

# The CER Working Paper Series on Entrepreneurship and Innovation

ISSN 2048-2426



WP1

**ESSEX  
BUSINESS  
SCHOOL**

## **Entrepreneurial Growth and Labour Market Dynamics: Spatial Factors in the Consideration of Relevant Skills and Firm Growth in the Creative, Knowledge-Based Industries**

by

**Jay Mitra  
Yazid A. Abubakar**

**Number of Pages: 20**

**CENTRE FOR ENTREPRENEURSHIP RESEARCH  
Essex Business School  
University of Essex  
Elmer Approach  
Southend-on-Sea, Essex  
SS1 1LW, UK  
Tax: +44 1702 328387  
[www.essex.ac.uk/ebs/research/cer](http://www.essex.ac.uk/ebs/research/cer)  
General correspondence to [jmitra@essex.ac.uk](mailto:jmitra@essex.ac.uk)**

### **External Advisors:**

Prof David Smallbone  
Prof Mathew Manimala  
Prof Gunnar Prause

# **Entrepreneurial Growth and Labour Market Dynamics: Spatial Factors in the Consideration of Relevant Skills and Firm Growth in the Creative, Knowledge-Based Industries<sup>1</sup>**

August 2011

Professor Jay Mitra

Dr Yazid A. Abubakar

*Corresponding authors:*

Prof Jay Mitra, Dr Yazid Abubakar

Essex Business School

University of Essex

Elmer Approach, Southend-on-Sea

Essex, SS1 1LW UK

Tel: +44 1702 328390 (Mitra), +44 1702 328392 (Abubakar), Fax + 44 1702 328387

Email: [jmitra@essex.ac.uk](mailto:jmitra@essex.ac.uk), [yaabub@essex.ac.uk](mailto:yaabub@essex.ac.uk)

---

<sup>1</sup> Special thanks to our ex-colleague Dr William Gleave who worked with us to develop the Creativity Index referred to in this paper, and also for the development of the ideas which informed the development of our Entrepreneurship Research Project based in the Thames Gateway Region in the UK. Some of the references are drawn from that project. We would also like to thank Dr Jun Li for his contribution to the identification of some key sources.

## Table of Content

Abstract.....	3
Introduction .....	4
Literature Review .....	6
Research Method .....	9
The Findings and the Analysis.....	10
Conclusion and Discussions .....	17
References .....	20

## Abstract

Studies into the spatial determinants of entrepreneurship have tended to focus on (a) the characteristics of more successful regions, knowledge spillovers and agglomerations of economic activity (Jaffe, 1993, 1998, Zucker, et al, 1998, Acs, 2002, Sorensen and Stuart, 2003, Audretsch and Feldman, 2004; regional differences in entrepreneurship capital (Sternburg & Wennekers 2005), (c) the relationship between personal entrepreneurial characteristics and behaviour and new business creation. An apparent propensity for researchers to focus on the performance outcomes of entrepreneurship at a regional level, rather than the structural supply-side conditions that may influence regional differences in rates of new venture formation, and therefore be construed as constituent components of an 'entrepreneurial culture' in those areas.

This paper is concerned with the exploration of some of the critical, spatial and structural factors underpinning industry growth, entrepreneurship and labour market dynamics with particular reference to the so-called 'Creative Industries'. Our research shows a statistically significant spatial correlation between levels of human capital (amongst other framework factors) and higher rates of new firm formation in knowledge-intensive sectors in the United Kingdom. It then goes on to investigate how human capital (measured in terms of educational attainment at different levels) can be enhanced within an economically peripheral sub-region to overcome mismatches between the supply of, and demand for, what the government terms 'economically valuable' skills (Leitch Review of Skills in the UK, 2004). Not all such enhancement measures generate entrepreneurial outcomes in terms of self-employment and new business creation. Equally, the availability of flexible labour and skills can support the growth of innovative firms. It is precisely these dynamics within local production systems, coupled with the existence of an entrepreneurial capability, that force many workers to change from the status of self-employed to that of employees at various times in their lives (Cappellin, 1998). Thus, the issue of labour market skills and flexibility is of particular relevance in this paper.

In recent years there has been a growing interest from academia and policy makers in the idea of the 'cultural industries' initially, and more recently in the 'creative industries' and the notion of the 'creative economy'. It is the specific and special construct of the 'creative industries' (as distinct from all other industries) that has received overwhelming attention from the media, policy makers and researchers. Florida (2002, 2005) makes a compelling argument that creative talent is the key driver of growing knowledge-based economies. Creative industry products and services incorporate individual skill and creativity that are knowledge-intensive and locally derived. This paper seeks to address these issues with a particular focus on the determinants of new firm formation and the factors that can help determine regional advantage for new business creation and innovation in the creative industries. Specifically, we attempt to explore and identify key determinants of business formation in Knowledge Intensive sectors (which include the creative industries) of regions outside the major metropolitan conurbations, and their possible differences with other Non-Intensive Sectors.

Based on analysis of Local Authority Districts of Thames Gateway South Essex (TGSE) in East of England, we find that while human capital is positively correlated with new business entry in Knowledge intensive sectors, it is negatively correlated with new start-ups in non-knowledge intensive sectors. This finding suggests that while entrepreneurship

in knowledge based and creative industries requires highly skilled labour, in non-knowledge based industries, low skilled labour is the primary determinant of new firm creation. Our findings also appear to suggest the need for higher skills/educated base in order to boost the growth of new businesses in the TGSE region. Finally, we develop a new creativity index for secondary regions that measures more directly the concentration of creative and knowledge based industries.

**Keywords:** Creative Industries; knowledge-based; core-periphery; talent; skills; regions; human capital; creativity; formation; new firms

## Introduction

Recent years have witnessed a growing interest from academia and policy makers alike in the idea of the 'cultural industries' initially, and more recently in the creative industries and the notion of the creative economy. This has resulted from the suggestion that the creative industries (however defined) are a growing sector, which offers opportunities for new job creation, new business ventures, inward investment and tourism (European Commission, 1998). More importantly, it is based on the recognition that, as globalization has changed the international division of labour, developed countries have to base their global competitiveness on the strengths of their labour market and consequently on products and industries in the high end of value chain. While it is widely agreed that creativity can also be used as a defining characteristic of firms in every sector that take their principal competitive advantage from creativity and innovation, it is the specific and special construct of the 'creative industries' (as distinct from all other industries) that has received overwhelming attention from the media, policy makers and researchers.

