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Understanding the Links between Diversity and Creativity as Assessed in the Boroughs of London

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Abstract: This paper analyses the links between creativity and diversity in the different boroughs of London. Based on rich data from the UK Census of Population of 2011 and other sources, we specifically analysed the correlations between creativity and diversity within the London boroughs. The main results of this study indicate that there is no direct correlation between creativity and diversity. Some significant correlations have been observed, however, between variables that shape such indices. Namely, the "creative class" tend to live in more diverse, more heterogeneous neighbourhoods (alongside people from many different countries) and they are more prepared to tolerate such diverse environments. The study also shows that diversity of geographical origin (measured by country of origin) is a more relevant factor for boosting creativity than variables such as religious diversity. This article contributes to the theoretical field of research exploring the impact of diversity on creative people and cities.

Keywords: city; innovation; creativity; diversity

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1. Introduction

It is increasingly accepted that the relationship between creativity (defined by two variables: creative occupations and university qualifications) and diversity (as defined by three variables: foreign residents, religion, and attitude towards others) are part of a broader picture of enormous economic, political, and social importance for urban city development. Over the last two decades, and in particular since the publication of studies by Richard Florida [1,2], growing attention has been paid to creativity in academic [3,4] and public policy debates, in particular because of the strong links that apparently exist between creativity (the raw material for innovation) and the outcomes of this in terms of "innovation" (understood as new products or services that have been validated in the market) [5,6]. As a result, both cultural and population diversity are increasingly considered to be key variables for consideration by studies of urban, social, and economic development in the era of cosmopolitanism [7]. Florida [1] goes beyond this in pointing out that diversity offers a competitive advantage for businesses: an economic asset that can be used to their gains. Herein lies the importance of analysing the links between diversity and creativity, the main focus of this article.

As Lee [8,9] observes, various explanations have been put forward regarding the (often positive) impact that diversity has on creativity, a concept related with the provision of public goods such as education and health, community identity, diversification of the supply and consumption of goods and services (necessary for the "creative class"), encouragement of entrepreneurship, etc. However, other economists studying diversity claim that the

relationships between diversity and creativity are not so obvious and transparent and in fact have not been sufficiently studied and understood by those who regard diversity as an economic asset. Syrett and Sepulveda [10], for example, argue that the type of cultural diversity that produces creativity and innovation within cities (the main focus of the research by Florida and his followers) has not been properly studied or characterised and that the mechanisms by which creativity arises or develops from diversity remain unclear. According to Syrett and Sepulveda [10], the main problem is that the debates on diversity have been influenced by two diverging and often opposing discourses. On the one hand, there are those who consider diversity (above all the diversity of population and culture, e.g., that associated with migrant populations) as something inherently positive for the development of a city within the context of liberalisation and globalisation and which should therefore be encouraged [1,11]. On the other, there are those who regard diversity as inherently problematic in that it may lead to tensions between communities, put pressure on public services (health and social care, housing, and education), making the fight against social and economic exclusion more difficult and more expensive [12,13].

This paper aims to contribute to this debate by going one step further in the analysis of these relationships between diversity and creativity as established by Richard Florida and the new economists and sociologists of diversity [3,8–10], focusing on creativity as the key raw material for innovation. In particular, this article aims to analyse the creative professions and their relationship with diversity in London, one of the most cosmopolitan and diverse cities in the world [10]. We will analyse these relationships at a microgeographic level (Borough or Municipal) based on existing secondary data from the last UK Census of Population carried out in 2011.

Some methodological considerations are in order here. Creative occupations are defined as professions in which the members "do not own and control any significant property in the physical sense. Their property, which stems from their creative capacity, is an intangible because it is literally in their heads" [1]. It has been observed that analyses based on aggregated data for diversity (at city, regional, and country levels) can encounter a number of methodological problems in terms of processing (for example, due to different ways of aggregating the data) and often do not produce the required data, especially at more disaggregated geographical levels. In earlier studies conducted in Spain and Argentina by the authors [14,15], we found that although from a quantitative point of view there was no correlation between tolerance and creativity (except within the Florida's 'Bohemians' sub-group), when a qualitative approach was used we found that creativity and a diverse, heterogeneous life were closely related, although social forces of a centripetal, homogenising nature were also present. It can therefore be argued that social and cultural diversity and heterogeneity are important in the social construction of the creative professional. In some of our earlier research in Spain [14,16,17], we distinguished between two similar terms with slightly different definitions—*heterogeneidad* (heterogeneity) and *diversidad* (diversity). According to the The Oxford English Dictionary, *diversidad* is the abundance of different things in a defined space, whereas *heterogeneidad* is the mixture of parts of a different nature within a whole. We also distinguished between two different types of heterogeneity, namely weak and strong heterogeneity. We showed that although some societies tend to create weak heterogeneities in which lives are reduced to a game of signs without much meaning (as happens with hegemonic orders), creativity is much more closely related with strong heterogeneities, made up of a multiplicity of symbols with dense meanings that are very difficult to order from or around a general equivalent. This is why, in this paper, we use the concept of "imaginary" when referring to the variety of meanings that we have analysed in our studies of work in various creative sectors [17], such as website and fashion designers, among others.

