1 Question 1

It is commonly assumed that agglomeration economies generate benefit to: i) the firms within a cluster and ii) the communities that 'house' the agglomeration. In both cases, provide detail on the nature of these advantages.

2 Question 2

Discuss possible conventional GIS modeling of some of your data variables (pp. 14-15 in your Proposal). This may include Overlay Combinations, Rules in Distance Relationships, Spatial Analysis using Continuous Fields and other functions, normally as part of GIS procedures (scripts). Allude to both (quantitative) Analysis and (qualitative) Visualization results. Specify the spatial scope for these models, e.g., within cities, regions (GTA, SW Ontario), or at coarse scales (Canada, USA, North America).

3 Question 3

Discuss the concept of spatial autocorrelation. Explain and critically evaluate that concept in the context of the spatial patterns of economic activities.

Spatial autocorrelation is at it's heart the application of Tobler's first law of geography: "everything is related to everything else, but near things are more related than distant things."(Tobler 1970, page 236). In other words, this concept test using probability on whether the characteristics of location A are similar (or dissimilar) to location B via distance lags. Significant results implies that spatial processes are at work. Furthermore, this underlying spatial pattern renders many classical statstics unreliable, since it violates the assumption of independence between observations.

There are four widely used measures of spatial autocorrelation: Joint count analysis, Moran's I, Geary's C and Getis- ord g statistic (also known in the literature as Hotspot Analysis or High/Low Clustering)

References

Tobler, W. R. (1970). A Computer Movie Simulating Urban Growth in the Detroit Region. *Economic Geography 46*, pp. 234–240.