

Lessons Learned from Traffic Culture Research in South Korea

Korea Transportation Safety Authority

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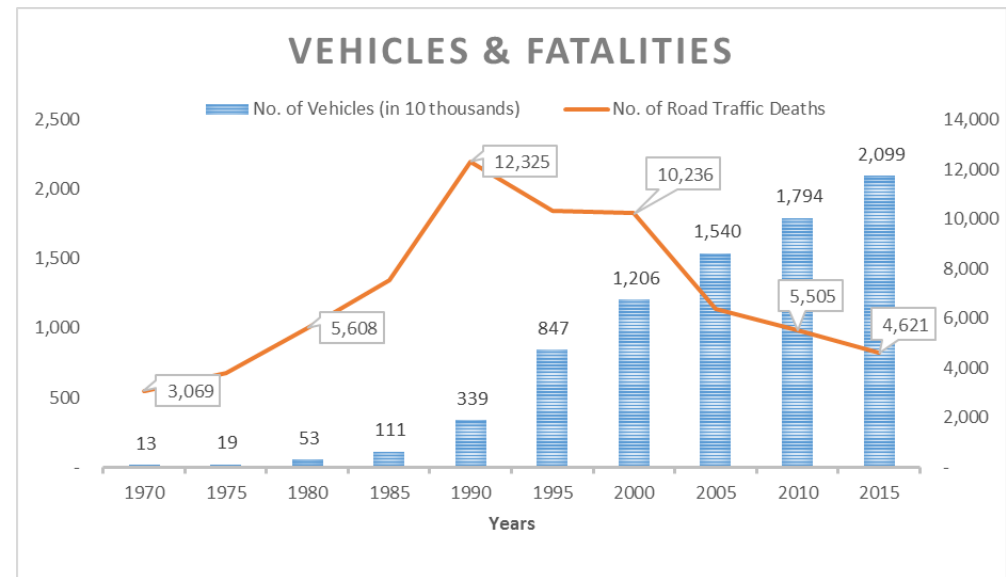
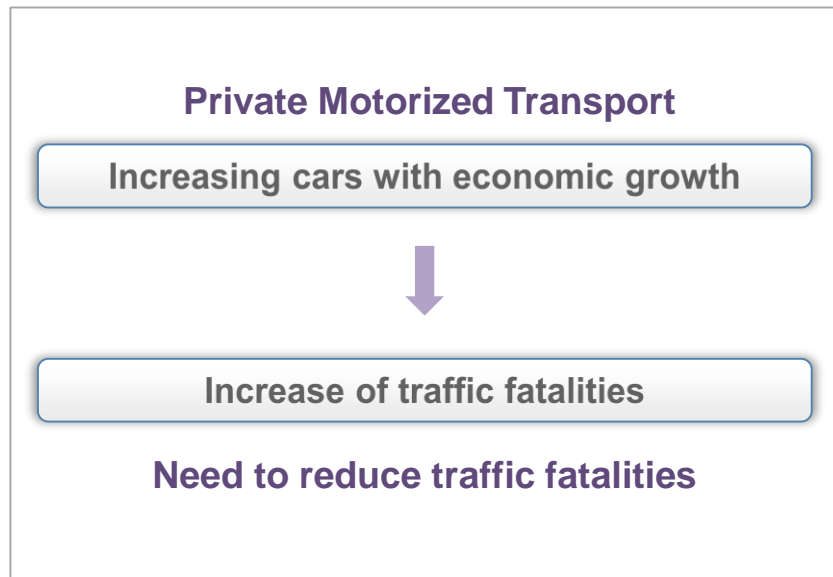
I. Traffic Fatalities and Efforts in Korea

II. Introduction on Traffic Culture Index

III. Lessons Learned and Future Direction

1. Number of Vehicles and Traffic Fatalities

- Economic growth increased car ownership level, resulting in more road traffic deaths
 - The highest traffic fatality rate in 1992 among OECD countries
- A lot of efforts were made such as revising traffic safety acts, improving transport facilities at hazardous locations, and revising drivers' license issuing program, etc.
 - No. of deaths per 10,000 vehicles : 236 in 1970 → 36 in 1990 → 2 in 2015 (over 100 times reduction)



