were included in the list. Among them

Gyori Kimbap took the honor of 1st place, and Gyeongju Hwangnam Bread followed. In cities other than Gyeongju, Yeongdeok King Crab Market and Hwanyeo Rawfish Restaurant in Pohang were included in the list.











Meanwhile in Gyeongnam, Twosome Place Changwon Guisan, which has a perfect nightscape, took the 1st place. Next came Hayeonok, a pride of Jinju. Hayeonok serves specialty naengmyeoun with meat pancakes on top. Aside from that, kkulbbang bakery in Tongyeong and Daedong Halmae Guksu in Gimhae were also included in the list.

Top 10 restaurants in Gyeongbuk on Kakao Navi

No	Search term	Location
1	 Gyori Kimbap	Gyeongju
2	 Hwangnam Bread	Gyeongju
3	 Hamyang Jip Gyeongju Bomun	Gyeongju
4	 Aden	Gyeongju
5	 Hwanyeo Rawfish Restaurant	Pohang
6	 Venzamas	Gyeongju
7	 Ganggu Port King Crab Market	Yeongdeok
8	 Kong-Ilang	Gyeongju
9	 Mammoth Bakery	Andong
10	 Myeongdong Jjolmyeon Sikdang	Gyeongju

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Gyeongnam on Kakao Navi

No	Search term	Location
1	 Twosome Place Changwon Guisan	Changwon
2	 Hayeonok	Jinju
3	 Kkotmareum Jinjuhyeoksindosi	Jinju
4	 Brown Hands Masan	Changwon
5	 Bakwonsuk Ui Coffee and Story	Namhae
6	 Daedong Halmae Guksu	Gimhae
7	 Yeije Gaejangbaekban	Geoje
8	 Dongbu Rawfish Center	Changwon
9	 Omisa Kkulbbang	Tongyeong
10	 McDonalds Yangsan DT	Yangsan

Sep. 2017 - Aug. 2018, search basis

Jeonbuk is a birthplace of Korean cuisine. In Jeonbuk, restaurants in Jeonju and Gunsan took over the list. Lee Sung Dang was in the 1st place, where Gunsan's Jirinseong (a Chinese restaurant) and Bokseongnu (serves one of the best jjamppongs in Korea) each took 2nd and 3rd place. Tourists' all-time favorites Hankookjib, Sambaekjip and Hanirok were also nominated in the list.

In Jeonnam, Najugomtang Hayan jip in Naju was ranked in 1st place. Ssanggyosutbulgalbi which serves tteokgalbi in Damyang and Hwangso Sikdang in Yeosu followed. They all sound delicious and make you want to visit. Gejang was very popular in Jeonnam, four of the gejang restaurants were nominated in the list.

Top 10 restaurants in Jeonbuk on Kakao Navi

No	Search term	Location
1	 Lee Sung Dang	Gunsan
2	 Jirinseong	Gunsan
3	 Bokseongnu	Gunsan
4	 Geunalui Ondo	Jeonju
5	 Hankookjib	Jeonju
6	 Hwashim Sundubu	Wanju
7	 Sambaekjip Jeonju	Jeonju
8	 Hanirok	Gunsan
9	 Hyumdaik Jeonju	Jeonju
10	 Chojeomrye Nammum Pisundae	Jeonju

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Jeonnam on Kakao Navi

No	Search term	Location
1	 Naju Gomtang Hayan jip	Naju
2	 Ssanggyosutbulgalbi	Damyang
3	 Hwangso Sikdang	Yeosu
4	 Columbang	Mokpo
5	 Myungdong Gejang	Yeosu
6	 Seungil Sikdang	Damyang
7	 Samdae Gwangyang Bulgogi Jip	Gwangyang
8	 Dukkeobi Gejang	Yeosu
9	 Damyangae Kkot	Damyang
10	 Cheongjeonggejangchon	Yeosu

Sep. 2017 - Aug. 2018, search basis

In Daegu, Daedeok Sikdang which sells seonji gukbap took the honor of 1st place, while Bareumi Sushi Buffet and Tree Farm, a new cafe in Mt. Palgong, each took 2nd and 3rd place.

In Gwangju, Kungjeon Bakery was in 1st place. Hwangsolchon, a famous place for pork galbi, and Najeong Store followed. Myeonghwasikyuk Restaurant in ranking no. 8 is famous for aehobak jjigae, so unlikely when you consider the restaurant name.

Top 10 restaurants in Daegu on Kakao Navi

No	Search term	Location
1	 Daedeok Restaurant	Namgu
2	 Bareumi Sushi Buffet Dusan	Suseong
3	 Tree Farm	Donggu
4	 Deo Flower Buffet	Junggu
5	 Billy Works	Bukgu
6	 Keunnamujip Gungjungyakbaeksuk Gachang	Dangseong
7	 Gonjigonji	Dangseong
8	 Yuchangbanjeom	Junggu
9	 Miseongbokeo Bulgogi	Suseong
10	 Hands Coffee Porteworlbae	Dangseo

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Gwangju on Kakao Navi

No	Search term	Location
1	 Kungjeon Bakery	Donggu
2	 Hwangsolchon Suwan	Gwangsan
3	 Najeong Store	Seogu
4	 Maison Du Bonheur Buffet	Seogu
5	 Coboc	Donggu
6	 KKarere Star Suwan	Gwangsan
7	 Ssanggyosutbulgalbi Songgeong	Gwangsan
8	 Myeonghwasikyuk Restaurant	Gwangsan
9	 Poongnamok (Chonnam Univ, Back Gate)	Bukgu
10	 Yeongmi Oritang	Bukgu

Sep. 2017 - Aug. 2018, search basis

Ulsan is famous for eonyang bulgogi - no wonder, Eonyang Giwajip Bulgogi took the 1st place. Heymer in 2nd place is located in Ganjeolgot cape and is famous for its ocean view. Gachunpork Wholesale Center in 3rd place is also famous for eonyang bulgogi.











In Busan, restaurants in Gijang and Haeundae, which are the top destinations for both locals and tourists, nominated their names in the list. Waveon Coffee in Gijang took the 1st place, while Soksiwonhan Daegutang in Haeundae and Hayden in Gijang followed. Always the best, Geumsubokguk Haeundae also put its name on the list.

