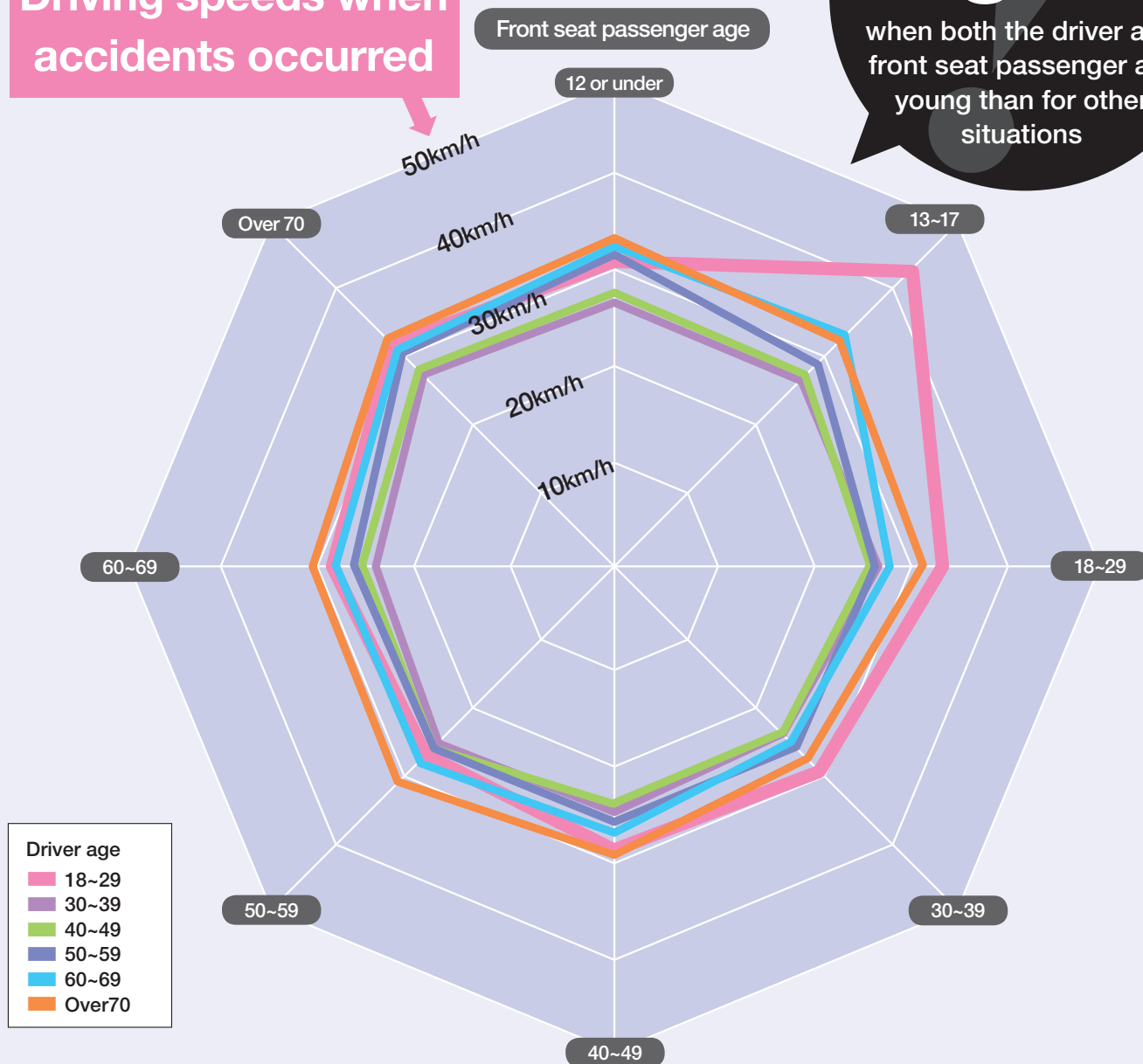


### ITARDA INFORMATION

No. **93** 2012  
FEBRUARY

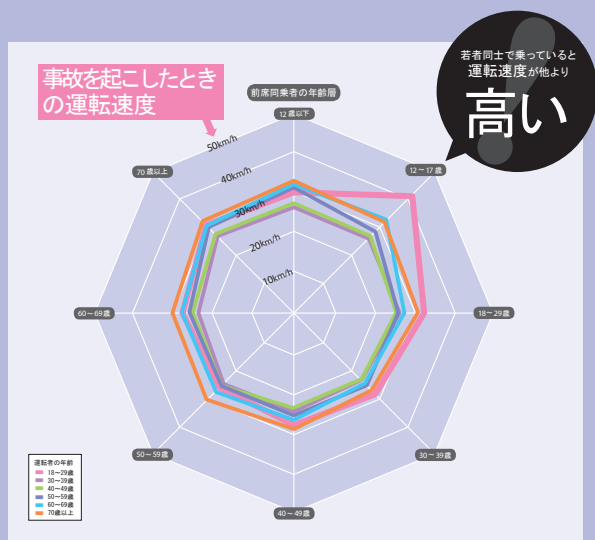
Driving speeds when  
accidents occurred

Driving speeds are  
**higher**  
when both the driver and  
front seat passenger are  
young than for other  
situations



Special feature

# Watch out for this when giving people lifts in your car



## Special feature

# Watch out for this when giving people lifts in your car

Many people tend to drive differently when there are passengers present. In general, it is usual for people to drive more carefully in such situations, but it appears that there are also those who tend to push their driving beyond sensible limits when a passenger is present, eager to “show that I’m good at driving.”

In this issue of ITARDA Information, we look at the influence which the presence of passengers (particularly front seat passengers) has on driver behavior, and present the results of our analysis of such influence, broken down by the ages of both parties and the relationship between their ages.

Results were obtained using accident data compiled over a 10-year period from 2001 to 2010, targeting four-wheeled vehicle with an empty vehicle weight of less than 2t, in order to exclude buses and large trucks.

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- 2 Is it safer to have passengers present?
- 3 Who most often gives lifts to whom?
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- 5 Influence of front seat passengers on driver behavior
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SECTION

1

# Number of drivers in accidents with a passenger present

How many accidents occur when there are passengers in a car? Table 1 shows the number of drivers who have experienced accidents, broken down by the presence of passengers in either the front seat or rear seat, and Fig. 1 shows this as a percentage of all accidents. Drivers who experienced accidents when there

were passengers in the car make up 17.0% of all drivers aged 50~59 years who experience accidents, but the figure rises to 21.7% for drivers aged over 70 years and 21.5% for drivers aged 18~29 years; the percentage thus varies according to the age of the driver.

Table 1: No. of drivers in accidents by driver age and presence of passengers  
(combined figures for primary and secondary parties)

(People)

Driver age \ Passenger presence	18~29	30~39	40~49	50~59	60~69	Over 70	Total
Total accidents	3108782	2453296	1874365	1938988	1286429	637461	11299321
Passenger absent	2441394	1935445	1514819	1608501	1041425	499025	9040609
Passenger present*	667388	517851	359546	330487	245004	138436	2258712

