

## Geographical characteristics of telemedicine in Korea and Japan

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**(1) Objective:** The ultimate goal of telemedicine is regionalization through innovated medical technologies by developing regional medical systems and promoting patients' travel time and burdens to external medical institutions. This paper thus examines how geographical characteristics of telemedicine associated with spatial distribution and organization intimately emerge in Korea and Japan so as to fulfill its objectives.

**(2) Methods and Data:** My analysis for the Korean case is based on data from 51 telemedicine suppliers and 17,783 telemedicine demanders. In addition, I could obtain data for the Japanese case on 398 telemedicine suppliers and 1,756 telemedicine demanders. In dealing with this issue, I have adopted vertical and horizontal approaches that are useful for starting out the examination into two separated components of telemedicine. The first part examined distributional and locational characteristics of telemedicine suppliers and demanders through percentage, location quotient (LQ), moving on to consider locational characteristics. The second part briefly laid out the ways how far telemedicine suppliers and demanders keep their distance and how telemedicine networks are formed on the surface, more to the immediate point, regionalization. In order to ferret out these key points, I explored the range of telemedicine and referral patterns of telemedicine toward another

diagnostic area. Basically, all of the analyses are based on GIS.

**(3) Originality:** Contemporary telemedicine is interpreted variously on the surface. However, relatively little attention has been paid to practical researches of telemedicine in geography or related fields. This paper thus attempts to offer an analysis of geographical characteristics of telemedicine comprehensively through objective and substantial data for Korea and Japan.

**(4) Results:** Basically, both Korea and Japan show an urban-oriented characteristics and those distributions depend on the number of existing medical institutions. But internal geographical characteristics of telemedicine are completely different owing to respective peculiar characters and conducts. For Korean telemedicine, most of the medical institutions, as suppliers and demanders are outstandingly located in the metropolitan areas. Moreover, the serious result is that nationwide telemedicine demanders are bound up with telemedicine suppliers in the special diagnostic area (each medical group-integrated or major urban areas-oriented type). Besides, Japanese telemedicine is dominantly based on each diagnostic area, and its telemedicine networks among diagnostic areas are not as strong when compared to Korean telemedicine networks (self-supported or local areas-rooted type).

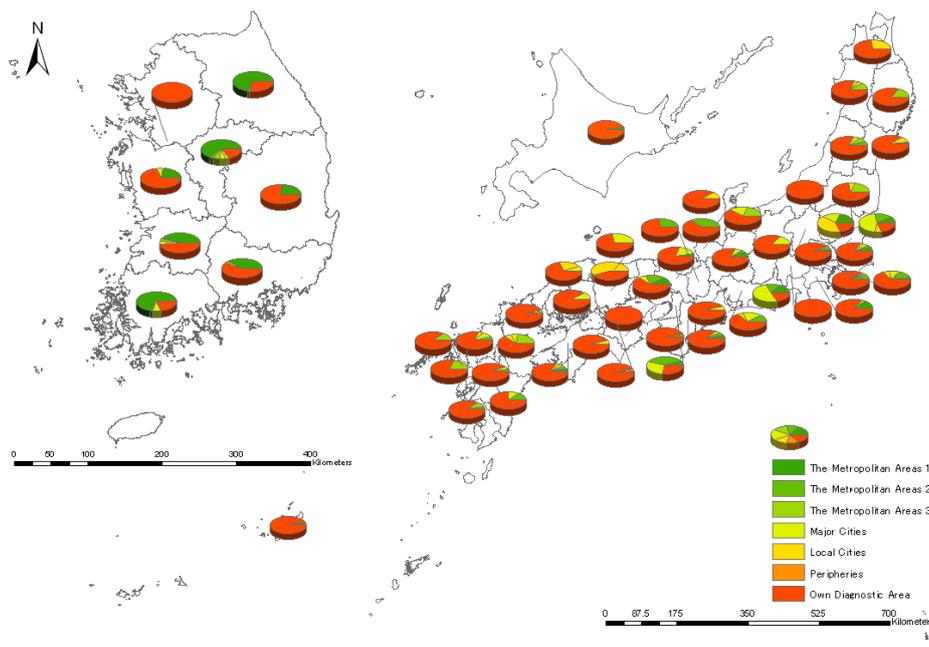


Fig. 1: The referral rate of telemedicine toward another diagnostic area in Korea and Japan