

Index-based Diagnosis for Enhanced Sustainability of Smart Cities

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- Recently growing attention is paid to the diagnosis model of smart cities for various purposes including the identification of levels of development in smart cities, the establishment of smart city plans, comparison among smart cities, and decisions on whether to spend additional resources, etc. But there has been no diagnosis model for smart cities which can be used as a benchmark.
- In Korea, provisions on the certification of smart cities have been recently added to its smart city act, increasing the potential of utilization of the diagnosis model, but detailed plans are not sufficient.
- To develop a smart city diagnosis model that can be used globally, detailed indicators were established to expand the technology-focused concept of smart cities into the combination of technology, institutions, and human resources, which can be used as smart city factors.
- The smart city diagnosis model was applied to the four municipalities that are actively implementing smart city projects to measure the level of development (maturity) of smart cities among the municipalities and predict their potential for further development.
- The suitability of the indicators was checked through comparison between the values of indicators on maturity and potential for development and the results of a survey of citizens.

| Policy implications |

① A smart city diagnosis model should be adopted in order to monitor the level of performance of various smart city policies of each local government, exchange information on the development process of smart cities, and efficiently allocate budgets.

② For successful introduction and sustainable development of smart cities, it is necessary to move from the current infrastructure-oriented policy into a balanced smart city policy which encompasses technology, governance, and innovation and meets global standards.

③ The concept of a smart city should include such non-physical elements as collaborative systems and innovative industries. The diagnosis model should be developed further in accordance with the expanded concept of a smart city.

④ The certification of and policy support for smart cities require differentiated incentives which are provided according to the level of maturity and growth potential of smart cities.

The suggested diagnosis model with indicators on maturity and growth potential can be used for assessment.