These initial reflections enabled us to identify three specific objectives: (1) describe the composition and structure of the creative occupations in London, disaggregating the data by boroughs; (2) analyse diversity in London; and (3) identify which elements influence and enable the creativity and expansion of the creative class in the city. To this end, the

following research questions will be addressed: What is the composition of the creative class by borough in London? What indicators can be used to characterise diversity in these boroughs? What other factors help to explain the relationship between creativity and diversity?

The main hypothesis is that there is a positive relationship between diversity and creativity. Our premise is that creative occupations require places that are dense in terms of social and cultural heterogeneity, and, therefore, the greater the heterogeneity or diversity of the population, the stronger the presence of creative occupations and creativity. In fact, earlier studies seemed to indicate that creative people need intersectional ecosystems; in other words, places that are dense in diversities [17]. Therefore, if our objective is to understand the nature of this creative ecosystem, the degree of diversity must be measured as a function of different variables, as we will now go on to explain in the next section of this article.

The article is divided into six sections, including this introduction (Section 1). Section 2 analyses the relationship between diversity and creative occupations. Section 3 presents the methodology. Section 4 develops the main result of the study conducted. The correlations between the Creativity Index and the Diversity Index are discussed in Section 5, followed by the conclusions (Section 6).

2. Diversity and Creative Occupations

The study of diversity is to review the research by Nathan [3,4] on immigration, innovation, and diversity, in which he develops the idea of the economy of diversity on the basis of the concept of "superdiversity," defined as the diversification of diversity, a phenomenon at work in cities such as London [18]. Nathan explains a number of its effects. Firstly, diversity alters the structure of the labour market as a whole and of production and consumption networks. Secondly, it leads to an increase in average salaries and productivity by way of production complementarities (which affect innovation, entrepreneurship, and market access, for example). Thirdly, it can increase the demand for hybrid goods and services, and can also increase the local cost of living as a result of overpopulation. Lastly, the area's poor-quality jobs tend to be occupied by immigrants, which can cause low-skilled natives to be excluded from job opportunities (social bargaining power).

One of the core factors in the association between population diversity and urban competitiveness is the supply of migrant workers, who bring with them different skills, knowledge, and experience, and who join the labour market in jobs that are not occupied by the local labour force [10]. This is particularly true in the case of highly skilled workers, who are seen as drivers of economic development and innovation in knowledge-based societies [19]. Some authors cite the skills, knowledge, experience, and contacts that these workers provide as important factors when explaining the links between population diversity and creative development and innovation. The contribution made by highly skilled migrant workers and entrepreneurs to innovation processes in Silicon Valley is often put forward as an example of this association.

Florida [1] pointed out that creativity is the source of the most important competitive advantage in contemporary societies, and with the incipient processes of digitalisation, robotisation, and automation in today's economy, this trend seems likely to continue. This means that in future societies, there will still be a demand for jobs that require creativity and the development of new ideas and products, although according to Florida, the presence of people working in creative professions is conditional on the connectivity of the networks within which they live and work. This means that social capital will continue to play a fundamental role because it helps create a basic ecosystem.

In addition, and advancing on the arguments presented by Florida, in order to develop creative environments, we need a high level of tolerance towards others within society as a whole. In other words, we need new ecosystems that enable people with different forms of understanding the world to move and operate within them. However, in previous research studies on Spain today [16,17], we found that creativity is more closely related to

diversity and heterogeneity than to tolerance. Furthermore, Florida also proposed that the creative classes often decide to live in places which offer ecosystems (amenities) that enable creative people to conduct their professional activities. One of the main characteristics of such ecosystems is diversity.

Nathan [4] carried out an interesting dissection of Florida's research, which he divided into two stages: Florida 1.0 and Florida 2.0. In the first stage, which was probably the most innovative and daring, Florida presented the theory of the three Ts (Talent, Technology, and Tolerance), while in the second, he argued that urban growth could best be measured using variables related to the creative class, rather than by using traditional measurements of human capital. Since then, it could be argued that a Florida 3.0 stage has appeared, in which he analyses the new urban crisis [20] and highlights the ambivalence of the creative class. In other words, while in his initial research work Florida's approach was largely devoid of social content, in Florida 3.0 he explores more sociological aspects, such as social inequality and segregation. His theory is that in the urban processes of the last 20 years, just as jobs have been created in creative occupations, they have also stimulated processes resulting in inequality, segregation, gentrification, and the decline of the middle classes.