2. Key Efforts for Road Safety

- 1995**
- School Zone System
 - New Car Assessment Program (NCAP)

- 1997**
- Unmanned Speed Cameras & Heavier Fines

- 2001**
- Citizen Report & Reward System for Traffic Violations
 - Prohibition of Mobile Use while Driving

- 2005**
- Campaign to Reduce Child Fatalities by Half
(Tighten enforcement, Free supplies of infant car seats, etc.)

- 2008**
- Transportation Safety Training Center for Commercial Drivers
(by Korea Transportation Safety Authority)

- 2011**
- Compulsory Use of Seat Belts in All Seats on Expressways



1. What is Traffic Culture Index (TCI)?

TS Background

- Highest traffic fatality rate in 1992 among OECD countries
 - Still TWO TIMES those of other OECD countries in 2015
- Safety attitude is one of main root causes of traffic accidents and fatalities
 - Not enough to reduce them with improving traffic facilities, revising safety-related acts, etc.

TS Object

- To understand traffic safety culture & derive policy directions for reduction of road traffic fatalities
- By evaluating traffic culture index of all cities & announcing them to attract local cities' voluntary efforts for road safety



2. History of Traffic Culture Index (TCI)

■ Since 1998, Korea Transportation Safety Authority has continued to improve TCI

1998 ■ Korea Transportation Safety Authority voluntarily conducted TCI Survey, continued every year
- Covered only 13 cities among 229 cities in Korea

2006 ■ Survey coverage expanded to 229 cities covering all of cities

2007 ■ Official survey according to Article 57 of 『Transportation Safety ACT』

2008 ■ National Statistical Office approved TSC as official statistics based on 『Statistical Law』

2014 ■ On-site survey sites were expanded to 551 sites (2.4 sites per city)

2016 ■ A new indicator, “local governments’ efforts to improve traffic safety (13 sub-indicators)”
■ Expanded on-site survey sites to 635 sites in order to improve reliability

2017 ■ Questionnaire Survey was developed to capture citizens’ attitudes toward road safety (pilot)

3. On-Site Survey Sites

- All cities are divided into 4 groups by population and rank their TCIs within each group

| Group | Types of Cities | No. of Cities | No. of Observation Sites per City | Total of Observation Sites |
|-------|--------------------------|---------------|-----------------------------------|----------------------------|
| A | City (500,000 and over) | 15 | 5 | 75 |
| | City (300,000 - 500,000) | 13 | 3 | 39 |
| B | City (less than 300,000) | 50 | 3 | 150 |
| C | County | 82 | 2 | 164 |
| D | District | 69 | 3 | 207 |
| Total | - | 229 | - | 635 |

4. Indicators of Traffic Culture Index

- TCI consists of 11 indicators with 5 reference items collected by both on-site survey and using statistics
- TCI is calculated using weights derived by AHP (Analytic Hierarchy Process) method

| Category | Survey Items | Weights | Method | Period of Time |
|---|--|---------|---------------------|--|
| Driver Behavior (55%) | Seatbelt wearing | 10 | On-Site | 2 times/day for 1 hour (morning & afternoon) |
| | Turning left-turn signal light | 14 | | |
| | Abiding by crosswalk stop line | 14 | | |
| | Safety helmet wearing of motorcyclists | 10 | | |
| | Abiding by traffic light | 7 | | |
| Pedestrian Behavior (15%) | Abiding by traffic light at crosswalk | 10 | On-Site | 2 times/day for 1 hour (morning & afternoon) |
| | Using smart devices at a crosswalk | 5 | | |
| Traffic Safety (30%) | Traffic fatalities / 100,000 people | 10 | On-Site | Past 1 year |
| | Pedestrian traffic fatalities / 100,000 people | 5 | | |
| | Year-on-year rate of commercial-driver traffic fatalities | 5 | | |
| | local gov'ts' efforts to improve road safety (safety educations & campaigns, investigation of accident causes, safety plans, etc.) | 10 | Submitted Materials | |
| Reference Items for analysis (-) | Seatbelt wearing rate on expressway | - | On-Site | 2 times/day for 1 hour (morning & afternoon) |
| | Cellphone and infant car seat using rate | - | | |
| | Daytime running lights | - | | |
| | Abiding by right-of-way rules at roundabouts | - | | |
| | Traffic culture questionnaire survey (pilot survey) | - | Questionnaire | 11,450 people |

