# THE "CREATIVE CLASS" IN THE UK: AN INITIAL ANALYSIS

by
Nick Clifton

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ABSTRACT. Richard Florida argues that regional economic outcomes are tied to the underlying conditions that facilitate creativity and diversity. Thus the Creative Class thesis suggests that the ability to attract creativity and to be open to diverse groups of people of different ethnic, racial and lifestyle groups provides distinct advantages to regions in generating innovations, growing and attracting high-technology industries, and spurring economic growth. In this paper we investigate the extent to which there might be similar processes concerning the relationship between creativity, human capital, and high-technology industries at work in the UK as in North America. The approach taken is broadly sympathetic to the Creative Class thesis; critical perspectives and reservations from the literature are introduced as appropriate research is focused around the three principal research questions: Where is the creative class located in the UK? What is the impact of quality of place upon this dispersion? What is the connection between the location of the creative class and inequalities in technical and economic outcomes within the UK? To this end, the creative class and its subgroups are defined and identified. We then construct quality of place indicators relating to tolerance, diversity, creativity and cultural opportunity. To these are added measures of public provision and social cohesion. Data are analysed by means of correlations and regression. In general we find that, although the distribution of the creative class is uneven and complex, our results are consistent with the findings of the North American research with the notable exception of technology-based employment growth. Finally, priorities for further research are discussed. The need to further investigate causality, variations within the creative class itself, and the potential role of qualitative data in this are highlighted, as is the potential fate of "non-creative" workers and places.

*Key words*: Creative Class, spatial analysis, economic dynamism, implications – policy and further research

## Introduction

Much of the recent interest in the development of creativity has drawn upon Richard Florida's (2002b) book *The Rise of the Creative Class*. Whereas in the Industrial Age classical and neoclassical economic theory told us that 'people followed jobs', in the modern knowledge economy Florida describes how 'jobs follow talented people'. That is, places that display "creative class" characteristics, meaning a high presence of professionals, technologists and bohemians, performed best economically in recent years.

In a knowledge-based economy, the ability to attract and retain highly skilled labour is therefore perceived as crucial to the current and future prosperity of regions as well as entire nations. For example, Florida (2000) has argued that in the knowledge economy, regions develop advantage based on their ability to quickly mobilize the best people, resources and capabilities required to turn innovations into new business ideas and commercial products. In particular, the ability to attract creative people in arts and culture fields and to be open to diverse groups of people of different ethnic, racial and lifestyle groups provides distinct advantages to regions in generating innovations, growing and attracting high-technology industries, and spurring economic growth (Gertler *et al*. 2002).

This research demonstrates that quality of place must be understood in broader terms than we have traditionally been accustomed to: while the attractiveness and condition of the natural environment and built form are certainly important, so too is the presence of a rich cultural scene and a high concentration of people working in cultural occupations (most specifically the "bohemians"). According to the results from Florida *et al*.'s research the underlying hypothesis is that the presence and concentration of bohemians in an area creates an environment or milieu that attracts other types of talented or high human capital individuals. The presence of such human capital in turn attracts and generates innovative, technology-based industries (Florida 2002b).

However, given the interest Florida's writings have received from academics, policy-makers and the media alike, it is no surprise that they have been the object of a high degree of critical examination. This critique has centred most notably around the apparent fuzziness of some of the concepts, definitions and causal logic Florida employs, the seemingly convenient appeal of his ideas to the agendas of a multitude of urban actors and policy-makers, and conversely the minimal attention paid to difficult issues such as the potential inequalities and negative externalities implied by a creative class

model of regional development. More fundamentally, a number of authors question the very concept of a "new economy" that can deliver prosperity in tandem with greater levels of self-determination to an ever-expanding body of knowledge workers. Brown and Lauder (2006), for example, envisage a future scenario of diminishing returns to human capital investments, with all the various discontents this entails. Moreover, we also need to be aware that "Culture" is now positioned at the centre of many urban policies. It has become a delivery vehicle for all manner of outcomes including social cohesion, sustainability, economic growth, civic pride, mental and physical well-being, social inclusion, and an ever-increasing array of other social, economic and environmental goals. This trend is highlighted by a recent report by the Department of Culture, Media and Sport which states: 'Culture drives regeneration in many ways, from inspiring landmark buildings through to reviving the decaying centres of market towns to bringing a community together around an arts event' (DCMS 2004, p. 6). In this climate we need to guard against the Creative Class and the Creative and Cultural Industries becoming the latest policy panacea.

This paper essentially seeks to apply Florida's models systematically in the UK context,[1] using comprehensive datasets, for the first time (to the best of the author's knowledge). The approach taken is broadly sympathetic to the Creative Class thesis, although we are of course mindful of the critical perspectives and reservations noted above. The structure of the paper is therefore as follows: the theoretical basis of the Creative Class approach is outlined in more detail below, with significant reservations and criticisms from the literature introduced as appropriate. Data sources and methodologies are then described in some detail, with the consequent results presented. These are focused around the three principal research questions: Where is the creative class located in the UK? What is the impact of quality of place upon this dispersion? What is the connection between the location of the creative class and inequalities in technical and economic outcomes within the UK? Finally, conclusions are drawn and implications for future research considered in the light of these questions.

## The creative class: review of theoretical perspectives

A distinct advantage of city-regions is their ability to produce, attract and retain those workers who play the lead role in knowledge-intensive production and innovation – who provide the ideas, know-how, creativity and imagination so crucial to economic success. The idea that growth-based development agendas can be actively pursed at the city level is however not a new one – see, for example, the "urban entrepreneurialism" documented by Leitner (1990). If we accept that the value creation in many sectors of the economy rests increasingly on non-tangible assets, the locational constraints of earlier eras – for example, the access to good natural harbours or proximity to raw materials and cheap energy sources – no longer exert the same pull they once did. Instead, what Florida and his associates assert matters most now are those attributes and characteristics of particular places that make them attractive to potentially mobile, much sought-after *talent*. A key reason for believing that a significant shift has occurred taking us into a knowledge economy is that data suggest this to be true. Thus the book value of intangible assets compared to raw materials has shifted from 20:80 in the 1950s to 70:30 in the 1990s (Cooke and De Laurentis 2002). Consequently, the distribution of talent, or human capital, is an important factor in economic geography, as talent is a key intermediate variable in attracting high-technology industries and generating higher regional incomes. This makes it an important research task to explore factors that attract talent and its effects on high-technology industry and regional incomes (Florida 2002c).

The replacement of raw materials or natural harbours with human capital and creativity as the crucial wellspring of economic growth means that in order to be successful in the emerging creative age of the knowledge economy, regions must develop, attract and retain talented and creative people who generate innovations, develop technology-intensive industries and power economic growth. Such talented people are not spread equally across nations or places, but tend to concentrate within particular city-regions. According to Florida, the most successful city-regions are the ones that have a social environment which is open to creativity and diversity of all sorts. The ability to attract creative people in arts and culture fields and to be open to diverse groups of people of different ethnic, racial and lifestyle groups provides distinct advantages to regions in generating innovations, growing and attracting high-technology industries, and spurring economic growth.

As Wojan *et al*. (2007) describe, theorizing on

how local environments influence economic outcomes has a long and rich history, the two dominant views of which may be traced back to Marshall (1920) – agglomerations, industry/firm-focused – and Jacobs (1961, 1969) focusing on variety and people. Traditional theories of economic growth and development tended to emphasize the role of natural resources and physical assets. Such theories were used to inform strategies typically based on various incentives to try to alter the location decision of *firms*. In recent years, several more related theories have emerged. The first, associated with the work of Porter (2000) and others, emphasizes the role of *clusters* of related and supporting industries. According to this work, clusters operate as geographically concentrated collections of interrelated firms in which local sophisticated and demanding customers and strong competition with other firms in the same industry drive the innovation process. A second view associated with Lucas (1988) and Glaeser (1998) focuses on the role of human capital – that is, primarily *highly educated people*. It argues that places with higher levels of human capital are more innovative and grow more rapidly and robustly over time. A third approach, associated with Richard Florida, emphasizes the role of creative capital, arguing that certain underlying conditions of places, such as their ability to attract *creative people* and be open to diversity, inform innovation and growth.[2] Further independent research by Robert Cushing (2001) provides support for the creative capital view. Peck (2005) remarks upon how the Creative Class thesis taps into many of the same 'cultural circuits of capitalism' (Thrift 2001) as much of the immediately preceding work on the knowledge (or new) economy. It should also be noted that there is work preceding the first accounts of the creative class which makes explicit reference to quality of place and locational choice factors, including Wong (2001) in the UK, which in turn may be linked back to Hall *et al*. (1987).