Top 10 restaurants in Ulsan on Kakao Navi

No	Search term	Location
1	 Eonyang Giwajip Bulgogi	Ulju
2	 Heymer	Ulju
3	 Gachunpork Wholesale Center	Ulju
4	 The Party Ulsan	Junggu
5	 Costco Ulsan Food Court	Bukgu
6	 Hangawi	Bukgu
7	 Starbucks Ulsan Seongan	Junggu
8	 Solbat Garden	Junggu
9	 Veteran Barbeque	Ulju
10	 Honestcape	Ulju

Sep. 2017 - Aug. 2018, search basis

Top 10 restaurants in Busan on Kakao Navi

No	Search term	Location
1	 Waveon Coffee	Gijang
2	 Soksiwonhan Daegutang	Haeundae
3	 Hayden	Gijang
4	 On the Plate	Haeundae
5	 The Party Centum	Haeundae
6	 Haenyeo Chossi Halmae jip	Gijang
7	 Geumsubokguk Haeundae	Haeundae
8	 Haeundae Somunnan Amso Galbijip	Haeundae
9	 Naengsutang Garden	Busanjin
10	 Pungwonjang Sigolbabsang jip	Gijang

Sep. 2017 - Aug. 2018, search basis

Everybody loves Jeju restaurants

Kakao Navi tells you about national hot places

Is there anyone who doesn't like Jeju? Kakao Navi is working as hard as it can in Jeju as well. Let's find out top 10 restaurants (and their main menu) that locals and tourists have searched in Kakao Navi.

Jeju had most unique menu in the list compared to other regions. Ujin Haejangguk where a long line forms even in the early morning is famous for its Jeju gosari yookgaejang. Three gogiguksu restaurants were nominated in the list, while Jeju Kimmanbok Restaurant which serves kimbap stuffed with abalone guts and egg jidan took its share. Three jeonbok (abalone) restaurants that sell jeonbok kimbap, jeonbok juk (porridge), and jeonbok mulhoe were in the list. However, nothing compared to the popularity Monsant de Aewol had. The number one menu in Jeju was coffee and bread.

Top 10 restaurants in Jeju on Kakao Navi and their main menu

No	Search term	Main Menu
1	 Monsant de Aewol	Coffee
2	 Ujin Haejangguk	Gosari yookgaejang
3	 Ollae Guksu	Gogiguksu
4	 Jamae Guksu	Gogiguksu
5	 Jeju Kimmanbok Restaurant	Gimbap
6	 Vadada Café	Burgers, Cocktails
7	 Myeongjin Jeonbok	Jeonbok porridge, Jeonbok dolsofbap
8	 Oneunjeong Gimbap	Gimbap
9	 Gasiabang Guksu	Gogiguksu, Dombae
10	 Sunogine Myeongga	Jeonbok mulhoe

Sep. 2017 - Aug. 2018, search basis

Top 30 travel destinations

Kakao Navi tells you about
national hot places

Now we looked at the top travel destinations in Korea. We analyzed the navigation search data from the same period as above (Sep. 2017 to Aug. 2018) and the honor of the most searched place went to Gangwon Land Casino. Eulwangni Beach and Everland took 2nd and 3rd place. Major beaches, resorts, and hotels were included in the list.

When compared to the list in previous year, five new destinations appeared in the top 30 list: Yeoido Hangang Park, Anmok Beach, Grand Walkerhill Seoul, Namiseom Island, and Seorak Cable Car.

Top 30 hot travel destinations on Kakao Navi

No	Search term	Location
1	 Gangwon Land Casino	Jeongseon, Gangwon
2	 Eulwangni Beach	Junggu, Incheon
3	 Everland	Yongin, Gyeonggi
4	 Daecheon Beach	Boryeong, Chungnam
5	 Daemyung Vivaldi Park	Hongcheon, Gangwon
6	 Gwangalli Beach	Suyeong, Busan
7	 Wolmido	Junggu, Incheon
8	 Haeundae Beach	Haeundae, Busan
9	 Gyeongpodae	Gangneung, Gangwon
10	 Sol Beach Hotel & Resort Samcheok	Samcheok, Gangwon
11	 Jeonju Hanok Village	Jeonju, Jeonbuk
12	 Grand Hyatt Seoul	Yongsan, Seoul
13	 Sokcho Beach	Sokcho, Gangwon
14	 Hotel Shilla	Junggu, Seoul
15	 Sol Beach Hotel & Resort Yangyang	Yangyang, Gangwon

No	Search term	Location
16	 The-K Hotel Seoul	Seocho, Seoul
17	 Heyri Art Valley	Paju, Gyeonggi
18	 Lotte World	Songpa, Seoul
19	 Yeoido Hangang Park	Yeongdeungpo, Seoul
20	 Korean Folk Village	Yongin, Gyeonggi
21	 Songjeong Beach	Haeundae, Busan
22	 Anmok Beach	Gangneung, Gangwon
23	 Grand Walkerhill Seoul	Gwangjin, Seoul
24	 Oido Red Lighthouse	Siheung, Gyeonggi
25	 Nami Island	Chuncheon, Gangwon
26	 Mt. Seorak Cable Car	Sokcho, Gangwon
27	 Konjiam Resort	Gwangju, Gyeonggi
28	 Kkotji Beach	Taeon, Chungnam
29	 Sinsadong Garosu-gil Road	Gangnam, Seoul
30	 Dongmak Beach	Ganghwa, Incheon

Sep. 2017 - Aug. 2018, search basis

Seasonal changes affect the ranking

Kakao Navi tells you about national hot places

This time we compared how the popularity of travel destinations change with the season. April, July, October, and January were selected as sample months.











Gangwon Land Casino was always on the list, regardless of the season. It never fell below 5th place, which must be a reason why Gangwon Land Casino ranked 1st in the top 30 list.

Indeed, spring was a season for flowers. Regions where spring flower festivals were held were hot.

Everland, which took 1st place, is famous for its flower festival. Jinhae Gunhangje Festival and Bomun Tourist Complex which are famous for their beautiful cherry blossoms were in the list.











Summer was all about swimming. Most of the places in top 10 were related to water sports or swimming. 1st place was Eulwangni Beach, while Ocean World and Caribbean Bay were also in the upper ranks.

Top 10 travel destinations in spring on Kakao Navi

No	Search term	Location
1	 Everland	Yongin, Gyeonggi
2	 Gangwon Land Casino	Jeongseon, Gangwon
3	 Yeoido Hangang Park	Yeongdeungpo, Seoul
4	 Eulwangni Beach	Junggu, Incheon
5	 Gyeongpodae	Gangneung, Gangwon
6	 Daecheon Beach	Boryeong, Chungnam
7	 Bomun Tourist Complex	Gyeongju, Gyeongbuk
8	 Jinhae Gunhangje Festival	Changwon, Gyeongnam
9	 Gwangalli Beach	Suyeong, Busan
10	 Wolmido	Junggu, Incheon

Apr. 2018, search basis

Top 10 travel destinations in summer on Kakao Navi

No	Search term	Location
1	 Eulwangni Beach	Junggu, Incheon
2	 Daecheon Beach	Boryeong, Chungnam
3	 Gangwon Land Casino	Jeongseon, Gangwon
4	 Vivaldi Park Ocean World	Hongcheon, Gangwon
5	 Caribbean Bay	Yongin, Gyeonggi
6	 Gwangalli Beach	Suyeong, Busan
7	 Gyeongpodae	Gangneung, Gangwon
8	 Sokcho Beach	Sokcho, Gangwon
9	 Everland	Yongin, Gyeonggi
10	 Haeundae Beach	Haeundae, Busan

Jul. 2018, search basis

Autumn's most popular destination was Nari Park in Yangju, Gyeonggi. Nari Park is famous for Chunilhong (globe amaranth) Festival. Cable cars in Mt. Seorak, Hwadamsup Forest in Konjam Resort, and Hongcheon Unhaengnamusup Forest where you can enjoy beautiful autumn leaves were also in the list.

