

York and North Yorkshire Creative Industries

Analysis of size and concentration



Executive Summary

Scope and Data Sources

Hatch has been appointed to produce an assessment of the scale of the creative industries in the York and North Yorkshire Combined Authority area.

This report provides an in-depth analysis of York and North Yorkshire's Creative Industries based on three sources of data:

- Published ONS business count and employment data
- A large language model (LLM) built to analyse the footprint of extended reality within York and North Yorkshire's businesses
- A LinkedIn Talent Pool Report

This report focuses largely on the published ONS data, with a particular focus on the **Department for Media, Culture and Sport's (DCMS)** Creative Industries SIC code categorisations. There are inherent challenges associated with mapping Creative Industries. Namely, the vague definition of "creative" in an increasingly-technological world means that Creative Industries cover a variety of sectors rather than forming their own sector outright.

The LLM analysis and insights from the LinkedIn Talent Pool Report, therefore, complement the findings from the published data, building on the policy overview provided in the front end of this report.

Key Findings

The York and North Yorkshire Local Growth Plan¹ Consultation Draft highlights that the **Creative Industries lack skills and investment**. The Creative Industries remain a High Priority sector in the published Growth Plan, albeit with some evident challenges which are also reflected in the data analysis in this report.

Although the data does not show an overall specialisation in business counts and employment across York and North Yorkshire's Creative Industries compared to the national level (excluding London), some key sectors do stand out. These include **Architecture, Culture** (creation and consumption), **Fashion and Design** and **Broadcasting and Communication**. There is a large footprint of IT businesses and employment in the Creative Industries (~40% and ~50% of total creative industries, respectively), but with no significant concentration of either. Further, the LinkedIn Talent Pool Report suggests that for every person entering in the last year York and North Yorkshire's Creative Industries, **1.2 left the Creative Industries in York and North Yorkshire**.

It should be noted that York and North Yorkshire has a sparse geography compared to other Combined Authorities. Forces of agglomeration in its few urban centres are limited relative to Combined Authorities with, or adjacent to, large cities. **This also influences employment and business concentrations**. Indeed, this is observed in the mapping of findings from the LLM.

¹ York and North Yorkshire Combined Authority (2025), "York and North Yorkshire's Local Growth Plan Consultation Draft". Available [here](#).

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DCMS Creative Industries SIC Codes, LLM Priority Subsector Topics

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Introduction

Scope of the work

Hatch has been appointed to produce an assessment of the scale of the creative industries in the York and North Yorkshire Combined Authority area.

This analysis has three elements:

1. An analysis of published data on the creative industries, using SIC-based DCMS definitions
2. The use of an AI based Large Language Model to identify relevant businesses based on web content
3. An overview of key findings from LinkedIn Talent Pool Insights

The analysis of published data allows us to get a detailed insight into what official national statistics say about the size and composition of the sector. It also enables us to benchmark against the national average, along with other Combined Authority areas.

More detail on each of these is provided under the following Definitions and Caveats slide.

Structure of this report

The rest of this report is structured as follows:

- Definitions and caveats: explanation of the definitions and coverage of the datasets used
- Analysis of published data: explanation of the headlines from this analysis, and then a breakdown of individual sectors
- Analysis of AI-modelled data.
- Overview of LinkedIn Talent Pool Report



Introduction – The Creative Industries’ Policy Context

York and North Yorkshire Combined Authority – Economic Framework, Local Growth Plan Consultation and Skills Strategy.

The Creative Industries is defined as a **high growth potential sector** for delivering inclusive economic growth in the Combined Authority’s Economic Framework. The Local Growth Plan acknowledges the Creative Industries’ role in shaping York and North Yorkshire’s cultural sector, but also as **a driver of R&D in the augmented reality sector**. However, the Local Growth Plan also concedes the wider Creative Industries faces significant growth constraints linked to a **lack of investment** and a **lack of skills** within the local labour market. To address these headwinds, the Combined Authority is expected to publish a **High Potential Opportunity Sector Plan** for the Creative & Digital Technologies sectors, in addition to Skills Bootcamps already being offered. Nevertheless, the Creative Industries remain a High Priority Growth Sector, but under the label of **Rail Innovation & Creative, Culture and Heritage**.

