Executive summary

Access to efficient and safe infrastructure and high-quality public services, independent of a person's wealth or status, is essential for economic development that benefits all citizens, often referred to as "inclusive growth". In Korea, the total length of paved roads increased dramatically between 1951, from 580 kilometres to more than 87 000 kilometres. This expansion of Korea's expressway, highway and major road network has created benefits for cities and rural areas across the country, contributing to both economic growth and inclusiveness. But this rapid development of road infrastructure and motorisation have also resulted in relatively high traffic fatality rates.

The expansion of the expressway network and the resulting improvements in connectivity contributed to balanced development, as seen in increasing income tax collection in the regions that are not part of major agglomerations. This effect was in part driven by higher employment and wage increases for manufacturing workers. The benefits of new infrastructure were particularly strong for small manufacturing enterprises and manufacturers that operate in the medium-high- and high-tech sectors. These firms are more likely to locate close to new expressway infrastructure and are able to make the most of increased access by expanding turnover and employment.

New infrastructure has also increased the size of local labour markets, boosting potential employment opportunities for workers and the unemployed. International evidence suggests that this can be particularly relevant for women's employment and the estimates for Korea support this finding. Female employment rates in Korean cities tend to increase where road infrastructure improvements enlarged the local labour market located within a 60-minute commute by car. Tapping underutilised employment potential is essential for alleviating the impact of ageing on the size of the labour force and, ultimately, for continued growth. Road infrastructure investments have also created better access for areas with a high percentage of elderly residents, creating opportunities for mobile service solutions for a growing group of people.

But the strong focus on transport infrastructure investment for economic development and traffic efficiency also created negative side effects. One of the highest costs that Korea pays for its road network is the number of traffic fatalities. While Korea has experienced the third largest decline in the traffic fatality growth rate among 29 OECD member countries since 1972, it remains among the OECD countries with the highest number of per capita traffic fatalities. A closer look at traffic fatality data shows that Korea's relatively high rates of pedestrian fatalities are largely responsible for this gap and that almost half of the pedestrians that die in an accident are 65 years or older.

Analysis of 1 800 individual accident records from across Korea and of an additional 1 000 accidents from the worst performing "accident hotspots" identified by the Korean government shows that infrastructure and behaviour both play a role in the occurrence and severity of accidents. Significant risks arise around crossroads; they account for 90% of accidents in Korea's "accident hotspots", areas with the worst traffic safety performance. Wider roads account for a disproportionate percentage of accidents with

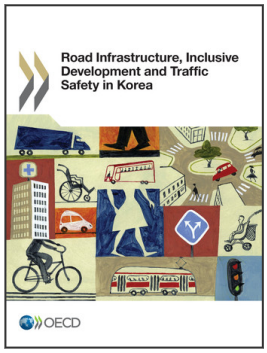
severe or fatal injuries. A variety of structural deficiencies in traffic safety facilities – often minor problems that can be remedied by basic maintenance – contribute to the risk and severity of accidents. This can be a challenge for local governments as accident-prone "hotspots" are often located in in less affluent regions. A further aspect that needs to be addressed is drivers' behaviour, as careless driving and traffic light offences are the main reasons for severe accidents in Korea.

The governance of the road infrastructure network in Korea involves a variety of actors at different levels, and responsibilities for road safety remain highly fragmented, with unclear accountability. When examining road safety activities in Korea through the prism of the "3Es" model (engineering, enforcement, education), the complexity becomes apparent. Two ministries, the National Police agencies and their affiliated organisations are joined by other stakeholders, ranging from additional ministries and agencies to subnational governments and civil society organisations. This fragmentation of actors is also reflected in the lack of a unified budget on traffic safety, with each ministry submitting individual budget proposals to the Ministry of Strategy and Finance.

Positive steps have been taken and contributed to a decline in fatalities, but fragmented governance structures impede the chances of achieving the Korean government's current ambitious target of reducing the number of road deaths by 45% between 2010 and 2016. Since 2009, safety around crossroads has been improved by moving traffic lights, which are traditionally located on the opposite side of a crossing, to the front. Between 2010 and 2012, a pilot project replaced 192 crossroads with roundabouts, which led to significant reductions in accidents, injuries and fatalities. But further improving road safety requires, at a minimum, effective co-ordination among transport, infrastructure and police authorities. More broadly, it requires working across different policy domains, such as education, public health, ageing and environmental impact.

Key recommendations

- A regional development strategy that relies solely on constructing roads to less connected cities and rural areas is unlikely to create substantial benefits, as new investments often yield lower returns than prior investments. Complementary measures can help tap the potential created by new or improved infrastructure, e.g. land-use policies that incentivise intensive land use around new transport links.
- There is a need to co-ordinate national and local planning with public housing provision and other social facilities, since prices tend to increase in response to transport improvements. An inclusive strategy is required ensure access to opportunities for all income levels.
- Achieving further progress in road safety performance requires the creation (or rekindling) of an effective "control tower", tasked with an official mandate to co-ordinate policies and corresponding resources among the different stakeholders beyond vested interests.
- To reduce fatalities and protect pedestrians, Korea should consider adjusting its speed limits, especially in residential areas, and strengthening incentives for enforcing road safety legislation. International experience shows that strengthening traffic law enforcement is often accompanied by citizen resistance, which can be minimised by proactively building public support.
- Adapting and modernising existing infrastructure can create substantial benefits. The installation of roundabouts has shown significant potential in reducing accidents and fatalities, and an expansion of the initial programme should be considered.



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