

H [REDACTED] AnD

Please Do not ride a  
ride a motor cycle Without safety  
cycle Without safety gear.

**DURATION**

2019.09 ~ 2020.07

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**TEAM**

ESPOO

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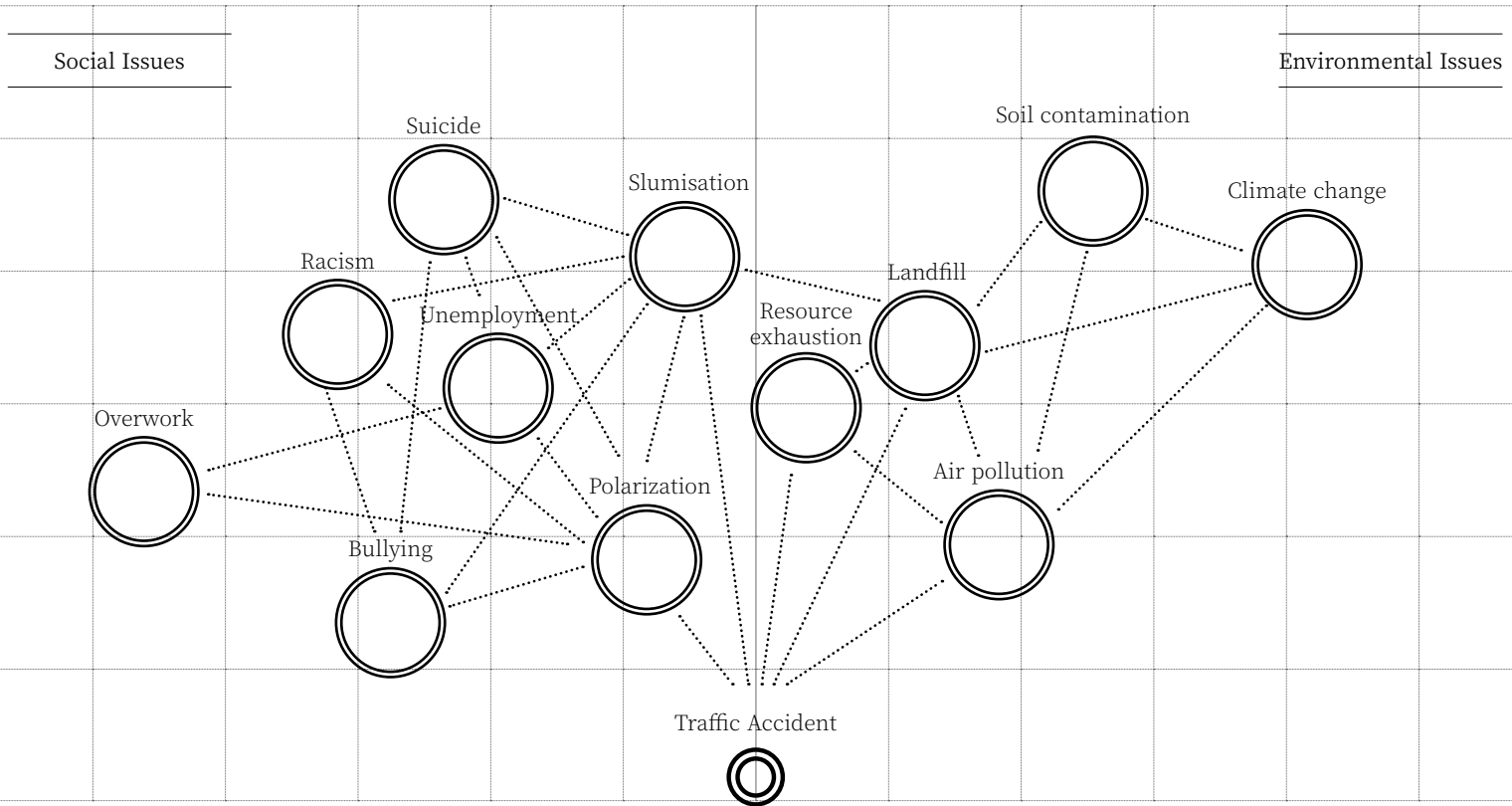
**MEMBER**

Jinhyuk Kwon    Mingyu Seo

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## Significant Problems that Society is Facing



Stanford Design Thinking Proceess

### Empathize

현대사회는 너무나 많은 문제들은 안고 있다.  
이 사회의 고통들을 하나씩 나열했고 깊은 이야기를 나눴다.