Florida (2002, 2005) argues that creative talent is the key driver of growing knowledge-based economies. Creative industry products and services incorporate individual skill and creativity that are knowledge-intensive and locally derived. Hence they are difficult to imitate by low cost producers abroad (Turok, 2003). Creative industries tend to have an urban focus (Scott, 2006, Florida, 2005, Hartley, 2005, Thorsby, 2003), and this focus tends to highlight the spatial concentration of firms in those industries. The relationship between urban areas and industry agglomeration is reinforced by specific division of labour, allowing for functional diversity (in terms of production sectors, job types, occupational strata, worker skills associated human attributes, sources of capital, and a spread of businesses across the value chain (Scott, 2006). While Florida emphasizes the importance of creativity in economy, one of the uncomfortable messages from his work (and indeed that of others) is that the creative economy tends to aggravate inequality, including regional inequality.

Interestingly, in the UK the creative industries have been closely associated with the regeneration agenda of many local governments. From big cities such as Manchester, Birmingham, Glasgow, and Cardiff, to smaller towns such as Huddersfield and Southend-on-Sea, the creative industries have been integral to a broader regeneration that has focused on urban renaissance, attracting post-industrial jobs; encouraging people back to living in city centres, and generally improving the urban quality of life (Jayne, 2004).

Whilst much of the attention concerned with creative industries and creative cities has been focused on the core cities and regional capitals, there is a pressing need to explore a key research and policy issue in that whether and to what extent the creative industries have a role to play in other non-core peripheral regions. This view is based on the notion that the relatively low threshold of entry into these industries should allow for new business creation and subsequent skills as growing ventures put pressure on the local supply of adequate and relevant capabilities and competencies of people. At a meta level, shifts in the production system result in major reorganizations of the spatial division of labour, centered round high technology manufacturing, neo-artisanal production, cultural industries, business and financial services, in the new economy of our times.

An interesting outcome of such structural change in the new economy is the “expanding mosaic of interrelated economies at various levels of scale and development. This mosaic is steadily overriding the pre-existing core-periphery system that prevailed under the old and new divisions of labour” (Scott, 2006, p.43). Thus the interrelationship between core-periphery regions in accommodating the growth of the creative industries provides fodder for analysis of the prospects for entrepreneurship in the creative industries.

This paper takes a more specific focus on the creative industries in the context of peripheral or secondary regions (secondary to major metropolitan areas). The purpose is to seek out the determinants of new business formation with particular reference to the creative industries and identify the regional factors that determine the advantage that some regions have in generating new businesses, encouraging specialization and achieving economic growth. Specifically, we address the following objectives:

- *Objective 1: to explore and identify key determinants of business formation in Knowledge Intensive sectors of secondary regions and their possible differences with other non-knowledge intensive sectors*
- *Objective 2: to investigate whether ‘entrepreneurship gap’ exist in knowledge intensive sectors of secondary regions, in relation to national rates of business formation and growth and why.*
- *Objective3: to develop a creativity Index for knowledge economy in secondary regions based on key factors identified.*

Addressing the above objectives, will allow us identify key factors supporting new venture creation, in secondary regions. By secondary regions, we are simply referring to non-core regions; which are regions without high-concentration of knowledge activities. The study’s findings are help in the formulation of more informed policies for supporting creative and knowledge based industries in these regions. Creative industries are widely considered to be key drivers of the knowledge economy and enablers for other services and industries. Policy-makers are therefore keen to promote their growth and development within local and regional economies.

## Literature Review

Richard Florida (2002, 2005) sets his thesis at the international level to address the source of new competitiveness of nations. In his view, the movement of human capital, particularly the most creative and talented, from nation to nation is critically important to understand a nation's future success or failure in global competition. At the centre of this thesis is the concept of 'creative class'. Florida (2005) defines the 'creative class' as those employed in the fields ranging from science and engineering to architecture and design, and from arts, music, and entertainment to the creative professions of law, business and finance, health care, and related fields (p.7). From this definition, it is clear that the creative sector he refers to is broader than the widely-used definition of the creative industries. So is his 'the global creativity index' (GCI). The GCI is the weighted average of three indices: a) talent index, measured by creative class, human capital, and scientific talent; b) technology index, measured by R&D index and innovation index (patents); and c) tolerance index, measured by values index and self-expression index.

His argument can be summed up as follows:

- a) we are witnessing the rise of the creative economy in which the primary drivers of economic growth for both regions and nations are technology, talent, and tolerance (3 Ts);
- b) creative talent and the knowledge and technology creative people bring with them are mobile factors and an area's ability to hold these critical factors lies in its openness, diversity, and tolerance;
- c) companies, instead of bringing talent to their existing locations, set up facilities where the talent already exists;
- d) more urbanized and denser areas gain productivity advantage due to their ability to bring together and argument creative talent;
- e) the creative economy will aggravate economic inequality and increase social and political tension.

According to Richard Florida (2002), creative centres across regions are those places where "all forms of creativity - artistic and cultural, technological and economic - can take root and flourish". In those creative centres, the agents of production are small firms with the entrepreneurial drive, spatial proximity fosters social interaction and trust, and dense local networks create a dynamic atmosphere that spurs innovation, lures talent, attracts investment and generates growth through a self-reinforcing, endogenous process. This has led to the emphasis on the importance of creative networks in cities. Cities are said to be privileged locations in the new information-rich economy as nodes of intense business interaction and sharing of ideas and insights, leading to rapid learning and innovation (Leadbeater, 1999). Overall, Florida's argument, from the spatial perspective, seems to imply that the creative sector, in his definition, tends to thrive in a small number of places where both the infrastructure and the tolerant environment exist and that the rise of the

creative economy will therefore reinforce the pattern of regional disparity or the core-periphery relationship.

While it is still not entirely clear as to the extent to which the development of the creative industries and the creative economy as a whole correlates, there is a need for a close look at determinants of the creative industries development from a geographical or spatial point of view. This acquires greater poignancy when consideration is given to what Scott (2006) refers to as the interrelationships between different regions and sub-regions. There is also the need to address the question of the inherent tendency of inequality of the creative economy and the desire for facilitating the development of the creative industries in secondary regions. Surprisingly, given the rapidly increasing number of publications relating to the creative industries, research on the creative industries in the non-core, peripheral or secondary regions is very limited and research, if any, is mainly case study-based.

