Figure 1 Study processes

Optimal location of health centres → Entering the factors affecting the system → Determining the functional radius and the spatial distribution of health centres using the GIS functions

Experts' experience ← Literature review ← Interviews

Creating and rating the effective layers in locating the health centers

Creating a hierarchical structure and determining the relationships between the layers

Pairwise comparisons by Fuzzy AHP

Calculating the weights of criteria in Fuzzy AHP Solver 2015 Software

The final map of suitable locations for the establishment of health centres

Integrating the layers in the environment of GIS

✓ Slope of the land
✓ Proximity to residential areas
✓ Proximity to green spaces
✓ Proximity to centres of neighbourhood
✓ Proximity to population density
✓ Proximity to firefighting
✓ Proximity to communication networks
✓ Distance from the existing health centres
✓ Distance from the industrial workshops
✓ Distance from places of education
✓ Distance from the urban facilities
✓ Distance from the cultural services
✓ Distance from the sports facilities

Examining the compatible layers

Examining the incompatible layers