**Modelling business clusters in regions**

# Introduction /Business Problem:

UK high streets are turning into ghost centres, number of automobile manufacturing business including the big brands such as Honda and Land Jaguar are shutting down their operations and financial capital is losing its shine because of uncertain Brexit where some of the banks have already started exiting London (BBC, 2019). In such a volatile business environment, it becomes increasingly important for government and regional developmental organisations to plan and design more effective and sustainable business models to boost the economy and one of the alternatives could be the creation of innovative business clusters or science and technology parks - STPs in right locations.

The process of creation of successful business clusters has always drawn a great attention in the management literature, since the seminal work of Porter (1990) on ‘industrial cluster theory.’ The development of successful business clusters has been a major driver in efforts around the world to improve the economic growth and competitiveness of locals, regions, and nations. It is keenly understood that the right combination of factors and policies can guide in unleashing the tremendous entrepreneurship benefiting individuals and societies. (Engel, 2015)

Business clusters are defined as a ‘socioeconomic entity characterised by a social community of people and a population of economic agents localised in close proximity in a specific geographic region’ (Morosini, P 2004). The companies within the clusters thrive by competing with each other while able to network and knowledge share with each other. It is “accepted wisdom” that successful examples of science parks etc. promote regional development and thus many governments and regional authorities have tried to construct imitations, but actually only a small proportion are successful (BBC, 2010 for a UK perspective and Wadhwa, 2013, for an international perspective).

The increasingly transglobal and knowledge based nature of the world business is motivating the organisations to find out innovative ways of collaborating with each other to gain a competitive advantage in their operations and strategic business objectives. The phenomenon of clusters, deﬁned by Porter (2000; p 15) as ‘geographic concentrations of interconnected companies’, is an approach which really explains how ﬁrms gain because of proximity to each other. Some of the well known and most frequently studied clusters are - Central London’s financial cluster (Keeble and Nachum, 2002), the biotech cluster in Malmö–Copenhagen region (Moodysson et al, 2008), and the Chilean wine cluster (Giuliani and Bell, 2005). Klofsten, et al. (2015)

The number of studies have shown an evidence of the additional benefits of clusters to the society through their value enhancement which includes learning and knowledge repository; advantages of economies of scale; synergies through collaboration, networking and social relations, more information flow and construction of infrastructure (Porter, 1998; Johannisson and Lindholm Dahlstrand, 2009; Sölvell, 2009; Smith et al, 2013). Klofsten, et al. (2015)

The cluster presence within related businesses in a location will foster entrepreneurship by reducing the start-up costs of a business, enabling better access to a more diverse range of inputs and complementary products and enhancing opportunities for innovations. (Saxenian, 1994; Porter, 1998a; Feldman, Francis, and Bercovitz, 2005; Glaeser and Kerr 2009). The co-location of businesses, suppliers, customers and other institutions increases the perception of innovation opportunities while amplifying the pressure to innovate. (Porter, 2000). (Mercedes et.al. 2010)

The firms generally tend to locate in regions that help to improve their economic activity - the reason may be to access the resources or to find ways to enter new markets. Presence of positive externalities determine the onset of clustering process and the competition between the rival firms is the main driver that influences the further development of cluster which drives firms to be more creative, innovative and to keep pace with advancement in technology. Hence, stimulating the research and development activity where employees becoming more specialised by gaining higher professional qualification and presence of higher value added services sector. The freedom of movement of employees from one firm to another within the cluster and proximity allow easy and fast transfer of knowledge to new firms enabling increased competitiveness and growth and therefore leading to onset of new activities which will, in turn, result in the emergence of new firms both upstream and downstream. In brief, cluster becoming part of an organic development process over time. (Porter 1990)

I will investigate business clusters in a landscape. Questions include how many potential clients (and at what input and churn rate amongst inhabitants) does a cluster need? Methods for identifying the number of client companies will initially be taken from company house.

Unfortunately many of the clusters fail because of number of reason sometimes probably because the cluster or science park was started in a wrong location? Study will aim to find out a right location for the next UKSPA to start up using regression analysis and Foursquare application.

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