\*Either front seat or rear seat passengers

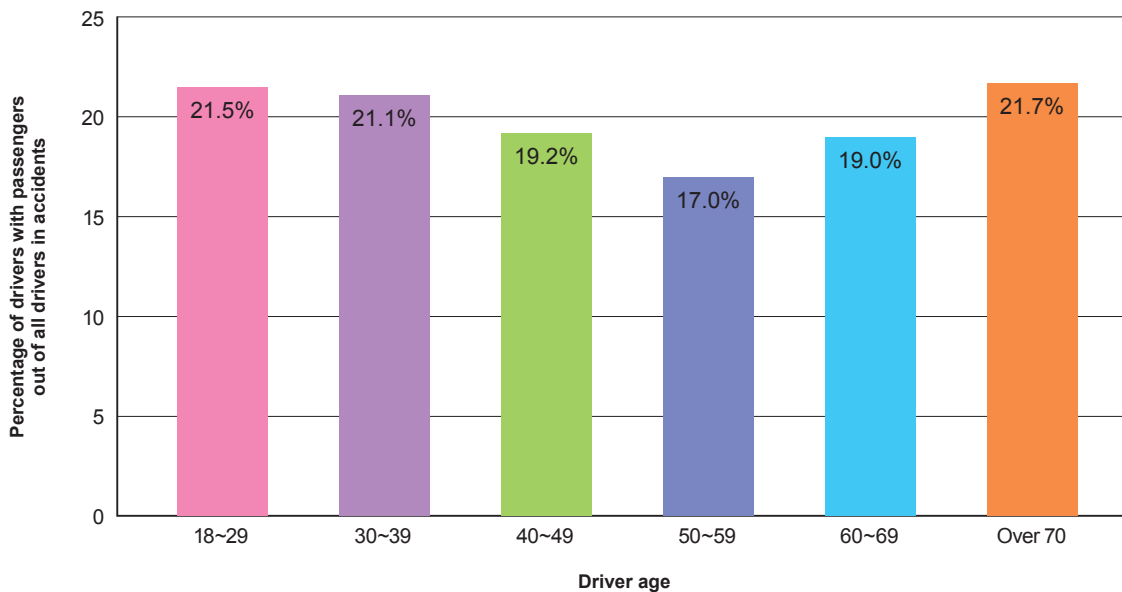


Fig. 1: Percentage of drivers with passengers out of all drivers in accidents

SECTION

2

# Is it safer to have passengers present?

We calculated the “driver fatality and serious injury rate,” being the rate of fatalities and serious injuries for drivers in their respective cars, broken down according to whether there was a passenger present at the time, and set out the results in Fig. 2.

$$\text{Driver fatality and serious injury rate (\%)} = \frac{(\text{No. of driver fatalities} + \text{No. of serious injuries to drivers})}{\text{No. of driver casualties}} \times 100$$

As the formula indicates, this is the number of major accidents resulting not just in slight injuries but in fatalities or serious injuries, as a percentage of all accidents.

Fig. 2 indicates that the driver fatality and serious injury rate is unrelated to driver age, and is lower

when there are passengers present than when they are absent. In other words, it is believed that drivers put more effort into careful driving when there are passengers present. These results show the same trends that were evident in the results of ITARDA Information No. 77, “The risk of causing accidents is lower when passengers are present.”

With the exception of drivers aged 18~29 years, it is evident that the driver fatality and serious injury rate grows higher as driver age rises. The main reason for this is believed to be that the human body’s ability to withstand shocks declines with advancing age. The reason for the high driver fatality and serious injury rate for drivers aged 18~29 is believed to be that, as is often pointed out, there are a fair number of reckless drivers in this age group.

