

Traffic Safety Education and Public Awareness Campaigns in South Korea

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1 Introduction

1.1 Overview

In South Korea, about 2.23 million traffic accidents have occurred over the past 10 years (2003 – 2012), resulting in approximately 64,000 fatalities and 35 million injuries. The number of traffic accidents by year totaled about 240,000 in 2003 and approximately 223,000 in 2012, sustaining a predominantly sideways trend.

During that time, the number of automobiles increased from 14.586 million at the end of 2003 to 18.870 million in 2012—an increase of 29% in a decade. This increase is expected to continue over some time in the future, making traffic safety a major for concern and interest going forward.

The facts that a rise in the number of automobiles directly contributes to automobile usage and the number of traffic accidents has remained flat over the past ten years despite a 29% increase in the number of automobiles suggest that traffic accidents have experienced a relative decline, but the absolute numbers have remained static. This can be interpreted as an overall improvement in traffic safety.

The cited result shows an approximate 25% reduction effect in fatalities caused by traffic accidents over this period, from 7,212 in 2003 to 5,392 in 2012. The number of injuries caused by traffic accidents has also decreased by 9%, from approximately 376,000 in 2003 to approximately 344,000 in 2012, which demonstrates a continual decrease.

This reduction effect can be linked to various policies, among which are continuous traffic safety services and safety devices equipped in vehicles, and are considered to have had a direct impact on safety. While the fundamental effects of traffic safety education and public awareness are not immediate, the long-term effects are believed to be quite substantial.

While the situation in traffic safety has improved, the 2.4 fatalities per 10,000 vehicles in South Korea is hardly an acceptable level when compared to fatality figures in other countries; the United States is at 1.3, France 1.0, and Japan 0.7. These comparative results imply that the reduction effect is not satisfactory, and further efforts are required in promoting traffic safety through various safety policies, first and foremost being education.

The effects of traffic safety education and public awareness are not easily verifiable, but they cannot be dismissed as they are the most basic safety methods and most trustworthy in the long term.

Table 1. Comparison of Traffic Accident Rates by Country (In 2011. Units: 1,000 vehicles, individuals)

	South Korea	US	Japan	United Kingdom	Germany	France
No. of vehicles	21,909	257,515	82,839	34,039	50,902	39,026
Fatalities	5,392	32,885	5,450	1,960	4,009	3,963
Fatalities per 10,000 vehicles	2.4	1.3	0.7	0.6	0.8	1.0

The main objectives of this text are to outline primary information related to traffic safety education and public awareness implemented in South Korea and to take this opportunity to examine effective policies that should be put forward.

1.2 History of major traffic safety policies

In South Korea, traffic safety issues were first raised in earnest as social issues in 1983, when the fundamental law regarding traffic safety—the Traffic Safety Act—established the first basic traffic safety plan. From this perspective, 1983 could be construed as the initial phase of building various systematic advances relative to traffic safety.

The rapid increase in the number of vehicles from 1984 to 1991 led to increased fatalities caused by traffic accidents. Statistics on traffic accidents were disclosed for the first time in 1984, and statistical collection on traffic accidents became computerized in 1988; this launched a period of organization that included documentation that had previously not been collected.

In 1992, comprehensive traffic safety countermeasures were established by the Prime Minister's office and other organizations because the previous year, 1991, witnessed the greatest number of fatalities caused by traffic accidents in history. Meanwhile, target numbers for fewer fatalities were established on a road-by-road basis, and various policies were implemented to achieve these goals. In 1995, road driving tests were initiated in driver's license exams, and regulations designating and enforcing child protective zones were passed.

In 2009, the Prime Minister's office formed the Safety Control Improvement Planning Body to enhance the comprehensive and regulating tasks in governmental safety policies, extend license revocation for drunk driving from one year to two years, and enhance safety through measures such as requiring guardians to accompany children on buses.

2. Current situation of transportation and traffic safety in South Korea

At the end of 2012, the number of registered vehicles numbered 18.871 million, with a total of 20.964 million including motorcycles. This is a 30% increase over ten years from the 14.587 million registered vehicles in 2003. Passenger vehicles comprise 74.9% of this figure, and increased 4.0% on average annually—a higher rate of increase than other types of vehicles experienced.

The number of licensed drivers was 28.263 million at the end of 2012, representing 56.5% of the population eligible for licenses. The average annual increase of licensed drivers over the past ten years has been 2.8% since 2003, outstripping the 0.5% average annual increase in population.

While the male and middle-aged segments of licensed drivers are saturated, many seniors

and women are now seeking driver's licenses. Considering these shifts in social demands, it is reasonable to assume that future safety policies must address gender- and age-specific education.

The number of traffic safety signs, which are assumed to promote traffic safety (including warnings, restrictions, indicators, and aids), totaled approximately 1.192 million at the end of 2012, an average annual increase of 3.7% since 2003. This figure represents a 27% increase of signage per kilometer of road, rising from 8.8 units in 2003 to 11.2 in 2012. The continuous increasing trend in traffic safety signage can be said to have a positive effect on traffic safety. Considering that there are fundamental limits to the effects that these signs can have, however, the appropriate limit on signage should be subject to fundamental, restrictive reconsideration.

The number of traffic lights installed reached 37,008 at the end of 2012. This is a 76% increase from the 2003 figure of 20,953, or an average of 6.5% annually. Like the situation with traffic signs, this trend must also be examined to determine what the appropriate number of traffic lights is in terms of safety.

However, the number of traffic accidents that occurred by the end of 2012 was 223,000, with 5,392 fatalities and 334,000 injuries. These trends show that the number of traffic accidents is not decreasing despite the increase in safety equipment outlined above.

Of course, considering that the number of fatalities caused by traffic accidents has continuously decreased from 7,222 in 2002 to 5,392 in 2012, the effects are evident to a certain extent. Moreover, given the 30% increase in the number of registered vehicles over the past ten years and the subsequent relative increase in traffic (14.587 million registered vehicles in 2003, 18.871 million registered vehicles in 2012), one could see even a sustained sideways trend in the number of traffic accidents as an effect to some degree.