Department for Culture, Media & Sport – Creative Industries Sector Vision; House of Commons Library – Creative Industries

The sector vision published by DCMS under the previous government provides a high-level overview of the importance of Creative Industries to the UK economy, as **1 in 14 people across the country are employed in the Creative Industries**. The report also highlights that since 1990 emissions in the creative industries have broadly dropped considerably, emphasising **the important role the Creative Industries can have in shaping a sustainable economy**. More recent research published in 2025 shows that **40% of Creative Industries’ GVA is driven by IT, software and computer services** – this indicates that **tech-driven creative activity** (including augmented/extended reality) **will play a vital role in shaping the creative landscape** at the national level.





Introduction – The Value of Creativity in the Economy

R&D, Creative Networks and Positive Externalities

Over the last decade, the Creative Industries' role as an incubator for economic growth has been recognised in research and policy across the public, private and third sectors across a range of publications.

In an academic context, positive 'spillover' of knowledge and innovation from the Creative Industries into the wider economy has been found to occur through supply chain links between the Creative Industries and other sectors (Customer links), supply chain links with other firms in the creative space (Supplier links) and employees moving to and from the Creative Industries to other sectors in the economy (Labour links).²

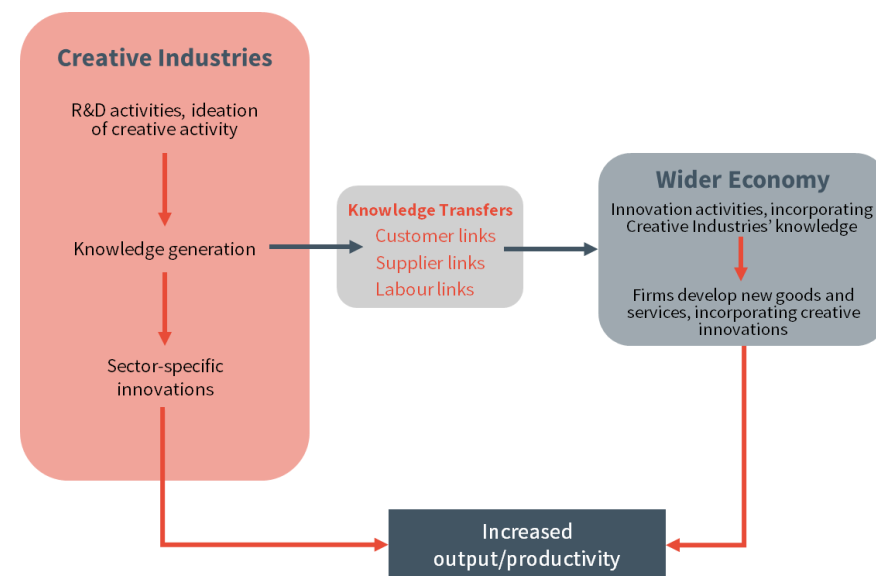
One of the reasons why the Creative Industries are so important to the wider economy is their role as a driver of creativity – a skill that in an ever-automating world stands out as a 'humanising' touch, not to mention the Creative Industries' role in nurturing culture and creating entertainment. Another key characteristic in the Creative Industries and creative jobs is that they bring together talent from a variety of backgrounds, cutting across numerous industries.³

However, the challenge in quantifying and analysing what the wider economic impact is that the Creative Industries "... [defy] definition almost by definition"⁴. For this reason, it is paramount to establish clear definitions and boundaries when mapping the impact and economic footprint of the Creative Industries.

² Frontier Economics (2023), "Creative Spillovers: Do the Creative Industries Benefit Firms in the Wider Economy". Available [here](#).

³ Boston Consulting Group (2018), "How Government Are Sparking Growth in Creative Industries". Available [here](#).

⁴ United Nations Trade & Development (2019), "How the Creative Economy Can Help Power Development". Available [here](#).



Adapted from "Creative Spillovers: Do the Creative Industries Benefit Firms in the Wider Economy", Frontier Economics (2023). Available [here](#).