According to Turok (2003), Scotland has a larger share of employment in television production and distribution than all other regions in the UK besides London; within Scotland, the film and television industry is strongly city-oriented; and Glasgow is the largest Centre. The film-making sector, however, has struggled to make a sustained impact. Turok argues that despite the existence of a group of talented and committed individuals, support organisations with diverse capacities ranging from acting to production and technical assistance, and the intangible resources like Scotland's culture and physical environment, the sustained development of the sector needs to have sufficient critical mass to sustain specialised services, consistent public funding and financial incentives, and control over distribution and exhibition. Although the television sector in Scotland performed much better than the film sector, the process that key decisions were made in London, underpinned by the inherent character of the commissioning process, again resulted in a lack of control over their creative products. It is secondary or 'peripheral' (in both sectoral' and industry terms) that defines the character of the creative (film) industry in Scotland;

This case study suggests that city size and density matter for the existence of a pool of creative and technical talent, as well as generalized urban assets such as external air connections, recreational facilities and cultural amenities (Turok, 2003). It also echoes Florida's (2005) argument that highly skilled labour is mobile. Therefore, the quality of life and image of cities as well as efficient external transport links are important to attract and retain qualified personnel.

Montana's creative enterprise cluster is another interesting case. The cluster is dominated by businesses in arts and design and consists of three ties: the first tie consists of individuals and freelancers who mainly work alone or, occasionally, with apprentices or family members; the second tie consists of the artisan-entrepreneurs and small to mid-sized firms that can meet a larger market demand; and the third tie consists of the specialized service companies and freelancers that design, deliver, and produce creative content in various forms (Rosenfeld, 2004). In the cluster, a very large proportion of the companies are micro-enterprises, individuals, freelancers, and part time (secondary) businesses, and businesses tend to concentrate in and around a few cities.



The development of the creative industries cluster was attributable to such factors as biodiversity, low population density, independent lifestyle, and cultural heritage. It has also benefited from the home-grown talented residents of rural areas and reservations who have honed their skills over long periods of rural self-sufficiency and are now turning those skills into commercial endeavours - as knitters, weavers, woodworkers, canners and potters (Rosenfeld, 2004). Whilst higher education institutions play a positive role, a large proportion of creative and innovative people were found to lack any degrees in art or design. In fact, informal learning prevailed and tacit knowledge was highly valued. It was also recognised that the cluster was represented by a wide range of non-profit associations that serve various interests. In relation to this, businesses found it more important to have close access to support services than proximity to the manufacturing companies, as they tend to rely on intermediaries to find customers.

Jayne (2004) charts two major creative industries initiatives in Stoke-on-Trent, UK, which has a symbolic name of 'the City of Pots'. Between 1989 and 1993, millions of Euros, including European Structural Funding, were invested in the two initiatives. They sought to conserve the local industrial and cultural heritage, and to develop a new and innovative approach to the regeneration of the area. Despite substantial investment, the impact of this development on the regeneration of the city has been minimal. Jayne (2004) argues that the disappointing outcome resulted from a combination of factors, such as flawed creative industries strategy, associated failings of the city to overcome its spatial and economic structural conditions, and, most critically, the domination of working-class production and consumption cultures.

The various case study references made above suggest that an underpinning feature of the creative industries in different regions is the system of social and economic relationships that shapes and influences creative desire, capability and inventiveness. This system of interrelationships is what Scott (2006) refers to as the 'creative field', which is made up of different types of continually evolving organisational arrangements contributing to and engendering different social and economic relationships. These organisational arrangements may be represented by specific types of labour-management relations, a nexus of particular sectors, the connections between universities, industry and government (Leydesdorff and Etzkowitz's (1997) idea of the 'triple helix', see also Mitra and Matlay, 2002) or even a regional innovation system (Cooke, 2000). The critical consideration is the spatial and locational attributes of different aspects of human capability, effort and organisation (Scott, 2006), and the extent to which they contribute to entrepreneurial outcomes in an economy. Representation of such human capability and effort can be found in the key variables (levels of skills, employment, job density, etc.) that connect or correlate with each other to help determine the patterns of new firm formation and economic growth.

What follows is the quantitative analysis of the relationship between the specific variables that contribute to new firm formation with specific reference to key sectors that are either part of the creative industries or those which support such industries. The analysis is then followed by a discussion on the development of a new 'creativity index' which could help better in obtaining a critical understanding of entrepreneurship and the creative industries.

## Research Method

Given that the key purpose of this research is to seek out the determinants of new business formation in secondary regions, we employ ordinary least square (OLS) regression method. The importance of multiple regression equation is that it identifies the impact of each influence on the dependent variable independently of other influences (Barkham *et al.*, 1996). As regards choosing appropriate unit of observation, we choose the regions of Thames Gateway South Essex. The sub-regions of South Essex, which include Southend-on-Sea, Rochford, Castle Point, Basildon and Thurrock, provide a spatial construct that has much in common with areas marginal to large urban conurbations such as London (ERP, 2007). The businesses in the South Essex region are seen as having a general focus on lower-skilled activities (ERP, 2007). Thus, these regions of South Essex are considered here as being secondary regions.

The K sector (renting, real estate and renting activities) in South Essex is chosen for a number of reasons. 1) Renting, real estate and renting activities is among the sectors generally viewed as part of knowledge intensive services (Eurostat cited in Jones *et al.*, 2008; see table 1); and 2) the data on VAT registration is available at the sub-regional level from NOMIS (2004).

Table 1: Definition of knowledge intensive services and Non-knowledge Intensive Service industries

Definition	Industries included
<b>Knowledge intensive services</b>	<ul style="list-style-type: none"> <li>• Financial intermediation;</li> <li>• <b>Real estate, renting and business activities;</b></li> <li>• <b>Education;</b></li> <li>• Health and social work;</li> <li>• Recreational, cultural and sporting activities;</li> <li>• Water transport;</li> <li>• Air transport;</li> <li>• Post and telecommunications.</li> </ul>
<b>Non-Knowledge intensive services</b>	<ul style="list-style-type: none"> <li>• <b>Transportation services;</b></li> <li>• Travel services;</li> <li>• Construction services;</li> <li>• Insurance services;</li> <li>.</li> </ul>

Source: ESRC (2005); Eurostat cited in Jones *et al.* (2008)

Our proxy for new firm creation is VAT registration, which is in line with VAT registration, which is widely used in new firm creation related studies (Huggins and Izushi 2008; Mitra and Gleave, 2008). We however recognize that our proxy has some limitations it does not capture firms that are not VAT registered.