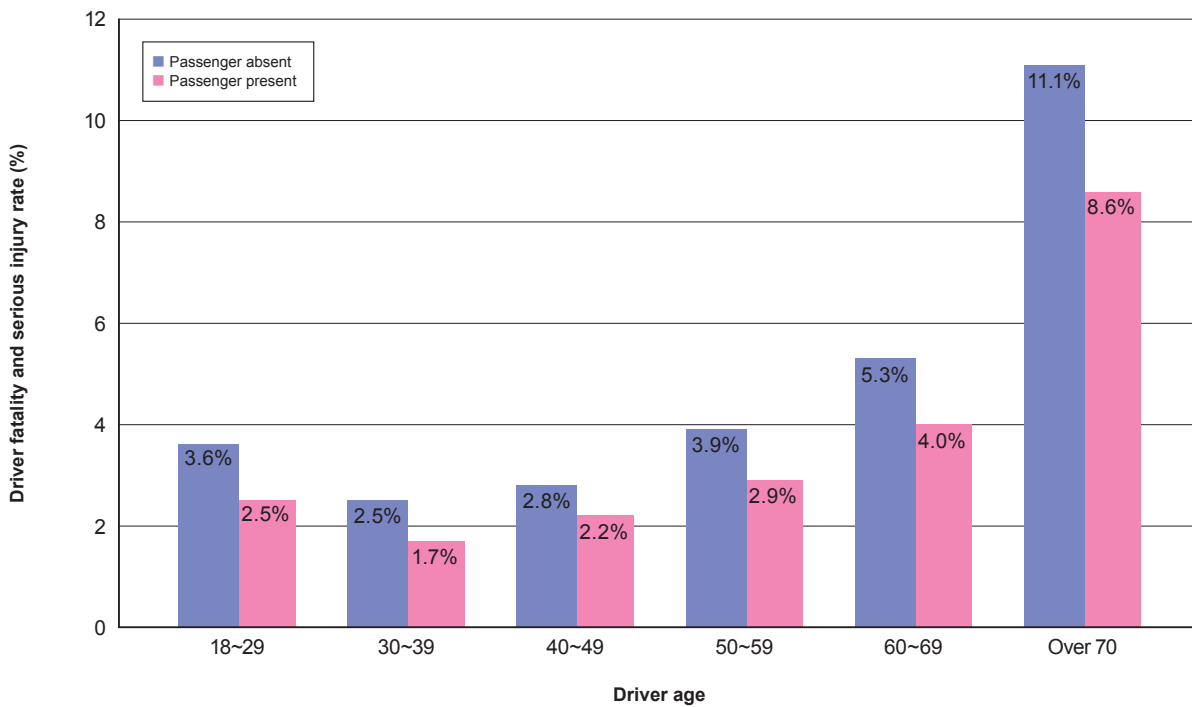


Fig. 2: Driver fatality and serious injury rate, by passenger presence

SECTION

3

# Who most often gives lifts to whom?

Up until now, the discussion has concerned passengers in either the front or rear seat regardless of whether they themselves are injured or not. From this point, however, we will turn our attention to front seat passengers, who are believed to exert a particularly strong influence on driver behavior, and among these on those front seat passengers who are killed or injured in accidents.

Table 2 and Fig. 3 show the numbers of drivers who have experienced accidents, broken down by mutual age relationship. From this it can be

seen that in the bulk of accidents in which a front seat passenger was present, the driver and front seat passenger were of the same age group (the sections highlighted in pink in Table 2), a trend that was particularly marked among young drivers aged 18~29 and elderly drivers aged over 70 (in Fig. 3, the percentage of total accidents in which the driver and front seat passenger were of the same age group was 70% in the case of drivers aged 18~29, and 60% in the case of drivers aged over 70).