Definitions and Caveats

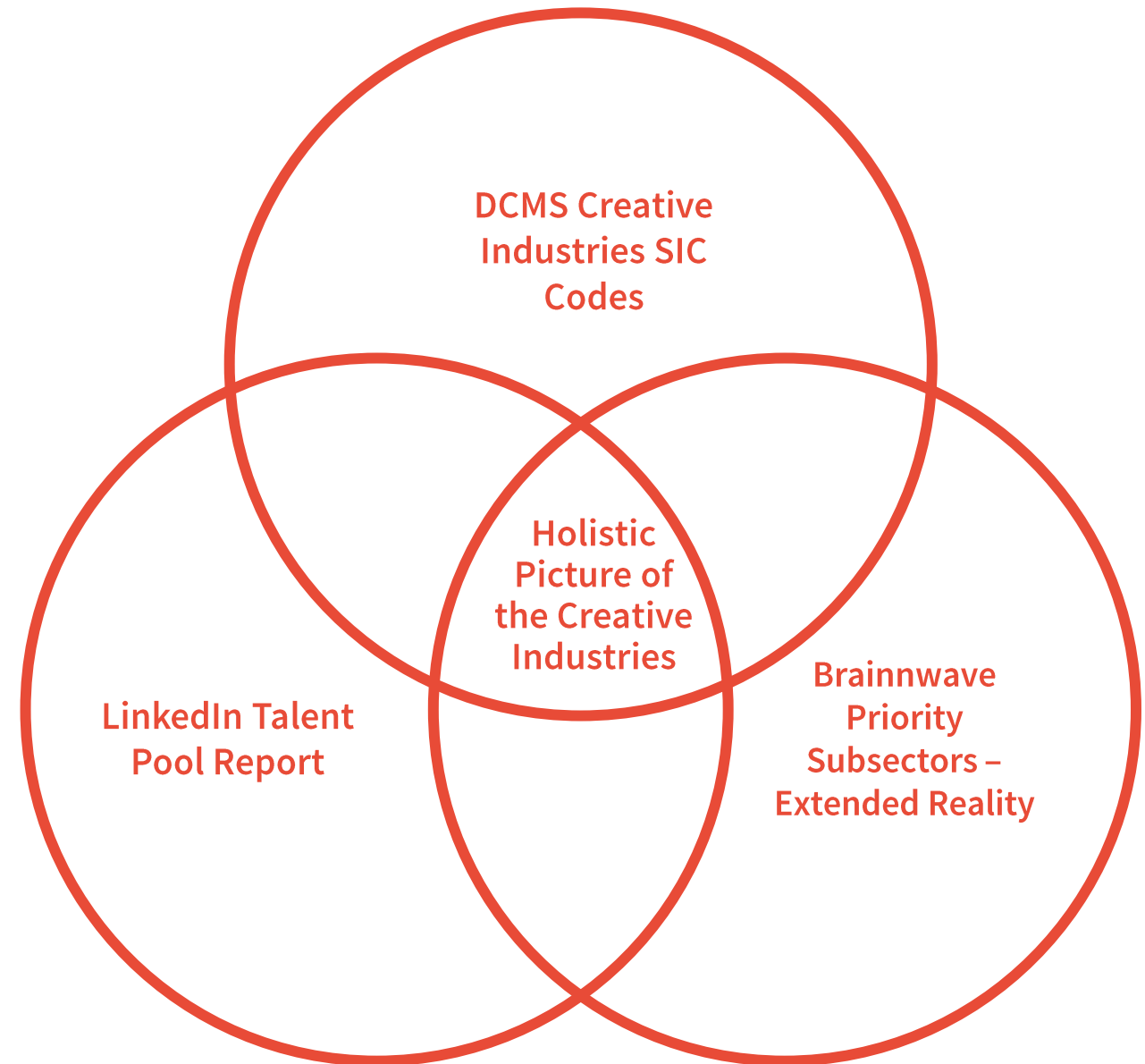
Definitions

To analyse the Creative Industries we have used Standard Industrial Classification codes (SIC codes), for subsectors defined by the Department of Culture, Media and Sport (DCMS) as falling within the Creative Industries. These subsectors are listed in [Pages 12-13](#), and included with their respective SIC codes in [Appendix A](#). To further distinguish between the various subsectors established by DCMS, Hatch has attributed each subsector a “theme”, to easily compare the concentration and specialisation of Creative Industries across geographies.

For the businesses found using the Brainnwave Large Language Model (LLM), sector and subsector definitions are intentionally different to those provided by DCMS in order to capture businesses that would otherwise not necessarily be classified as “creative”. A list of these classifications and their definitions is provided in [Appendix B](#). It should be noted that the DCMS Creative Industries SIC codes and the Extended Reality Priority subsectors estimated by the LLM **measure different things**. Whereas the DCMS SIC codes attempt to provide an estimate of business counts and employment in the Creative Industries’ sector as a whole, the LLM estimates the businesses that use Extended Reality and related creative technologies. Hence some businesses identified **may not be traditionally classified as “Creative”**.