## The Findings and the Analysis

### **Objective1: Determinants of business formation in Knowledge Intensive sectors of secondary regions**

The following regression models examine the determinants of VAT registrations in Knowledge-sector (renting, real estate and renting activities) and non knowledge sectors (transport) industries respectively, for all districts within the East of England. They allow differences between the two industrial groups, in term of the regional economic factors which affect VAT registration rates, to be isolated and identified. Given that these districts vary in size both geographically and in terms of their total population, the absolute number of VAT registrations need to be controlled by a size measure. Ashcroft *et al* (1991) highlight the regional workforce and the stock of existing businesses as two appropriate denominators to use in this context and discuss the relative advantages of each. A per-capita measure of business start-up is employed in Table 2 in order to examine the VAT registration data in relation to the adult population in each district. The underlying assumption with this measure, which van Stel and Storey (2002) term the ‘Labour Market approach’, is that start-up activity essentially derives from the potential workers within an area. In contrast, the regression models in Table 3 consider VAT registrations as a proportion of the existing stock of businesses (the ‘Business Stock’ approach). This assumes that new firms are created out of existing ones.

Table 2: Determinants of VAT registration in K and I sector industries at LAD level – 2000 to 2004 (East of England) – Labour market measure

Predictors	Average VAT registrations per 10,000 adult population (2000-2004)	Average VAT registrations per 10,000 adult population (2000-2004)
	K-sector	I-sector
Constant	-7.77	0.43
% of economically active people educated to NVQ 4+ (2000-2004)	0.30**	-0.04**
Employment specialization in industry (2001)	6.02**	0.38**
Employment rate 18+ (2000-2004)	0.07	0.50*
% of economically active unemployed (2001)	-1.01**	-0.16**
% economically active self-employed (with employees - 2001)	0.07	-0.14
% economically active self-employed (no employees - 2001)	0.00	-0.13
% of workplaces with under 10 employees (2001)	0.76**	-0.12
Job density (2000-2004)	8.71**	0.03
R-squared (adjusted)	81.6	50.3
F-statistic	42.60	12.89
N	48	48

\*Significant at 5% level \*\*Significant at 1% level

Source : NOMIS

It can be seen that whilst the proportion of people educated to NVQ 4 and above exerts a positive influence on registrations in K-sector activities, this measure of human capital produces a negative and statistically significant predictor of registration in transport, storage and communications, indicating the importance of a lower more industry-specific skills base within this sector. Employment specialisation is an important predictor of VAT registration for both industrial groups, suggesting the positive influence of industrial concentration on new firm formation and growth. In addition, the proportion of workplaces employing fewer than 10 people and the job density variables represent positive predictors of VAT registration in K-sector activities, demonstrating the importance of ‘cluster’ related dimensions on SME growth and development.

Table 3: Determinants of VAT registration in K and I sector industries at LAD level – 2000 to 2004 (East of England) –Business stock measure

Predictors	Average VAT registrations as % of stock at end of previous year	Average VAT registrations as % of stock at end of previous year
	K-sector	I-sector
Constant	14.87	18.09
% of economically active people educated to NVQ 4+ (2000-2004)	-0.21	-0.09
Employment specialisation in industry (2001)	-0.08	-0.02
Employment rate 16+ (2000-2004)	0.13	0.14
% of economically active unemployed (2001)	-0.21	-0.17
% economically active self-employed (with employees - 2001)	-0.06	-1.45**
% economically active self-employed (no employees - 2001)	-0.28*	0.17
% of workplaces with under 10 employees (2001)	-0.08	-0.03
Job density (2000-2004)	-0.12	-0.02
R-squared (adjusted)	0.13	0.35
F-statistic	7.86	26.37
N	48	48

\*Significant at 5% level \*\*Significant at 1% level

Source : NOMIS

The regression models presented in Table 2 are much weaker than those in Table 1 in terms of the proportion of the variance that is explained. This may indicate a possible limitation in using the stock of existing businesses as a denominator for analysing VAT registrations. For example, the measure cannot discriminate between areas that have a small number of large firms, and those that have a larger number of smaller business enterprises. Interestingly, the models highlight the negative influence of the self-employed segment of the work-force on business start-ups, possibly indicating market saturation in certain places or that larger businesses registering for VAT are not locating in areas with a higher proportion of low value added activities run by individual workers.

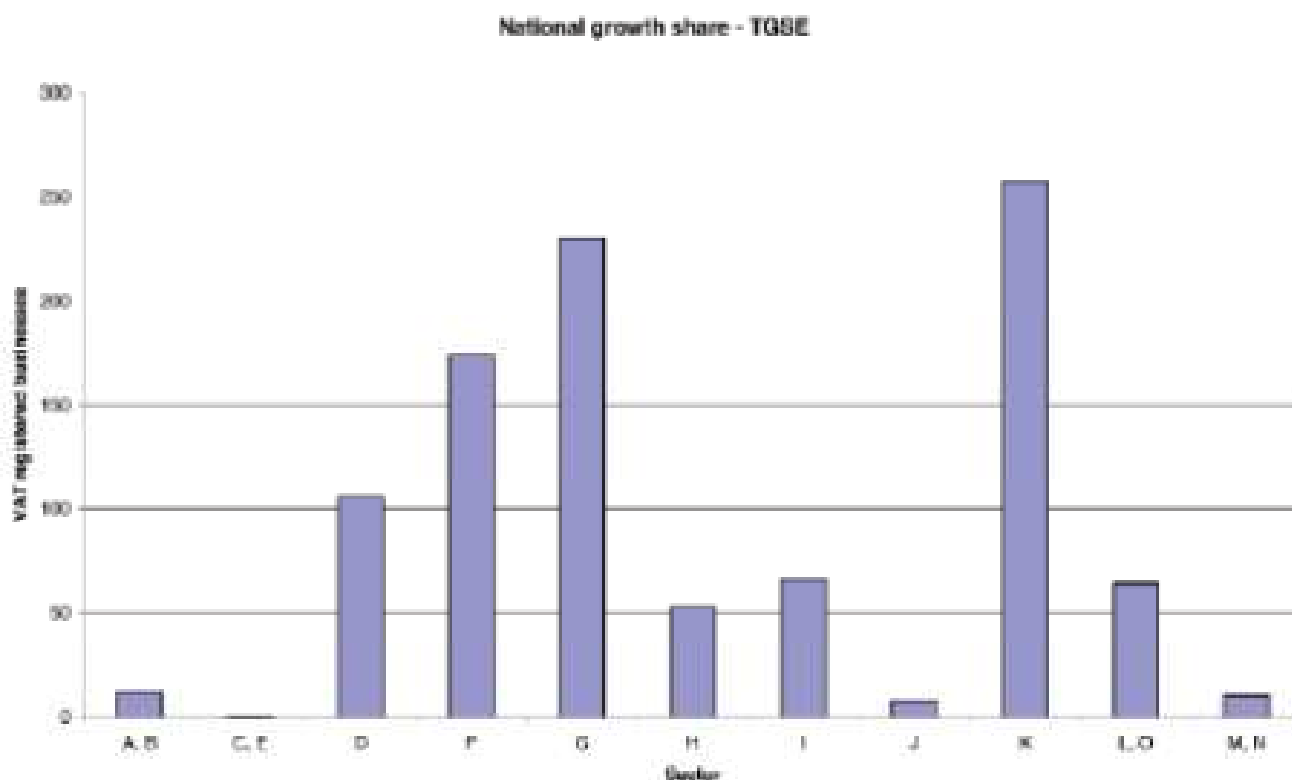
**Objective 2: ‘Entrepreneurship gap’ in secondary regions, in relation to national rates of business formation and growth.**