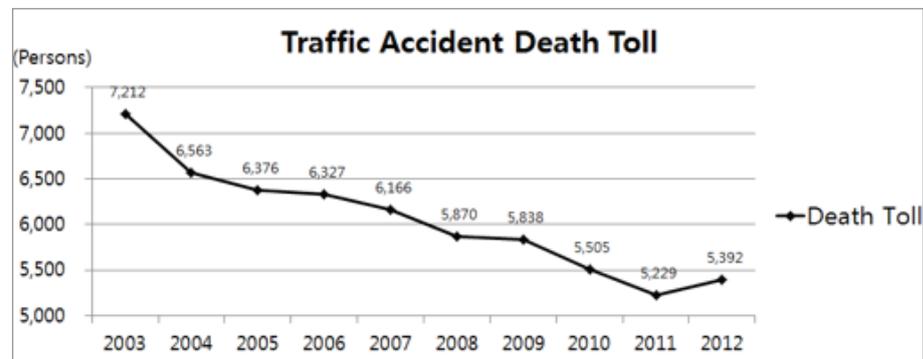


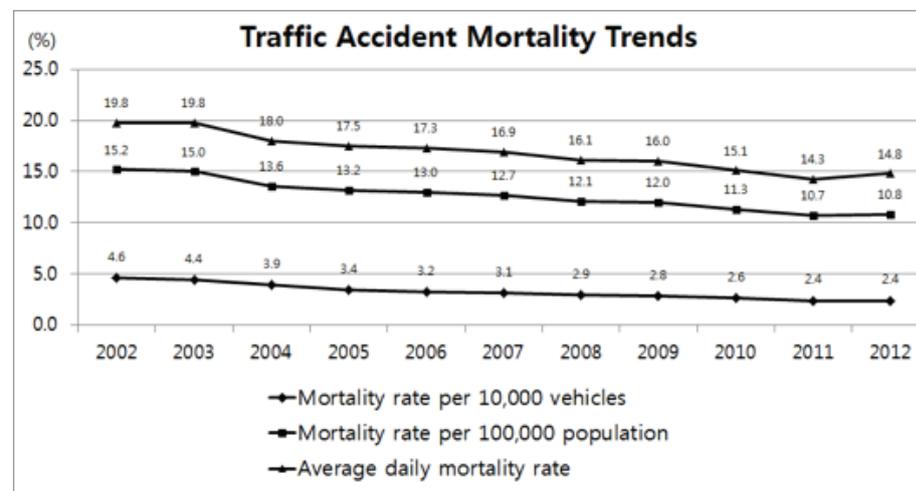
Figure 1. Number of fatalities caused by traffic accidents by year

The result is a decrease in the number of fatalities per 10,000 vehicles by almost half, falling from 4.6 in 2002 to 2.4 in 2012. The number of injuries per 10,000 vehicles has also decreased by 30% from 222 in 2002 to 152 in 2012. Fatalities and injuries per 100,000 people also continue to decline from 15.2 and 730 in 2002 to 10.8 and 689 in 2012, respectively. The average number of fatalities per day has also decreased by about 25% over the same period, from 19.8 to 14.8. The number of injured, however, has not decreased by much.

Although the overall effect has been a decreasing number of fatalities, etc., the number of fatalities over the past five years has remained almost unchanged, while the number of accidents and injuries has been static. This suggests the need for different policies that could lead to much greater results.

Table 2. Number of Traffic Accidents over Time in South Korea (Vehicles, Accidents, People)

Year	Vehicles Owned	No. of Traffic Accidents	Fatalities	Fatalities Per 10,000 vehicles
1970	128,298	37,243	3,069	239
1980	527,729	120,182	5,608	106
1990	3,394,803	255,303	12,325	36
2005	17,123,540	214,171	6,376	3.7
2010	19,766,830	226,878	5,505	2.8
2011	20,265,685	221,711	5,229	2.6
2012	20,963,999	223,656	5,392	2.5

**Figure 2.** Traffic accident mortality trends

Traffic accidents are caused by a multitude of factors, the most notable of which—driver behavior, incidents of traffic violations, and awareness, among others—directly threaten traffic safety in big ways. Approximately 223,000 traffic violations were reported to police in South Korea in 2012, 56.1% (125,391) of which were categorized as unsafe driving, followed by 11.3% (25,307) traffic light violations, and 10.0% (22,275) failing to keep safe distances. This indicates that driver awareness is the biggest issue.

71.8% of fatalities from traffic accidents (3,872) were caused by unsafe driving. The risk (mortality rate) of this kind of violation is high, and the percentage of these violations (56.1%) relative to the percentage of resulting fatalities (71.8%) is large, underlining the riskiness of this behavior.

Table 3. Traffic Accidents by Traffic Violation (In 2012. Units: Incidents, People)

	Accidents (Composition Ratio)	Fatalities (Composition Ratio)
	223,656 (100.0%)	5,395 (100.0%)
Unsafe driving	125,391 (56.1%)	3,872 (71.8%)
Traffic light violation	25,307 (11.3%)	389 (7.2%)
Failing to keep safe distance	22,275 (10.0%)	97 (1.8%)
Intersection violation	14,721 (6.6%)	111 (2.1%)
Crossing center line	13,018 (5.8%)	445 (8.3%)
Pedestrian protection violation	7,106 (3.2%)	174 (3.2%)
Speeding	337 (0.2%)	107 (2.0%)
Other	15,461 (6.9%)	197 (3.7%)

Details of traffic accidents occurring in 2012 show that the highest percentage of accidents involved multiple vehicles (72.6%), followed by involvement with pedestrians (22.4%). However, 40.0% of fatalities involved multiple vehicles and 36.7% pedestrians, indicating that both are high-risk causes.

What is important to note here is that of all fatalities, 36.7% involved pedestrians. The composition ratio of fatalities from this kind of accident is roughly three times higher than other countries such as France (11.6%), the United States (12.1%), and Germany (14.2%).

A supposition could be made from these results that for a period, South Korean measures prioritized automobile traffic and focused on driving ability, which in turn engendered a generalized neglect for pedestrian safety. Thus, the country would benefit by establishing policies for safety countermeasures, education, and public awareness to address this situation.

Further analysis of accidents involving pedestrians by their circumstances reveals an unacceptably high percentage (39.0%) of accidents involving pedestrians at crosswalks. Meanwhile, 7.8% of accidents involved pedestrians in traffic, and 7.1% of accidents occurred while vehicles were passing pedestrians (and 41.3% were categorized as other). 50.7% of all victims that died in accidents were at crosswalks, meaning what is often considered the safest location was actually associated with higher risk. This situation demands attention.

Table 4. Accidents Involving Pedestrians and Composition Ratio by Type (In 2012. Units: Accidents, People)

	No. of Accidents	No. of Fatalities
	50,111 (100.0%)	1,977 (100.0%)
Crosswalk	19,537 (39.0%)	1,003 (50.7%)
In traffic	3,904 (7.8%)	174 (8.8%)
At edge of street	3,577 (7.1%)	94 (4.8%)
On sidewalk	2,399 (4.8%)	83 (4.2%)
Other	20,694 (41.3%)	623 (31.5%)

Categorizing accidents occurring while the pedestrian was crossing the street by time of day shows that the numbers of accidents were split almost even between night and day, but the number of fatalities was higher at night (62.5%). This high risk indicates that countermeasures such as illumination are necessary, as is education about safe walking.

Since the percentage of accidents at crosswalks turns out to be quite high, it is critical to call attention to the importance tied to crosswalks, the social meaning of traffic safety for pedestrians, and fundamental issues related to traffic safety. These items require immediate countermeasures.

Determining risk levels derived from data like the number of traffic accidents that occur and the number of fatalities and injured not only illustrates the current situation of traffic safety but also is also useful for evaluating policies that have been implemented and determining what policies should be going forward. Further, comparing the number of accidents and victims in South Korea with other countries provides a comparative perspective for accurate judgment of the situation.

Analysis of traffic accidents by road type shows that the highest percentage of all accidents occurred on special municipality/metropolitan roads at 42.5%, followed by municipal roads at 30.4%, rural roads at 8.9%, and the lowest on expressways at 1.6%. However, fatalities caused by accidents were 24.7% on special municipality/metropolitan roads, 22.9% on municipal roads, 20.4% on general national roads, and 6.9% on expressways, where the fewest number of accidents occurred. This suggests that the impact of characteristics in high-speed driving is huge.

The rate of traffic accidents per kilometer of road in addition to road type was highest at 4.9 on special municipality/metropolitan roads and lowest at 0.9 on expressways, as shown in Table 5.