5. On-Site Observer Training

- On-site survey is conducted for 3 days (Tue, Wed, Fri in Sep.) at 635 sites, thus requires rigorous training



6. On-Site Survey - Seatbelt Wearing Rate

- Only drivers and front passengers wearing seatbelts are observed, because it's invisible to the naked eye



Overview

Target

- The first vehicle in a row waiting for green traffic signal at the stop line in front of the crosswalk

Time

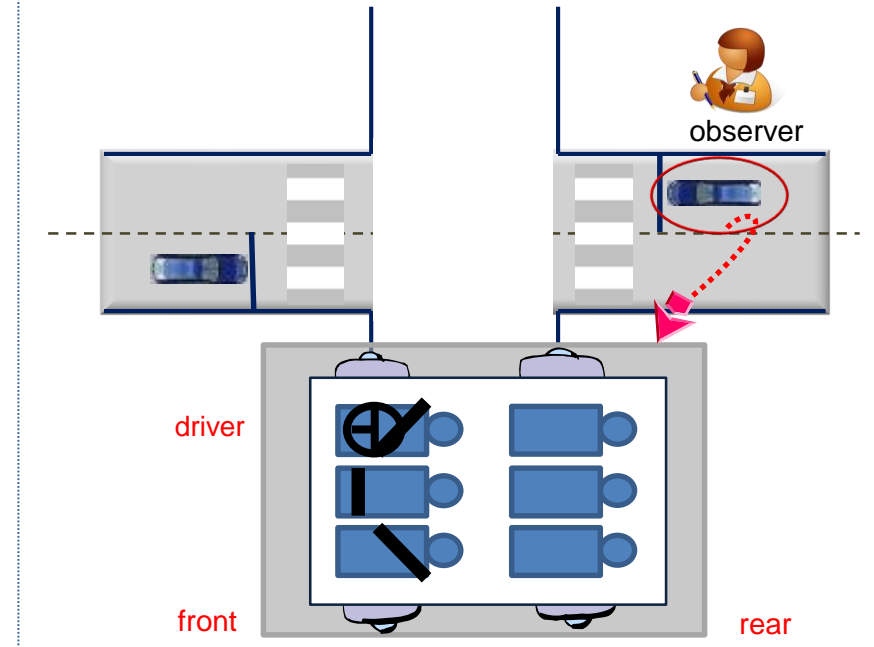
- 08:00 ~ 09:00 (morning)
- 14:00 ~ 15:00 (afternoon)

Survey

- Trained observers count the number of drivers and front passengers wearing seatbelts during the green light for pedestrians