A shift-share analysis was conducted to examine the competitive position of TGSE in terms of the growth of VAT registered businesses across different sectors of the economy. The purpose of this was to indicate the industrial groups within which entrepreneurship was most prevalent, and where ‘entrepreneurship gaps’ exist, in relation to national rates of business formation and growth.

What we are looking here is the difference between current rates of entrepreneurship and what would be achieved if negative environmental factors were not present. The analyses below attempt to indicate the TGSE sectors that failed to create VAT registered establishments, given what was achieved within those sectors at the national level.

The national growth share (Figure 1) reveals the number of VAT registered businesses that were created between 2000 and 2005 as a result of the overall rate of increase (5.71%) at the national level. K- and G-sector activities perform particularly well on this component reflecting their strong representation in TGSE’s business stock in 2000.

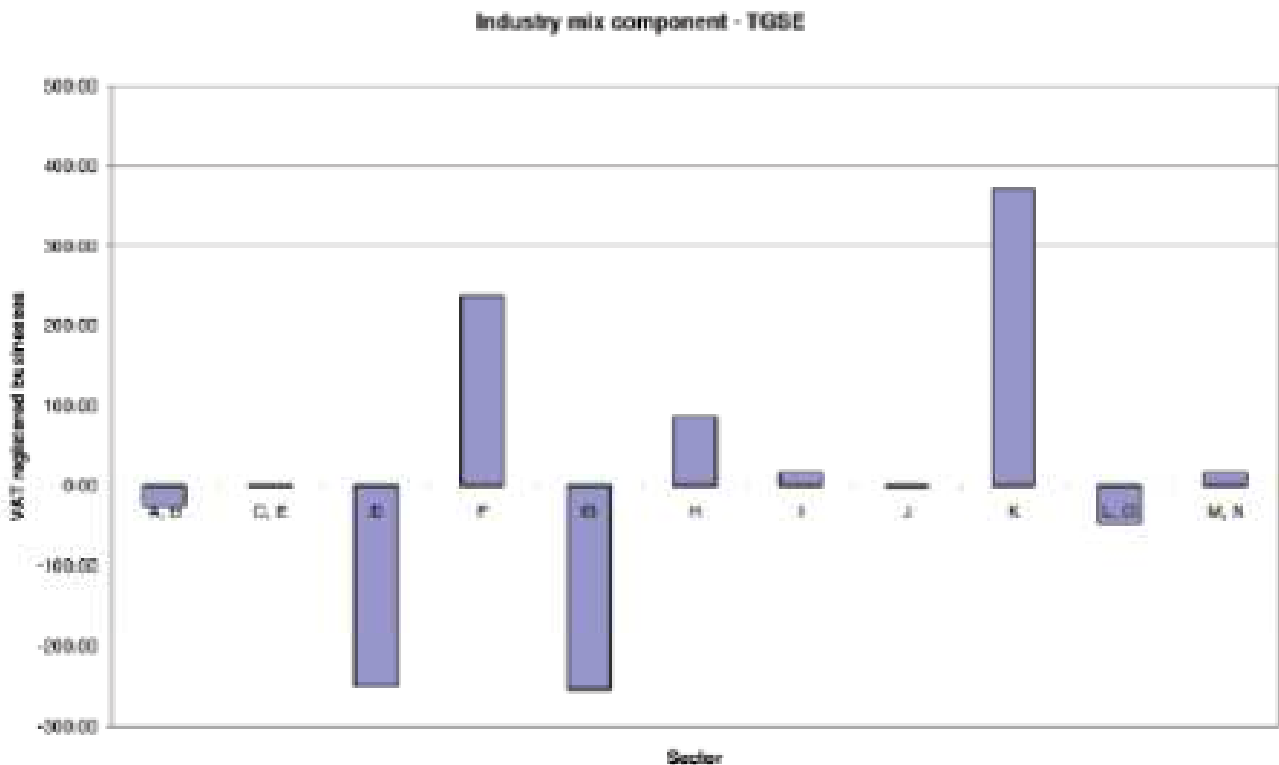
Figure 1: National Growth Share



The industry mix component (Figure 2), which measures the number of VAT businesses formed or discontinued between 2000 and 2005 as a result of industrial growth or decline in the national economy, again identifies the growth of K-sector activities (including