Such constellations of talents and creative people are – as already mentioned – most commonly found in large city-regions where the diversity of urbanization economies is most abundant. This, together with other factors such as labour markets characterized by high demand for qualified personnel, cultural diversity and tolerance, low entry barriers and high levels of urban service, largely determine the economic geography of talent and of creativity, both of which display concentration to large cities. According to Cooke and De Laurentis (2002) cities on average are twice as advantaged by their knowledge intensity over towns and rural areas compared to their already existing advantages from agglomeration economies. Thus if a city scores 50 per cent above the mean in GDP per capita it is likely to score 100 per cent above it in terms of its knowledge-based industry. Thus there is more chance of knowledge economy employment in the city than in the country, a major contributory factor in the renewed migration of young people from rural to urban areas in many European countries, making the knowledge economy unevenly distributed and knowledge poverty a new kind of locational disadvantage (Cooke and De Laurentis 2002).

Thus, it is not enough to attract firms: the "right" people also need to be attracted. Richard Florida calls for complementing policies for attracting firms with policies for attracting people, which means addressing issues of "people's climate" as well as of business climate (Florida 2002c). Indeed, the former is seen as basic to the latter, in that the presence of human capital and talent is essential for attracting and developing high-tech industries and consequently for the economic growth of cities. This suggests that the attention of politicians and planners should be directed towards people, not companies; that is, away from business attraction to talent attraction and quality of place (Florida 2002c). Critics of this viewpoint have however pointed to what they consider the "easy-sell" of this message to urban policy-makers; Peck (2005, p. 752) in particular has dissected in some detail what he regards as the eminently 'deliverable supply-side policy prescriptions' that flow implicitly from acceptance of the Creative Class thesis, and which thus (either by design or otherwise[3]) find a ready market among these newly "legitimized" urban actors.

The knowledge-based economy means then that the ability to attract and retain highly skilled labour is seen as crucial in terms of both the current and future prosperity of city-regions as well as entire nations. Recent research on this question indicates that talent is attracted to and retained by cities, but not just *any* cities. In their analysis of American metropolitan areas, Richard Florida and Gary Gates have shed new light on those characteristics of urban regions that seem to be most important in this process (Florida and Gates 2001; Florida 2002a, 2002b, 2002c). The central finding of this work is that the social character of city-regions has a very large influence over their economic success

and competitiveness. In particular, Florida and his colleagues have found that those places which offer a high quality of life and best accommodate diversity enjoy the greatest success in talent attraction/retention and in the growth of their technology-intensive economic activities.

Diversity as a key aspect of successful places concerns entry barriers facing newcomers: cities with great diversity are understood as places where people from different backgrounds can easily fit in (Florida 2002c). There are several quantitative indicators used by Florida and colleagues to capture this. One of the most influential variables was found to be a city's "gay index", measuring the prevalence of gay males in the local population. This index has been shown to imply a high degree of openness to newcomers of diverse backgrounds with respect to nationality, race, ethnicity and sexual orientation, reflecting an environment that is open to diversity, high in urban oriented amenities, and characterized by low entry barriers (Florida 2002c). Another associated indicator of diversity is the "melting-pot index", reflecting the proportion of a city-region's population that is foreign-born; this is the indicator we employ in the present study.

The findings from the Canadian study by Gertler *et al*. (2002) strongly indicate that the relationships first captured for US city-regions in the work of Florida and colleagues are also evident in Canadian city-regions. If anything, the relationships in Canada are stronger than those found in the United States. In particular, the findings showed that a vibrant local creative class and an openness to diversity attracted knowledge workers in Ontario and Canada more generally. It was also found that, in general, Ontario city-regions (of which Toronto is the largest) have a solid foundation in these areas to compete against US city-regions. In summary, there appears to be a strong set of linkages between creativity, diversity, talent and technology-intensive activity that are driving the economies of Ontario's – and Canada's – city-regions (Gertler *et al*. 2002).

### *Creativity, class and the economic mainstream*

The creative class moniker can be linked more generally to a reassessment of the idea that "bourgeois" values of business, profit and so on (inherently linked to a wider conservative value system) are by definition mutually exclusive to "bohemian" values of creativity, the embracing of new ideas and valuing of diversity (in its various forms). Brooks (2000) actually merged the two words themselves in describing the emergence of the *bobos* – a new group of people in which bourgeois and bohemian values are blended into the creative, unconventional but also entrepreneurial (Brooks' depiction is though an inherently less sympathetic one than Florida's description of his creative class). This idea has some intrinsic appeal when the nature of "cool" jobs in technology, new media and so on is considered: as Heath and Potter (2006, p. 206) put it: 'What people yearn for these days is no longer an old-fashioned "status" job, like being a Doctor. The "cool job" has become the holy grail of the modern economy.' Indeed, with play-zones and chill-out areas having become the stuff of hi-tech start-up cliché the question remains as to whether such idiosyncrasies are actually intrinsic to this kind of creativity or merely ostentations, to be dropped hastily in an economic downturn such as the fallout from the dot.com shakeout. A full answer to this question is however beyond the scope of this paper.

The use of the word *class* comes of course with a certain baggage in that it implies some kind of self-identity and consistent value system within a socio-political hierarchy. Whether the creative class really is a class in some kind of Marxist sense is something of a moot point; the broad attitudes held and approaches to life that Florida (and others) describe does suggest that at least the term is not wholly erroneous in this context, but this argument is not an entirely convincing one. These traits include personal attire and style, beliefs and values, attitudes to work – to old-style demarcations of blue collar and white collar is added the "no-collar" workplace; viewed through the eyes of someone used to the traditional demarcations of the workplace these are people 'who seem to be always working, and yet never working when they are supposed to' (Florida 2002b, p. 5).

The points that Markusen (2006) makes regarding the fuzziness of Florida's definitions and causal logic are thus warranted in certain respects, albeit that the comment 'it is rather amusing to think of the vast bulk of artists as making common urban or economic cause with bankers, real estate developers' (Markusen 2006, p. 1937) does seem rather close to something of a straw man. Artists (i.e. the bohemians) are typically treated as a distinct group even within Florida's creative class. Indeed the bohemians are essentially posited as a quality of place factor in their own right; that is, one which is attractive to the much wider creative class in

general, which does not necessarily imply a complete commonality of values and beliefs.[4] Furthermore, the ingenious study by Wojan *et al*. (2007) did find evidence for a positive "artistic milieu" effect upon regional growth outcomes; these authors attempt to avoid the potential bohemians-lead-to-growth, growth-leads-to-bohemians circularity by controlling for both supply and demand-side factors for artists, and in turn using the residuals from this model (i.e. unexplained variations in the presence of bohemians) to predict economic growth. The positive result does not of course necessarily mean that artists themselves are the conscious hard-nosed economic drivers of the localities in which they find themselves concentrated. Either way, a conceptual route in to these issues of shared versus divergent preferences is offered by an analysis of the knowledge bases which differentiate occupations within an aggregate creative class (Hansen *et al*. 2005). We are not able to emulate that here, but we can at least specify separate models for the Creative Core, Creative Professionals and combined Creative Class, and indeed omit the bohemians from the analysis when they are also involved as an independent quality of place variable.