In the top 10 list for winter, lots of winter sports sites were included. Ski resorts and ice fishing festivals were in high ranks, while beaches were still in the list due to people who love to see the ocean in the winter. Recently opened Sogeumsan Chulleongdari Bridge in Wonju first came into the list. Lotte World, an indoor amusement park which did not appear in the list in other seasons, was ranked 10th. It is interesting to see Everland excluded in the list, when it has always had a share in other seasons.

Top 10 travel destinations in autumn on Kakao Navi

No	Search term	Location
1	 Nari Park (Chunilhong Festival)	Yangju, Gyeonggi
2	 Everland	Yongin, Gyeonggi
3	 Jeonju Hanok Village	Jeonju, Jeonbuk
4	 Gangwon Land Casino	Jeongseon, Gangwon
5	 Mt. Seorak Cable Car	Sokcho, Gangwon
6	 Eulwangni Beach	Junggu, Incheon
7	 Cheomseongdae Observatory	Gyeongju, Gyeongbuk
8	 Hwadamsup Forest	Gwangju, Gyeonggi
9	 Hongcheon Unhaengnamusup Forest	Hongcheon, Gangwon
10	 Nami Island	Chuncheon, Gangwon

Oct. 2017, search basis

Top 10 travel destinations in winter on Kakao Navi

No	Search term	Location
1	 Daemyung Vivaldi Park	Hongcheon, Gangwon
2	 Hwacheon Sancheoneo Ice Festival	Hwacheon, Gangwon
3	 Gangwon Land Casino	Jeongseon, Gangwon
4	 Deogyusan Resort	Muju, Jeong- buk
5	 Konjam Resort	Gwangju, Gyeonggi
6	 Sogeumsan Chulleongdari Bridge	Wonju, Gangwon
7	 Eulwangni Beach	Junggu, Incheon
8	 Sol Beach Hotel & Resort Samcheok	Samcheok, Gangwon
9	 Gwangalli Beach	Suyeong, Busan
10	 Lotte World	Songpa, Seoul

Jan. 2018, search basis

Top 10 hot travel destinations by region




Kakao Navi tells you about
national hot places

We looked through top 10 hot travel destinations by each region to find out the uniqueness of each destination. Data period is September 2017 to August 2018.

In Seoul, popular hotels such as Grand Hyatt, Hotel Shilla, The-K Hotel were ranked 1st to 3rd. 4th was Lotte World, and Yeoido Hangang Park and Olympic Park were also in the list.

Top 10 in Gyeonggi showed places that you could actually call a 'travel destination.' Everland, the king of amusement parks in Gyeonggi, took the 1st place, while Heyri Art Valley and Korean Folk Village followed.

Top 10 travel destinations in Seoul on Kakao Navi

No	Search term	Location
1	 Grand Hyatt Seoul	Yongsan
2	 Hotel Shilla	Junggu
3	 The-K Hotel Seoul	Secho
4	 Lotte World	Songpa
5	 Yeoido Hangang Park	Yeongdeungpo
6	 Grand Walkerhill Seoul	Gwangjin
7	 Sinsadong Garosu-gil Road	Gangnam
8	 The Riverside Hotel	Secho
9	 InterContinental Seoul COEX	Gangnam
10	 Olympic Park	Songpa

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Gyeonggi on Kakao Navi

No	Search term	Location
1	 Everland	Yongin
2	 Heyri Art Valley	Paju
3	 Korean Folk Village	Yongin
4	 Oido Red Lighthouse	Siheung
5	 Konjiam Resort	Gwangju
6	 The Garden of Morning Calm	Gapyeong
7	 Ilsan Lake Park	Goyang
8	 Jebudo Island	Hwaseong
9	 Seoul Grand Park	Gwacheon
10	 Daebudo Island	Ansan

Sep. 2017 - Aug. 2018, search basis

In Incheon, Eulwangni Beach took the 1st place. Wolmido and China Town are traditional travel sites where you can see regional characteristics. Seongmodo Island in Ganghwa was also included in the list.











Gangwon, a mecca of sightseeing, had Gangwon Land Casino in the first place. Famous beaches, water parks, and ski resorts were in the upper rank. Nami Island and Mt. Seorak Cable Car, popular travel destinations for couples and families, were also in the list.

Top 10 travel destinations in Incheon on Kakao Navi

No	Search term	Location
1	 Eulwangni Beach	Junggu
2	 Wolmido	Junggu
3	 Dongmak Beach	Ganghwa
4	 Songdo Central Park	Yeonsu
5	 The Central Park Hotel Songdo	Yeonsu
6	 Incheon Chinatown	Junggu
7	 Incheon Grand Park	Namdong
8	 Seongmodo Island Mineral Hot Spa	Ganghwa
9	 Seongmodo Island	Ganghwa
10	 PARADISE CITY	Junggu

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Gangwon on Kakao Navi



No	Search term	Location
1	 Gangwon Land Casino	Jeongseon
2	 Daemyung Vivaldi Park	Hongcheon
3	 Gyeongpodae	Gangneung
4	 Sol Beach Hotel & Resort Samcheok	Samcheok
5	 Sokcho Beach	Sokcho
6	 Sol Beach Hotel & Resort Yangyang	Yangyang
7	 Anmok Beach	Gangneung
8	 Nami Island	Suncheon
9	 Mt. Seorak Cable Car	Sokcho
10	 Delpino Golf & Resort	Goseong

Sep. 2017 - Aug. 2018, search basis

In Daejeon, Daejeon O-World which is a famous theme park and Jangtaesan Recreational Forest known for its red clay trail were included in the list. Business hotels and tourist hotels in Yuseong Special Tourist Zone were also in the list.










Sejong Lake Park was the most popular place in Sejong, while gardens and camping sites were also within the rank.