In this paper, we aim to further explore Florida's ideas in relation to creative occupations and their relationship with cities. When analysing the creative occupations, Florida [1] does not regard the creative class as an economic class in the sense of their ownership of property, capital, or the means of production, as might be understood from a Marxist or Weberian perspective. This is because the creative class do not own or control the ownership of the means of production in the physical sense. An attempt to define and delimit this intangible is currently underway and is based on the type of work carried out by the members of this class, which consists of "creating new meaningful forms," according to Florida [1]. According to his definition, the creative class has two components: (a) the super-creative core made up of scientists and engineers, university professors, poets and writers, artists, animators, actors, designers and architects, and the leading thinkers in modern society; and (b) creative professionals: those in high-technology sectors (ICT), financial services, legal and health professions, and business management. Therefore, under Florida's approach, social classes are explained as mainly occupational groupings. By contrast, Mo [21] argued that those employed in creative occupations should not be identified as social classes, due to the fact that the most important aspects of their behaviour are diversity and heterogeneity in the world of work, as well as in leisure and consumption. Other critics of Florida's initial research, such as Boschma and Fritsch [22], Pilati and Tremblay [23], Scott and Allen [24], Lang and Danielsen [25], Peck [26], Uzzi and Spiro [27] and among others, emphasised the difficulties involved in the operationalisation of variables such as diversity, inequality, etc. Florida responded to some of these criticisms in his book, *"The new urban crisis,"* in which he argues that the current crisis in our cities has five characteristic dimensions [20]: (a) deepening of the gap between "superstar" cities and the rest, (b) an increase in inequality and house prices, (c) the disappearance of the middle class, (d) growing crises in suburban areas (poverty, insecurity, crime, and racial and economic segregation), and (e) the severing of the link between urbanisation and a growth in living standards.

This discussion features Florida [1], who notes that "[the] lifestyle of the creative class can be summarised as the passionate pursuit of experiences." Thus, creative professionals have more active and participatory practices, especially those that they can organise themselves. Experiences are now replacing goods and services because they stimulate and reinforce creative faculties and capacities. That is why Van Olm [28] analyses the leisure preferences of the creative class and finds Florida's thesis limited. In a similar vein, Thomas [29] explores the perception, attachment, and engagement of creative workers with the place where they live, specifically 28 creative workers in Edmonton (Canada). His results question the relevance of Florida's creative capital theory because the way weak ties are accessed contradicts his ideas. According to their interviews, it appears that place is not a key means of maintaining weak ties to social capital. On the other hand, and changing the object of study, Rodriguez-Pose and Lee [30] carry out an interesting

analysis of innovative cities in US metropolitan areas. Among their main results, they point out that hipsters (creative occupations) need geeks (STEM occupations), but geeks also need hipsters. Each group alone makes a much smaller contribution to innovation. The presence of STEM workers in a city is a more important driver of innovation than the presence of creatives, from which we conclude that it is the combination of both factors that maximises innovation in the US. At a more general level, Llobet [31] discusses the role of social creativity in coping with the uncertainties of the risks of society.

3. Methodology. Data, Sources of Information and Variables Used

The study presented in this article was conducted on the basis of a quantitative research methodology, which was adapted in line with the objectives of this study. Our principal unit of analysis was the boroughs of London, of which there are 32, plus the City of London (the financial district). When the 32 boroughs were created in 1965, they were divided into two categories: "Inner London" (the centre of the city), with 12 boroughs in total and "Outer London" (or Greater London), with the remaining 20 boroughs.

Our main sources of data were the Census of Population (2011) and the Qualifications of Working Age Population (NVQ) (2017), which were used together with other sources such as the Annual Population Survey (2018) and the Public Attitudes Survey (2017).

In order to operationalise the dimensions used in this study, we began by developing two central indices as set out in the following Table 1:

Table 1. Construction of the Creativity and Diversity Indices.

(A) Creativity Index (A.1. $_{b100}$ + A.2. $_{b100}$)	(A.1.) Creative Class (% occupations belonging to the creative class) (A.2.) Level of Studies (% university qualifications)
(A) Diversity Index (B.1. + B.2. + B.3.)/3 (or other possibility)	(B.1.) Diversity of Origin (% people born outside the UK) (B.2.) Religious Diversity (% non-Christian people) (B.3.) Attitudes (% people who believe that, in their local area, there is a good relationship between people of different backgrounds)

The Creativity Index is based on two sub-indices (see Table 1): creative class (as measured in terms of the percentage of people working in creative occupations) and the level of studies attained (in terms of the percentage of people with university qualifications). The first sub-index (the creative class) was constructed according to previous research work by Pac and Rodriguez [15], Baez, Bergua, and Pac [14] and Florida [1], and was divided into three components: Bohemians, the super-creative core, and the creative professions. According to its definition the creative class has two components: (a) a super-creative core: scientists and engineers, university lecturers, poets and writers, artists, animators, actors, designers and architects, and leaders of opinion of modern society, and (b) creative professionals: those in high-tech sectors, financial services, legal and healthcare professions, and business management.

The first component, Bohemians, was obtained from subgroup 34 (Culture, Media, and Sport) of the SOC2000. The second sub-index, i.e., the percentage of people with university qualifications, included all those with Level 4 and above qualifications in the Census of Population 2011.