However, even when the creative class is defined in its widest sense, this still implies that around 60 per cent of the workforce is engaged in "non-creative" activities. A number of authors make the point that the role of this non-creative class is neglected. Peck (2005) goes so far as to suggest that Florida advocates a form of what he (Peck) terms 'creative trickle-down'; that is, there is an acknowledgement of the potential inequalities and negative externalities associated with high-growth locations, but very little in the way of concrete policies for how these might be addressed, and generally nothing within the remit of central government. There has been some attempt to deal with these concerns outside the US context (Cannon *et al*. (2003) in the UK; Bradford (2004) in Canada) within some of the creative-cities literature, but typically these amount to little more than somewhat ad hoc social objectives bolted on to an underlying Creative Class orthodoxy. Whatever the subtleties of the debate however, the fundamental point remains that a dichotomous split between the bohemian and the bourgeois, or the business like and the creative, is no longer adequate in describing how a significant group of people live and work, and that this creative class is now very much part of the economic mainstream.

**Research questions**

Although North America and Europe share many common values and institutions, there are aspects of their respective societal development that show strong divergence; for example, with regard to political priorities, functioning of labour markets, economic growth processes and social outcomes (see e.g. Hall and Soskice 2001). Given that virtually all of the systematic research of the phenomenon has taken place in North America, the Creative Class thesis warrants investigation in a European context.[5] Therefore, the research reported in this paper represents an analysis of quality of place and the dispersion of the Creative Class in the UK, building upon the work described above that has been undertaken in North American cities in order to understand whether similar processes concerning the relationship between creativity, human capital and high-technology industries are at work in Europe as clamed within North America. The questions we seek to address are then essentially:

1 Where is the Creative Class located in the UK?
2 What is the impact of quality of place upon this dispersion? Does the Creative Class thesis appear valid within the UK context?
3 What is the connection between the location of the Creative Class and inequalities in technical and economic outcomes within the UK?

Our research is taking place within the context of a wider project entitled 'Technology, talent and tolerance in European cities: a comparative analysis', involving matched datasets and research partners in Denmark, Sweden, Norway, Finland, the Netherlands and Germany.[6] To get at these issues, the role of human capital, creative capital and diversity in technology-based economic development in the UK is investigated. The research uses the two measures developed by the North American studies: the Bohemian index to reflect creative capital, and the Diversity (mosaic) index to reflect openness and diversity. This suggests that there will be a relationship between openness to creativity and diversity and the ability to support high-tech industries and economic development based on talented workers. New indices are developed in order to grasp the fundamental differences in certain aspects of life between North American and European societies (see the following section). As noted, this kind of analysis has not yet been performed for European cities, and has the potential to shed im-

portant new light on the role of quality of place in shaping the competitiveness of city-regions in the UK.

## Data and methodology

The data for the quantitative statistical analyses are derived primarily from the 2001 Census of Population, supplemented by the Labour Force Survey and the Annual Business Inquiry. Various indices are constructed from these data as described below, and explored through means of plots, regressions and correlations. In addition, this is being supplemented by the collection of qualitative empirical material in the form of interviews with key actors, as well as with theoretical representative groups of "talents" employed in urban governance and planning in the case study cities, high-technology industry and service, and higher education and research institutions. These interviews are being complemented with additional interviews with representatives from creative/artistic occupations as well as from different ethnic groups. The qualitative analyses are aimed at obtaining a subjective evaluation and assessment of the relative importance of the various indices used in the quantitative analyses in order to obtain a more comprehensive picture of which preferences talented people actually have and why they behave the way they do. These interviews are ongoing at the time of writing; thus most of the material presented here derives from the quantitative analyses.

### *Key variables for quantitative analyses*

The key variables for quantitative analyses are the Bohemian index, the Talent index, the Diversity index, and the Tech-Pole index. These mirror variables were employed in previous research by Florida (2002a, 2002b, 2002c) and Gertler *et al*. (2002) on the geography of talent and the rise of the creative class. In addition, indicators for cultural and recreational amenities, which were also used in Florida's studies, will be considered. A pair of new indicators, developed to reflect characteristics of European cities and their national political economies, is also introduced. These two new indicators are social cohesion, and a public provision index measuring the supply of public sector goods such as education, healthcare, social security and so on.

In general, the variables used were designed to jointly maximize consistency between the different European countries involved in the wider project, and between Europe and the USA and Canada. Variation in availability across the partner nations has inevitably imposed constraints upon the data used by individual partners, and in some cases involved compromises around lowest common denominator levels of detail and time frames.

*Creative class*: Clearly of central importance is the ability to actually quantify the size of the creative class present in any given location. These are essentially people who as a key constituent of their work are involved in the creation of new knowledge, or use of existing knowledge in new ways, combinations and so on. In the absence of a primary dataset relating to the actual engagement in such activities, this is proxied by the use of occupational categories. We subdivide the Creative Class into the Creative Core (scientists and engineers, architects and designers, academics and teaching professionals),[7] and the Creative Professionals (associated professional and technical occupations of the Creative Core, managers, financial and legal professionals). Data for this index (and the others using occupational data) were derived from the 2001 Census of Population, the only source of sufficiently similar size to allow four digit Standard Occupational Classification 2000 (SOC2000) breakdowns at the levels of regional disaggregation required.

*Bohemian index*: The Bohemian index is defined using employment in artistic and creative occupations. It is a locational quotient that compares the region's share of the nation's bohemians to the region's share of the nation's population (local prominence of employment in artistic/creative occupations compared to national prominence of employment in the same occupations). Data for the UK are delineated using the SOC2000 system; within this it is convenient to use sub-major group 34 (Culture, Media and Sports) to define the bohemian occupations.[8]

*Cultural Opportunity index*: The opportunity to enjoy cultural and recreational activities can be calculated more directly than other indicators on quality of place. According to Florida, such opportunities play an important role in cities' ability to attract the creative class. The proportion of employees in the cultural and recreational industries within an area is used as an indicator of this cultural opportunity. This involves using a number of three digit Standard Industry Classification (SIC) groups from

Annual Business Inquiry to account for employment within restaurants and bars, libraries, museums and other cultural and entertainment activities.

*Talent index*: Talent is defined as the proportion of the population over 18 years of age with a Bachelor's degree or higher (local proportion compared to national). These data were obtained from the 2001 Census of Population.

*Diversity (Openness) index*: The Diversity index is the counterpart of Florida's melting pot index. It is calculated as the proportion of the total population that is foreign-born. A second index, which measured the proportion of total population that is foreign-born of *non-Western origin*, was also constructed; the logic behind this was that a more visible manifestation of diversity may be a more valid tool, or at least provide greater insight into the concept of tolerance (see later discussion of this issue). These data were provided by the 2001 Census of Population.

*Tech-Pole index*: Following the method of the Milken Institute (e.g. DeVol *et al*. 2007), this index shows local employment in technology-intensive manufacturing and service sectors (specialization and size). The index compares a region's share of national employment in high-technology industries to the region's overall share of national employment; this is then adjusted for city size by multiplying by a region's overall share of national high-technology employment. Therefore, it reflects both the region's degree of specialization in technology-intensive activity as well as its sheer scale of employment in these sectors. The index includes technology-intensive sectors in both manufacturing and services. Data for constructing the index were extracted from the Annual Business Inquiry (ABI) employee analysis for 2002.

*Social Cohesion index*: Florida himself has expressed concern regarding the polarization in terms of prosperity that high levels of creative class employment has been associated with in the USA, to the point where this is becoming a negative quality of place factor for these creative workers themselves. As such it was felt that some attempt to factor this into the research design should be made; that is, not cohesion in the sense of a social capital indicator (which may indeed be incompatible with the concept of openness), but rather one based on perceived inequality. Ideally this should involve some kind of gini coefficient with respect to income distribution, but these kinds of data are not available at the spatial level we are using (this is also true for the other European project partners). As such, the apparent level of exclusion from mainstream economic activity was used, as represented by the ILO definition of unemployment.[9] Using a labour market variable as a proxy for social cohesion introduces a new net of complicating factors – as with other issues relating to the operationalization of Creative Class concepts, these are revisited in later sections. The data were taken from the Labour Force Survey with respect to the twelve-month period March 2001 to February 2002.