The goal, therefore, is to get a sense of not only the Creative Industries as whole, but also the “knowledge transfers” outlined in the previous page, to create a holistic picture of the Creative Industries.

This report also makes use of LinkedIn Talent Pool Report insights to corroborate and deepen the findings from ONS data and LLM mapping. The Talent Pool Report monitors job postings and job changes among people in a geographical area and sector(s); their flow to and from the area/sector(s), as well as providing insights on those people’s educational background and skills to give a holistic picture of the potential talent within a sector in a given area. The Talent Pool Report is also useful to measure any “leakages” in talent.





Definitions and Caveats

Published Data Sources

To analyse the economic activity in York and North Yorkshire's Creative Industries we have undertaken a rapid baseline, utilising publicly available data, to paint a picture of overall economic trends.

Gross Value Added (GVA)

GVA refers to the GDP of a sector, excluding taxes, plus any subsidies. It differs from GDP in that it measures the actual sectoral contribution by subtracting intermediate consumption from sector output. For the purposes of this study we apportion national-level estimates of Creative Industries' GVA to the local share of employment in the Creative Industries in York and North Yorkshire, along with the average productivity ratios for the area.

Employment Analysis

To analyse trends on employment across relevant sectors, we have utilised publicly available data from the Business Register and Employment Survey (BRES) (ONS, 2023). It is an annual survey which is used as the official source for employee and employment estimates in the UK, by detailed geography and industry. Given that this data is survey based, at sub-national levels there may be sampling errors, which means drawing conclusions around trends over time which need to be treated cautiously.

Businesses Analysis

To analyse trends in businesses across relevant sectors, we have utilised publicly available data from ONS UK Business Counts (ONS, 2024). It is an extract compiled from the Inter Departmental Business Register recording the number of Enterprises that were live at a reference date in March of each year, broken down by employment size band, detailed industry (5-digit SIC2007) and legal status. We have used the local units data set, which provides information for the number of unique places of work rather than the enterprises data set which can be thought of as the overall business, made up of all the individual sites or workplaces (local units).

Large Language Model (LLM) Creative Industries Definition and Data

Overview

The AI-based approach to defining and quantifying the Creative Industries in York and North Yorkshire in this study are underpinned by Brainnwave's Smart Sector Analysis tool, which uses established keywords and themes to scrape websites of companies in York and North Yorkshire in order to provide a more nuanced and up-to-date count of Creative Industries than that offered by SIC codes, which were last revised in 2007.

This approach allows not only for more visibility of smaller businesses or sole traders, but businesses in general, who in practice fall into the Creative Industries even if their self-declared SIC sectors are not considered as "creative" by DCMS.

Limitations

Unfortunately, there are some limitations to this approach. The first is that the ability for the web scraper is very much tied to the quality of websites; their use of certain keywords in online text and the pre-defined themes actually being used by creative businesses.

This may lead to omissions of businesses in the Creative Industries if certain keywords or website formatting requirements are not met. The inverse is also true; non-Creative businesses may be counted as Creative if they do use certain keywords. Though this is accounted for by manual checks and validations on the data, it is a limitation to bear in mind when interpreting the findings of the AI-based data. Further limitations are set out in Appendix C.

Other Caveats

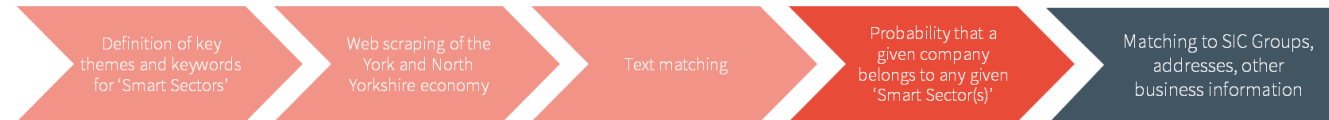
It is also paramount to note that the published data and LLM data **measure fundamentally different things**. Whereas the published data is used to paint a picture of the broader Creative Industries, the LLM data is used to **drill down on the extended reality (XR) sector**, hence, discrepancies in sample sizes are expected. Therefore, the classifications and results for **both methods are not directly comparable**.