Three sub-indices were used in the construction of the Diversity Index: country of birth (percentage of people born outside the UK), religion (percentage of non-Christian people), and attitude towards others (percentage of people who believe that, in their local area, there is a good relationship between people of different origins). Three main sources of information were used: the Census of Population (2011), the Annual Population Survey (2018), and the Public Attitudes Survey (2017).

Looking beyond the production of these indices and sub-indices, in some cases it would also be interesting to be able to analyse this information in a more detailed, disaggregated form. For this purpose, we used six geographical variables—UK, Europe, Africa,

Asia, the Caribbean, and Oceania—to indicate the percentages of the population of each borough from these geographical regions. There were nine categories within the religion variable, which indicate the percentage of the population belonging to a particular religious congregation (plus those who do not belong to any religion and those who prefer not to declare their religious origin), and four variables for occupation: percentages of people with university qualifications who belong to either the creative professions, the super-creative core of these professions, or the Bohemians sub-group, as well as the sum of these three percentages, in other words, all the members of the creative class as a whole.

4. Main Results

4.1. Analysis of the Creativity Index

In terms of occupation, we found that over half of the occupations in London belonged to the creative class. However, it is important to note the considerable internal differences within London with regards the geographical distribution of creative occupations in that the percentage of people working in creative occupations in each borough ranges between 28.7% and 80.8%. The highest percentage is in the City of London, where over eight out of ten people work in creative occupations. The other boroughs in the top five are Kensington and Chelsea, Westminster, Camden (all Inner London boroughs), and Richmond upon Thames (southwest London), in which over 65% of the population works in creative jobs. At the other end of the scale is Barking and Dagenham, with less than 30% in creative jobs, which is only slightly surpassed by Newham, Bexley, Havering, and Waltham Forest (all with less than 40% in creative jobs), all of which are in east or northeast London.

As well as the internal composition of the creative class, there is a clear correlation between creative professions and core creative occupations in that the boroughs with high percentages of people working in creative professions also have high percentages of people in core creative occupations. However, the correlations with the Bohemians subgroup are not so strong. For example, the London borough with the highest percentage of Bohemians is Hackney (east London), in which over one in ten work in Bohemian-type professions (such as design, advertising and marketing, etc.). However, Hackney has a relatively low percentage of people in the creative class as a whole compared to the top five boroughs.

The tendency towards geographic concentration of the creative professions in certain boroughs is also correlated with their level of economic affluence: the most affluent boroughs in the centre of London (such as City of London, Kensington and Chelsea, and Westminster) have the highest levels of people working in creative occupations, while the least affluent boroughs in east London (Barking and Dagenham and Newham) have the lowest levels.

With the information from the two tables (Tables 2 and 3), we were then able to obtain the Creativity Index. This was done by calculating the values for the two sub-indices that make up the index in relation to a base value of 100 (allocated to the highest value for each variable). The values for the two sub-indices were then added together:

As we saw in earlier research studies [14], the places with the highest percentages of creative workers are also, in general, those that have the highest levels of education of the population. So, for example, in the City of London, 8 out of 10 working people belong to the creative class and almost 9 out of 10 have University qualifications (87%). Perhaps the only borough in which there are significant differences between these two variables is Tower Hamlets (east London), which is in 9th position in the creative class and 22nd position in the percentage of people with university qualifications.

4.2. Analysis of the Diversity Index

As explained earlier in the methodology section, for the purposes of this study, the diversity variable is made up of three indicators which will be analysed in this section, namely country of birth, religion, and attitude towards others.

Table 2. Creative Class and its internal distribution—London Boroughs.

	Creative Professions	**Creative Core**	**Bohemians**	**Creative Class**	
City of London	48.9	26.2	5.6	80.8	3836
Kensington and Chelsea	47.0	17.6	7.0	71.6	58,258
Westminster	42.9	20.5	5.7	69.1	76,873
Camden	35.3	24.2	8.3	67.7	73,798
Richmond upon Thames	35.8	25.7	6.2	67.7	67,155
Wandsworth	36.5	23.5	5.3	65.3	116,552
Islington	32.3	24.5	8.0	64.8	69,215
Hammersmith and Fulham	35.7	21.5	6.4	63.7	63,491
Tower Hamlets	29.5	22.3	5.3	57.1	68,960
Lambeth	28.9	21.7	6.2	56.8	94,610
Hackney	24.0	21.8	10.6	56.5	66,946
Kingston upon Thames	28.5	22.5	3.7	54.7	44,869
Southwark	28.3	20.1	5.4	53.8	79,250
Barnet	29.3	20.0	3.8	53.1	90,683
Merton	27.9	20.6	3.2	51.7	54,165
Haringey	23.9	20.3	7.2	51.4	63,829
Bromley	28.2	19.6	2.9	50.6	76,666
Lewisham	23.6	19.7	5.5	48.8	66,421
Harrow	25.9	19.8	2.0	47.7	54,306
Redbridge	25.6	19.8	1.9	47.3	58,993
Ealing	24.0	18.2	3.8	46.1	75,945
Greenwich	23.1	18.1	2.9	44.2	52,060
Sutton	23.8	18.0	2.1	43.9	42,861
Croydon	23.7	17.7	2.2	43.6	75,441
Hounslow	22.2	17.3	2.9	42.4	53,925
Enfield	23.4	16.3	2.5	42.2	58,140
Brent	21.2	15.5	3.7	40.4	59,534
Hillingdon	22.0	16.5	1.8	40.3	52,551
Waltham Forest	19.9	16.2	3.2	39.2	47,460
Havering	21.3	14.2	1.5	36.9	41,695
Bexley	20.2	15.0	1.5	36.7	40,451
Newham	17.0	13.3	1.7	32.0	42,400
Barking and Dagenham	16.9	11.3	0.5	28.7	21,598
LONDON	26.9	19.2	4.2	50.3	2,012,937