*Public Provision index*: Having acknowledged the potential implications for social cohesion implied within the Creative Class model, there is a need to further take account of the European context; given the high levels of private employment-based provision in the USA, particularly for healthcare, to what extent might high-quality social welfare provision be a quality of place factor for the European creative class? In this index, levels of employment in education and healthcare (SIC2003, two-digit codes 80 and 85) for a given locality are expressed as a proportion of the resident population, using data from the Annual Business Inquiry.

*Levels of geography*: As described above, data were collected such that the triple goals of country-specific, inter-country and Europe–North America comparisons could best be achieved. This was also true with respect to the levels of geography (i.e. spatial units employed in the analysis). With the partner countries accounting for large variations in size, governance structure, patterns of population dispersion and so on it was impractical to impose a single standard definition; in practice such definitions actually have different meanings dependent upon the context in which they are applied; i.e. the same definition will actually define a spatial unit that has a different meaning from one country to another.

As we were seeking definitions that encapsulated something approaching functional labour markets (analogous at least in part to the municipal city-regions employed in the North American research[10]) it was decided that the most meaningful functional unit in each national context would be used, subject to this also being a level at which the necessary statistical data were available from the relevant national agencies. As Parr (2005) notes, standard UK administrative geographies do not

Table 1. Creative Class as a share of the labour force (%).

| | England and Wales | Highest locality | Lowest locality |
|---|---|---|---|
| Creative Core | 9.7 | 13.7 | 5.0 |
| Creative Professionals | 25.5 | 44.3 | 17.7 |
| Bohemians | 2.1 | 8.8 | 0.8 |
| Creative Class in total | 37.3 | 64.9 | 24.1 |

*Source*: Census of Population (2001).

typically relate in a systematic way to any theoretical construct of the city-region; for the UK this meaningful unit was primarily the NUTS3 definition (105 spatial units in England and Wales). Due to the sometimes complex and non-hierarchical nature of these standard geographies, this is supplemented by analysis using the Unitary/County Authority level (171 units).

A significant difference between our geography and that of the research undertaken in the USA and Canada is that it is totally inclusive (i.e. no localities are excluded), whereas the North American analysis has tended to focus exclusively on large urban centres. This was essentially done for reasons of consistency; the European countries are generally more densely populated than North America, the demarcation of city-regions less obvious and so partial selection is potentially more arbitrary. Once information has been included in a database it can always be manipulated further, rescaled or partially excluded, while the reverse is much more problematic.

## Results and analysis

### *Mapping the creative class in England and Wales*

As shown in Table 1, the creative class in England and Wales accounts for some 37.3 per cent of the workforce, substantially greater than the 'more than 30%' figure that Florida (2002b) himself quotes with regard to the USA. Problems in obtaining consistent occupational time series data mean that it is difficult to draw many conclusions with regard to how the size of the creative class may be changing over time. However, if the major group Professional Occupations is taken as a proxy for the Creative Core, then an increase is observed from below 9 per cent of the workforce in the 1991 Census to over 11 per cent in 2001, suggesting significant growth in these occupations.

The total figure for the Creative Class is split between the Creative Core (9.7% of the workforce), the Creative Professionals (25.5%) and the Bohemians (2.1%). As Table 1 shows there is considerable variation around the England and Wales percentages. It is worth noting here that the two NUTS3 areas of Inner London West and Inner London East between them account for the highest percentages across all four creative class categories shown. Other than Inner London West (64.9%), only Inner London East (at just under 52%) possesses a labour force of which the Creative Class comprises more than half. For the bohemians an even greater concentration is observed; after the two Inner London areas (both above 7%) the highest percentage is found in Brighton and Hove at 4.4 per cent of the labour force.

At the opposite end of the spectrum, the same localities also tend to crop up across the board, albeit with some variation; Stoke on Trent possesses the lowest proportion of total Creative Class and also Creative Core, Gwent Valleys the lowest share of bohemian occupations, while the lowest share of Creative Professionals is found in Hull. Despite this apparent variation, the same localities are typically found within a few places of each other at both the top and bottom of the rankings. This effectively demonstrates that although there are variations in the overall make-up of the Creative Class in any given place, there is little correlation between this variation and the actual size of the Creative Class in that place.

Table 2 shows the top fifteen and bottom fifteen NUTS3 areas in England and Wales ranked in terms of their population size. The actual populations vary from just under 1.8m down to around 69 000, with a median size of just over 360 000. The corresponding ranks in terms of Creative Class Location Quotient (LQ) are also shown. The LQ itself is a measure of spatial concentration, expressed as a proportion such that the average for England and Wales is 1.

These data highlight the sometimes arbitrary nature of NUTS3 geography in the UK, with counties, towns, cities and urban metropolitan areas all being represented. Many of the smaller areas are particular accidents of geography such as islands and relatively isolated smaller towns and cities.

Table 2. Creative Class location and population rank.

| Population size rank | Locality (NUTS3) | Creative class LQ rank |
|---|---|---|
| 1 | London (inner, west) | 1 |
| 2 | London (outer, west and N west) | 4 |
| 3 | London (outer, east and N east) | 29 |
| 4 | Kent | 36 |
| 5 | Greater Manchester (south) | 35 |
| 6 | Essex | 25 |
| 7 | Hampshire | 17 |
| 8 | Greater Manchester (north) | 75 |
| 9 | London (outer, south) | 6 |
| 10 | Lancashire | 50 |
| 11 | Surrey | 3 |
| 12 | Hertfordshire | 9 |
| 13 | Birmingham | 54 |
| 14 | London (inner, east) | 2 |
| 15 | Calder, Kirlees and Wakefield | 66 |
| 91 | York | 32 |
| 92 | Swindon | 47 |
| 93 | Herefordshire | 51 |
| 94 | Southend | 26 |
| 95 | Telford and Wrekin | 73 |
| 96 | Peterborough | 55 |
| 97 | Thurrock | 97 |
| 98 | Blackpool | 86 |
| 99 | Blackburn and Darwen | 87 |
| 100 | Isle of Wight | 65 |
| 101 | Torbay | 68 |
| 102 | Powys | 80 |
| 103 | Gwynedd | 70 |
| 104 | Darlington | 56 |
| 105 | Anglesey | 76 |

*Source*: Census of Population (2001).

One thing which Table 2 does highlight are the differences that exist *within* London, particularly the relatively low ranking in terms of Creative Class LQs of the more peripheral areas in contrast to the central areas. Although London looms large over the UK picture, there are other regional centres of high creativity (and high concentrations of bohemians). The situation tends to differ in the smaller countries, where the capital may be the only realistic locational choice for many specialized professional workers. Moreover, the status of London as a genuine global city is significant, as it is therefore competing for creativity (to use the fashionable rhetoric) on the world stage, with the different tensions that this brings. One of these may be a latent conflict between national capital versus international roles, perhaps generating competing pressures or funding priorities; for example, resources which are ostensibly earmarked for local regeneration might be spent with one eye on the potential national or international payoffs.

As the UK's "second city", Birmingham is an interesting case; with statistics relating to the central area (population of about 1m) it ranks proportionally much lower for the Creative Class (54th) than it does in terms of population (13th); variations around this urban core are however apparent in Fig. 1, discussed below. Despite these discrepancies and data issues, there is some evidence of an association between size of agglomeration and creative class concentration, a rank correlation between the two producing a coefficient of 0.41. In order to explore this agglomeration effect further, the association between population density and Creative Class concentration was investigated; somewhat surprisingly, virtually no link was found, with a correlation coefficient of only 0.1.[11] Clearly then it is not just size or density of population, the higher levels of which are typically found in metropolitan areas and urban centres, that is associated with the location of the creative class. This could reflect different preferences within the agglomerated crea-

Table 3. Creative Core location by unitary authority/county.

| Top 10 localities | (LQ) | Bottom 10 localities | (LQ) |
|---|---|---|---|
| 1. Wokingham | 1.46 | 1. Barnsley | 0.63 |
| 2. Reading | 1.42 | 2. Tameside | 0.62 |
| 3. Cardiff | 1.39 | 3. NE Lincolnshire | 0.61 |
| 4. Oxfordshire | 1.34 | 4. Knowsley | 0.60 |
| 5. London* | 1.33 | 5. Kingston upon Hull | 0.58 |
| 6. Newcastle | 1.32 | 6. Sandwell | 0.57 |
| 7. Cambridgeshire | 1.31 | 7. Thurrock | 0.56 |
| 8. Brighton and Hove | 1.31 | 8. Blackpool | 0.52 |
| 9. Windsor and Maidenhead | 1.31 | 9. Blaenau Gwent | 0.51 |
| 10. Trafford | 1.27 | 10. Stoke on Trent | 0.49 |

*Source*: Census of Population (2001).
*Note*: * Combined NUTS1 region.

tive class, as suggested by some of the literature reviewed earlier. It also suggests that different spatial levels of analysis might be appropriate – in order, for example, to zoom in on micro-level neighbourhood effects not currently captured in the data. More generally, these issues highlight the importance of investigating additional quality of place factors (quantitative and if possible qualitative) in seeking to explain the distribution of the creative class; see the section on the creative class and quality of place below.