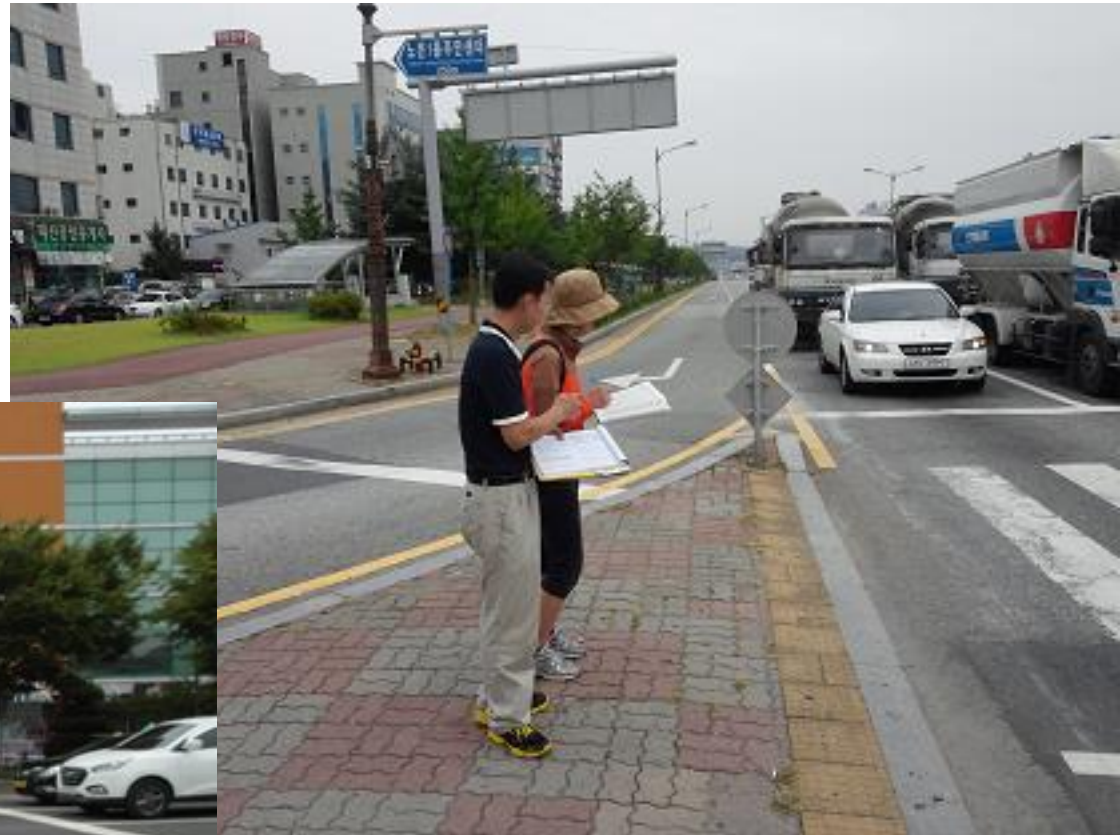


Observation site



6. On-Site Survey - Seatbelt Wearing Rate

II. Introduction on Traffic Culture Index



- Drivers' stop line abiding depends on traffic signal location, we are moving them rearward
- The abiding rate is increasing after moving them rearward