Source: Drawn up by the authors using data from the Census of Population 2011.

Table 3. Creativity Index—London Boroughs.

	Occupations		UNIV. QUAL.		Creativity Index
	%	Base 100	%	Base 100	SUM A + B
City of London	80.8	100	87.9	100	200.0
Westminster	62.6	71.2	62.6	71.2	142.4
Wandsworth	65.3	53.2	71.3	81.1	134.3
Barnet	53.1	72.1	54	61.4	133.5
Lambeth	56.8	56.2	67.3	76.6	132.7
Hammersmith and Fulham	63.7	47.0	66	75.1	122.1
Southwark	53.8	49.0	63.1	71.8	120.7
Merton	51.7	55.7	56.9	64.7	120.5
Richmond upon Thames	67.7	46.1	65	73.9	120.1
Kensington and Chelsea	71.6	45.0	64.3	73.2	118.1
Islington	64.8	46.0	61.9	70.4	116.4
Camden	67.7	47.9	60	68.3	116.1
Kingston upon Thames	54.7	51.9	56.4	64.2	116.1
Lewisham	48.8	54.3	54.2	61.7	115.9
Hackney	56.5	47.0	59.4	67.6	114.5
Sutton	43.9	54.3	51.5	58.6	112.9
Haringey	51.4	50.2	53.9	61.3	111.5
Ealing	46.1	54.6	49.5	56.3	110.9
Greenwich	44.2	49.8	53.5	60.9	110.7
Harrow	47.7	53.6	49	55.7	109.4
Redbridge	47.3	53.5	47.5	54.0	107.5
Tower Hamlets	57.1	52.3	47.5	54.0	106.4
Brent	40.4	56.9	39.9	45.4	102.3
Croydon	43.6	48.3	47.3	53.8	102.1
Hillingdon	40.3	51.0	43.6	49.6	100.6
Newham	32.0	52.9	41.9	47.7	100.6
Waltham Forest	39.2	50.2	44	50.1	100.2
Bromley	50.6	46.3	46.9	53.4	99.7
Hounslow	42.4	46.5	44.9	51.1	97.6
Enfield	42.2	48.8	36.2	41.2	90.0
Bexley	36.7	45.4	37.1	42.2	87.6
Havering	36.9	51.7	30.1	34.2	86.0
Barking and Dagenham	28.7	35.5	30.7	34.9	70.4

Source: Drawn up by the authors using data from the Census of Population 2011.

With regards to the first indicator, more than one in three inhabitants of London were born outside the UK, and there are some boroughs, such as Brent in northwest London, where more than half the population were born overseas. In London, the makeup of the population by place of birth is as follows: 65% were born in the UK, 11.6% are from other European countries, 11.1% are from Asia, and 7.2% from Africa. The lowest percentages are from America/the Caribbean and Oceania (3.8% and 1.0%, respectively). The boroughs with the highest concentration of people born in the UK are Richmond upon Thames,

Sutton, and Bromley (all in south London), and Bexley and Havering (in east London), with percentages of over 75%. At the other end of the scale, with percentages of less than 60% born in the UK, we have Brent (northwest London), Newham (east), Kensington and Chelsea (centre), Ealing, Haringey, and Harrow (all in west London). The highest concentration of foreign citizens by borough according to their respective regional origins is as follows: Europeans in Enfield (north London); Africans in Brent; Asians in Newham, people from Latin America and the Caribbean in Lambeth (south London) and those from Oceania in the City of London.With regards to religion (see Table 4), in the Census of Population 2011, half the population of London declared themselves to be Christian of various denominations (such as Anglicans and Catholics) (49.2%). These were followed by Muslims (11.6%), Hindus (4.7%), Jews (1.8%), Sikhs (1.5%), and Buddhists (1%). A total of 21.4% of the inhabitants said that they did not profess any religion and a further 8.3% chose not to declare their religion if any. Substantial differences between the different boroughs can also be found. Christians are most heavily concentrated in Bromley (south London), Bexley, and Havering (east), with percentages of over 60%. At the other extreme, with percentages of less than 40%, we have Tower Hamlets (east), Redbridge (northeast), and Harrow (northwest). The highest concentration of the different specific religions in individual boroughs is as follows: Muslims (Newham), Hindus (Harrow), Jews (Barnet), Sikhs (Ealing), and Buddhists (Kensington and Chelsea).