#### Define

- ☐ Problem Define 문제정의
- ☐ Research Define 연구정의
- ☐ Research 리서치

#### Ideate

- ☐ Persona 페르소나
- ☐ Journey Map 저니맵
- ☐ Scenario 시나리오
- ☐ Comparative Analysis 비교분석
- ☐ Insight 도출점
- ☐ 3 Ideas 3개의 결론

#### Prototype

- ☐ Studying 형태연구
- ☐ Sketching 스케치
- ☐ Prototyping 시험 모델 제작
- ☐ UX testing 경험 테스트
- ☐ Analysing 데이터 분석

#### Test

- ☐ Refinement 정리
- ☐ Evaluation 평가
- ☐ Model making 결과물 제작
- ☐ Product Survey 사후 평가

Empathy	Member A.
자신이 당한 직접경험.	<i>Sliding while driving a motorcycle.</i>
Experience	오토바이 운전을 그만둬.

Empathy	Member B.
경험하지 않은 간접경험.	<i>An acquaintance had a car accident.</i>
Experience	슬픔을 느끼고 안전을 강조.

Service

*Motorcycle Safety*

Product

# The Report of Death

2014 - Future

Traffic Accident Comparison		Total Number of Accidents			The Number of Motorcycle Accidents		
		Accidents	Killed	Injured	Accidents	Killed	Injured
Year	2014	223,552	4,762	337,497	11,758	392	13,899
	2015	232,035	4,621	350,400	12,654	401	15,172
	2016	220,917	4,292	331,720	13,076	428	15,773
	2017	216,335	4,185	322,829	13,730	406	16,720
	2018	217,148	3,781	323,03 7	15,032	410	18,621
Annual Increase		-3% ▾	-21% ▾	-4% ▾	+28% ▲	+6% ▲	+34% ▲
Estimated Increase	2019	▾	▾	▾	▲	▲	▲
	2020	▾	▾	▾	▲	▲	▲
	2021	▾	▾	▾	▲	▲	▲
	2022	▾	▾	▾	▲	▲	▲
	2023	▾	▾	▾	▲	▲	▲
	2024	▾	▾	▾	▲	▲	▲
	2025	▾	▾	▾	▲	▲	▲
	2026	▾	▾	▾	▲	▲	▲

# Mortality and Survival

We all know how comfortable a motorcycle is, but we neglect how dangerous it is. According to the Korean Traffic Accident Analysis System (TAAS), motorcycle accidents have increased gradually, while car accidents have decreased. We, the team, analyze the traffic accident statistics of the last five years and research the difference between a motorcycle and car accidents.

Not everyone, but most of the motorcycle drivers tend to seek freedom and do not like to be restricted. Some of them prefer not to wear a helmet just because it is uncomfortable. They drive across roads and sidewalks. Therefore, the total number of traffic accident death has decreased by 21% between 2015 and 2019. However, motorcycle accident death has increased by 6%. The number of motorcycle accidents has increased by 28% since 2014. It is not astonishing that motorcyclists get into accidents relevantly more than other vehicle drivers.

On the other hand, motorcyclist traits are not the only reasons they get into more accidents. Unlike a car, a motorcycle does not have any protection. It does not have a body frame, a seat belt, or an airbag. Even though the driver wears a helmet, it cannot protect them from serious injuries or deaths. Statistics show that the average accident rate per 10,000 in transportation is 1.4, but that of the motorcycle is 68.1 per 10,000, which is a humongous difference. Besides, the motorcycle is small, and the rider drives alone, which makes it harder to find for first aid.

Although the motorcycle is comfortable transportation while being dangerous, registration of it is continuously increasing. As a team, we empathize with motorcyclists and try to find a way to make their journeys safer.