Table 2: No. of drivers in accidents by mutual age relationship between driver and front seat passenger (combined figures for primary and secondary parties)

		(People)							
Driver	Front seat passenger	12 or under	13~17	18~29	30~39	40~49	50~59	60~69	Over 70
	18~29		13888	11639	215994	27731	13298	19971	4163
30~39		34445	6430	41027	82302	17113	12888	14046	3217
40~49		13730	19248	19912	22960	41584	12938	7423	9361
50~59		2843	3915	19312	9214	18952	53052	13545	11053
60~69		2373	853	3365	6111	3640	22666	46239	10238
Over 70		683	756	620	757	1389	1840	16308	33747

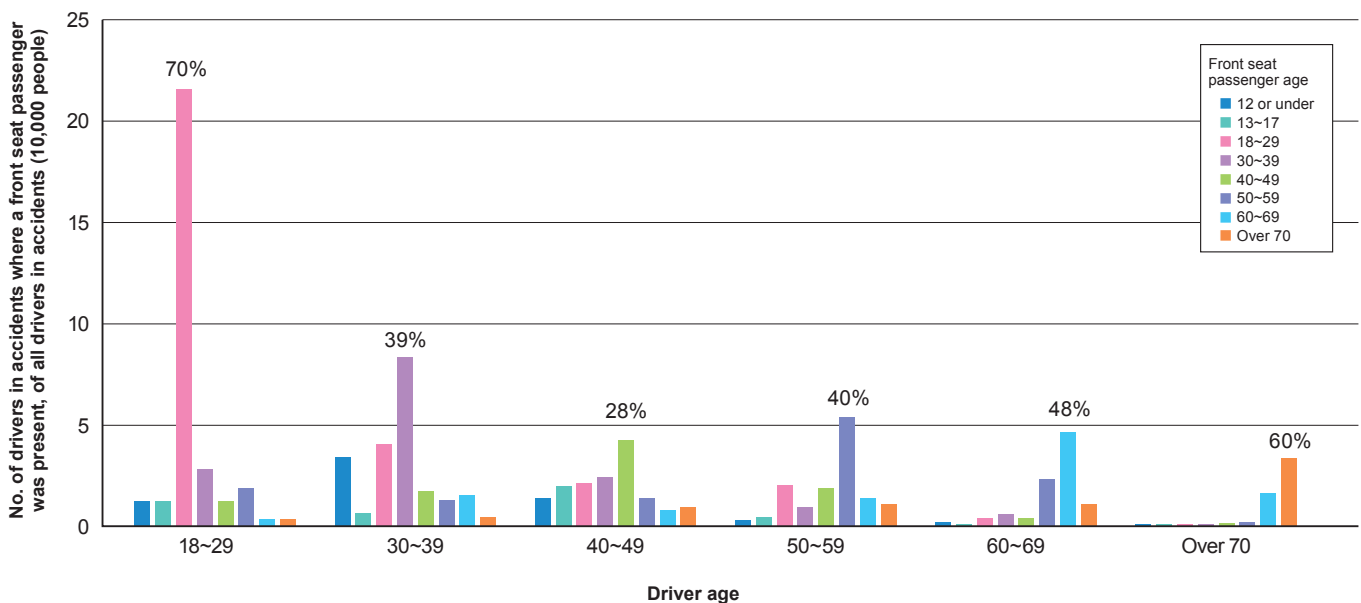


Fig. 3: No. of drivers in accidents by mutual age relationship between driver and front seat passenger

SECTION

4

## Variation in the driver fatality and serious injury rate due to drivers' and front seat passengers' ages

Fig. 4 shows the driver fatality and serious injury rate by mutual age relationship between the driver and front seat passenger.