Table 4. Main statistical indicators of the variables used.

	Maximum	Minimum	Mean	Standard Deviation
Born in the UK	88.3	47.1	66.16	9.51
Europeans	21.3	4.2	11.31	3.92
Africans	11.2	2.9	7.17	2.13
Asians	22.7	3.5	10.84	5.23
Caribbean	7.7	0.9	3.64	1.83
Oceania	2.7	0.1	0.89	0.69
Christians	64.7	37.3	50.00	7.10
Buddhists	1.5	0.4	0.94	0.28
Hindus	21.7	1.3	4.74	4.34
Jews	13.9	0.1	1.63	2.61
Muslims	30.5	2.7	11.41	6.75
Sikhs	7.6	0.2	1.47	2.02
Other religions	2	0.3	0.56	0.30
With no religion	28.9	10.2	21.06	5.40
With no declared religion	13.4	6.4	8.18	1.63
Attitude	98	83	91.79	4.44
Bohemians	10.6	1	4.27	2.32
University students	87.9	30.1	52.89	12.30

Lastly, we analysed the indicator regarding attitude or tolerance towards others, defined as the percentage that accepts that their local area is a place where people of different origins get on well or coexist without serious problems. In general, we can see a high level of acceptance of others (over 80%) in London as a whole, including boroughs with different levels of diversity in their populations. In this indicator, the highest percentages were achieved by Southwark (south London), with a 98% acceptance level, followed by Hammersmith and Fulham (west) and Richmond upon Thames (south), with figures of

over 97%. The lowest scores were obtained in Bromley and Bexley with 83% (south and southeast, respectively).

By collating the above information, we obtained the Diversity Index using the same procedure as described above for the Creativity Index.

On this occasion, the maximum values were obtained in three different boroughs (see Table 5). Brent, which had the highest value for foreign population, and Tower Hamlets, which had the highest value for non-Christian population, are amongst the top five in the Diversity Index due to their high scores in the other two sub-indices. However, Southwark, which obtained the highest value in the Attitude indicator, is situated in the middle of the table. Other neighbourhoods which obtained high values in the Diversity Index were Newham and Ealing, in second and third place, respectively.

Table 5. Diversity Index—London Boroughs.

	Diversity of Origin		**Rreligious Diversity**		**Aattitude**		**Diversity Index**
	%	**Base 100**	**%**	**Base 100**	**%**	**Base 100**	**Base 300**
Brent	52.9	100.00	57.6	91.87	89	90.82	282.68
Newham	47.4	89.60	58.7	93.62	96	97.96	281.18
Ealing	46.6	88.09	56.2	89.63	93	94.90	272.62
Tower Hamlets	38.2	72.21	62.7	100.00	96	97.96	270.17
Harrow	41.8	79.02	60.1	95.85	89	90.82	265.69
Kensington and Chelsea	47.2	89.22	47.2	75.28	96	97.96	262.46
Hackney	38.1	72.02	59.2	94.42	94	95.92	262.36
Camden	37.6	71.08	58.8	93.78	95	96.94	261.80
Barnet	37.4	70.70	57.4	91.55	91	92.86	255.10
Haringey	43.8	82.80	53.5	85.33	85	86.73	254.86
Westminster	39.2	74.10	51.9	82.78	96	97.96	254.84
Hounslow	38.5	72.78	55.8	89.00	89	90.82	252.59
Islington	34.7	65.60	56.1	89.47	95	96.94	252.01
Redbridge	34	64.27	61	97.29	88	89.80	251.36
Hammersmith and Fulham	39.6	74.86	48.2	76.87	97	98.98	250.71
Waltham Forest	37.3	70.51	51.8	82.62	89	90.82	243.94
Southwark	34.6	65.41	47.4	75.60	98	100.00	241.00
Lambeth	37.7	71.27	45.4	72.41	95	96.94	240.61
Wandsworth	35.6	67.30	46.6	74.32	96	97.96	239.58
City of London	34.7	65.60	50.8	81.02	91	92.86	239.47
Merton	33.7	63.71	43.8	69.86	95	96.94	230.50
Lewisham	31.1	58.79	45.9	73.21	96	97.96	229.96
Hillingdon	30.4	57.47	50.1	79.90	87	88.78	226.15
Enfield	33.6	63.52	46.5	74.16	86	87.76	225.43
Greenwich	27.9	52.74	46.5	74.16	94	95.92	222.82
Kingston upon Thames	27	51.04	46.2	73.68	94	95.92	220.64
Richmond upon Thames	24.6	46.50	44.5	70.97	97	98.98	216.46
Croydon	27.6	52.17	43.4	69.22	92	93.88	215.27
Barking and Dagenham	27	51.04	45	71.77	85	86.73	209.54

Table 5. *Cont.*

	Diversity of Origin		Rreligious Diversity		Aattitude		Diversity Index
	%	Base 100	%	Base 100	%	Base 100	Base 300
Sutton	19.5	36.86	41	65.39	92	93.88	196.13
Bromley	14.4	27.22	39	62.20	83	84.69	174.12
Bexley	13.8	26.09	38.3	61.08	83	84.69	171.87
Havering	11.7	22.12	35.3	56.30	87	88.78	167.19

Source: Drawn up by the authors using data from the above tables.