Car			
		Airbag	Car Frame
		Seat Belt	

Number of Registered Car	18,676,824	Injured	323,036
Accidents	217,148	Number of Deaths (per 100,000)	7.3
Killed	3,781	Number of Accidents (per 10,000)	1.4

Motorcycle			
		Helmet	Gloves
		Jacket	Suit

Number of Registered Motorcycle	2,208,424	Injured	15,032
Accidents	15,032	Number of Deaths (per 100,000)	1.9
Killed	410	Number of Accidents (per 10,000)	68.1

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# Golden Hour

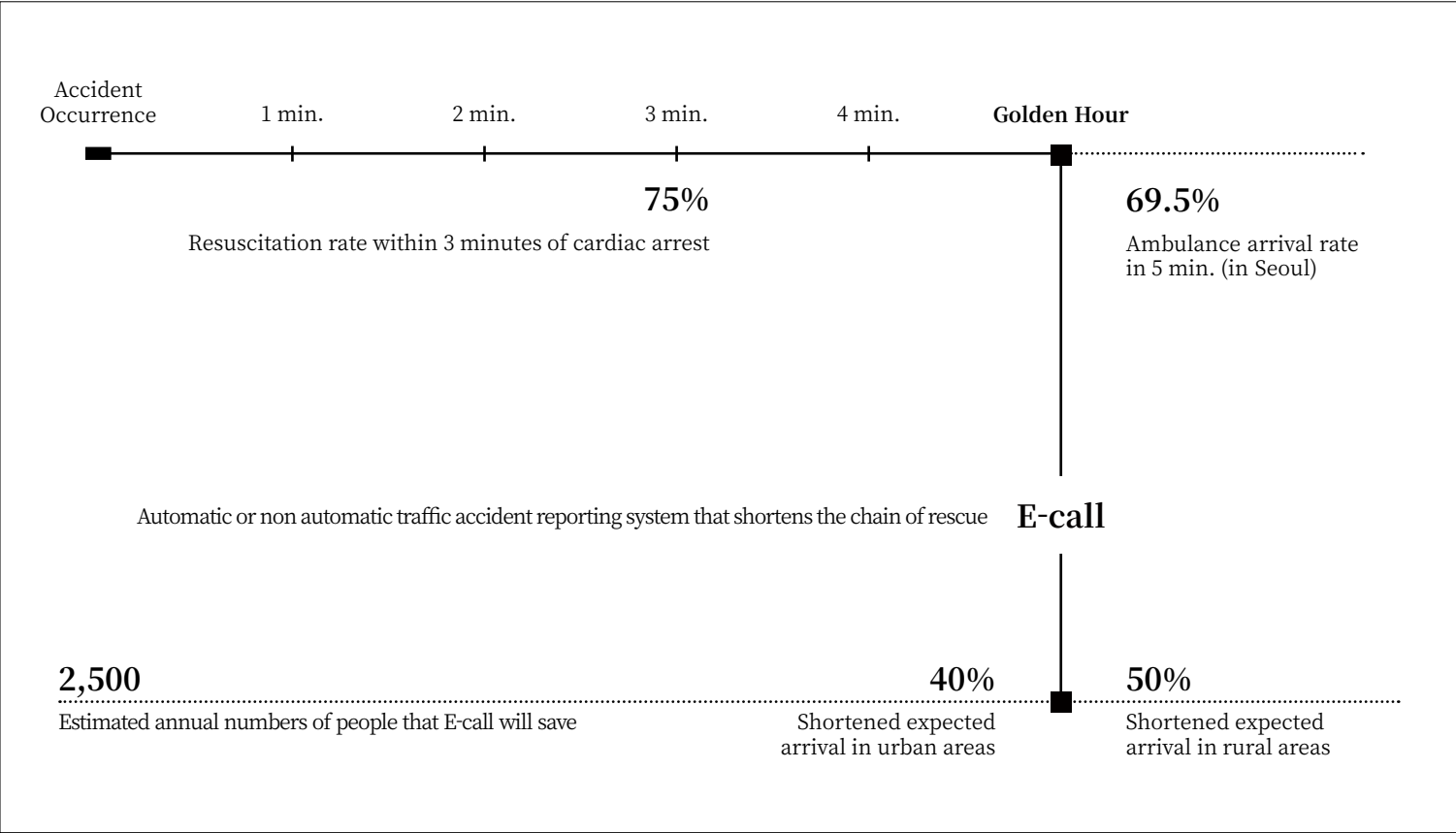
The first hour after the occurrence of a traumatic injury, considered the most critical for successful emergency treatment to prevent death.