Table 5. Rate of Traffic Accidents by Road Distance/Type (In 2012)

	General National Roads	Rural Roads	Special Municipality/Metropolitan Roads	City/Town/Village Roads	Expressways
Accidents per km	1.4	1.1	4.9	1.5	0.9

The percentage of traffic accidents by vehicle type (with a base criterion was highest in passenger vehicles at 67.6%, followed by freight vehicles at 13.0% and passenger transportation vehicles at 7.3% as of 2012. Compared to percentages in 2002 (Table 6), these figures are higher among passenger vehicles and motorcycles and lower among freight vehicles and passenger transportation vehicles. Considering the large percentage of accidents involving passenger vehicles, the country must focus on repetitive safety education and public awareness, taking into account general characteristics, in order to reduce traffic accidents among general drivers.

Table 6. Traffic Accidents by Vehicle Type (In 2012. Units: Accidents, %)

	Accidents	Composition Ratio
Passenger vehicles	151,191	67.6
Transportation vehicles	1,408	7.3
Freight vehicles	29,011	13.0
Special-purpose vehicles	999	0.4
Motorcycles	10,415	4.7
Other	15,632	7.0
Total	223,656	100.0

However, the number of accidents per 10,000 vehicles of each type is highest in passenger transportation vehicles at 166.3, followed by special-purpose vehicles at 159.6 and passenger vehicles at 103.7. The number of fatalities is extremely high in special-purpose vehicles at 9.1, followed by passenger transportation vehicles at 4.6, and relatively low in passenger vehicles at 1.8. These numbers suggest the need for safety countermeasures by vehicle type.

The results indicate that it is necessary to fully consider characteristics according to driver and profession, such as driving characteristics by vehicle type and driver experience, in order to improve the usefulness of future traffic safety. This information will also prove valuable in formulating educational programs appropriate for specialized safety education and public awareness.

An overall decreasing trend in terms of fatalities caused by traffic accidents by age group has emerged with the exception of seniors, a segment where accident fatalities have been increasing. The rapid aging of Korean society has been accompanied by an increase of social activities by seniors and a greater frequency of movement compared to before. A variety of factors can be brought to attention, such as the fact that senior perspectives on awareness and safety are different and that they rely on others for safety. With regards to concerns about currently middle-aged drivers who will continue to drive as they become elderly in the near future, the psychological and physical characteristics of seniors must be included in provisions for safety education in order to advance future traffic safety capabilities.

As society ages ever faster, social responses lag further and further behind, making this point the most important to observe in the future.

Recently, society has been paying more attention to issues with accidents involving senior drivers due to aging. Despite senior drivers' relatively long driving records and various levels of experience, aging causes declines in body functions, awareness, reactions, impairing sight and faculties of judgment in particular. These issues appear to be the primary causes of the aforementioned accidents.

While safety countermeasures have been initiated in the past around the perception of senior drivers as protected individuals, senior drivers have become more prone to causing accidents in recent years; awareness has spread to the point where any doubts of this high likelihood have been eliminated. Through changes in awareness, there is growing acknowledgement of the need for responses such as providing sufficient and enhanced safety education for senior drivers and limits on driving duration.

Drunk driving has a considerable and terrible impact on traffic safety. Approximately 13% of the total number of traffic accidents in South Korea in 2012 was caused by drunk driving. This serious issue resulted in 815 fatalities that year. Recidivism rate is high, with second offenders accounting for 30% of crackdowns on drunk driving.

Driver awareness influences characteristics like these. In order to promote a change in the paradigm that dismisses the seriousness of drunk driving and control drunk driving behavior, it is necessary to publicly address the risks involved in drunk driving and implement educational policies for safety education and paradigm shifts based on acknowledgement of drunk driving as a social problem, not a personal problem.

When looking at the current situation and characteristics of traffic accidents raised above, we see that a flat trend in the number of traffic accidents and fatalities has persisted in recent years in South Korea. A large percentage of these traffic accidents is caused by behaviors that drivers should know better not to do, like failing to keep a safe distance, pointing toward a dire need for awareness and education.

The high percentage of accidents in crosswalks should not simply be a lens into traffic safety but also a standard by which the direction of future policies are determined. The issues surrounding senior drivers as the society at large ages rapidly have reached a point where a change in perspective as to whom has been viewed to be the victim is critical.

These very changes in society provide an opportunity to reassess perspectives on safety. A comprehensive view that both grasps the current situation in policies being promoted and fully considers education is necessary. Various educational programs and public awareness activities will also be required to help shift paradigms about drivers and pedestrians as society gets older.

3 Policy approaches to traffic safety

3.1 Continuous promotion of child protective zone improvement projects

In May 2003, the Vehicle Traffic Control Improvement Special Accounting Act was revised and outfitted with a basis for promoting projects related to child protective zones. From 2004, the implementation of all programs related to child protective zones was shifted from the National Police Agency to under the aegis of the Ministry of Security and Public Administration.

In November 2004, the jurisdiction of designating protective zones for children, seniors, and pregnant women was shifted from the National Police Agency to local governments, thus consolidating regional designation and control. This resulted in an increase of corresponding schools from approximately 9,000 in 2008 to about 15,000 in 2012, demonstrating a high annual average rate of increase.

Table 7. Increase in Child Protective Zones Established

	Total	Elementary Schools	Kinder- gartens	Special Schools	Day-care Facilities	Other
2008	8,999	5,526	2,602	93	778	-
2009	9,584	5,654	2,781	107	1,042	-
2010	13,207	5,850	5,476	126	1,755	-
2011	14,921	5,917	6,766	131	2,102	5
2012	15,136	5,946	6,735	131	2,303	11
Annual average increase	12.0%	1.8%	26.8%	8.9%	31.3%	-

Focused control of child protective zones is occurring in tandem with this facility management. Continuous campaigns with related groups are being implemented while regional experts give lecture tours about the social significance and risks of traffic accidents involving children. As a result, the number of traffic accidents involving children per 100 child protective zones dropped from 5.58 in 2009 to 3.38 in 2012.

3.2 Promotion of senior traffic safety through the designation of senior protective zones

The April 2006 revision to the Road Traffic Act established a basis and system for securing safety from hazardous situations such as traffic accidents through regulations regarding the designation and management of senior protective zones and "regulations regarding the designation and management of protective zones for children, seniors, and people with disabilities."

This revision emphasized the necessity of establishing protective zones around facilities that seniors and people with disabilities frequented, resulting in the establishment of 566 zones total nationwide by 2012. In addition, a plan has been made in the Ministry of Security and Public Administration to continue government sponsorship for establishing traffic safety facilities within these zones.

Some have pointed out that because the designation of these zones often prioritizes seniors in traffic, the actual effects of designating a location are not always substantial depending on the circumstances of the location. Functions are often redundant because residential areas are surrounded by many medical and leisure facilities that seniors frequent, as well as protective zones for children. Many have taken the position that zones

need to be designated more efficiently and effectively in the future, taking into consideration redundancy from other designated zones.

Table 8. Trends in the Designation of Senior Protective Zones

	Total	Near Residential Facilities	Near Medical Facilities	Near Leisure Facilities	Near Parks	Near Community and Exercise Facilities
2008	97	7	8	82	-	-
2009	205	20	28	157	-	-
2010	265	25	40	200	-	-
2011	417	28	71	317	-	1
2012	566	40	104	412	4	6

To reduce traffic accidents involving and resulting in injury to children, seniors, and people with disabilities, who are transportation-disadvantaged outside of designated protective zones, the "Plan for the Designation and Management of Protective Zones for Children, Seniors, and People with Disabilities" was enacted in January 2011. Improvements are now being made around these facilities for protection against traffic accidents.