5. Correlations between the Creativity Index and the Diversity Index

The following consists of an analysis correlation. The main variables follow a normal distribution, so using the Pearson correlation is the most adequate method (see Aggarwal and Ranganathan, [32]). We will now go on to analyse the correlation between the two indices proposed in this paper. The following graphic is a dispersion diagram illustrating the relationship between the Creativity and the Diversity Indices. As we move up the scale, we can see an increasing relationship between the two indices, as manifested in the straight (solid) line for linear regression and the smoothed (dashed) line. However, there are some findings that make it more difficult to establish a linear correlation between the two variables, such as, for example, those for Newham and Brent, which have high levels of diversity and low levels of creativity, or those for Bexley, Havering, and Bromley, which have poor results in both indices. According to the smoothed line, the increasing relationship is more pronounced in the boroughs with low values for both variables. In the boroughs with values of over 234 in the Diversity Index and over 100 in the Creativity Index, the increasing relationship is of lesser magnitude.

The Pearson correlation coefficient between these two variables is 0.32, with a p value of 0.07, which does not allow us to reject the null hypothesis of zero correlation between the variables (see Figure 1). This result is confirmed by the confidence interval provided by the output of the R package (at a confidence level of 95%): $(-0.02, 0.60)$.

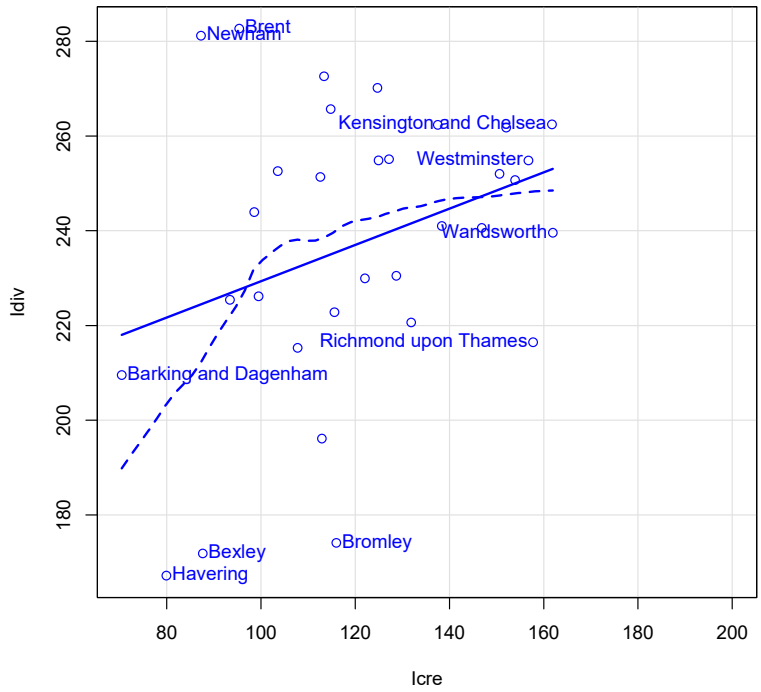

Figure 1. Dispersion Diagram between the Creativity and Diversity Indices. Source: The authors.

We will now carry out more detailed analyses of the variables that make up the two indices in order to be able to identify lines of argument that can help explain the values we have obtained.

The following Table 6 sets out all the Pearson correlation coefficients that can be obtained by crossing the five variables used to construct the two indices, accompanied by their corresponding *p*-values. The coefficients that proved significant at a level of at least 5% have been highlighted in bold type. The *attitude* variable is the most highly correlated in that three of its coefficients are significant (with *creative class*, *university qualifications*, and *diversity of origin*). We believe that this reflects the intrinsically tolerant attitude of the creative class, of the sectors of the population with a university education, and of the foreign population. In addition, the other two significant coefficients (between the creative class and people with university qualifications, and between diversity of origin and religious diversity) are also quite plausible. The first of them would be due to the need for university degrees to access creative jobs; the second due to the different religions of the different origins of the migrant people.

Table 6. Pearson correlation coefficients between the five variables that make up the Diversity and Creativity Indices.

	% University Educated	**Diversity of Origin**	**Religious Diversity**	**Attitude**
Creative Class	**0.87 (<0.00)**	0.23 (0.19)	0.14 (0.41)	**0.63 (<0.00)**
% University Educated		0.28 (0.11)	0.10 (0.58)	**0.75 (<0.00)**
Diversity of Origin			**0.75 (<0.00)**	**0.36 (0.03)**
Religious Diversity				0.19 (0.27)

In bold those cases where *p* value < 0.05. Source: The authors.

We also calculated the Pearson correlation coefficients between, firstly, the Creativity and Diversity Indices and geographic regions of origin and secondly, between geographic regions of origin and professed religions.