As with the results of Fig. 2, it is evident that the driver fatality and serious injury rate grows noticeably higher as the driver age rises. Looking at Fig. 4, another striking point may be observed. The driver fatality and serious injury rate is extremely high when the driver is aged 18~29 and the front seat passenger is aged 13~17.

Let us consider the reasons for this, in terms of driver behavior, and specifically in terms of driving speed and the seat belt use situation.

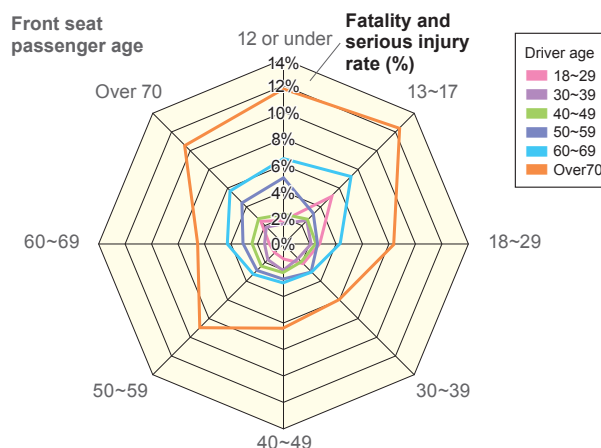


Fig. 4: Driver fatality and serious injury rate, by mutual age relationship between the driver and front seat passenger

SECTION

5

## Influence of front seat passengers on driver behavior

### (1) Influence on driving speed at the time of accidents

The “danger perception level”—that is, the speed at which the driver perceives the danger of an accident—is set out in Fig. 5, broken down by mutual age relationship between the driver and front seat passengers.

When drivers aged 18~29 gave lifts in the front seat to passengers their own age or slightly younger—that is to say, front seat passengers aged 13~17 or 18~29—it is evident that the speed at which they drove was more than 5~10km higher than with other front seat passengers. It may be surmised that drivers are apt to feel a sense of exhilaration when they are with other young people, and a consciousness of wanting to “adopt a cool pose.” By contrast, the driving speeds of drivers in age groups other than 18~29 clustered around the 30km/h range, regardless of the age of the front seat passenger.

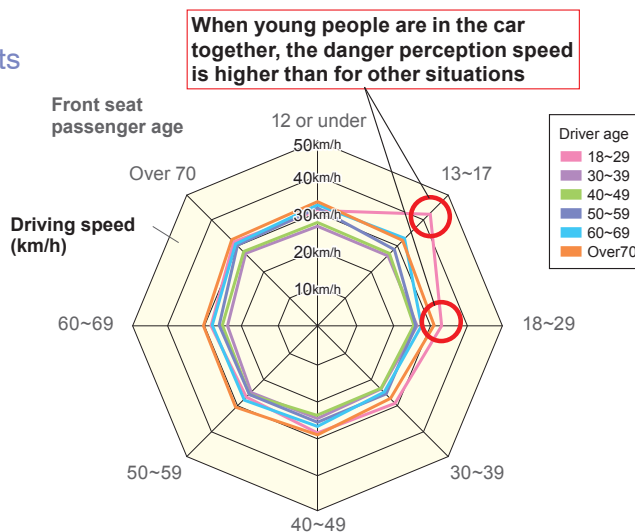


Fig. 5: Driving speeds when accidents occurred

## (2) Influence on the seat belt use rate

Next, in Fig. 6 we set out the seat belt use situation for drivers when they experienced accidents. The seat belt use rate for drivers aged 18~29 is noticeably lower when the front seat passenger is aged 13~17; even when the front seat passenger is aged 18~29, 12 or under, or 30~39, the rate is still lower than the rates for front seat passengers in other age groups. Predictably, drivers feel less on their guard when driving if their passengers were also young (although the effects in the case of rear seat passengers are unknown).

