Table 16.3
Correlations between DID population densities and indicators of quality of life.

Quality of life indicator	Car ownership	Amount of petrol purchased	Using car for journey to work	Average floor space	Land price
Correlation with DID population densities (multiple correlation coefficient, R^2)	0.7366	0.8668	0.8579	0.5973	0.7531
Implication of higher densities (for planning)	Reduced need to own/use car as method of transport (concentration should be on providing public transport/multi-mode transport options)	Reduced quantity of petrol purchased (reduced need to concentrate on road infra-structure)	Reduced need to drive to work (concentration should be on increasing the accessibility of local services and facilities)	Smaller household floor space[a]	Increased land prices[b]

Note: (*a*) Location is an important consideration to be taken into account, (*b*) will be affected by location and other factors, such as climate and household structure.

a fairly strong positive correlation between the average land prices and urban population density: as population density falls, so does the land price.

Results: quality of life and urban densities

The results of the above analysis are tabulated together in Table 16.3. Five indicators show fairly strong to strong correlations with DID population densities. The people who live in cities with lower-density DIDs own and use private cars more than in higher-density cities. That higher-density areas have smaller floor space of houses and higher land prices than lower-density areas is not disputed.

Urban density and accessibility to local facilities

Methods of analysis

The condition and diversity of the level of accessibility to local facilities in relation to various urban densities were examined

in the case study. The percentage of houses located within 500 m, walkable distance[2] from local facilities, was the measure used to evaluate the level of accessibility. Seven types of local facilities were selected, which include

1. local community centres
2. parks and gardens
3. rail stations
4. hospitals and clinics
5. banking facilities and post offices
6. day-care centres for older people
7. food convenience stores

The data used was based on the 1998 housing and land survey of Japan, which was used to draw up scatter plot graphs. The main conclusions of this data analysis are discussed below.

Analysis of accessibility

Day-care centres

Although the numbers of public and private day-care centres for the elderly are rapidly increasing in Japan, due to its ageing population, they are not yet enough to meet the demand in many regions. The percentage of houses located within 500 m of day-care centres is generally low in the case study cities, with the average at only 13%. Currently, the relationship between the level of accessibility to day-care centres and the densities of DIDs is not strong.

Railway stations

Railway stations represent a small part of the national transport system in most local areas of Japan. Local bus systems are often developed instead of tram or rail systems. The percentage of houses located within 500 m of a railway station is generally low, in fact under 30% in principal cities. The overall average is only 25.7%. The relationship between accessibility to train stations and DID densities is not strong.

Local community centres

Local civic centres are essential for community activities. But there is incongruity in the percentages of houses located within 500 m of them in sample cities. The overall average is 53.9%, but accessibility levels vary widely in each case study city.