As can be seen in the Table 7, creative activity takes place above all in those parts of London in which there are large numbers of Caribbeans, non-British Europeans, and, above all, people from Oceania. Diversity coincides with creativity in boroughs in which there are high concentrations of citizens of European origin or from African and Asian backgrounds. What also seems obvious is that United Kingdom citizens tend not to live in the areas with the greatest diversity (as well as the significant figure of −0.73 from the table above, the correlation coefficients between the UK and other geographical areas all produced significantly negative values). The obviousness of these results stems from the fact that Diversity of Origin (that is, the percentage of people born outside the UK) constitutes one of the three sub-indices that make up the Diversity Index.

Table 7. Pearson correlation coefficients between the Diversity and Creativity Indices and geographic regions of origin.

	Africa	**Asia**	**Carib.**	**Europe**	**Oceania**	**UK**
Creativity Index	−0.02	−0.15	0.58	0.40	0.75	−0.28
pvalue	0.88	0.39	**0.00**	**0.02**	**<0.00**	0.10
Diversity Index	0.36	0.53	0.34	0.48	0.31	−0.73
pvalue	**0.04**	**0.00**	0.05	**0.00**	0.07	**<0.00**

In bold those cases where *p* value < 0.05. Source: The authors.

According to the Table 8, the creativity index is especially high in those areas of London inhabited by Buddhists, those who stated that they had no religion and those who did not declare their religion (if any). Furthermore, and according to our results, diversity is

particularly strong, above all, in areas inhabited by Buddhists, Hindus, Muslims, and those who profess other religions not specified in this study. However, diversity seems to be minimal in those areas mainly inhabited by people who declare themselves to be Christian and those who do not profess any religion.

Table 8. Pearson correlation coefficients between the Diversity and Creativity Indices and professed religions.

	Creativity Index		**Diversity Index**	
Buddhist	0.56	**0.00**	0.58	**0.00**
Christian	−0.13	0.47	−0.87	**<0.00**
Hindu	−0.27	0.12	0.42	**0.01**
Jewish	0.16	0.37	0.32	0.06
Muslim	−0.27	0.13	0.69	**<0.00**
No religion	0.56	**0.00**	−0.39	**0.02**
Other religion	0.04	0.82	0.40	**0.02**
Not declared	0.62	**0.00**	0.26	0.13
Sikh	−0.31	0.08	0.17	0.33

In bold those cases where p value < 0.05. Source: The authors.

6. Conclusions

We began this paper by setting out our main objectives, i.e., analysing the creative occupations and the relationship between this and diversity in London, one of the most cosmopolitan and diverse cities in the world. One hypothesis was derived from the literature review to focus the rest of our research, namely that there is a positive relationship between Diversity and Creativity. In particular, those who do creative jobs tend to live in more diverse areas, measured in terms of country/region of origin, religious beliefs, and attitudes or tolerance.

Based upon the statistical analysis conducted, we could not confirm this hypothesis. Surely, this has been due to the complexity in the construction of the indices and that the data available by neighbourhood in the city of London have excessively limited the variables included in the analysis, leaving out others with greater explanatory power (for example: number of homosexuals, used by Florida, 1994).

This methodological limitation is added to another: the fact that some of the data is from the 2011 Census and therefore a bit dated, which could be solved when data from the UK Census of Population carried out in 2021 is published. Qualitative techniques should also be used to explain the relationship between the creativity and diversity variables in more detail and so to determine how this relationship can be conducive to innovation.

Regarding the positive aspects, focusing our research on a single city, in this case London, was an advantage in that all our data came from the same sources, thus enabling us to eliminate possible spurious effects caused by using different sources (and underlying concepts), a problem that often arises in comparative studies.

On the other hand, the study shows that the relationship between diversity and creativity may well be much more complex than can be inferred from the data available at present. This analysis provides a starting point for understanding this relationship and a useful account of this phenomenon at a micro city level, which sets the basis for future research.

Thus, the existence of correlations between some of the variables that make up the creativity and diversity indices has been demonstrated, such as that between the attitude variable and three others (creative class, university degree, and diversity of origin); or between the creative class and people with a university degree (which should not surprise us, given the need for a university degree in most creative jobs), and between diversity

of origin and religious diversity, which should not surprise us either, due to the fact that non-Christian religions are more common among migrants.

It is especially interesting to note that those born in the UK seem to prefer areas with less diversity and seem less interested in integrating into creative areas, as can be seen from the correlation results above. This may be due, to some extent, to a slight distorting effect in that diversity of origin is one of the variables in the definition of diversity, but we believe that this issue runs deeper and would be an interesting question to study in the future. Such research could focus, firstly, on an analysis of the differential sociodemographic profiles of native Britons who live in creative areas (e.g., by traditional variables such as social class, gender, etc.) in comparison with those who live in less creative areas, e.g., in the Home Counties, and secondly, on their background history and geographical mobility. We could also distinguish between creative territories and creative people or groups, so as to be able to identify the relationships and synergies between the two ways of approaching the object of study.

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