Top 10 travel destinations in Daejeon on Kakao Navi

No	Search term	Location
1	 Daejeon O-World	Junggu
2	 Yousung Hotel	Yuseong
3	 Gyeryong Spatel	Yuseong
4	 Lotte City Hotel Daejeon	Yuseong
5	 Hanbat Arboretum	Seogu
6	 HOTEL ICC	Yuseong
7	 Hotel Spapia	Yuseong
8	 Machi Square	Seogu
9	 Jangtaesan Recreational Forest	Seogu
10	 Hotel Riviera Yuseong	Yuseong

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Sejong on Kakao Navi

No	Search term	Location
1	 Sejong Lake Park	Sejong
2	 Gobok Reservoir	Sejong
3	 Bear Tree Park	Sejong
4	 Pororo Park Sejong	Sejong
5	 Geumgang Arboretum	Sejong
6	 Hapgang Park Camping Site	Sejong
7	 Geumgang Natural Recreation Forest	Sejong
8	 Dodamdong Mukjagolmok	Sejong
9	 Sky Mu-in Hotel	Sejong
10	 Coupling Motel	Sejong

Sep. 2017 - Aug. 2018, search basis

The most popular destination in Chungbuk was Daemyung Resort Danyang. Next came Ochang Lake Park and Mancheonha Skywalk. Cheongnamdae Presidential Villa, once a vacation home for the president of Korea, was also in the list.











In Chungnam, Daecheon Beach was ranked 1st, while famous beaches such as Kkoji, Mallipo, Muchangpo also showed up in the list. Deoksan Hot Spa in Yesan and Dogo Hot Spain Asan were also included.

Top 10 travel destinations in Chungbuk on Kakao Navi

No	Search term	Location
1	 Daemyung Resort Danyang	Danyang
2	 Ochang Lake Park	Cheongju
3	 Mancheonha Skywalk	Danyang
4	 Danyang Dodamsambong Peaks	Danyang
5	 Risomforest Resort	Jecheon
6	 Daechungdam Observatory	Cheongju
7	 Old Sanmaki Road	Goesan
8	 Uirimji Reservoir	Jecheon
9	 Cheongnamdae Presidential Villa	Cheongju
10	 Jincheon Nongdari	Jincheon

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Chungnam on Kakao Navi











No	Search term	Location
1	 Daecheon Beach	Boryeong
2	 Kkotji Beach	Taeansa
3	 Resom Spa Castle Deoksan	Yesan
4	 Paradise Spa Dogo	Asan
5	 Mallipo Beach	Taeansa
6	 Sapgyoho Lake Tourist Spot	Dangjin
7	 Jijunghae Maeul	Asan
8	 Muchangpo Beach	Boryeong
9	 Lotte Resort Buyeo	Buyeo
10	 Haemieupseong Fortress	Seosan

Sep. 2017 - Aug. 2018, search basis

Coming down to Gyeongsang, we could see many historic destinations in the list. In Gyeongbuk, Yeongildae Beach took the 1st place, while many famous tourist spots such as Cheomseongdae Observatory, Gyeongju Bomun Tourist Complex, Hwanglidangil Street, Donggung Palace and Wolji Pond appeared in the list.











Meanwhile in Gyeongnam, destinations in Geoje and Tongyeong which have been hot in recent years, were included in the top 10 list. 1st place went to Windy Hill in Geoje, where you could see exotic windmills. Windy Hill pushed Tongyeong Cable Car to the second place, proving its popularity. Namhae German Village and Dongpirang Mural Village were also in the list.

Top 10 travel destinations in Gyeongbuk on Kakao Navi

No	Search term	Location
1	 Yeongildae Beach	Pohang
2	 Cheomseongdae Observatory	Gyeongju
3	 Bomun Tourist Complex	Gyeongju
4	 Homigot	Pohang
5	 Hwanglidangil Street	Gyeongju
6	 Donggung Palace and Wolji Pond	Gyeongju
7	 Daemyung Resort Gyeongju	Gyeongju
8	 Yeongdeok Sunrise Park	Yeongdeok
9	 Daemyung Resort Cheongsong	Cheongsong
10	 Hanwha Resorts Gyeongju	Gyeongju

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Gyeongnam on Kakao Navi




No	Search term	Location
1	 Windy Hill	Geoje
2	 Tongyeong Cable Car	Tongyeong
3	 Namhae German Village	Namhae
4	 Dongpirang Mural Village	Tongyeong
5	 Gimhae Lotte Water Park	Gimhae
6	 Skyline Luge Tongyeong	Tongyeong
7	 Daemyung Resort Geogje Marina	Geoje
8	 Kumho Resort Tongyeong Marina	Tongyeong
9	 Hakdong Jinju Mongdol Beach	Geoje
10	 Yi Sun-Sin Park	Tongyeong

Sep. 2017 - Aug. 2018, search basis

In Daegu, one of the most famous tourist spot Peace Square took the 1st place, while E-World (previously Ubang Tower) followed behind. Kim Gwang Seok Street in 5th place catches your eye.

In Gwangju, Gwangju Family Land took the 1st place and Uncheon Reservoir took the second. 5.18 Memorial Park, a place that reminds you of the sad history, was ranked in 7th.

Top 10 travel destinations in Daegu on Kakao Navi

No	Search term	Location
1	 Peace Square	Suseong
2	 E-World	Dalseo
3	 Hotel Inter-Burgo Daegu	Suseon
4	 Daegu Arboretum	Dalseo
5	 Kim Gwang Seok Street	Junggu
6	 Hotel Laonzena	Suseon
7	 Dongchon Resort	Donggu
8	 Songhae Park	Dalseo
9	 Queen Vell Hotel	Donggu
10	 Novotel Ambassador Daegu	Junggu

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Gwangju on Kakao Navi

No	Search term	Location
1	 Gwangju Family Land	Bukgu
2	 Uncheon Reservoir	Seogu
3	 Ramada Plaza Gwangju	Seogu
4	 Holiday Inn Gwangju	Seogu
5	 Empayieo Tour Hotel	Gwangsan
6	 Yeongnak Park	Bukgu
7	 5-18 Memorial Park	Seogu
8	 Shinyang Park Hotel	Donggu
9	 Pungam Reservoir	Seogu
10	 Gwangju Park	Namgu

Sep. 2017 - Aug. 2018, search basis

In Jeonbuk, Jeonju Hanok Village is firmly keeping its 1st place. Deogyusan Resort and Daemyung Resort Byeonsan followed behind, while Seonyudo Island, Saemangeum Tide Embankment, Chaeseokgang, Gwanghallu Pavilion were also in the top 10 list.











Jeonnam revealed a colorful result, as it has hot places such as Suncheon, Damyang and Yeosu. Among this heated competition, Suncheonman Bay National Garden took the honor of 1st place. Yeosu, which became famous by Busker Busker's famous song 'Yeosu Bambada,' was in the 4th place.