Definitions and Caveats

Basic Overview of LLM

LLMs are “large” neural networks in the sense that they typically draw from a vast number of parameters (data points) to process human language. They require certain “training” data to predict whether a sample of text data matches sufficient characteristics to be assigned to a certain group, or not. In the context of this report, the “training” data consists of bespoke and agreed-upon themes and topics **relating to the XR/augmented reality sector**, and not necessarily the broader Creative Industries and should **not be used as a comparable alternative source of data** to publicly available data. A summary workflow is shown on this slide, with a summary of each step elaborated below:

- 1. Definition and key themes and keywords for ‘Smart Sectors’** were agreed-upon between XR Stories, Brainnwave and Hatch (see [Appendix B - LLM Priority Topics](#)).
- 2. Web scraping of the wider York and North Yorkshire economy** scraped and analysed ~25,000 company locations across the entire York and North Yorkshire economy.
- 3. Text matching** matched only 70% (c.19,500) of the initial sample to 37 “Smart Sectors” across the entire York and North Yorkshire.
- 4. Probability “scores” that a given company belongs to any given “Smart Sector(s)”** were assigned to companies, from which companies that were highly likely to belong the agreed-upon “Smart Sectors”, based on matching with keywords and key themes. Data validation was then conducted to ensure only relevant companies using XR/augmented reality were included.
- 5. The final datasets matched companies to SIC Groups, addresses and additional business information** (e.g. employees).





Definitions and Caveats

Metrics for Published Data

Specialisation

The metric used to measure specialisation and concentration of the Creative Industries in York and North Yorkshire is the **Location Quotient (LQ)**. LQs are derived by dividing the share of businesses or jobs within the Creative Industries relative to all businesses and jobs in North and North Yorkshire by the same proportion at the national level. For this exercise, we have excluded London, given the large concentrations of creative economy activity there:

$$LQ = \frac{\% \text{ Creative Industries in York and North Yorkshire}}{\% \text{ Creative Industries in Great Britain (excl. London)}}$$

In essence, this ratio expresses the share of Creative Industries within York and North Yorkshire relative to Great Britain (excluding London) in a way that is easy interpretable: if an LQ equals 1.5 it indicates that the share of creative businesses or jobs is **50% higher** in York and North Yorkshire, relative to the share of creative businesses or jobs in Great Britain (excluding London).

Comparator Geographies

This study will compare the concentration of the Creative Industries in York and North Yorkshire to all other Combined Authorities, using published data for employment (BRES 2024) and Business Counts (ONS 2023). LQs are based on Great Britain Business Counts and Employment numbers, omitting London to avoid skewing the data.

As is can be seen, York and North Yorkshire is **considerably larger in land mass terms than most comparators**. Given the Combined Authority's dispersed and rural structure, York and North Yorkshire's Creative Industries **perform is relatively well** and broadly **in line with expectations**.

Map of Comparator Geographies





Definitions and Caveats

The Department of Culture, Media and Sport (DCMS) categorise the Creative Industries into nine subsectors. For ease of comparison across the Creative Industries, Hatch has categorised the subsectors into themes.

DCMS Subsector	Description	Theme
Architecture	Architectural activities	Architecture
Advertising and Marketing	Public relations and communication activities	Broadcasting and Communications
Film, TV, video, radio and photography	Advertising agencies	
	Media representation	
Museums, galleries and libraries	Radio Broadcasting	Culture
	Library and archive activities	
	Museum activities	
	Sound recording and music publishing activities	
	Cultural education	
	Performing arts	
	Support activities to performing arts	
	Artistic creation	
Music, performing and visual arts	Operation of arts facilities	



Definitions and Caveats

The Department of Culture, Media and Sport (DCMS) categorise the Creative Industries into nine subsectors. For ease of comparison across the Creative Industries, Hatch has categorised the subsectors into themes.

DCMS Subsector	Description	Theme
Crafts Design and designer fashion	Manufacture of jewellery and related articles Specialised design activities	Fashion and Design
IT, software and computer services	Publishing of computer games Other software publishing Computer programming activities Computer consultancy activities	IT
Publishing	Book publishing Publishing of directories and mailing lists Publishing of newspapers Publishing of journals and periodicals Other publishing activities Translation and interpretation activities	Publishing
Film, TV, video, radio and photography	Motion picture, video and television programme production activities Motion picture, video and television programme post-production activities Motion picture, video and television programme distribution activities Motion picture projection activities Television programming and broadcasting activities Photographic activities	Screen Industries

Definitions and Caveats

The LLM developed by Brainnwave for this study identifies **11 unique sub-sectors** within the Extended Reality sector (Digital Creativity and R&D activities) and scrapes web data to provide unique insights into York and North Yorkshire’s Creative Industries.