Table 3 provides a slightly different view of Creative Class distribution, in this case showing the ten highest and lowest unitary/county authorities, ranked with respect to their Creative Core LQs. There are in total 171 of these localities in England and Wales, and this level of geography allows a little more detail to become apparent than is the case with NUTS3. Further to this end, the thirty-three unitary authorities that comprise London have been combined into the single standard NUTS1 UK region; this provides a view of how London as a whole is positioned, but equally important is the fact that eighteen of the top twenty Creative Core UAs in England and Wales are located in the capital,[12] and so collapsing these into a single figure allows detail elsewhere to emerge.

As might be expected (see e.g. Hall *et al*. 1987), localities in the west-of-London M4 corridor area (Wokingham, Reading, Oxfordshire, Windsor and Maidenhead) feature heavily in the top ten Creative Core LQs. In addition to London, ranked at number seven Cambridgeshire completes the third facet of the "Golden Triangle" of the UK's knowledge economy. What is perhaps more interesting is that in addition to those areas which might be expected to feature, a number of less obvious regional centres of creativity emerge – Cardiff in the west, Manchester in the northwest (Trafford lying just to the west of the city centre with Manchester itself ranked only four places below at 14), and Newcastle in the northeast. Finally, our rankings confirm the perception of Brighton and Hove as a creative centre with its unique bohemian image and relative proximity to London.[13]

Turning attention to the bottom ten UAs, a number of these are places suffering the protracted after-effects of the loss of heavy industry, either as distinct localities (Blaenau Gwent, Stoke on Trent, Barnsley) or the deindustrialized areas of large cities, for example, Tameside (Manchester), Knowsley (Liverpool) and Sandwell (Birmingham). In addition, a couple of places associated with old-style seaside holiday resorts also make an appearance (northeast Lincolnshire, Blackpool). Although locations in the left-hand column are generally associated with higher levels of growth and prosperity, the patterns revealed here do not necessarily imply an economic consequence; for example, Blackpool although the ninth least Creative (Core) locality in England and Wales has had some success in recent years, reinventing itself from a traditional "bucket and spade" destination into one that seeks to attract a younger party-oriented clientele.

Figure 1 shows how the Creative Core are distributed within England and Wales, with London excluded from this representation for the reasons outlined above. A number of locations are highlighted on the map; this is not necessarily a comprehensive listing of the highest or lowest ranked places, rather they are intended to serve as illustrative examples. The concentration Creative Core in the southeast of England generally and the M4 corridor area in particular is apparent; within this area the Unitary Authority of Reading is highlighted, immediately to the southeast is Wokingham, and

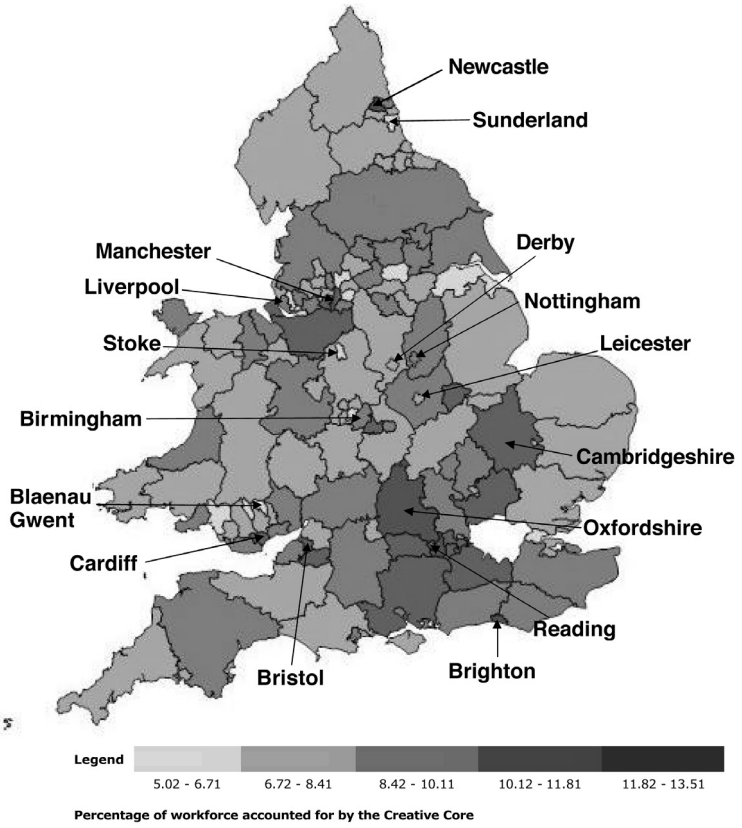


Fig. 1. Location of the Creative Core in England and Wales (except London).

Windsor and Maidenhead lie to the east again (not shown).

The three cities of the East Midlands (Derby, Leicester and Nottingham) serve to illustrate the way in which urban centres do not necessarily possess a consistent relationship with their surrounding hinterland in terms of where the Creative Core congregate – one of these cities (Leicester) has a significantly higher concentration than the corresponding county area, while in the other two cases it is approximately equal. There is a wider point to note on this in that as alluded to earlier, explanations of creative class distribution go beyond a simplistic urban vs. rural issue, although this may play some part in the process. It is also worth acknowledging that such idiosyncrasies do tend to get lost in a NUTS3 level or user-constructed city-region-type analysis.

This type of pattern is further revealed when the major cities are examined, in that localities which make up the wider city area are often very different with respect to levels of the Creative Core, despite quite small distances being involved. Examples of this are apparent in Birmingham, with the district of Sandwell immediately to the west placed fifth lowest (see Table 3) while directly to the east lies Solihull (twenty-second from the 138 Unitary Authorities and Counties outside London). A similar situation is observed with respect to Manchester: Tameside to the east, Trafford to the (south) west, placed in the bottom ten and top ten respectively of the Creative Core ranking. The northeast of England provides another example of contrasting creative class patterns existing in close proximity; this is however different in one key aspect in that although adjacent to one another, Newcastle and Sunderland are two distinct cities with their own identities, not to mention rivalries. Newcastle's much higher levels of Creative Core may in part be assigned to its role as a regional capital and administrative centre, but in recent years it has seen extensive cultural development and has acquired something of a boho image that is more complex to explain.

Focusing on those areas of England and Wales that are less well placed in terms of creativity, as discussed above a number of larger city areas fall

Table 4. Quality of place indicators: overview (%).

| | England and Wales | Highest locality | Lowest locality |
|---|---|---|---|
| Openness (diversity) | 8.9 | 36.2 | 1.6 |
| Bohemians | 2.1 | 8.8 | 0.8 |
| Cultural opportunity | 2.9 | 15.2 | 1.3 |
| Public provision | 9.0 | 17.6 | 5.4 |
| Unemployment | 5.1 | 10.5 | 2.1 |

*Source*: Census of Population (2001); Annual Business Inquiry, Employee Analysis (2002).

into this category, along with distinct 'post-industrial' regions such as the South Wales valleys, and the former coalfield areas in the north of England. It is notable that the former exist in relative proximity to Cardiff, one of the highly placed cities for Creative Core in England and Wales, and it is significant that of these Blaenau Gwent is one of the two valley areas that does not share a border with either Cardiff or Newport to the east (the other being Merthyr Tydfil).