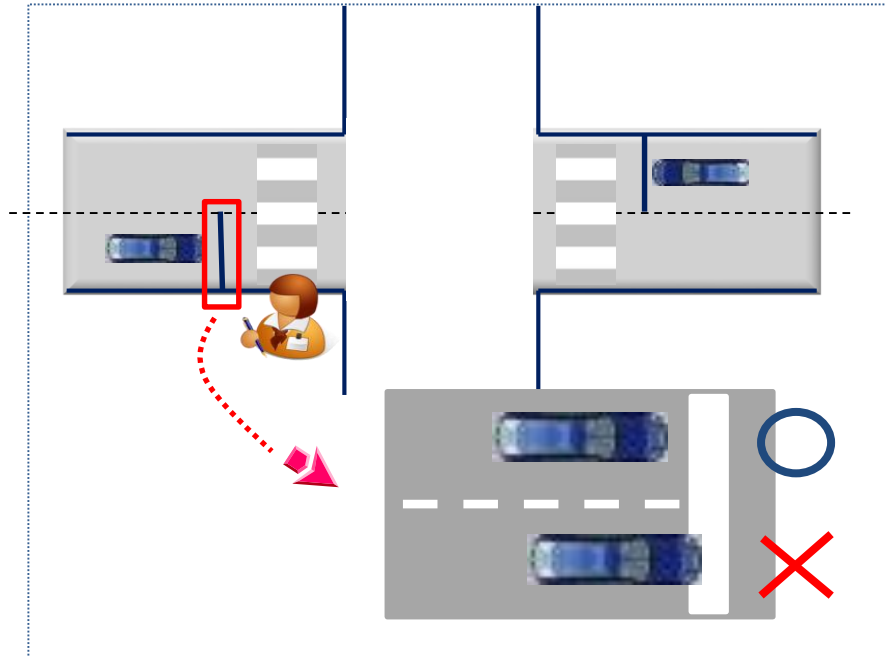


Overview

| | |
|---------------|--|
| Target | <ul style="list-style-type: none"> ▪ The first vehicle in a row waiting for green traffic signal at the stop line in front of the crosswalk ▪ Identifying vehicle type (commercial, private) |
| Time | <ul style="list-style-type: none"> ▪ 08:00 ~ 09:00 (morning) ▪ 14:00 ~ 15:00 (afternoon) |
| Survey | <ul style="list-style-type: none"> ▪ If a car keeps stopping behind a crosswalk stop line until pedestrian lights turn to "Red", an observer marks "Okay" on a survey sheet. |