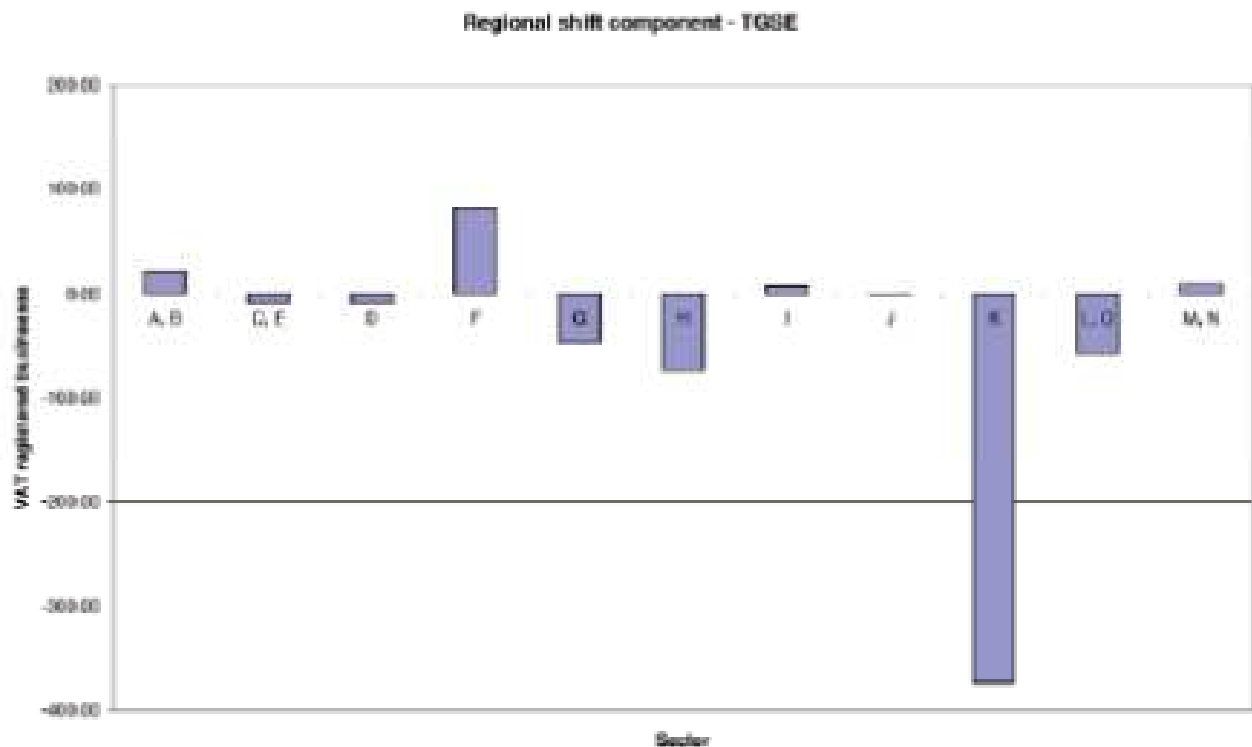
business and financial services), as well as increases in VAT registered construction businesses. Indeed, the most successful sector overall within TGSE, as indicated by the regional shift component (Figure 3), is construction in which 83 establishments were created, probably as a consequence of the urban renewal projects that have been initiated as part of the Thames Gateway regeneration strategy in recent years. Clearly this will place pressure on the construction labour market attracting a migrant workforce into the sub-region. What is especially striking is the loss of 373 VAT registered businesses on the regional mix component, attributable to the slower rate of growth of these activities at the regional level.

Figure 2: Industry Mix Component



This finding is of particular concern since K-sector activities include a range higher value-added, knowledge intensive businesses that contribute to regional growth and innovativeness. As shown above, the K-sector displays a high-degree of business churn within TGSE indicating that rates of business survival amongst these activities are particularly poor. Thus where the region needs a higher skills/educated base to allow for structural change in the economy, we find worrying signs of weakness accounting for their relatively poor entrepreneurial performance. Investigating the shifts in the share of employment and of business registrations reveals different dynamics of the TGSE sectors.

Figure 3: Regional Shift Component



**Objective 3: The Creativity Index for secondary regions**

We propose a new ‘creativity index’ which can be applied in the UK context with existing secondary datasets at various levels of spatial aggregation. This composite measure is comprised of 6 different variables relating to various aspects of human capital, regional economic performance, entrepreneurship, and local specialisation in ‘creative’ sectors. Similar to the measure proposed by Florida (2004), the index considers the regional advantages that underpin growth and specialisation in ‘creative’ sectors, as well as the process of new enterprise creation. The development of this technique represents an attempt to combine the range of widely available data sources that have been used individually as proxy measures of more abstract theoretical concepts (e.g. ‘human capital’ measured empirically in terms of educational attainment at university level, and ‘regional entrepreneurship’ assessed in terms of VAT registrations per capita), and to highlight the unique spatial interactions between them. Due to data limitations, the proposed index does not consider the occupational structure of local economies as Florida (2002) and Markusen and Schrock (2006) are able to do with US census sources. Rather, the commercial exploitation of human capital in an industrial context, and the regional conditions which support this, is the focus of the technique.

The underlying rationale for the inclusion of the 6 different variables in the index are the key interrelationships that are held to exist between them and their perceived importance to the process of creative industry specialisation and entrepreneurship. Figure 1 examines this process in the form of a simple path analysis (Florida 2002) developed from the correlation matrix presented in Table 3. It is argued that the foundations of a specialised creative industry base relate to a location’s stock of, or attractiveness to, highly educated

people who are able to access employment within high value added ‘creative’ sectors of the economy. As demonstrated in the regression models above, such specialisation in turn stimulates business creation and ultimately contributes to higher average wage levels. In grouping the 6 variables together, the proposed index measures the potential for the process outlined in Figure 1 to take place and develop within a region. Principle component analysis is used to group the 6 variables together into a single ‘creativity’ component. The area’s respective coefficients against this component are then ranked.

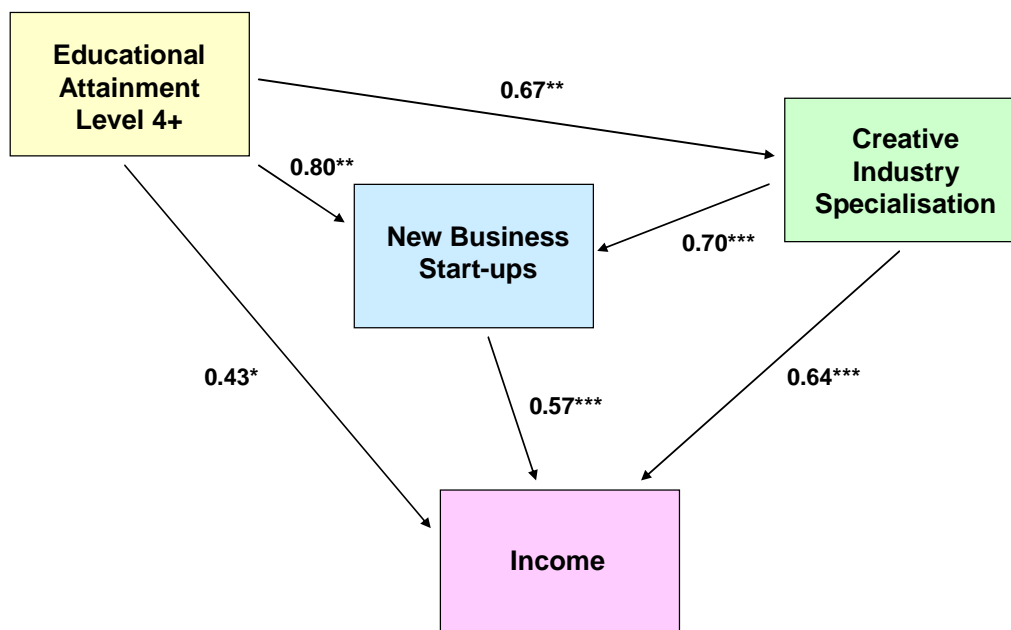
**Table 3: Interrelationships between Creative Industry Employment and Key Regional Indicators**