Top 10 travel destinations in Jeonbuk on Kakao Navi

No	Search term	Location
1	 Jeonju Hanok Village	Jeonju
2	 Deogyusan Resort	Muju
3	 Daemyung Resort Byeonsan	Buan
4	 Seonyudo Island	Gunsan
5	 Saemangeum Tide Embankment	Gunsan
6	 Chaeseokgang	Buan
7	 Gwanghallu Pavilion	Namwon
8	 Seonyudo Island Beach	Gunsan
9	 Deogyusan Resort Sightseeing Gondola	Muju
10	 Jeonju Zoo	Jeonju

Sep. 2017 - Aug. 2018, search basis

Top 10 travel destinations in Jeonnam on Kakao Navi





No	Search term	Location
1	 Suncheonman Bay National Garden	Suncheon
2	 Yeosu Maritime Cable Car	Yeosu
3	 Yeosu Nangman Pocha Street	Yeosu
4	 Juknokwon	Damyang
5	 Damyang Metasequoia-lined Road	Damyang
6	 Metaprovince	Damyang
7	 Yeonggwang Baeksu Coastal Road	Yeonggwang
8	 Peace Square	Mokpo
9	 Odongdo Island	Yeosu
10	 The MVL Hotel Yeosu	Yeosu

Sep. 2017 - Aug. 2018, search basis

Ulsan and Busan which are famous coastal cities, had many beaches in their list. Ulsan had Jinha Beach and Ilsan Beach in 1st and 2nd place, while Ulsan Grand Park which is famous for its Rose Festival was also nominated in the 4th place.











In Busan, including Gwangalli Beach that took the 1st place, a total of 5 beaches (Haeundae, Songjeong, Songdo, Dadaepo) were in the list. Taejongdae Recreation Area, a traditional tourist spot, was in 9th place.

Top 10 travel destinations in Ulsan on Kakao Navi

No	Search term	Location
1	 Jinha Beach	Ulsan
2	 Ilsan Beach	Donggu
3	 Daewangam Park	Donggu
4	 Ulsan Grand Park	Namgu
5	 Amethyst Cavern Park	Ulsan
6	 Gongeoptap	Namgu
7	 Deoksinsong Park	Ulsan
8	 Taehwangang Grand Park Daesup Sanchaekro	Junggu
9	 Jujeonmongdol Beach	Donggu
10	 Sipridae Forest	Junggu

Sep. 2017 - Aug. 2018, search basis











Top 10 travel destinations in Busan on Kakao Navi

No	Search term	Location
1	 Gwangalli Beach	Suyeong
2	 Haeundae Beach	Haeundae
3	 Songjeong Beach	Haeundae
4	 Hilton Busan	Gijang
5	 Busan Songdo Beach	Seogu
6	 Dadaepo Beach	Saha
7	 Hanwha Resort Haeundae Tiboli	Haeundae
8	 Songdo Marine Cable Car	Seogu
9	 Taejongdae Recreation Area	Yeongdo
10	 Haeundae Grand Hotel	Haeundae

Sep. 2017 - Aug. 2018, search basis

Where is everybody's favorite destination in Jeju? The honor goes to Seongsan Ilchulbong Peak. As you can imagine, most of the top search results were on the seaside or beach. One interesting fact was that hotels or resorts were not in the list. As Jeju is a famous tourist city, various types of accommodations exist and people had lots of choices other than hotels.

Top 10 travel destinations in Jeju on Kakao Navi

No	Search term	Location
1	 Seongsan Ilchulbong Peak	Seogwipo
2	 Hyeopjae Beach	Jeju
3	 Hamdeok Seoubong Beach	Jeju
4	 Woljeongri Beach	Jeju
5	 Eco Land Theme Park	Jeju
6	 Iho Tewoo Beach	Jeju
7	 Yongduam Rock	Jeju
8	 Daepo Jusangeolli Cliff	Seogwipo
9	 Camellia Hill	Seogwipo
10	 Aewol Coastal Road	Jeju

Sep. 2017 - Aug. 2018, search basis

Local festivals attracting tourists

Who are the visitors of local festivals?

Local festivals attracting tourists

Every year, hundreds of local festivals are being held. Festivals are a good reason for visiting some place new and give you pleasure of traveling. When you look at the people joining the festivals, you begin to wonder, who are these people? Are they locals or tourists? If they are tourists, where are they from?

In this paragraph, we will analyze the characteristics of visitors to local festivals based on Kakao Navi's data from last year. We also referenced '41 Cultural Tourism Festivals' in 2017 and 2018 by the Ministry of Culture, Sports and Tourism.

No. of visitors in each region during the festival

First we found out how many visitors visited the respective region during the festival period. On the actual visits that were made after searching the destination on Kakao Navi, we compared the number of visitors during the festival period to that of the annual average and listed the data in the order of highest growth.

There were some issues while analyzing the data, such as the difference of festival dates and the size of event locations. In order to compare the data under same conditions, we set the unit to si/gun/gu. The list below is not a popularity chart; rather, it should be understood as a data showing mobility among regions.

Festivals with the highest growth in the no. of visitors compared to annual average

No	Festival	Location
1	Pohang International Fireworks Festival	Bukgu, Pohang, Gyeongbuk
2	Hwacheon Sancheoneo Ice Festival	Hwacheon, Gangwon
3	Buyeo Seodong Festival	Buyeo, Chungnam
4	Gangneung Coffee Festival	Gangneung, Gangwon
5	The Great Battle of Hansan Festival	Tongyeong, Gyeongnam
6	Chuncheon International Mime Festival	Chuncheon, Gangwon
7	Damyang Bamboo Festival	Damyang, Jeonnam
8	Incheon Pentaport Rock Festival	Yeonsu, Incheon
9	Bonghwa Euneo (Sweetfish) Festival	Bonghwa, Gyeongnam
10	Jarasum Jazz Festival	Gapyeong, Gyeonggi

Based on visits from Sep. 2017 to Aug. 2018

Pohang Bukgu showed the highest growth in the number of visitors during Pohang International Fireworks Festival. But there can be more factors to the growth other than the festival itself. Pohang Bukgu is a famous summer destination which has Yeongildae and Chilpo Beach. That is, we need to consider that the number of visitors might have increased due to the external factor like 'summer vacations' as the festival was held during the vacation season. It is possible that some may have come to Pohang just for vacations and not the festival, but the number of visitors increased most rapidly compared to other festivals.

In terms of net increase, we guess, Hwacheon Sancheoneo Ice festival took the actual 1st place. This festival was the most searched festival in the navigation, and there was no other factor that could have induced the additional increase of visitors to this region. Buyeo Seodong Festival, Gangneung Coffee Festival, and the Great Battle of Hansan Festival also showed high increase of visitors compared to annual average.