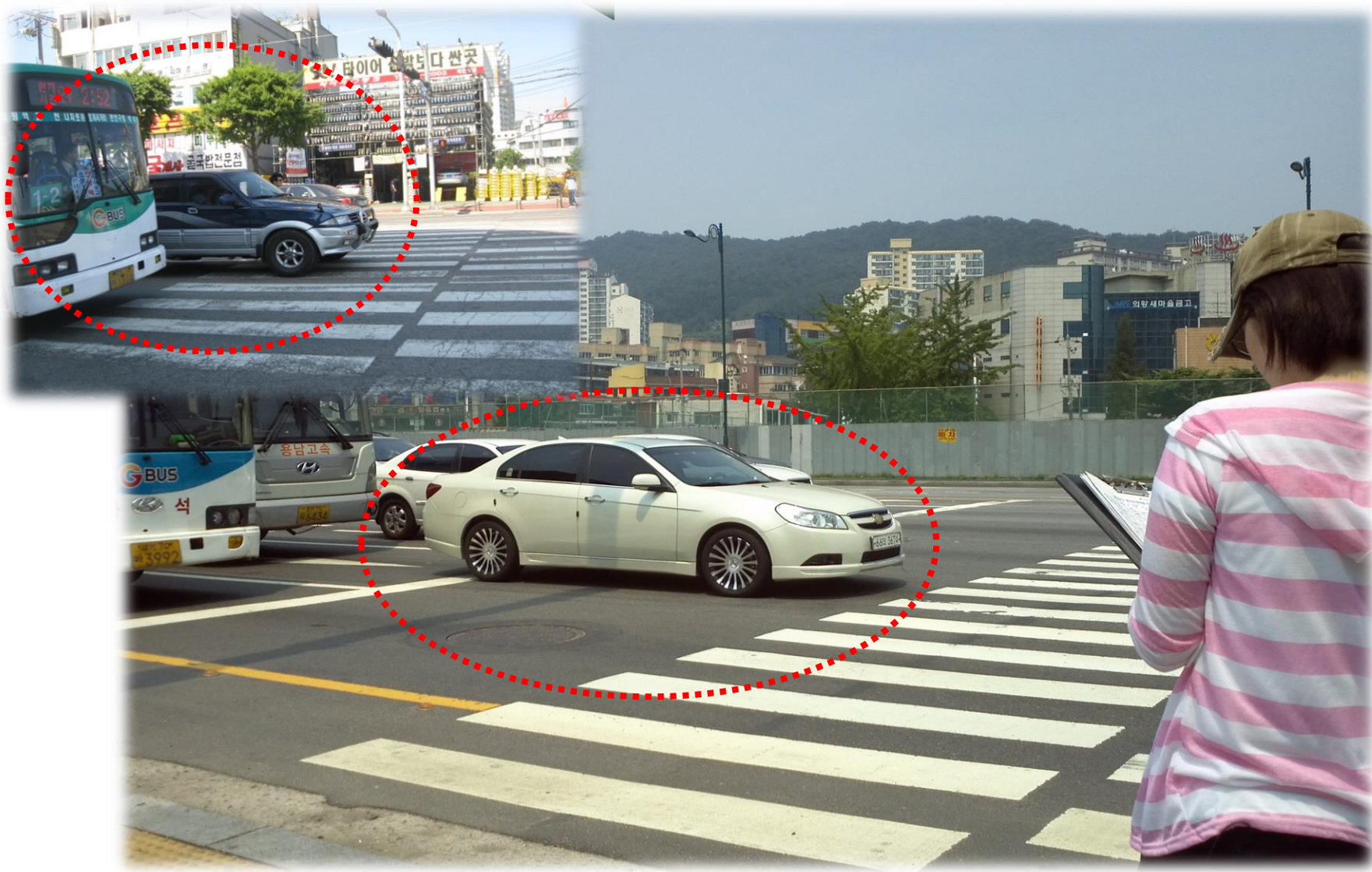


Observation site



7. On-Site Survey - Abiding by Crosswalk Stop Line

II. Introduction on Traffic Culture Index



8. Practical Use of Traffic Culture Index

II. Introduction on Traffic Culture Index

Award a prize to outstanding cities and report the TCIs of all cities to the press



| 경제혁신 | | |
|--|--|--------------------|
| 국토교통부 담당 부서: 교통안전복지과 | 보도자료 2016. 11. 30.(수) 총 7매(본문3, 붙임4) | |
| | 담 당 자: 과장 예창섭, 사무관 김석원, 사무관 권성근 ☎ (044)201-3865, 3867 | 31년의 혁신 30년의 성명 |
| 보도 일시: 2016년 12월 1일(목) 조간부터 보도하여 주시기 바랍니다. ※ 통신방송인터넷은 11. 30.(수) 11:00 이후 보도 가능 | | |

대전시 서구, 「2016년 교통문화도시 大賞」 수상 제천운수 등 7개 운수사업자, 교통안전우수사업자 지정

- 국토교통부(장관 강호인)은 선진 교통안전 문화 정착 및 자율적 경쟁을 도모하기 위해 2016년도 「교통문화 우수도시」와 「교통안전 우수사업자」를 각각 선정했다.
 - 「교통문화 우수도시」는 전국 229개 시·군·구별 각 지역의 주민들의 운전행태, 보행행태, 교통안전 3개 영역에 대한 “교통문화지수 실태조사”를 실시하여 교통수칙 준수율이 높은 ‘대전 서구’ 등 4개 지자체가 선정되었다.
 - 「교통안전 우수사업자」는 전국 4,500여 개 운수사업자(버스, 택시) 중 시도지사가 추천한 교통안전관리 우수사업자 83개 업체를 대상으로 교통안전도 평가를 실시하고,
 - 안전도 평가를 통과한 20개 업체에 대한 교통안전관리실태에 대한 현장 점검을 거쳐 제천운수 등 7개 운수업체를 최종 선정하게 되었다.
- 「교통문화 우수도시」는 인구 30만 명 이상인 지자체 중(28개)에서는 경기도 안산시, 30만 명 미만인 지자체 중(50개)에서는 세종특별자치시, 군 단위(82개)에서는 전남 화순군이, 구 단위(69개)에서는 대전시 서구가 우수 도시로 선정되었다.

Lessons Learned

- Indicators of TCIs depend on local conditions ← Local gov'ts' efforts for traffic safety
 - A general consensus among researchers about the need for greater traffic safety
 - Included it as a new indicator although it doesn't represent Traffic Culture Index
- Need to increase the level of subsidy to outstanding cities according to TCI
 - Most of cities know how to improve traffic safety, but they cannot put the solutions into action due to budget limitations

Future Directions

- Explore the effects of Local gov'ts' efforts for traffic safety on TCI
- Make more efforts to increase the level of subsidy by revising relevant acts
 - Currently, the amount of prize money is about 30,000 U.S dollars, not enough for local gov'ts to use it for effective traffic safety projects



Thank You!