<b>Correlation matrix – Creative Industries Specialisation and Key Economic Characteristics in East of England (n=48)</b>	<b>Creative Industries LQ (2004)</b>	<b>VAT registrations per 10,000 adults (k-sector) (2000-2004)</b>	<b>Job density (2004)</b>	<b>Unemployment rate (2001)</b>	<b>Employment rate (2000-2004)</b>	<b>% economically active educated to NVQ level 4+</b>	<b>Gross annual pay (2003)</b>
<b>Creative industries LQ (2004)</b>	1	0.695**	0.372**	-0.285*	0.369**	0.673**	0.640**
<b>VAT registrations per 10,000 adults (k-sector) (2000-2004)</b>	-	1	0.311*	-0.630**	0.564**	0.796**	0.571**
<b>Job density (2004)</b>	-	-	1	0.133	0.105	0.410**	0.339*
<b>Unemployment rate (2001)</b>	-	-	-	1	-0.656**	-0.521**	-0.248
<b>Employment rate (2000-2004)</b>	-	-	-	-	1	0.459**	0.371**
<b>% economically active educated to NVQ level 4+</b>	-	-	-	-	-	1	0.430**
<b>Gross annual pay (2003)</b>	-	-	-	-	-	-	1

Source: NOMIS



**Figure 1: Path Analysis – Key interrelationships between educational attainment, entrepreneurship and creative industry growth in East of England**



\*Significant at 1% level  
\*\*Significant at 0.1% level

### 'Creativity Index' – East of England

- Composite index comprised of the following 6 variables:
  - 1) Creative industries location quotient (2004)
  - 2) Average VAT registrations per 10,000 adults in K-sector activities (2000-2004)
  - 3) Average job density (2000-2004)
  - 4) Average employment rate aged 16+ (2000-2004)
  - 5) Average % of economically active population educated to NVQ 4+ (2000-2004)
  - 6) Average gross annual pay (2003)

***Creativity Index - Top ten 'creative' districts within East of England (n=48) and rank scores for TGSE***

Top ten districts	Rank	TGSE districts	Rank
St. Albans	1	Basildon	24
South Cambridgeshire	2	Southend-on-Sea	37
Cambridge	3	Thurrock	40
Three Rivers	4	Rochford	41
Dacorum	5	Castle Point	44
Watford	6		
East Hertfordshire	7		
Welwyn Hatfield	8		
Uttlesford	9		
Hertsmere	10		

**Conclusion and Discussions**

In this study we examined determinants of new firm formation and the factors that can help determine regional advantage for new business creation and innovation in the creative industries with particular reference to human capital and labour market dynamics. The study develops that the development of a new 'creativity index', made up of 6 composite measures, could help better in obtaining a critical understanding of entrepreneurship and the creative industries. The study then employs multiple regressions to test the explanatory power of the creativity index on new venture creation in two sectors, namely K-sector (renting, real estate and renting activities) and I-sector (transport) industries for all districts within the East of England. VAT registrations were employed as the key measure of new venture creation.

The following are the three key conclusions reached from the results of the analysis:

1. ***Human Capital Crucial is Crucial for business formation in Knowledge Intensive but not Non-knowledge Sectors of Secondary Regions:***

We found that our measure of human capital i.e. the proportion of people educated to NVQ 4 and above exerts a positive and significant influence on registrations in K-sector activities, but this same measure of human capital produces a negative and statistically significant predictor of registration in I-sector (transport, storage and communications).

Therefore, the findings in this study show that new venture creation in K-sectors sectors utilise highly skilled labour, while new venture creation in I sectors appears to be based on low skills.

This finding throws new light on the role of human capital in new firm creation in secondary. It suggests that human capital is mainly relevant for new firm creation in industries requiring high skills as stated elsewhere (Lee *et al.*, 2004) but not for non-knowledge intensive sectors. Rather, new firm creation in non-knowledge sectors appears to be associated low human capital.

## **2. *Employment specialisation is an important predictor of new venture creation in both Knowledge Intensive but not Non-knowledge Sectors.***

In contrast to human capital, *employment* specialisation appears to be an important predictor of new venture creation (VAT registration) for both K and I industrial groups. This suggests the positive influence of industrial concentration on new firm formation in both sectors that require high and low skills.

Although studies on high technology industries have long noted the importance of high-technology concentration and new firm formation (Saxenian, 1994; Stuart and Sorenson, 2003) especially in major regions; such relationships have received little attention in secondary regions. For example, Andersson, Quigley, and Wilhelmsson (2005) and Carlino, Chaterjee, and Hunt (2001, 2006) show the positive role of local employment density on innovation. Regression analysis by Krudsen et al (2007) demonstrates a positive relationship between the density of creative workers and metropolitan patenting activity. Thus, our own findings extends these research works by showing the influence of employment specialisation on new venture creation in not just Knowledge Intensive but also non-knowledge sectors.

## **3 *A New Creativity Index for secondary regions***

Our main finding based on the analysis is that the foundations of a specialised creative industry base relate to the 'new' Creativity Index – i.e. a location's stock of, or attractiveness to, highly educated people who are able to access employment within high value added 'creative' sectors of the economy. Although similar in some respects to work of other authors (Zucker, Darby, and Brewer, 1998; Florida, 2002; Currid, 2006) most of these works focus on core cities and regional agglomerations, while we focus on non-core peripheral regions (referred to here as secondary regions).

For example Florida (2002) shows that there is a positive and significant relationship between Creativity Index and concentrations of high-technology industry. Also, Currid (2006: p.344) demonstrate the concentration of artistic and cultural occupations in New York City, and suggests that "dense production agglomerations are especially likely to be

sites of originality and inventiveness.” Similarly, Zucker, Darby, and Brewer (1998) demonstrate how the localisation of intellectual human capital as embodied in “star” biotechnology scientists is related to the localisation of new bio-tech industry. Feldman (2000: p.380-1) claims that Zucker, Darby, and Brewer (1998) “demonstrates that localised intellectual capital is key in the development of the bio-tech industry and that knowledge generates externalities that tend to be geographically bounded within the region where the scientists reside”. We extend these research works by focussing more on secondary regions, rather than core cities. We therefore point to the role the Creativity Index in influencing entrepreneurship in secondary regions.