If the person gets medical treatment in 5 minutes after the accident, he will survive with high probability.

In the case of cardiac arrest, the survival probability reaches 75% in the first aid within 3 minutes.

In Seoul, the ambulance arrives at the scene of the accident in 5 minutes, with 69.5%. However, the rural area has a different story.

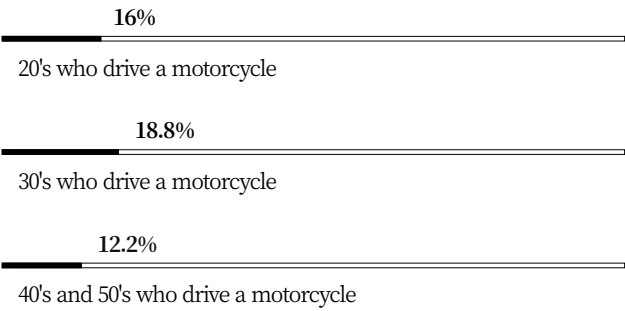
However, when an accident occurs in a rural area, the chance to arrive in the golden hour gets drastically decreased.



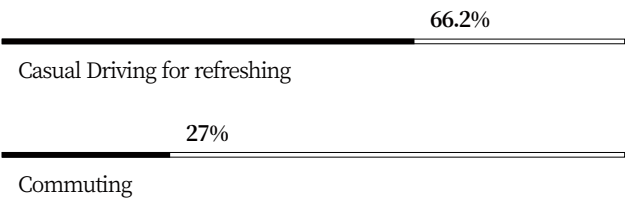
Survey. Research Agency [Embrain Trend Monitor]

Surveyed 1000 men and women aged between 19~59

Key 1. The younger generation drives motorcycles more than older.



Key 2. People drive motorcyrcels to relieve stress



Name  
*Phillip Kim*

Gender  
*Male*

Age  
*32*

Nationality  
*South Korea*

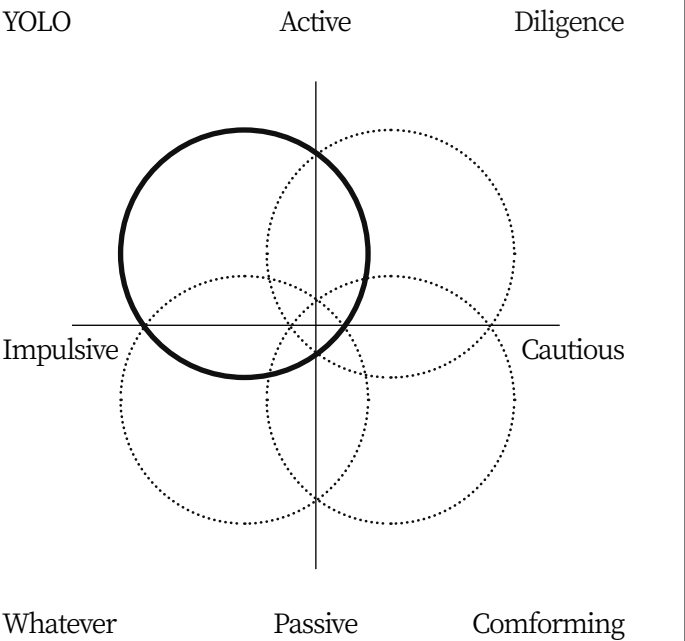
Occupation  
*Programmer*

- # Rider
- # Safe drive
- #Location sharing
- #Thrill
- #YOLO
- #Comfort
- #Impulsive
- #Freedom