At the same time, the Ministry of Security and Public Administration is supporting programs to create and distribute educational materials for safety instructors and enable continuing safety education at a national level. Meanwhile, the Korea Transportation Safety Authority has been focused on emphasizing the widespread use of car seats to protect infants in traffic accidents.

Car seat usage is still low in South Korea (39%) compared to other countries (96% in Germany, 94% in the United States, 52% in Japan; Samsung Traffic Safety Research Institute materials). Loaners and giveaways have been planned to increase usage. Similarly, it has been deemed necessary to distribute canes with reflective materials to seniors nationwide to prevent accidents while they are walking.

3.3 Traffic accident countermeasures for pedestrians

The largest issue in discussions of traffic accidents in South Korea is, of course, traffic accidents involving pedestrians. Approximately 40% of the over 2,000 fatalities due to traffic accidents each year involve pedestrians.

This value is much higher than the 18.3% average value (in 2010) of the Organization of Economic Cooperation and Development (OECD) and significantly higher than 11.7% in the Netherlands, 12.1% in France, and 13.0% in the United States. The issue of traffic safety for pedestrians is difficult to broach in the face of such extreme differences. Traffic safety for pedestrians is a critical and central function of traffic safety and is a top priority for government.

"Pedestrian environment development programs" promoted by the Ministry of Safety and Public Administration in response to this issue primarily aim to secure the safety of pedestrians through countermeasures such as eliminating uneven surfaces on sidewalks (for pedestrian safety and convenience) or even banning vehicle entry altogether.

To accomplish this, local authorities first implemented the necessary preliminary investigations through "pedestrian environment development programs" during the latter half of 2009 and then selected locations (or zones) where pedestrian safety facilities were necessary (4,127 in total). It came to light that 76% of these locations required new construction or extension of sidewalks and 70% of rural roads required improvements.

Pedestrian environments have been continuously improved, beginning with 20 projects in 2009 based on the results from the preliminary investigations, and increasing to 44 in 2010, 52 in 2011, and 75 in 2012.

In 2013, the “line” concepts for establishing related programs targeting existing roads were passed over in favor of “plane” concepts with the enactment of the “Law for Promotion of Pedestrian Safety and Convenience” in August 2012, which included language to enable this conceptual shift and enhanced pedestrian rights.

3.4 Improvement of points of frequent traffic accidents

Points of frequent traffic accidents are defined in South Korea as special municipality/ metropolitan roads where five or more traffic accidents involving human injury occur and other general city roads where three or more traffic accidents involving human injury occur. Under this definition, the segment unit for an intersection is the 30-meter radius around and including an intersection (with intersection segments equal to 200 m), and the segment unit for a single road is 400m.

Improvement programs for points of frequent traffic accidents are promoted jointly by the Ministry of Security and Public Administration (managed by local authorities), the Ministry of Land, Infrastructure and Transport, the National Police Agency, and the Road Traffic Authority under the aegis of the Office for Government Policy Coordination. Five stages of improvement programs were initiated in 1988, with various relative programs implemented during each stage.

Table 9. Details of Each Improvement Program for Points of Frequent Traffic Accidents

	Main Details
First point of frequent traffic accidents improvement program (1988 – 1995)	All documentation for accidents that occurred in 1988 were examined, 6,555 points were selected as hazardous, and 6,103 of these points underwent improvement construction over the next six years excluding expressways
Second point of frequent traffic accidents improvement program (1996 – 2001)	Accidents that occurred in 1994 were examined, 7,005 points were selected, and 4,289 of these points underwent construction
Third point of frequent traffic accidents improvement program (2002 – 2006)	Investigation of all accidents was implemented on an annual basis starting in 2004
Fourth point of frequent traffic accidents improvement program (2007 – 2011)	The opinions about points selected by safety experts and local residents were reflected in designs from the fourth stage
Fifth point of frequent traffic accidents improvement program (2012 – 2016)	A shift was made from “point” concepts to “line” concepts to plan diversification starting from the fifth stage

The number of points where improvement programs were completed from 1991 to 2012 was 13,447. Analysis of these points before and after the programs showed reductions by 27.9% in the number of traffic accidents, 43.2% in the number of fatalities caused by accidents, and 26.3% in the number of injuries, respectively. These analyses showed that improvement programs on points of frequent traffic accidents had a large impact on traffic safety and led to the decision to continuously implement these programs.

3.5 Establishment of the Traffic Safety Information Management Complex System (TMACS)

Despite the overall decreasing trend in the number of traffic accidents over the past ten years, the number of fatalities per 10,000 vehicles could still be deemed hazardous compared to OECD nations and requires continual efforts going forward. The large-scale traffic safety policies implemented by South Korea have not yielded much pertinent information for individuals.

TMACS was completed over the period between 2008 and 2011 pursuant to Article 52 of the Traffic Safety Act and Article 40 of the order for its enforcement. The objective of the system is to provide pertinent information and improve traffic safety by sharing documentation and analysis results collected to prevent traffic accidents. Information provided by the system includes cumulative analysis results of traffic accident documentation for the most recent three years, points of frequent traffic accidents and their year by year trends, and overviews of each accident.

Information related to each region, year, vehicle, and violation type based on accident indices is provided as traffic safety information analysis, while cumulative points of accidents, cumulative segments of accidents, each accident location, and thematic maps are each provided as GIS-based information. This allows individuals to check safety information that they are interested in by region, holds promise for promoting traffic safety awareness and caution, forms the basis by which future policies are established region by region, and is expected have even greater utility in the future.



Figure 3. Start page of the Traffic Safety Information Management Complex System (TMACS)

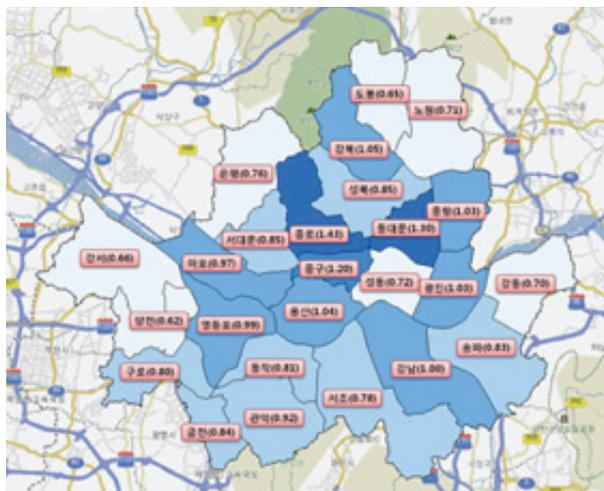


Figure 4. Example of integrated index of traffic safety by zone in Seoul provided by TMACS

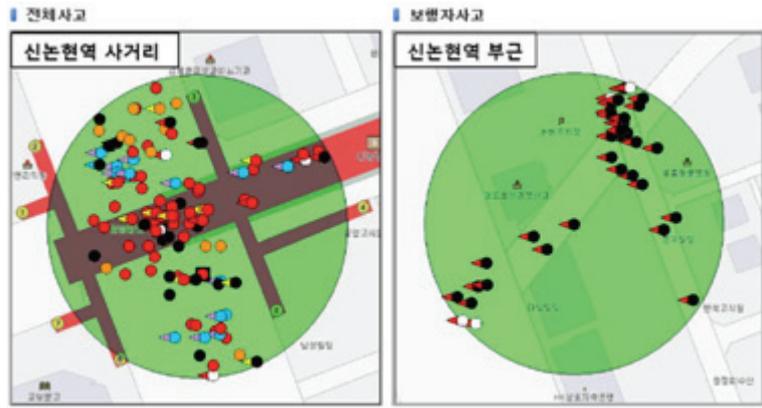


Figure 5. Status of accidents by intersection (left) and pedestrian accidents (right) provided by TMACS

3.6 Promotion mechanism for traffic safety education

A framework primarily for overseeing related tasks is necessary to promote traffic safety education effectively and continuously. First, Article 2 of the order of enforcement for the Traffic Safety Act indicates that the organizations that shall oversee traffic safety duties will be “designated government bodies” (there are 14 total), which will oversee traffic safety education and public awareness, safety technology development, and budgets, etc.

