The Sustainable Development Goals (SDGs) have been introduced by the United Nations as the next global goals and targets to be achieved by 2030 after the Millennium Development Goals (MDGs). The SDGs are broader and more ambitious than the MDGs, calling for participation of all the countries in moving towards sustainable development. The SDGs lay out 17 goals and 169 targets with qualifiable indicators, addressing the three dimensions of sustainability, namely social, economic and environmental dimensions, in the integrated manner. In achieving the goals and targets under the SDGs, cities have a significant role to play as a locus with concentrated population and economic activities. Thus, it is necessary to apply the SDGs not only to the national level but to the city level and encourage implementation of the SDGs at the city level. However, there is a serious lack of research in addressing the SDGs in the local context and analysing the implementation of SDGs at the city level despite the urgency of the matter. Against this backdrop, the study aims to apply the SDGs to the city level, analyze the current status of their implementation and, further, assess the relationships between the goals and targets to identify any conflicts or concurrence between the goals, for the city of Seoul in Republic of Korea. Time-series data for the indicators of SDGs at the city level have been collected and analyzed using a factor analysis to assess the implementation over time with indexation. In addition, a network analysis has been conducted to reveal the relationships between the targets and indicators. The preliminary results show that the current levels of achievements as well as their speed are diverse across sectors in Seoul, Republic of Korea. The results from the analysis as well as the methodology introduced in the research are expected to contribute to incorporation of SDGs into the local policy and facilitate the sustainable development in cities.