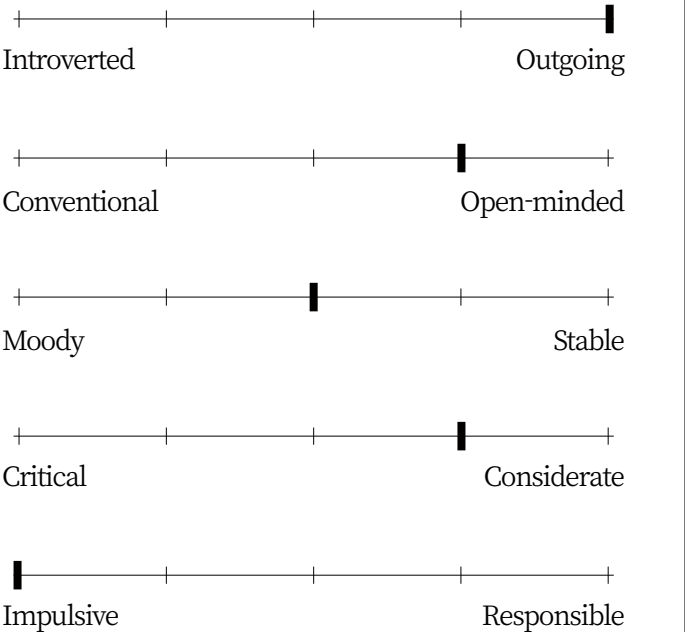
Personality

Sungmin is an autonomous freelance programmer in the '30s living in Seoul, Korea. He is willing to spend money to invest in himself. He rides a motorcycle in a rural area for a short trip. Wearing helmets, gloves, and other protective gear, he is conscious that driving a motorcycle is entertaining but dangerous.