Of the designated government bodies, the Ministry of Land, Infrastructure and Transport manages most of these roles, with involvement from the Ministry of Safety and Public Administration and the National Police Agency. The National Transportation Committee is chaired by the Minister of Land, Infrastructure and Transport and primarily comprises the heads of the 12 designated government bodies related to traffic safety duties and experts chosen among key figures in the field of traffic safety. The committee deliberates on, organizes, and determines basic national traffic safety plans.

Article 13 of the Traffic Safety Act stipulates that the main policies related to traffic safety by region and the deliberation of basic transportation safety plans for each region are to be conducted by safety policy deliberation committees established in each city, town, and village.

4 Various education and public awareness activities for traffic safety in South Korea

4.1 Project for reducing traffic accident fatalities and injuries (plan to reduce the number of fatalities and injured people by half)

This project raised awareness of the social severity of fatalities and injuries caused by traffic accidents. The “five-year plan for reducing the number of traffic accidents by half” was selected as one of the 100 national policy targets managed by the Prime Minister’s office in July 2008. A “National Traffic Safety Countermeasure Deliberation Committee” was established to deliberate and decide on a five-year plan for reducing the number of fatalities and injuries caused by traffic accidents by half from 2008 to 2012, chaired by the Prime Minister with involvement by the Ministry of Land, Transport and Maritime Affairs (Ministry of Land, Infrastructure and Transport), the Ministry of Public Administration and Security (currently the Ministry of Security and Public Administration), and the National Police Agency.

This committee determined that there were practical limitations in the existing systems and regulations related to traffic safety and reducing the number of fatalities and injuries caused by traffic accidents by half. It recognized that different countermeasures needed promotion. The field of traffic safety was analyzed in other countries in order to introduce a traffic safety management system that included education on par with global standards, and efforts were put into countermeasures specific to various causes of accidents.

Next, annual target values were established for five years, and promotion strategies were established for each year to achieve the targets in order to reduce accidents. Details of the related promotion projects are outlined in the Table 10 & 11.

Table 10. Main Details of 5-year Plan

Main Policy Details	
Year 1, 2008	Target set for a 5-10% reduction, 65 base pillars and sub-items selected to promote overall plan, safety standards for motorcycles set
Year 2, 2009	Target set for 10% reduction in traffic accidents and projects emphasizing system improvements and publicity implemented
Year 3, 2010	Target set for 15 % reduction, education implemented to enhance analysis of accident causes and motorcycle safety, speed control residential roads in 33 locations
Year 4, 2011	Organization of related laws, expansion of pedestrian safety facilities, requirement of reporting use of motorcycles 50 cc or under, enhancement of education for drivers
Year 5, 2012	Improvement of road safety equipment, establishment of "Pedestrian Safety and Convenience Promotion Act," improvement of 2,200 points of frequent traffic accidents involving crossing violations, etc.

Table 11. Main Promotion Strategies through the Project for Reducing Traffic Accident Fatalities and Injuries

Classification	Promotion Program Details
Pedestrian and public transportation safety	Improvement of safety facilities focused on pedestrians, expansion of programs that prioritize walking zones, enhancement of safety education and improvement of the license system for motorcycles, promotion and education/awareness enhancement of senior protective zone improvement programs, etc.
Introduction and infrastructure development of advanced speed management	Introduction of zone 30 for speed management, introduction of a municipal road speed management system, activation of road safety diagnostics, expansion of safety equipment in points of frequent traffic accidents, etc.
Systematic establishment of foundation for traffic safety	Publicity for enhancement of penalties for traffic violations, extension of periods after which 3+ repeat offenders of drunk driving may acquire driver's licenses and increase of education time, requirement for wearing rear passenger seat belts, revision of the Act on Special Cases Concerning Traffic Accidents, etc.
Enhancement of regional local authority traffic safety activities	Enactment of notification system for vehicles violating traffic laws (through black box video), implementation of traffic safety example cities, enhancement of parking violation management, etc.
Improvement of emergency medical response system for traffic accidents	Advancement of traffic accident fatality and injured transfer system, enhancement of emergency response training for instructors to target schools, installment of systems for emergency response training, etc.

Additionally, a community-government "Coordination Promotion Committee" was established to investigate progress on the promotion of the five-year plan to reduce the number of traffic accident fatalities and injuries by half. A variety of opinions were collected from external experts and the directors of ministries related to the duties of the committee, and activities were determined to analyze onsite performance and raise the applicability of the data.

While the initial results of these related actions have not achieved initial target values, they have produced a certain effect by helping reduce the number of traffic accident fatalities by 12.6% over the past six years. The number of fatalities per 10,000 vehicles is still high compared to OECD member nations, but there has been a decrease from 3.1 in 2007 to 2.4 in 2012, and a decrease in fatalities per 100,000 people from 12.7 in 2007 to 10.8 in 2012.

There are different opinions about the evaluation of these reduced levels. Some think that the proliferation of automobiles and subsequent increase in traffic volume have an effect above a certain threshold. For instance, the number of fatalities by accident per 100,000 people for children under 13 years old has greatly decreased from 2.3 in 2007 to 1.3 in 2011, a level consistent with the OECD average of 1.4.

A "comprehensive traffic accident fatalities and injuries reduction countermeasure," spanning five years (2013-2017), recently began. The countermeasure formulates five central strategies to ingrain a traffic safety culture that prioritizes people in order to reduce the number of annual fatalities per 10,000 vehicles from the 2.34 figure in 2012 to 1.60 by 2017.

The first of these strategies is an education and awareness effort to require wearing seatbelts in all seats in order to lay the roots for a traffic culture that prioritizes people. It also includes measures to enhance crackdowns on drunk driving and other behaviors that directly lead to traffic accidents and implement a trial "good driving mileage system" (a program that provides some kind of reward to drivers who have not violated any traffic laws for one year after they agree not to).

The second strategy is to implement improvement programs targeting 210 segments of frequent traffic accidents on national roads and increase the current number of "nap and rest areas" that are intended to prevent falling asleep at the wheel on expressways from 112 to 220 by 2017.

The third is to provide specialized safety education to prevent accidents involving senior drivers, who are rapidly increasing in number as society ages. Individuals who have completed this education will receive discounts on automobile insurance premiums from businesses in the industry. This education incentive measure is expected to increase chances for senior drivers to participate in education and have an education effect on them through awareness about their mental and physical characteristics.

The fourth strategy is an effort to introduce an "emergency automobile transmission (E-Call) system" by outfitting vehicles with devices that transmit location and damage status of accidents that occur to fire stations, medical institutions, and police stations. This system is expected to reduce response time to accidents by about 50% and reduce serious injury by 2-10%.

The final strategy is traffic safety infrastructure development that shifts the focus of the National Traffic Committee from existing safety equipment to traffic safety measures, including increasing the practical use of these safety measures. The strategy will also involve designating traffic safety leaders at local authorities in an attempt to increase the sense of responsibility for safety.