*The creative class and quality of place*

As outlined earlier, Florida suggests that the creative class is highly mobile, with strong preferences for certain aspects of quality of place. In conjunction with Canadian researchers (see e.g. Gertler *et al*. 2002) he shows that in North America cities with high levels of creative class tend to be open, tolerant and diverse places, with high levels of recreational and cultural opportunity. According to Florida (2002b) an open environment is one in which people are accepted and allowed in, on the basis of their skills rather than their similarity to the existing gatekeepers. As such, another indicator of tolerance we can employ is the proportion of bohemians in any given location. This group often stands out compared to mainstream culture, lifestyle and values, and thus in order to thrive requires high levels of tolerance (Florida 2002b, pp. 260–261). The idea therefore is that bohemians seek the opportunity to experience a diversity of impressions, and are thereby themselves indicators of a tolerant and open environment (it may be recalled from previous sections that this view has been critiqued as revealing a somewhat simplistic understanding of the locational choices of arts- and culture-based employment; e.g. Markusen 2006; Wojan *et al*. 2007). Finally, to these indicators have been added those of Public Provision and Unemployment (Social Cohesion) in order to reflect the European context of our research.

We do not suggest that all aspects of a concept as nebulous as quality of place can be perfectly captured by these relatively simplistic statistics; it is possible though to construct some general indicators, underpinned by Creative Class theory – in this section we analyse the association between these indicators and the location of the creative class in England and Wales. An analysis is conducted of the bivariate correlations between the individual quality of place indicators and the location of the creative class; we then combine these indicators into a single multiple regression model, which allows estimation of the overall explanatory value of these variables on the distribution of the creative class.

Table 4 shows summary values of the quality of place indicators for England and Wales. The distribution of the bohemians has been discussed above and so will not be commented upon here. Levels of diversity, defined as the percentage of residents that are foreign-born, shows quite considerable variation; the three highest values are accounted for by London NUTS3 areas (of which there are five) with Inner London East being the highest. The highest placed non-London locality is Leicester, a city with a long tradition of immigration from the Indian subcontinent. This result does raise concerns over this particular indicator, and these are subsequently discussed. Conversely, the Gwent Valleys is the least diverse locality in England and Wales by this measure, closely followed by the other Valleys area (central).

Cultural opportunity also sees wide variations, however, Inner London west is a massive outlier, unsurprisingly, given the concentration of high profile museums and galleries therein. Perhaps more surprising is that the next highest placed locality is Blackpool at 4.1 per cent; again this highlights how certain quality of place indicators can be influenced by underlying factors which are not necessarily consistent – the Blackpool figure is almost certainly largely derived from a high concentration of bars and amusements rather than the "high" culture

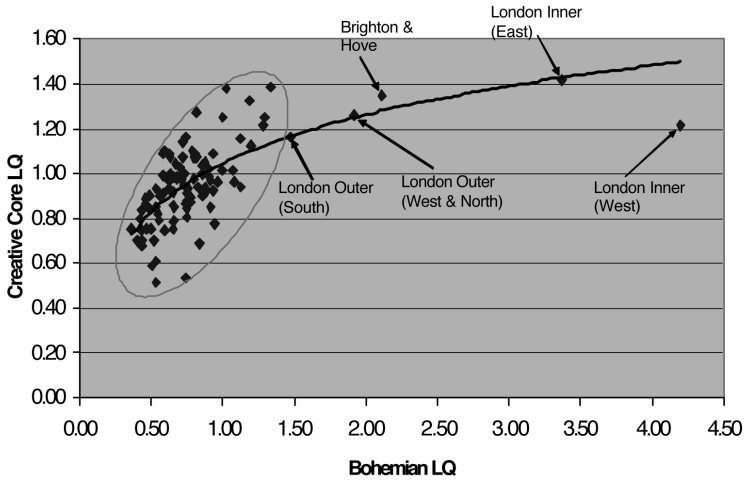


Fig. 2. Creative Core and Bohemians (Boho LQ).

found in central London. Once again, the lowest value of the indicator (1.3%) is accounted for by the Gwent Valleys region.

Finally, with regard to the Public Provision index (PPI) it is quite hard to discern any pattern within the results, with two of the top three being cities of the East Midlands (Nottingham and Leicester respectively), separated only by Inner London west. Again, different forces are likely to be at work here.

As shown in Table 5, the indicators for both diversity and the bohemians are positively correlated with the localization of the Creative Class and both of its subgroups. This means that the creative class in England and Wales tends to live in places that also have high levels of bohemians and diversity. Both relationships are quite strong, particularly so between the creative class and the location of the bohemians. The Openness index is a fairly simplistic measure of tolerance and as such might not be sufficient. A more focused measure on the effect of integration, or for highly educated foreign-born workers might, capture the openness of a community better. These are however restricted by data problems, an issue that forthcoming qualitative work will seek to address. However, from the above we can tentatively conclude that the Creative Class and tolerance (measured as diversity, and the presence of bohemians) do correlate in the same way that Florida and his associates found in the North American analysis. Figures 2 and 3 show graphical representations of the relationship between the Creative Class and respectively the bohemians and openness. Figure 2 demonstrates a strong and positive relationship as predicted, with the four NUTS3 areas of London, along with Brighton and Hove as significant outliers (i.e. they have higher concentrations of bohemians for their observed levels of Creative Core employment than is typical). This makes intrinsic sense given the locations in question, but without additional data we can only speculate on the relative importance of supply ver-

Table 5. Quality of place – bivariate correlations.

| | Correlation with Creative Class | Correlation with Creative Core | Correlation with Creative Professionals |
|---|---|---|---|
| Openness (diversity) | 0.52** | 0.44** | 0.50** |
| Bohemians | 0.72** | 0.58** | 0.71** |
| Cultural opportunity | 0.52** | 0.29** | 0.56** |
| Public provision | 0.02 | 0.21* | –0.07 |
| Unemployment | –0.31** | –0.21* | –0.33** |

*Source*: Census of Population (2001), Annual Business Inquiry, Employee Analysis (2002).
*Notes*:
* Significant at the 95% level.
** Significant at the 99% level.

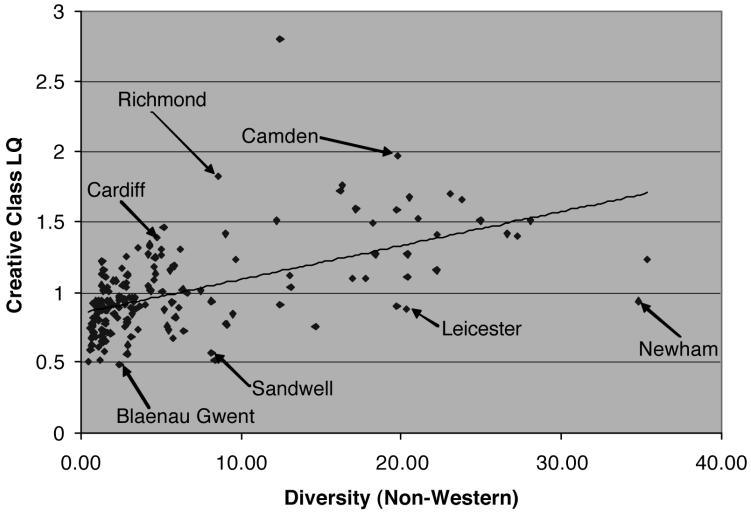


Fig. 3. Creative Core and Openness (diversity).

sus demand factors within this pattern. Figure 3 illustrates the point made earlier that despite a significant trend line, localities can possess identical levels of openness (as we measure it), but very different levels of the Creative Core. Different local and regional trajectories (and thus potentially different relationships) are likely to underpin this observation.

With regard to cultural opportunity, a positive and statistically significant relationship exists between the presence of the creative class in a location, and that location's cultural and recreational offering. This finding is again compatible with those of the North American research. This relationship is quite strong for the Creative Class as a whole and for the Creative Professionals, but somewhat puzzlingly weaker for the Creative Core.

