Space Syntax theory defines various parameters originating from the configuration of streets. These include integration, choice, total depth, connectivity etc. Further these are calculated at various radiuses corresponding to movement at that scale. For instance, parameters calculated at radius 'n' would correspond to movement happening all the way through the city, and similarly parameters calculated at radius of '800 metres' would correspond to movement at that scale. The latter is generally associated with the pedestrian movement.

Out of these parameters Integration and Choice (at different scales) have been empirically proven to have direct correlation with pedestrian and vehicular movement density. Integration is an estimate of how accessible a point is and has been further defined to be an intuitive factor. It is considered to be responsible for how people situate themselves which is consequently reflected in the property prices, where higher integration corresponds to higher property prices and vice versa. The formula for calculating the integration of a network node is found in Equation 1,

$$I = 2 (MD - 1) k -2$$

where MD equals the mean depth of the entire system, and k equals the number of nodes within the system. This formula compares an ideally connected graph (one where each point connected to every other point) with the properties of the graph in question to determine a measure of accessibility for each node or intersection. Integration is derived from this value for each node in the system.

On the other hand, Choice is an estimate of how frequented a route is. It is considered to be an emergent factor which takes form over a period of time and is found to correlate with the commercial distribution pattern in a setting.

A key assumption of this approach is that it assumes even population distribution across a pedestrian network, and all-point-to-all-point travel throughout the pedestrian grid. Although this is not often the case in the real world, the Space Syntax model can be modified to account for distortions caused by local traffic generators or attractors. To account for this variation, population density was added to the model using Census 2011. The attempt here is to use satellite imagery to redistribute population density and arrive at better estimates for pedestrian and vehicular volumes at different routes.

For the estimation of pedestrian volume, Choice/ Integration value of a route is combined with population density distribution and is calibrated by existing pedestrian counts at the location to generate a predictive model. The point of study is identified and syntactical distance of 800 metres from the point is calculated. The network map so generated is isolated and a buffer is generated to take cognizance of the population in the demarcated region. This step is benefited by the redistribution of population density and greater accuracy is sought. Volume of pedestrians is eventually arrived at by calibrating the population density in the demarcated region and Choice/Integration value of the route in question along with actual pedestrian counts.

Using a similar strategy, vehicular volumes for longer trips can be estimated. The Space Syntax model allows for identifying the underlying length of the trips that leads to a cumulative volume that is observed with the assumption of an evenly distributed population. This method however is extremely beneficial for places that lack trip surveys due to limited resources. By identifying the scale at which a route in a network becomes dominant, a network map can be generated for the same syntactical distance and isolated. This can be overlaid with the population density in the vicinity of the demarcated routes, much like the pedestrian model.

The above approach could be prove to be crucial in facilitating quick decision making in the face of limited data and for also augmenting pedestrian/ vehicular volume prediction with Space Syntax parameters and population density redistribution through built boundary creation.