We however differentiate our Creativity Index from those that focus on concentration of artists as key to concentration of economic activities (Florida, 2002; Lee et al, 2004). We do not claim that a concentration of artists supports new firm creation (Lee et al, 2004). We do not bring any evidence in support of that thesis as many prominent researchers have questioned such an approach. Thus, Glaeser (2005, p. 594) states that:

“I know a lot of creative people. I’ve studied a lot of creative people. Most of them like what most well-off people like – big suburban lots with easy commutes by automobile and safe streets and good schools and low taxes. After all, there is plenty of evidence linking low taxes, sprawl and safety with growth. Plano, Texas was the most successful skilled city in the country in the 1990s (measured by population growth) – it is not exactly a Bohemian paradise”.

Also, Malanga (2004) states that:

“A far more serious – indeed fatal – objection to Florida’s theories is that the economics behind them don’t work. Although Florida’s book bristles with charts and statistics showing how he constructed his various indexes and where cities rank on them, the professor, incredibly, doesn’t provide any data demonstrating that his creative cities actually have vibrant economies that perform well over time”.

As further explained by Malanga (2008), when Florida talks about San Francisco’s economic gains, as an example, he is often referring to economic growth generated in Silicon Valley, but implying that hip Haight-Ashbury is somehow responsible for it. It is too far flung to have been influenced by bohemians. Rich case studies by Saxenian (1994) and economic analysis by Jaffe (1989) and Acs (2002) all link Silicon Valley’s entrepreneurial activities with human capital and a research base. In the UK also, which houses a highly entrepreneurial – Cambridge cluster- region; most authors link the clusters origin to the research and human capital resources of the region, including the University of Cambridge (Athreye, 1999; Keeble and Wilkin, 1999; Mying et al, 2005). Therefore, our index does not claim in any way a link between artists and economic activity. Rather the importance of variables such as human capital, local creative industries and employment specialisation are what we see as drivers of new firm creation in secondary regions.

#### **4. Implications**

One of the major implications of our results for policy makers is that in supporting new venture creation, it may be of great import to take note of the composite Creativity Index for different industries; in particular human capital needs to be considered. This is because high human capital as we found appears to play different roles for K-sectors and I-sectors. Whereas the former appears to require high skills, the later appears to incline towards low skills. Therefore, we consider it imperative that caution is exercised in advocating the role of human capital for new venture creation in all industries, but rather, future studies need take on the challenge of studying the specific role played by human capital across different industries, why there are differences if any, thereby allowing the formulation of more robust models and informed policies.

#### **References**

Andersson, R.; Quigley, J.; and Wilhelmsson, M. 2005. Agglomeration and the spatial distribution of creativity. *Papers in Regional Science* 84: 445-464.

Ashcroft, B. Love, J.H. & Malloy, E. (1991) 'New firm formation in the British counties with special reference to Scotland', *Regional Studies*, 25 (5), 395-409.

Carlino, G.; Chaterjee, S.; and Hunt, R. (2006) Urban Density and the Rate of Invention. Working Paper No. 06-14, Federal Reserve

Carlino, G.; Chaterjee, S.; and Hunt, R. (2001) Knowledge Spillovers and the New Economy of Cities. Working Paper No. 01-14, Federal Reserve Bank of Philadelphia.

Ciccone, A., and Hall, R. 1996. Productivity and the Density of Economic Activity. *The American Economic Review* 86:54-70.

Currid, E. 2006. New York as a Global Creative Hub: A Competitive Analysis of Four Theories on World Cities. *Economic Development Quarterly* 20:330-350.

European Commission, (1998), Culture, the Cultural Industries and Employment (available at: [http://europa.eu.int/comm/dg10/avpolicy/forum/emploiculture\\_en.pdf](http://europa.eu.int/comm/dg10/avpolicy/forum/emploiculture_en.pdf)).

Florida, R. (2002) 'The economic geography of talent', *Annals of the Association of American Geographers*, 94 (4)

Florida, R. (2002), *The Rise of the Creative Class*, New York: Basic Books.

Florida, R. (2005), *The Flight of the Creative Class*, New York: HarperBusiness.

Glaeser, E.L. (2005). Review of Richard Florida's "The Rise of the Creative Class." *Regional Science and Urban Economics*, 35, 593-596.

Jayne, M. (2004), 'Culture that works? Creative industries development in a working-class city', *Capital & Class*, Winter Issue, 199-210

Knudsen, B., Florida, R., Gates, G. and Stolarick, K. (2007), Urban Density, Creativity, and Innovation, May 2007

Leadbeater, C. (1999), *Living on Thin Air*, London: Penguin.

Lee, S.Y., Florida, R. and Acs, Z. (2004), Creativity and Entrepreneurship: A Regional Analysis of New Firm Formation, *Regional Studies*, Vol. 38.8, pp. 879–891, November 2004

Leydesdorff, L., and Etzkowitz, H. (1997) 'A triple helix of university-industry-government relations' in *Universities and the Global Knowledge Economy: A Triple Helix of University-Industry-Government Relations*, eds. Etzkowitz, H. and Leydesdorff, 155-162, London, Pinter

Malanga (2004) Who's Your Economist? Richard Florida and his "creative class" are at it again, *City Journal*, 14(1), 36-45.

Malanga, S. (2004). The curse of the creative class. *City Journal*, 14(1), 36-45.

Markusen, A. & Schrock, G. (2006) 'The artistic dividend: Urban artistic specialisation and economic development implications', *Urban Studies*, 43 (10), 1661-1686

Mitra, J. and Gleave, W. (2008) New business creation and growth and its spatial and sectoral components: a multivariate analysis of key variables, relationships and processes and their policy implications, *International Journal of Business and Globalisation*, Volume 2, Number 3, p. 227 – 243

Rosenfeld, S.A. (2004), 'Art and design as competitive advantage: a creative enterprise cluster in the Western United States', *European Planning Studies*, Vol. 12, No. 6, 891-904.

Scott, A.J. (2006) '*Geography and Economy*' Oxford, Oxford University Press

Turok, I. (2003), 'Cities, clusters and creative Industries: the case of film and television in Scotland', *European Planning Studies*, Vol. 11, No. 5, 549-565.

Van Stel, A. & Storey, D. (2002) 'Entrepreneurial growth in the British regions 1980-1998', Paper presented at the European Regional Science Association (ERSA), 42nd Congress, Dortmund, August 27th-31st.

Wood, P. and Taylor, C. (2004), 'Big ideas for a small town: the Huddersfield creative town initiative', *Local Economy*, Vol.19, No.4, 380-395.

Zucker, L.; Darby, M; and Brewer, M. 1998. Intellectual human capital and the birth of U.S. biotechnology enterprises. *American Economic Review* 88:290-306.