Identity Graph



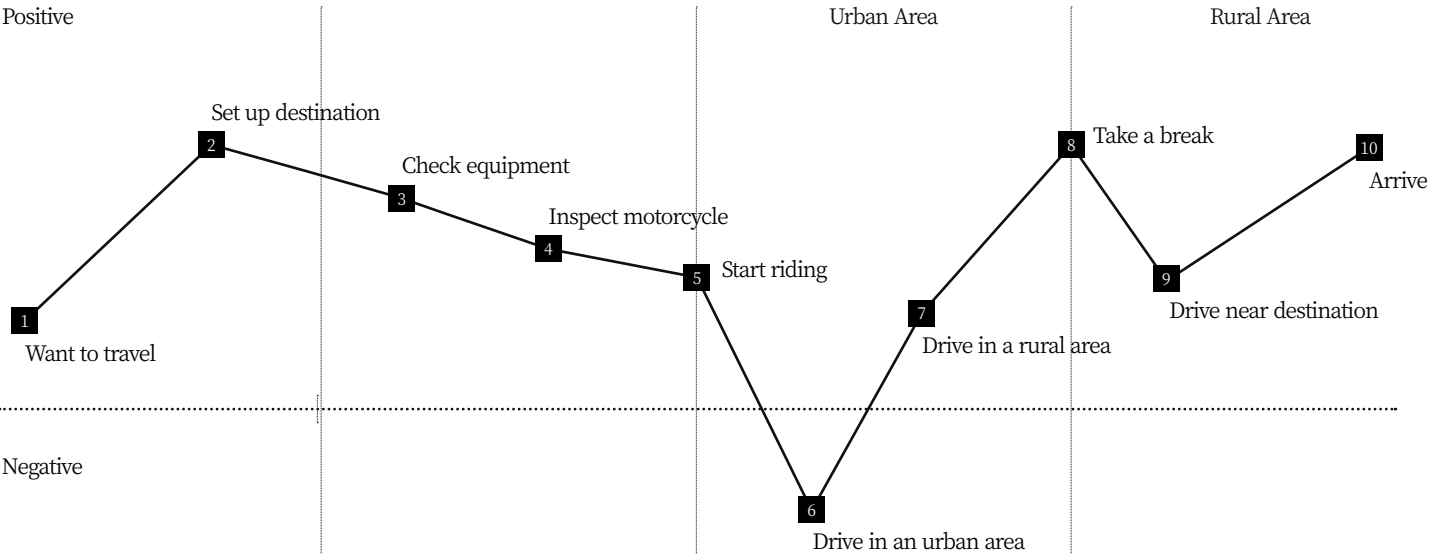
Big 5 Result Test





Q. How does it look like to travel with a motorcycle?

Trip Journey Map

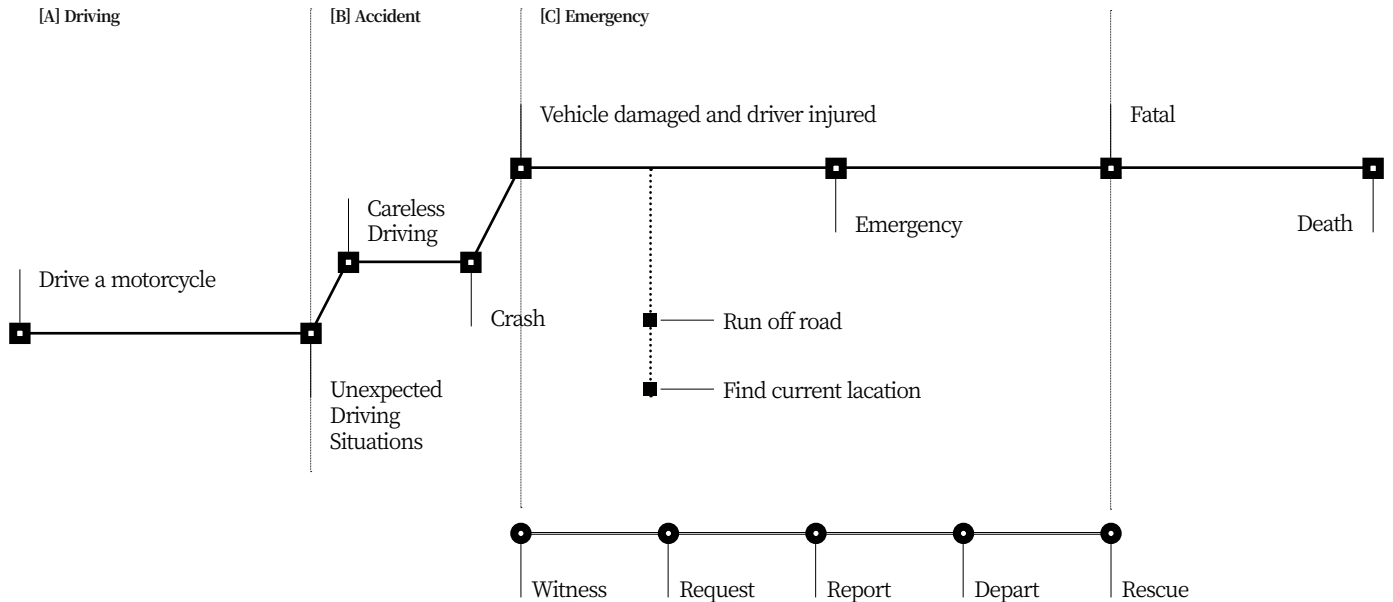


IDEATE

Recommend travel destination	Recommend to wear safety gear	Navigate the path	Record driving time and path
Provide travel information	Remind safety instruction	Track real-time location	Provide returning information
Find a path to the destination	Inspect the vehicle	Record driving data	Analyze driving habits
Record the journey	Record vehicle status	Suggest to avoid traffic congestion	Suggest to break bad driving habits
	Transfer vehicle status to a server	Plan transport	Provide safety information while driving

Q. What should we do at the scene of an accident?

Crash Scenario





INSIGHT

주행 중 충돌율을 낮추는 방법

사고시 사망율을 줄이는 방법

사고시 위치를 발견하기 쉽게 만드는 방법

경미한 부상시 쉽게 신고할 수 있는 시스템

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JOINT / SERVICE / APP

Product  
Challenge