The concepts of public provision and social cohesion are actually quite abstract, and are therefore somewhat difficult to operationalize in practice. The relative provision of public goods and services in healthcare and education is measured here by levels of employment in these sectors. Conversely, unemployment (i.e. exclusion from the labour market) is one of the main manifestations of social exclusion. For public provision, a significant and positive (but weak) association is observed for the Creative Core only. For unemployment, the relationship is consistently negative, although moderate and weak with respect to the Creative Core, meaning that municipalities with high levels of unemployment tend to have a low concentration of the creative class.

Overall, it would appear that the creative class in England and Wales shows a similar pattern of distribution with respect to quality of place, as is observed in North American cities. High concentrations are typically found in places which are tolerant, diverse, bohemian, socially cohesive and which offer higher levels of cultural opportunity, but the overall pattern is quite complex.

In order to test a unified Creative Class model, the multiple regression method is used. The advantage of using this method is that all indicators

Table 6. Results of the combined model: summary.

| | Total Creative Class | Creative Core | Creative Professionals |
|---|---|---|---|
| Openness (diversity) | + | n/s | + |
| Bohemians | + | + | + |
| Cultural opportunity | n/s | – | + |
| Public provision | n/s | + | – |
| Unemployment | – | – | – |
| Adjusted $R^2$ | .664 | .484 | .698 |

Table 7. Results of the Combined Model: detail.

| Model | | Unstandardized coefficients | | Standardized coefficients | t | Sig. | Collinearity statitics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 27.882 | 1.097 | | 25.406 | .000 | | |
| | Openness | .143 | .060 | .218 | 2.360 | .020 | .345 | 2.897 |
| | Bohemians | 3.235 | .906 | .414 | 3.572 | .001 | .221 | 4.530 |
| | Public provision | –.423 | .126 | –.223 | –3.356 | .001 | .670 | 1.492 |
| | Cultural opportunity | .877 | .265 | .302 | 3.313 | .001 | .356 | 2.807 |
| | Unemployment | –.903 | .145 | –.385 | –6.231 | .000 | .776 | 1.289 |

*Note*:
Dependent variable: Creative Professionals

*Model summary*

| Model | R | R square | adjusted R square | std. error of the estimate |
|---|---|---|---|---|
| 1 | .844(a) | .713 | .698 | 2.19272 |

are tested in one model, and therefore it is possible to control for any multicollinearity between the independent variables. A total of six models were produced; for each of the Creative Class and the two subgroups (the Creative Core and the Creative Professionals) two models were calculated for each dependent variable, including either all foreign-born citizens or non-Western foreign-born citizens as the Openness variable. These results are summarized in Table 6: this reveals some variation across the regressions: the model for the Creative Core had the lowest explanatory power (.484), while that of the Creative Professionals had the highest (.698). There was also some variation across the quality of place variables: for example the Cultural Opportunity was negatively associated with the Creative Core (the opposite direction predicted), and not significant within the Total Creative Class model. The Public Provision index was also not significant for the Total model, but positively associated with the Creative Core (the direction predicted).

The model shown in full in Table 7 – Creative Professionals as the dependent variable with all foreign-born citizens as a dependent variable – had the greatest explanatory power. In total, this model explains around 70 per cent of the distribution of the Creative Professionals. All of the independent variables are significant at the 99 per cent level, with the exception of Openness (95%).

The location of the Bohemians, Openness and the Cultural Opportunity index is positively correlated with the localization of the Creative Professionals. This means that, as we would expect from the theory of the Creative Class, wherever these quality of place indicators are high, levels of Creative Professionals will also tend to be higher. Moreover, from the standardized coefficients shown in Table 7 we can infer that of these variables it is the presence of the bohemians that has the greatest influence. With regard to the other two independent variables, as expected unemployment is negatively associated with the location of the Creative Professionals; the nature of causality behind this relationship is open to debate. On the one hand it may represent an association with higher levels of social cohesion, while on the other it could be seen as purely labour market related in that creativity is a growing area of employment and as such would be expected to coincide with lower unemployment. Finally, the public provision index is negatively linked to the distribution of the Creative Professionals, which is the opposite of what might be expected. This could be due to the nature of public sector employment in the UK, which tends to be proportionally higher in less prosperous areas, reflecting a lack of private sector jobs in combination with a conscious policy of employment redistribution. On the one hand, Tables 6 and 7 would appear to be *prima facie* evidence of systematic variation between sections of the Creative Class; however, we need to be wary of data or other specification issues; this is a clear area for further research and one in which qualitative (casual) evidence will play a useful part in the near future.

Table 8. Indicators of prosperity – bivariate correlations.

| | Correlation with Creative Class | Correlation with Creative Core | Correlation with Creative Professionals |
|---|---|---|---|
| Population change | 0.51** | 0.29** | 0.56** |
| Employment change | 0.27** | 0.23** | 0.25** |
| Milken Tech-pole index | 0.64** | 0.49** | 0.63** |
| Employment change (hi-tech) | 0.04 | 0.01 | 0.05 |
| New firm formation | 0.76** | 0.46** | 0.82** |

*Source*: Office of National Statistics, various datasets[14]
*Notes*:
* Significant at the 95% level.
** Significant at the 99% level.

*The creative class and indicators of prosperity, growth and technology*

Having examined where the creative class is located in England and Wales, and how this distribution is associated with various indicators of quality of place, attention is now turned to the relationship between the creative class and basic indicators of prosperity. Constraints of space prevent our reporting a full analysis of the geographical variations within each of these indicators here; thus Table 8 shows overall bivariate correlations between the three creative class groupings and the five indicators of prosperity, growth and technology.

The association between the two general indicators of prosperity (i.e. population growth and employment growth) and the localization of the Creative Class is statistically significant and positive. The relationship between Creative Class location and population growth is quite strong for both the Creative Class as a whole and the Creative Professionals, but weak for the Creative Core. For employment growth, the relationship is however quite weak for both the Creative Class and its two subgroups. Overall therefore, a high concentration of the creative class tends to be found in places that have growing populations and rising employment. This may be interpreted as evidence in support of the 'jobs follow people' aspect of the Florida thesis; that is, that the creative class creates prosperity in general by its very presence. Bivariate correlations can however only indicate association (i.e. covariance) and do not themselves imply any causal relationships between the variables involved. Put simply, it may be that the creative class also follows prosperity, rather than creating it. Conclusions regarding causality will need to be informed by more qualitative data, currently being gathered (at the time of writing).

With regard to employment in the Tech-pole sectors, the relationship between the Creative Class and share of "high-tech" employees is positive and significant; this relationship is somewhat stronger for the Creative Class in general and the Creative Professionals in particular than it is for the Creative Core. This means that a high concentration of resident creative class tends to be associated with the presence of relatively high levels of employment in technology-based businesses. This preponderance for the creative class to be collocated with high-technology activities is consistent with what is observed in the North American research (Florida 2002a, 2002b, 2002c; Gertler *et al*. 2002). There is however no evidence to suggest that the presence of the creative class (in any of its guises) is associated with any *growth* in employment in these activities, these correlations not being significantly different from zero. This is on the face of it a major difference between the UK and the US/Canada creative class results, and one that requires further investigation given the central tolerance and diversity begets creativity begets technology-based employment growth theme of the Creative Class model.

Finally, the correlation between the presence of the creative class (in all its forms) and the rate at which new firms are created is positive and significant. The relationship is strong with respect to the Creative Class as a whole, and for the Creative Professionals but less so for the Creative Core. This means that localities in which the creative class in England and Wales is concentrated typically exhibit higher levels of new firm formation; this is consistent with the Florida thesis but again open to interpretation with regard to causality.