There might be festivals that are not on the list but had high number of visitors. However, it might be difficult to figure out the direct relation between the festival and the number of increased visitors if the region is always popular. That's why not many festivals held in metropolitan area are in the list. Nevertheless, it is impressive to see Incheon Pentaport Rock Festival and Jarasum Jazz Festival which are music festivals held in metropolitan area in the top 10 list.

Local festivals visited from far away

Local festivals attracting tourists

So we see more visitors than usual coming to local festivals, then where are they from? Do they live nearby or far away? To find out, we calculated the rate of visitors coming from regions other than where the local festival was held. Analysis unit was si/gun/gu. For example, in the case of Bonghwa Euneo (Sweetfish) Festival held in Bonghwa, Gyeongnam, we compared the number of visitors from Gyeongnam to visitors from outside Gyeongnam.

Festivals with the highest rate of outside visitors

No	Festival	Rate of outside visitors
1	Goryeong Daegaya Experience Festival	56.6 % of visitors outside Gyeongbuk
2	Hwacheon Sancheoneo Ice Festival	56.0 % of visitors outside Gangwon
3	Damyang Bamboo Festival	53.2 % of visitors outside Jeonnam
4	Ganggyeong Fermented Seafood Festival	48.3 % of visitors outside Chungnam
5	Eumseong Pumba Festival	47.5 % of visitors outside Chungbuk
6	Mungyeong Traditional Chasabal Festival	47.2 % of visitors outside Gyeongbuk
7	Muju Firefly Festival	43.4 % of visitors outside Jeonbuk
8	Sunchang Fermented Food Festival	43.0 % of visitors outside Gangwon
9	Ulsan Onggi Festival	42.8 % of visitors outside Ulsan
10	Hansan Ramie Fabric Cultural Festival	42.7 % of visitors outside Chungnam

Based on visits from Sep. 2017 to Aug. 2018

Goryeong Daegaya Experience Festival, Hwacheon Sancheoneo Ice Festival, and Damyang Bamboo Festival took 1st to 3rd places with similar number of rates. It is noticeable that they were in upper ranks even when the regions where these festivals are held are quite far away from Seoul. Ganggyeong Fermented Seafood Festival and Eumseong Pumba Festival also showed high rate of outside visitors.

How far can you go to enjoy a local festival?

Local festivals attracting tourists

How far can you go for a local festival? Going to a festival in Tongyeong from Seoul and from Busan is a big difference. It takes 4~5 hours from Seoul to Tongyeong, while it only takes 1~2 hours from Busan.

Top local festival among people from Seoul

No	Festival	Location
1	Hansung Baekje Festival	Songpa, Seoul
2	Jarasum Jazz Festival	Gapyeong, Gyeonggi
3	Hwacheon Sancheoneo Ice Festival	Hwacheon, Gangwon
4	Icheon Rice Festival	Icheon, Gyeonggi
5	Siheung Gaetgol Festival	Siheung, Gyeonggi
6	Chuncheon International Mime Festival	Chuncheon, Gangwon
7	Suwon Hwaseong Cultural Festival	Suwon, Gyeonggi
8	Anseongmatchum Namsadang Baudeogi Festival	Anseong, Gyeonggi
9	Incheon Pentaport Rock Festival	Yeonsu, Incheon
10	Hyoseok Cultural Festival	Pyeongchang, Gangwon

Based on visits from Sep. 2017 to Aug. 2018

Top local festivals among people from Jeonbuk

No	Festival	Location
1	Gimje Horizon Festival	Gimje, Jeonbuk
2	Gochang Moyang Fortress Festival	Gochang, Jeonbuk
3	Sunchang Fermented Food Festival	Sunchang, Jeonbuk
4	Muju Firefly Festival	Muju, Jeonbuk
5	Hansan Ramie Fabric Cultural Festival	Seocheon, Chungnam
6	Damyang Bamboo Festival	Damyang, Jeonnam
7	Ganggyeong Fermented Seafood Festival	Nonsan, Chungnam
8	Buyeo Seodong Festival	Buyeo, Chungnam
9	Yeongam Wangin Culture Festival	Yeongam, Jeonsam
10	Joengnamjin Jangheung Water Festival	Jangheung, Jeonnam

Based on visits from Sep. 2017 to Aug. 2018

We looked at the festivals that were most visited by people in Seoul and Jeonbuk. People in Seoul mainly visited festivals in Seoul, Gyeonggi, and Gangwon. The most visited festival was Hansung Baekje Festival held in Songpa, Seoul, but considering the traffic population in Songpa and the purpose of mobility, it is difficult to infer that this mobility was actually caused by the festival itself.

The number gets more meaningful starting from the 2nd place. After investigating the data from Jarasum Jazz Festival, 86 percent of the visitors came from Seoul and Gyeonggi. Considering that the location is close to Seoul and Gyeonggi and the nature of the festival, many music fans from the city visited the site.

Meanwhile, people in Jeonbuk visited festivals held in Jeonnam, Chungnam, and their hometown Jeonbuk. Festivals held in Jeonbuk took 1st to 4th in the list, while the 5th place was taken by Hansan Ramie Fabric Cultural Festival held in Seochon, Chungnam and 6th place by Bamboo Festival held in Damyang, Cheonnam both near Cheonbuk. From this data, we could see that people visited local festivals held nearby, regardless of the province border.

Due to the diversity in festival time and location, it is not easy to clearly figure out the context of mobility just by using navigation data. Data could be impacted by so many variables. However, as we have seen above, we could have a general idea. For example, we could find out that Hwacheon Sancheoneo Ice Festival and Damyang Bamboo Festival are popular festivals, because they showed high growth in the number of visitors during the festival period despite the location. Analyzing the nature of mobility among festival locations would be very helpful to not only those who prepare the festival, but also those who visit them.

Kakao Navi is punctual

How Kakao Navi predicts the shortest route

Kakao Navi is punctual

Kakao Navi uses its own data analysis technologies and analyzes past and current traffic flow based on a huge amount of data updated in real time. It reflects traffic flow based on road conditions like accidents, construction, and nearby events like concerts or sports events, and provides rapid and accurate routes every minute.

Kakao Navi is developing technologies that generate more accurate traffic info by analyzing user-based speed info. Kakao Navi has advanced processing technology for traffic info analysis. For example, Kakao Navi figured out that average speed at crossroads was slower than the one at the straight section and reflected this in the algorithms. Kakao Navi does not simply predict patterns based on average figures. Instead, it predicts real time speed and navigates routes based on this information.