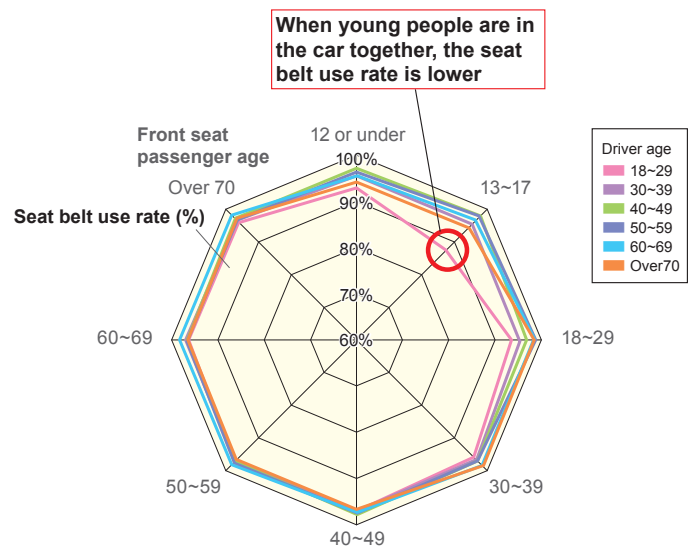


Fig. 6: Seat belt use rate of drivers

Meanwhile, the seat belt use situation for front seat passengers is set out in Fig. 7, where it is evident that the seat belt use rate for front seat passengers like that for the drivers is low when both drivers and front seat passengers are young. It would appear that both parties are having bad influences on each other in some manner.

Let us look once again at Fig. 7. One notices that the seat belt use rate is lowest when children aged 12 or under occupy the front seat (in this instant, seat belt includes child seats (for infants, for young children, for school-aged children etc.)). This trend is most strongly evident when drivers are aged 50~59, 60~69 or over 70—in other words, when children are occasionally given lifts by people who are generally believed to give lifts to children on an infrequent basis (grandparents and grandchildren etc.). Strictly speaking, children should be required to sit in the rear seat, but it appears that this rule is not being adhered to strictly. Another reason is considered to be that people in these age groups are not always able to prepare a child seat.

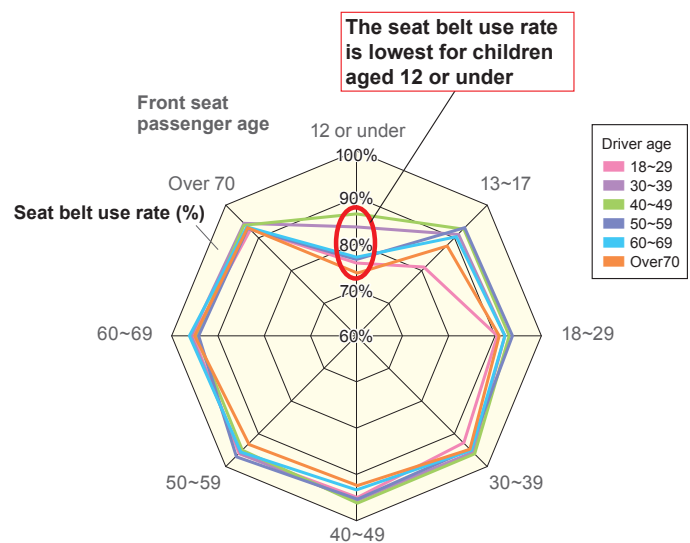


Fig. 7: Seat belt use rate of front seat passengers



## SECTION

## 6

## In closing

## ① Message for young drivers

When young drivers give lifts to other young passengers in the front seat, it appears that they pay insufficient attention to safety, often driving at excessive speeds and not wearing seat belts. Young drivers may want to adopt a cool pose, but the tragedy is that causing an accident and injuring a passenger is the least “cool” thing anyone can do. We urge young drivers to pay particular attention to safe driving precisely at those times when they have passengers, take the initiative in fastening their own seat belts, and encourage their passengers to fasten theirs as well.

## ② Message for elderly drivers

We urge elderly drivers to cease the careless practice of allowing grandchildren and other children to travel in the front seat of the car. It is safer for children aged 12 or under to travel in the rear seat. Even when travelling in the rear seat, young children under the age of 6 are required to use a child seat; even for children over the age of 6, use of a junior seat or booster seat suited to a child's physical requirements is recommended until the age of 12.

(Creator: Shinichi Yoshida)