## Conclusions and issues for further research

Our first research question was concerned with mapping the size and distribution of the creative

class in England and Wales. In its widest definition it currently accounts for just over 37 per cent of all employment, yet the dispersion of the creative class throughout England and Wales is somewhat uneven. High concentrations are typically an urban and metropolitan phenomenon, but not exclusively so, a number of inner city areas having some of the lowest rankings observed, in common with a number of localities and regions afflicted by the long employment decline within old traditional industries. It should be noted that the level of geography employed does have an impact here, and striking the balance between highlighting distinct localities and functional labour markets on the one hand and being able to observe interesting variations and idiosyncrasies on the other is not always easy. Particularly within the larger cities, the findings of Markusen (2006) and Wojan *et al*. (2007) suggest the need to investigate the subtleties of bohemian and creative class distribution at the sub-metropolitan (or even neighborhood) level.

Attention was focused upon how variations in quality of place are related to the location of the creative class. This analysis of this second research question showed statistically significant relationships between the localization of the creative class and these indicators. Tested individually, all the indicators were significantly correlated in the directions hypothesized with the exception of the Public Provision index, which was partially so. The strength and significance level of these correlations showed some variation by creative class type (i.e. Creative Class as a whole, Creative Core and Creative Professionals). The combined quality of place regression model produced high levels of explanatory power with independent variables largely significant in the direction suggested by Florida's theory: there are however some variations depending upon which creative class subgroup is employed as the dependent variable.

Do these variations reflect "real" differences in, for example, preferences for quality of place? Alternatively are they more likely to derive from data/model specification issues? These observed differences between the Creative Class groupings underline the potential value in seeking to unpack the sometimes amorphous set of occupations included; the knowledge base approach outlined by Hansen *et al*. (2005) may represent a fruitful method of doing just that. Essentially this requires the re-coding of the Creative Class dataset (or gathering of a new one) into (in their methodology) the users and creators of symbolic, analytical, and synthetic knowledge. A valid alternative (or indeed complement) to this approach might be to conduct a series of parallel focused studies on the distribution of narrowly defined occupational groups; that is, to minimize the conflation of identities, processes and identities: the bohemians might represent the most ready-made starting point for such an exercise – averaging around 2 per cent of the labour force. Another way to achieve greater understanding could be to explore life-stage effects of location choice, for example, as per the Markusen and Johnson (2006) study of artists in Minneapolis.

More generally it may also be insightful to bring together research on the hard and soft infrastructures of a given place. For example, what types of spaces, natural or built environments might aid (or hinder) milieu effects? At present these are essentially assumed to happen inside a spatial black box.

Indicators of prosperity, technology and growth are all significant and positively associated with the presence of the creative class, and again variations in the significance and strength of relationships were observed by creative class subgroups. The notable exception to this pattern was technology-based employment growth, which showed no association with the location of the creative class. This suggests the representation of both technology entrepreneurs and bohemians in the same places in North America while in the UK, by contrast, bohemians are concentrated in the London area and in a few other creative centres (Brighton, for example); technology entrepreneurship is less common but may also be found in smaller university cities.

Overall, we generally conclude that the creative class in England and Wales displays similar properties to those ascribed to it in the USA (Florida 2002a, 2002b, 2002c) and Canada (Gertler *et al*. 2002), albeit with certain caveats as noted. It should also be noted here that although our quantitative results provide evidence of consistency with the Creative Class theory through numerous correlations and associations, it is much more difficult to draw inferences relating to actual causality. This will be an issue that the qualitative part of the research addresses, with qualitative interviews and case studies designed to uncover the motivations and thought processes behind locational choices (i.e. designed to probe the *causations* that underpin the observed *correlations*). A good example of this is the association of creative class and openness: does this correlation between the creative class and diversity arise merely from a more or less coinciden-

tal location in certain metropolitan and urban areas with little or no interaction, is it primarily a kind of consumption relationship in which the creative class are able to access, for example, exotic ethnic shops and a wide variety of interesting restaurants, or is it a reflection of the creative class' genuine preference to live and work in an open, tolerant and diverse community as Florida describes? Each of these outcomes would potentially be consistent with our findings so far.

On the issue of diversity, Fig. 2 suggests a number of places that have arrived at similar levels (as we are able to measure it) but almost certainly for very different reasons, and with different outcomes likely. Clearly the whole issue of diversity and tolerance needs further exploration; one possibility is using the census data to examine variations within the overall foreign-born or non-Western figures; at present it is not possible to distinguish between places that have equal-sized foreign-born communities originating from one or a hundred different parts of the world: intuition alone would suggest that two such places are likely to be very different. In addition, on the wider point of measuring tolerance, one of the key insights of Florida and Gates (2001) is the linking of gay and hi-tech indices, something not possible in the UK using secondary data. Brighton is the classic example from the UK of a locality whose position in the tolerance rankings would be significantly affected if this alternative measure were used. To widen this point out, Florida himself suggests that the USA is now starting to lose its dominance in what he refers to as 'the new global competition for talent' (Florida 2004); if this is indeed the case, what might be the potential impact on both policy and potential economic outcomes for Europe in general, and the UK more specifically?

Perhaps the most pressing research priority though is the fate of the non-creative class, which after all comprises more than 60 per cent of the labour force. Will they be limited to those meagre trickle-down benefits of creativity, or can everyone become more creative; and who will be responsible for making this happen? The urban leaders driving forward the Creative Class agenda? National governments? Or will it be left to the creative class themselves to "grow up" and take responsibility as Richard Florida himself proposes? Analogously, there are similar questions to be resolved regarding non-creative places. Peck (2005) warns against the creation of "cargo cults", vainly attempting to flag down footloose creativity much in the same way that cities and regions used to enter into zero-sum games chasing old-style inward investment. Perhaps it would be an interesting exercise for further research to revisit the sites of creativity attraction programmes, to systematically evaluate their impacts, successful or otherwise.

## Acknowledgements

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## Notes

1. At present data from Northern Ireland and Scotland are absent from our analysis. This omission will be addressed during subsequent iterations of the analysis.
2. Markusen (2006) proposes that Florida's results in the USA actually derive at least in part from human capital effects, rather than from creativity effects per se. However, short of assessing all work-related creativity on an individual basis, proxy by occupation is the only way large-scale studies of this nature can be undertaken realistically.
3. Peck (2005) also notes the use of disarming terminology that invites positive association, and asks who indeed would seek to be rigid, narrow-minded and conservative when they could be flexible, open and creative?
4. Indeed, as Markusen (2006) herself notes, visual artists may (for example) have some different locational preferences to, say, performing artists.
5. There has been some work on Europe (Florida and Tinagli 2004) but this been at the national level only. Within this, with regard to creativity, the traditional large economies (including the UK) are seen as losing ground, Southern Europe continues to lag behind, while the Netherlands and the Nordics forge ahead.
6. This involves the construction of a dataset that allows three distinct fields of analysis: examining how the Creative Class model applies within each partner country, the performing of inter-country comparisons across partner countries, and finally a comparison between the "TTT group" as a whole and existing US and Canadian studies. Results relating to these latter two project aims will be reported elsewhere in due course.
7. As we define it, the Creative Core maps very closely to the major occupational group Professional Occupations, albeit with a small number of occupations therein placed in our Creative Professionals category.
8. Mainland European countries use the International Stand-

ard Classification of Occupations (ISCO) system; due to the nature of the wider research being undertaken it was with reference to this system that our occupational groupings (bohemian, creative class) were defined. In many cases ISCO maps directly to SOC2000, but in other cases it does not.

9. I.e. those people who have not worked more than one hour during the short reference period regardless of whether or not they are in receipt of unemployment related benefits.
10. Not in terms of absolute size – the USA and Canadian regions typically being much larger – but rather having a similar role within the national context in question.
11. This figure rises slightly to 0.28 for the bohemians only.
12. This statistic should not obscure the fact that massive variation exists within London, with some very low Creative Core LQs found therein (for example, Barking and Dagenham, at 0.51 the third lowest in England and Wales).
13. It is worth noting here that although not a directly comparable analysis, there are generally some consistencies with the indices produced by the Demos think tank (Demos 2003).

*Nick Clifton*
*Centre for Advanced Studies*
*Cardiff University*
*44–45 Park Place*
*Cardiff CF10 3BB*
*Wales*
*United Kingdom*
*E-mail*: CliftonN1@cardiff.ac.uk

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