4.2 Improvements to traffic safety awareness through safety education

Expansion of traffic safety education has been implemented through the Road Traffic Authority. Starting in 2003, high-performing speakers (910) have been selected from among mothers affiliated with National Friends of Mothers to provide repeated instruction at kindergartens and elementary schools across the country.

This resulted in approximately 1.624 million children in kindergarten and elementary school receiving instruction in 2008, a number that increased to approximately 2.565 million children in 2012. Further efforts to prevent accidents are continuing with more frequent education in protective measures for members of the Green Mothers Society tasked with child safety on site.

Table 12. Number of Children in Kindergarten/Elementary School That Have Completed Safety Education (Children/Year)

	2008	2009	2010	2011	2012
Children	1,624,244	1,837,078	1,965,072	2,129,874	2,565,108
Rate of increase from 2008	1.00	1.13	1.21	1.31	1.58

Table 13. Education Activities for Green Mothers Society (People)

	2008	2009	2010	2011	2012
Instruction Staff	8,804	4,353	3,292	5,589	5,681

Traffic parks for children allow them to directly participate and learn about safety while engaging in activities. The primary educational content includes safe methods for crossing at crosswalks, information on where traffic accidents involving pedestrians frequently occur, knowledge of traffic safety signs and the basic behavior they indicate, and safe methods for riding in vehicles. The number of pupils has been increasing annually.

Table 14. Number of Pupils Educated at Children Traffic Parks (Children)

	2008	2009	2010	2011	2012
Kindergarten	229,000	228,603	430,532	358,169	306,273
Elementary School	48,304	22,874	56,235	42,118	22,133

Education for general drivers has also been implemented. Drivers who are cited for traffic violations and have less than 40 points against them in the last year have been eligible for education about traffic regulations on a voluntary basis since July 2005. The material covers the relationship between orderly traffic and traffic accidents, traffic regulations and safety, and so on. It has been proposed that drivers who participate in the education be able to have 20 points against them removed once a year as an incentive.

Drivers penalized with 40 points or more have their driver's licenses revoked, and those who wish to have their licenses reinstated may opt for education about the dangers of traffic violations and their relation to accidents, as well as educational material about specific characteristics. For example, starting in June 2012, separate educational materials emphasizing the dangers of drunk driving have been provided to drunk driving offenders.

Outlined below are educational materials that, in an effort to encourage a safe road environment, have been created for drivers who have caused accidents or violated regulations.

Table 15. Educational Material for Traffic Offenders

Traffic Offenders	Drunk Driving Offenders	At-Fault Drivers	Drivers With Revoked Licenses
4 hours (1 for lecture, 3 for audio-visual)	First-time offender: 6 hours (4 for lecture, 1 for audio-visual, 1 for discussion) Second-time offender: 8 hours (5 for lecture, 1 for audio-visual, 2 for assignments) Three-plus-time offender: 16 hours (2 for lecture, 2 for practice, 12 for psychological counseling)	6 hours (2 for lecture, 1 for discussion, 3 for audiovisual and exam)	6 hours (3 for lecture, 1 for group counseling, 1 for audio-visual, 1 for presentation)
<ul style="list-style-type: none"> •Traffic regulation facts •Basics of safe driving •Anticipating hazards and safe driving, etc. 	<ul style="list-style-type: none"> •Drunk driving facts •Psychology of drunk driving recidivism •Drunk driving practical education, etc. 	<ul style="list-style-type: none"> •Orderly traffic and traffic accidents •Traffic accident prevention and safe driving •Driving aptitude exam, etc. 	<ul style="list-style-type: none"> •Livelihood and traffic regulations •Personality and behavior exam •Training for self-awareness and overcoming crises, etc.

Education has also been implemented through a two-hour safety education program for certain organizations or businesses as needed. In 2012, the number of individuals who received such education reached 1.426 million. The primary educational material consists of traffic accident statistics, traffic regulations, vehicle inspection, etc., with recent subjects including hazards of cell phone use and economical driving as required.

Educational programs in traffic accident scientific investigation are being established for civilians (“civilians” here refers to people involved in military investigations, the Expressway Authority, the Road Traffic Authority, national bus/taxi/freight associations, shipping companies, and insurance agencies) who want to become traffic officers. These include programs for traffic accident investigation processes and traffic officer road traffic management duties, local authority safety equipment and ITS processes, road traffic safety diagnostic processes, and educational programs for driving school instructor training processes.

Table 16. Specialized Educational Programs for Traffic Safety

Traffic Accident Investigation Processes	Local Authority Safety Equipment and ITS Processes
<ul style="list-style-type: none"> •Scene recreation processes: 4 weeks/140 hours •Objection investigation processes: 8 weeks/280 hours •Traffic accident investigation processes for civilians: 1 week/30 hours 	<ul style="list-style-type: none"> •Traffic officer road traffic management duty processes: 1 week/30 hours •Local authority safety equipment practical processes: 1 week/30 hours •Local authority ITS program: 1 week/30 hours
Road traffic safety diagnostic processes	Driving school instructor training processes
<ul style="list-style-type: none"> •Road traffic safety diagnostic processes: 1 week/39 hours 	<ul style="list-style-type: none"> •Training education: 2 days/16 hours

Detailed investigations into and objective analysis of circumstances behind traffic accidents are useful for future safety activities. Experts (road traffic accident appraisers) with skills in accident investigations and analysis are being trained in order to secure safety in South Korea.

Experts with these qualifications play a role in smooth accident processing by discerning causes of accidents and These qualifications were operated as private sector qualifications at the beginning of 2002, but were later admitted as nationally licensed qualifications (through tests administered annually). In 2012, a total of 2,608 individuals with these licenses were active.

Table 17. Status of Licensed Road Traffic Accident Appraisers (People)

	2007	2008	2009	2010	2011	2012
Licenseses	1,166	353	219	226	320	324

The number of expatriates living in South Korea has exceeded 1.4 million in recent years. The necessary traffic safety education that conforms to international standards has been implemented since 2008 for the expatriates living in the country. The learning audience receiving this instruction numbered 427 in 2008 and increased to 3,502 in 2012. This number is expected to rise in the future. However, the learning periods are still relatively short. It has been indicated that the education effectiveness and material must reflect the annual requirements.

Further, critics have said that the requisite costs of acquiring driver's licenses for foreigners are high, and that in the 100 police stations across the country, few instructors can teach with any fluency in other languages, making driver's license acquisition prohibitive. In response, education (in foreign driver's license instruction) in the form of coursework required for the written exam (in nine languages) and essentials of legal items (road traffic laws) and accident responses are being offered for free as a public service to ensure greater convenience and allow expatriates to function as productive members of society.

In 2010, the Ministry of Security and Public Administration began introducing "walking school buses" at 38 elementary schools in 16 cities and regions. That number rose to 202 in 2011 and 627 in 2012. The walking school bus is a method for organically having children learn about safety education by having walking safety leaders on site that walk with children to school, explaining dangerous places and situations and how to walk safely.

This education method is also being implemented in England, and has been acknowledged

to have a large effect in reducing traffic accidents with children by over 70%. Because the leaders know the traffic line of children, an effect on crime prevention is also expected. The method has been evaluated positively and many parents are satisfied with it. There are plans to expand the walking school bus as an educational policy.

Public-private sector public awareness activities have been conducted actively. The General Insurance Association of Korea has been developing traffic safety campaigns with governmental agencies, speeches, and citizen groups while promoting prevention activities as traffic safety countermeasures. For example, in 2012, a program to improve driver awareness and a program related to accident prevention conforming to zone characteristics were developed in collaboration with the National Police Agency.