In addition, crowdsourcing based automatic mapping technology applied by Kakao Navi helps rapidly reflecting new info of roads that change everyday. For example, when Kakao Navi figured out that more users were taking the road not shown in a map, Kakao Navi understands that the road was newly built. Kakao Navi predicts road conditions by monitoring users that turn left or pass a one-way road. Kakao Navi verifies relevant places based on this info and rapidly updates such info to provide users with the latest map.

Navi is getting smarter with machine learning

Kakao Navi is punctual

Navigation is continuously evolving by applying rapidly developing technologies. Recently, machine learning is contributing to system advancement. Kakao Navi keeps trying something new. It predicts road-based speed and reflects such info into its services by applying GBT, Gradient Boosted Tree, algorithms. Machine learning based development is only at the beginning stage. However, the accuracy of estimated time is expected to be higher based on accumulated information, real time driving info from users and new technologies.

Is Kakao Navi reliable?

Kakao Navi is punctual

In an era of smartphone navigation, route guidance only is not enough to raise its competitiveness. Rapid and accurate route guidance based on real time traffic info is important to stay competitive. How accurate is Kakao Navi with a large number of users at this moment? Estimated time by Kakao Navi during the recent week (September 6-12, 2018) and actual time on arrival were compared to calculate an error.

An error on overall estimated time on arrival

2m 11s

Sep. 6-12, 2018 only based on on-course driving

On average, difference between Kakao Navi guided estimated time and actual time on arrival was 2m 11s. This was calculated as follows: an absolute value of time spent until users arrived at an exact destination point while following the route originally guided by navigation was calculated. It is because when a user goes off course, estimated time on arrival originally provided on departure becomes meaningless. However, when he or she goes off course within 500 meters from a departure point or a destination point, this was not regarded as off course and included in this calculation.

In the middle, navigation users sometimes stop driving to go to a service area, a rest area, or a gas station. Since this case was not seen as proper data for this calculation, 5 or more minutes' stop was excluded. In other words, when a user follows the navigation route without a stop, he or she can arrive with two minutes of error on average.

Taxi drivers have a smaller error than regular drivers

Kakao Navi is punctual

Some users say “Two minutes of an error? It seems smaller than I experienced.” There are many variables including traffic lights, surveillance cameras, speed bumps, weather conditions, and events. For this reason, the shorter the guided distance is, the higher the probability of a smaller error and vice versa. Accordingly, an interesting difference in an error of Kakao Navi on Kakao T Taxi was found.

An error of estimated time on arrival on Kakao T Taxi

1m 32s

Sep. 6~12, 2018 only based on on-course driving

An error of estimated time on Kakao Navi used by Kakao T Taxi was lower than overall average. Is this because a taxi driver is better at driving? It can be, but it seems that this difference was caused by another reason. Average driving distance of taxi drivers is shorter than the one of regular drivers. A smaller error found among taxi drivers seems contributable to the fact that taxi drivers frequently drive shorter distance than regular navigation users and their driving data included operations in the middle of night.

Do users trust navigation?

What if users do not follow a navigation route?

Do users trust navigation?

“The Road Not Taken” is a famous poem by Robert Frost. This poem ends with “Two roads diverged in a wood, and I- I took the one less traveled by, and that has made all the difference.” Like this line of the heart touching poem, what if users take the one less traveled? Of course, this would not make all the difference. However, they will go around the long way. There is a reason why users take the one taken by many users.

However, what if the one less traveled is the one directed by navigation? They will go around the long way, but will arrive earlier. It is because Kakao Navi knows real-time information.

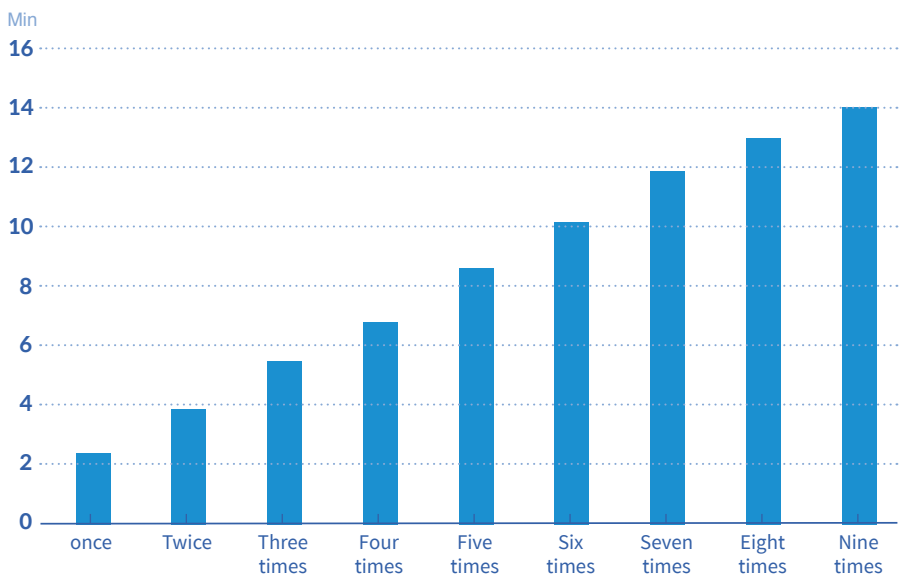
Most off course cases

Do users trust navigation?

How much do users trust navigation guided routes? What if users do not follow them?

As a result of analysis on correlation between the number of off-course cases and estimated time errors, the more users go off course, the longer it takes. If a user went off course once, twice, and three times, it took about two more minutes, four more minutes, and six more minutes. Nine times off course cases mean 14 more minutes late on average, which is a rare case.

An increase in estimated time on arrival resulting from off course on Kakao Navi



Sep. 6-12, 2018

Why do users go off course?

Do users trust navigation?

The above graph has two meanings. Estimated time provided by the real time traffic based Kakao Navi tends to be less than actual time spent on the route taken by users based on their experiences. When a user goes off course due to inexperienced driving, this tends to increase actual time spent. In other words, users go off course because they trust their own experience or because they are not used to driving. Two cases cannot be distinguished by data only.

People have different stories and preferences. In many cases, users go off course due to inexperienced driving or busy brain. However, they might want to stop by a certain location or have something urgent to do. They might want to go as they usually go or take a beautiful road like seashore road. Koreans have the right to freedom of movement, choice of residence, and freedom not to follow a navigation route. Navigation also does not have to persuade users. However, there are some examples that it was good to follow a navigation route.