Programs related to education and awareness and targeted toward seniors, children, and other transportation-disadvantaged people are being implemented together with police as safety activities. These activities include support for system improvement and construction for traffic safety, implementation of traffic safety campaigns and public appeal, and various awareness activities for traffic safety, and distribution of equipment required for traffic safety activities.

Table 18. Safety Policies Implemented by General Insurance Association of Korea (With Police)

	Outline
Support for improvement and construction of traffic safety systems	<ul style="list-style-type: none"> •Workshops that make traffic accident processing more efficient •Creation of traffic safety goods specific to each region •Instruction on implementing video control of intersections with chronic congestion
Transportation safety campaigns and public appeal	<ul style="list-style-type: none"> •UCC traffic safety public appeal •Summer break traffic safety prevention campaigns
Support for safety equipment	<ul style="list-style-type: none"> •Support for equipment as needed
Various awareness activities for traffic safety	<ul style="list-style-type: none"> •Subway TV commercials on safe walking methods •Bus commercials on traffic culture improvement •Senior traffic accident TV commercials •Creation and distribution of public appeal videos about strict observance of stop lines
Equipment necessary for traffic safety activities	<ul style="list-style-type: none"> •Distribution of reflective bracelets to prevent nighttime accidents •Distribution of reflective canes for seniors

The National Assembly is collaborating with the Traffic Safety Forum on separate activities. The third National Safety Forum was held with 123 members of the National Assembly in 2012, and there have been various activities since. The forum holds discussions on traffic safety policies and public hearings with experts, listens to public opinion concerning traffic safety laws and integrates them, and promotes safety legislation.

Table 19. Main Activities of the Traffic Safety Forum in the National Assembly

Policy discussions for traffic safety program planning and improvement of the systems

- Third Traffic Safety Forum Policy Conference
- Signage system improvement discussion to prevent secondary accidents
- Presidential candidate invitation to traffic accident zero vision proclamation ceremony
- Public hearing on the National Assembly’s role in traffic safety
- Public hearing on new government direction on traffic safety policies

Promotion of resolutions to actualize zero traffic accidents

- Assertive promotion of revision proposals to the traffic safety laws
- Securement of revenues for government and local authority traffic safety programs
- Establishment of overarching structure for traffic accident duties

Motions for related proposals like new penalties for consuming DMB while driving and enhancement of drunk driving standards
(Lower blood alcohol content from 0.05 to 0.03)

Revisions to the Traffic Safety Act, taken together with these forum activities, enhance local authority roles in promoting traffic safety countermeasures. These efforts thus foster a “zero regional traffic accident movement” in collaboration with citizen groups to promote accident countermeasures that meet local needs. The “zero traffic accident movement task force,” which comprises local authorities, police, and local media, has been operational in 64 regions since 2007 to create opportunities for improving local driver awareness by identifying the causes of accidents and organizing countermeasures against these factors.

In recent years, the heavy snow and rainfall caused by sudden changes in developing weather situations have been causing more traffic accidents.

To reduce traffic accidents caused by worsening conditions in the natural environment, the Ministry of Security and Public Administration, Ministry of Land, Infrastructure and Transport, and the National Policy Agency distributed brochures featuring safety driving tips to local authorities and developed activities related to vehicle maintenance and safe driving to raise public awareness of the impact that worsening weather has on traffic safety in the winter.

The General Insurance Association of Korea has implemented “property insurance industry personnel traffic safety campaigns” as part of their proactive participation in the government’s “project for reducing traffic accident fatalities and injuries by half.” In 2012, the organizing committee of the “Yeosu Expo” seized the opportunity to create transportation culture and implemented a campaign to improve the country’s image through traffic safety.

Campaigns implemented on expressways to prevent large traffic accidents during high traffic volume periods like New Year’s, Chuseok (The Korean Thanksgiving Day), holidays, and summer go together with various activities to spread awareness of the correlations between the risks of watching audiovisual DMB while driving and accidents, as well as the social issues of drunk driving, in hopes of eliminating these behaviors.

4.3 Diversification of safety information for drivers using smartphones

There have been many issues springing from sudden changes in weather conditions in South Korea. One such issue has been the abnormal impact of localized heavy rain, snow, and cold weather, which obviously make it very difficult to drive. Drivers need to know that these sudden changes in weather pose risks and may cause traffic accidents.

The impact of weather conditions on traffic accidents is large, and social interest in the topic is currently increasing. The need for and social value of receiving timely and accurate weather condition notifications is growing in importance.

At the same time, the number of smartphones, which many drivers own, has been rapid increasing annually, surpassing the number of vehicles on the road (30 million) to saturate nearly 70% of the population. At this rate, nearly the entire population will own smartphones before long.

Smartphones are demonstrating growing value as a social service media and means to provide prompt safety information that allows drivers and pedestrians to assess adverse effects on the traffic environment caused by rapid weather changes and reduces their impact.

The Korea Meteorological Administration is developing Weavigation (a portmanteau of weather and navigation) that integrates navigation systems for vehicles and weather status to provide the timely information that drivers need. A futuristic weather service from the Korea Meteorological Administration, Weavigation aims to bolster the basic weather information that the agency has traditionally provided through some navigation systems in order to provide location-aware weather information for the route being traveled, give people details on their destinations, and provide drivers crucial warnings of risks on the route to enhance safety.

As society begins to recognize the impact of weather conditions on traffic safety, the relationship between weather conditions and traffic accidents is drawing more attention. According to a 2011 presentation by the Ministry of Land, Transport and Maritime Affairs, mortality rates in traffic accidents that occur during foggy conditions are three times higher than normal, and bad weather conditions account for a 2% increase in traffic accidents.

The system uses TPEG (Transport Protocol Expert Group) through existing onboard navigation devices to merge weather conditions on travel routes with information on the destination. The system holds significant promise for preventing traffic accidents.



Figure 6. Example of information provided by Weavigation (from edaily.co.kr press news)

Additionally, a "weather call center (113)" provides basic information (in English as well) on weather conditions in the directions vehicles are traveling. For roads that pose a high risk of traffic accidents due to winter snow, cold weather, or the slope of the road (with 26 segments currently designated), the center provides 12-hour snowfall conditions, temperature, and sky conditions via smartphones to warn drivers.

4.4 Traffic safety education and development activities by related institutions

Because the cognitive and sensory faculties required for driving decline in seniors, the likelihood that they will be involved in traffic accidents increases. This issue has been a growing interest in society.

Despite this interest, the reality is that timely educational opportunities for seniors are few, as are their chances to participate in such activities.

In the meantime, the National Police Agency and the Financial Supervisory Service have established an "aging traffic safety education" process that ties educational opportunities together with automobile insurance premiums. This discount system, whereby seniors receive discounts if they take the education program, began in August 2013.

Provided by the Road Traffic Authority once per month, "aging traffic safety education" consists of a self-awareness exam and a driving tendency exam and focuses on traffic laws and safe driving methods. It also makes sufficient considerations for the age characteristics of seniors, such as a distance perception exam, continuous attention exam, ability to divide attention exam, and visual exam. The education is free, and the seniors are evaluated upon completion. They receive a discount (valid for two years) on their insurance premium if they score above a certain level.

The Korean Association for Safety Communities (www.safia.org) distributes materials related to traffic safety education and safety through individual applications in order to reduce the annually rising number of traffic accidents involving seniors. The costs of this program are shared with the General Insurance Association of Korea. In addition, traffic safety bulletin boards are being created and distributed at civic local authority centers established in every town in order to prevent the rising number of traffic safety issues involving seniors. Police officers also visit these civic local authority centers directly to provide education to seniors.

The National Policy Agency and Educational Broadcasting Station (EBS) use cartoons, which are popular with children, to hold children's attention (as part of the child traffic safety social contribution project) and improve the efficacy of traffic safety education for children. They also create educational materials on behavioral guidelines for various situations that might occur on general roads in this environment (spending 5–6 minutes on one theme, with 26 themes currently available and plans to continually add more) and distribute them to families in CD format to create an educational environment. The cartoons also run on TV and the Internet to provide a usage environment where children can access them anytime.

This educational initiative is regarded as practical and very effective, as the environment (CDs, TV, Internet, and smartphones) is easy to use, it is popular, and the content includes various real-world situations.



Figure 7. Website main page on the Internet



Figure 8. Example of scene regarding crosswalk safety, distributed CD (right)

The “Korea Child Safety Foundation” (www.childsafe.or.kr) runs a certification system for transport safety education, provides general traffic safety educational programs six times a year, and provides vehicle safety education programs five times a year.

The foundation sponsors programs related to safety education and culture and programs for research development regarding safety. Since 2004, it has also been providing mobile educational opportunities using educational buses in regions and situations where educational opportunities are scarce.

Smartphones continue to become increasingly prevalent, with statistics showing that about 70% of all citizens own one. “Cyber Traffic School” provides various traffic safety educational materials through a smartphone app to reflect this new environment.

This educational app uses “classrooms” arranged by age: children, teenagers, general drivers, and seniors. For example, the seniors classroom provides physical age self-diagnostics for drivers, physical age self-diagnostics for pedestrians, calisthenics for driving, and literature on traffic safety.

The classroom for elementary school children features videos promoting the understanding of traffic safety situations and bundles together movies, literature, and simple games on traffic safety. Once the children have learned the content in these materials, they take a simple test (entering their names, locations, grades, and birthdays) and get a virtual certificate if they pass.

This series not only provides direct, personalized education but also allows for indirect and far-reaching traffic safety education; by going from one-sided education to interactive education using a test, it is effective and economical. Education materials for driving safely in the country are available in English, Japanese, and Chinese, and the content also covers domestic traffic information and traffic culture.



Figure 9. Cyber Traffic School educational content and related mobile app (start screen)

At traffic training parks in 13 locations in South Korea, vehicle users learn about how to protect children from a safety perspective. The scope of this education extends beyond general drivers to shipping company drivers, as well.

The Ministry of Gender Equality and Family performs investigations for potential onsite risks around elementary schools according to standardized methods and then creates and distributes maps with safe routes around the schools using creation criteria for the purpose of education-based traffic safety.

4.5 Safety education for commercial drivers

Individuals who will be driving commercial vehicles must complete at least 20 hours of safety education before driving. The primary educational content focuses on relevant laws and traffic safety as well as emergency equipment usage methods.

Safety education for top managers has also been in place since 2001, when the Ministry of Land, Infrastructure and Transport determined that it would be best to improve managerial understanding and awareness of safety in order to reduce traffic safety accidents attributable to commercial vehicles.

In order to promote attendance by top managers and change awareness of this education, the name was changed to "Shipping Industry CEO Forum." The educational methods were also broken up from one national, consolidated educational format to regional, separate formats to allow for area-specific education.

In 2012, the new format gave the majority of top managers from 881 participating companies an opportunity to reconsider the importance of traffic safety. This effort had tremendous effects, reducing accident fatalities at participating companies by roughly 50% from the previous year.

Table 20. Change in traffic accidents involving companies participating in the Shipping Industry CEO Forum

	Number of Accidents	Number of Fatalities	Number of Serious Injuries
2011	11,175	254	15,827
2012	9,296	133	13,979

The Korea Transportation Safety Authority operates the “Traffic Safety Leader Academy” annually for traffic safety leaders of shipping companies to prevent traffic accidents involving commercial vehicles. The education was implemented for shipping company leader education until 2009, but the name was changed to Traffic Safety Leader Academy in 2010.

It was deemed to have made a large contribution to traffic safety for leaders to prevent onsite traffic accidents. It is expected to continue in the future. The number of participating staff in the education was 1,749 in 2012.

The Traffic Safety Education Center is a facility that was completed in December 2008 primarily for commercial drivers. The center has size of 302,801 square meters and is replete with accommodations for multi-day education. The center centers its educational activities on experiencing hazardous circumstances that are highly likely in traffic accidents. There is a general course, a free training course, a high-speed course, and an obstacle course for gaining practical experience in order to increase response skills for various situations.

Established in 2009 under Article 56 of the Traffic Safety Act (the establishment of research/educational facilities for traffic safety experience, etc.), the center has welcomed 45,000 educational participants as of 2012. The educational effect of the center has been quite significant, evidenced by the 49% reduction in the number of traffic accidents the year after 21,411 participants received education. The social value of this effect is substantial.

5 Conclusion

Transportation safety in South Korea may have improved vastly, but comparisons with other countries suggest that what happens in South Korea in the future is the key. While the number of fatalities from traffic accidents has been decreasing, one issue is it has not decreased any lower in recent years.

Rapid aging, a major change in the social environment, has precipitated a growing population of senior drivers. While seniors have until now traditionally been considered victims, society is now starting to see them as being at fault.

However, the ratio of senior pedestrians involved in all accidents remains higher than before. The elderly will surely be the subjects of diverse opinions in the coming years. Recently, the number of traffic accidents involving women drivers is increasing, which makes it necessary to pay attention to both demographics with concern and interest in the future.

As these changes in the social environment continue, policies have been implemented to build and improve safety facilities in order to ensure traffic safety. However, the sustained flat trend in the number of fatalities caused by traffic accidents in recent years suggests that there is a limit to these effects.

Therefore, education on and public awareness of the essential behaviors that drivers and pedestrians should take in a variety of situations are policies that likely have stabilizing short-, medium-, and long-term results. The education and public awareness campaigns that South Korea has conducted have been transmitted in a one-way fashion in the form of knowledge and content highly related to traffic safety. However, changes in the social environment—the rapid change in the usage of CD, TV, Internet, and smartphones—will make video media such as cartoons and apps going forward.

These media are always connected; through their use, ideas are very likely to stick in the minds of elementary school-aged children. In the long term, there are many reasons for related institutions that must implement traffic safety education and development to pay attention to these media. The strength of their transmission is thought to be a valid means to do this.

These media with strong transmission characteristics are expected to play a main role in future policies for traffic safety education and public awareness. Conveying video-based, realistic scenes can have a major effect on education. South Korea is in a stage of transition from existing educational methods to very accessible media in online settings and strong transmission through video-based cartoons and apps.

It is crucial to make future education and public awareness as grounded in reality as possible and make sure that the material gets through to the intended recipients. It is important to increase educational opportunities as much as possible. From this perspective, the process of maximizing educational effects must account for not only the educational and awareness content but also the psychological characteristics of the learner, as well.

Related institutions implementing traffic safety education and public awareness are numerous due to their need, but there may also be some redundancies. There may also be some differences in the educational content depending on the state of the organization in question, so there may be consistency issues. Therefore, future traffic safety education should be proposed from a comprehensive perspective and, based on this, consistency in educational content should be maintained within a certain range. Adjustments may be required from the perspective of the functions they share to effectively fulfill their roles.

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