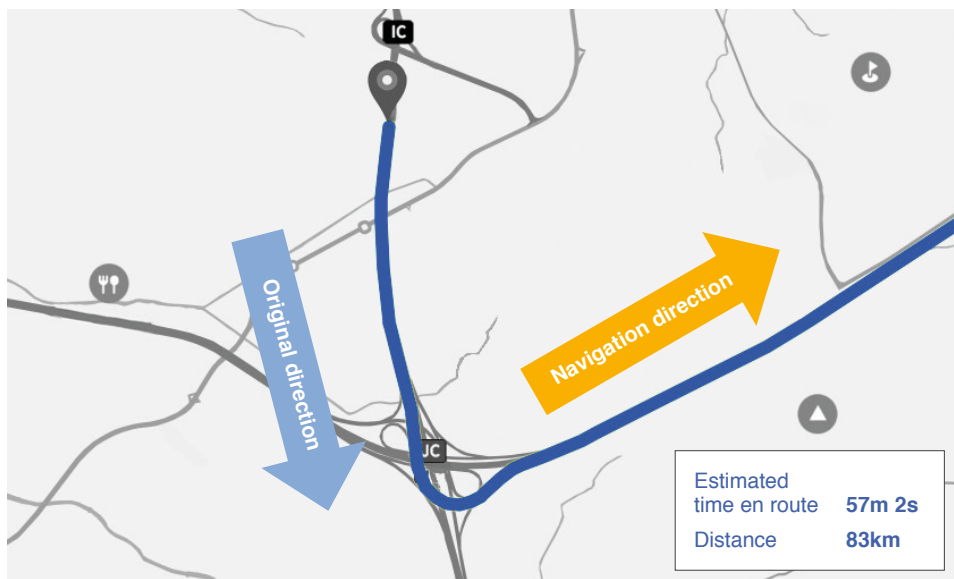
Difference between human's intuition and navigation estimation

Do users trust navigation?

The off-course case for the reason that “I trust my experience and intuition” was examined. Some complained “Navigation guided a strange route, so I went around the long way.” However, navigation has a reason to guide a strange route, doesn't it? Data showing such a reason was found.

It happened around Yeosu JC at 5:28 on September 12, 2018. Driver A was going from north to south with Kakao Navi on. At this moment, he was suddenly directed to an eastbound detour route right after passing Yeosu JC. As far as he knows, all he had to do was to go straight. He felt this was strange.

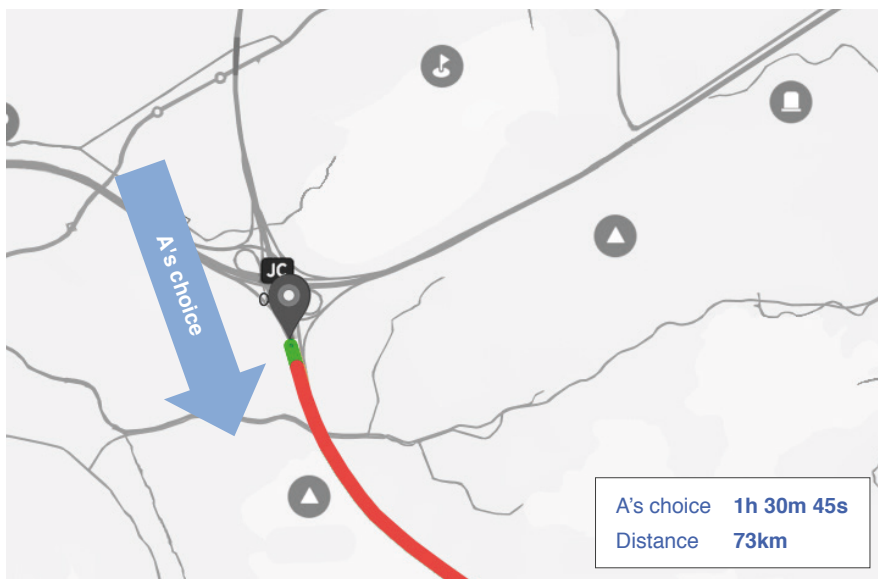
Route and estimated time for Driver A on Kakao Navi (5h 28m)



He felt strange because he did not know the situation. He was about to go straight, but was directed to a detour route. In addition, estimated distance was also longer. He could not understand. Since he knew these roads very well and did not like the navigation guided route, he followed his institution and went straight.

The following figure shows the result of his institution. Estimated distance was 10 km shorter, but estimated time on arrival was 33 minutes longer in the blink of an eye. Kakao Navi changed the route to avoid congested section because Kakao Navi knew that it would take a long time to pass this section.

**Route taken by Driver A
and changed estimated time (5h 30m)**



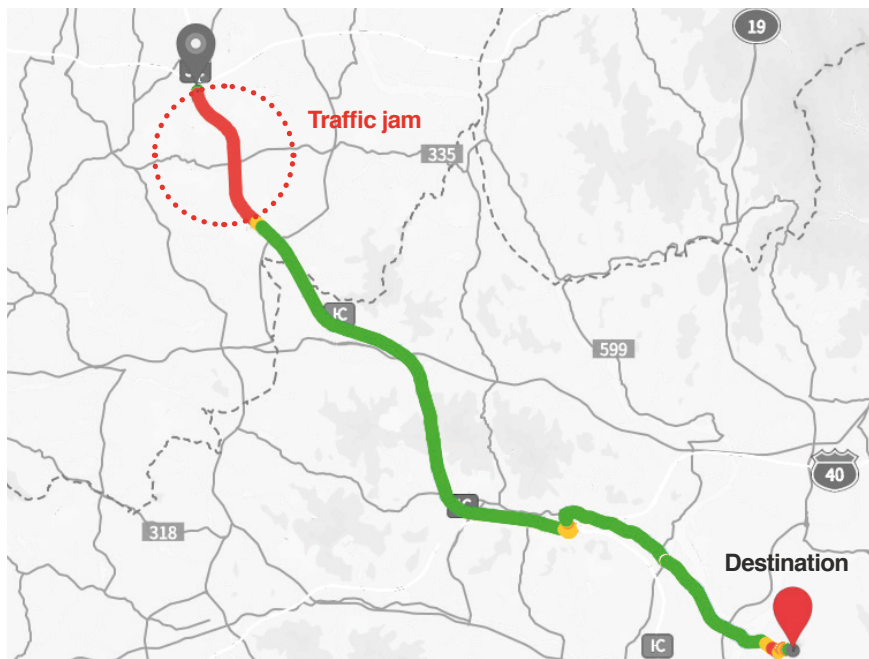
Navigation is seeing the big picture

Do users trust navigation?

In this Driver A's case, let's examine the overall route. In fact, there was an accident in the middle of the route leading to congestion. Kakao Navi detected this congestion and reflected this situation in a new route. However, he had to pass this long-congested section because he followed his intuition instead of the navigation route.

As shown in the poem by Frost, human beings always think of the road not taken and regret it. If they regret it, it may be better to follow the navigation route and regret it. It is because Kakao Navi has the big picture based on countless real-time navigation information and taxi information.

Big picture of the route finally taken by Driver A



Do users trust navigation?

kakaomobility

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