Subsector	Description	Theme
VFX and Post-Production	Animation refers to the segment of the media and creative industries dedicated to the design, creation, and production of motion graphics, animated visuals, and digitally-rendered storytelling. This subsector encompasses a variety of techniques, styles, and formats, including traditional hand-drawn animation, 2D and 3D digital animation, stop-motion, and real-time rendering.	Broadcasting and Communications
TV	TV refers to the creative, technical, and commercial ecosystem responsible for the production, broadcasting, and distribution of television content. This subsector includes a wide array of programming, such as scripted series, news, reality shows, documentaries, live events, and children’s content, delivered through traditional broadcast channels, cable networks, and digital streaming platforms.	
Performing Arts	The Performing Arts Subsector encompasses the creation, production, and presentation of live artistic performances, where performers use their bodies, voices, or objects to convey artistic expression to an audience. This subsector includes a broad spectrum of art forms such as theatre, dance, music, opera, and performance art. The performing arts are distinguished by their live, temporal nature, requiring a physical presence of both performers and audiences in real-time.	Culture
Music	The Music Subsector refers to the industry involved in the creation, production, distribution, and performance of music in various forms and genres. This subsector encompasses a wide array of activities, including music composition, recording, performance, sound engineering, distribution via digital and physical media, and live music events.	
Film	Film encompasses the creative, technical, and business processes involved in the development, production, distribution, and exhibition of motion pictures. This subsector covers a wide range of activities, including scriptwriting, directing, cinematography, editing, and marketing, contributing to the creation of narrative and documentary films for theatrical, digital streaming, and broadcast platforms.	

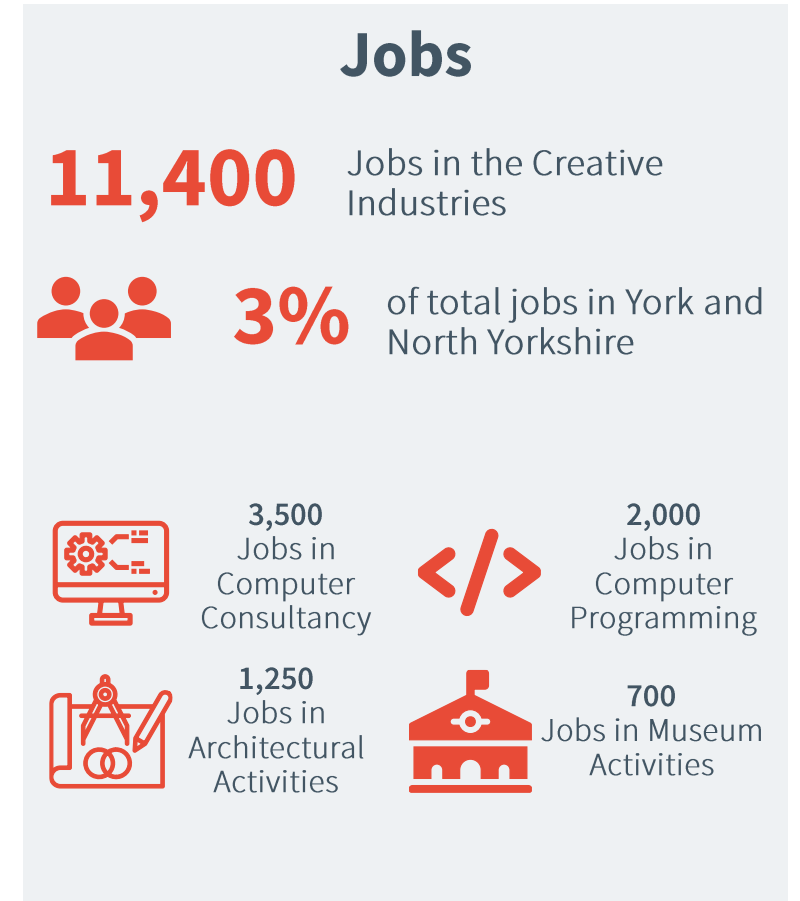
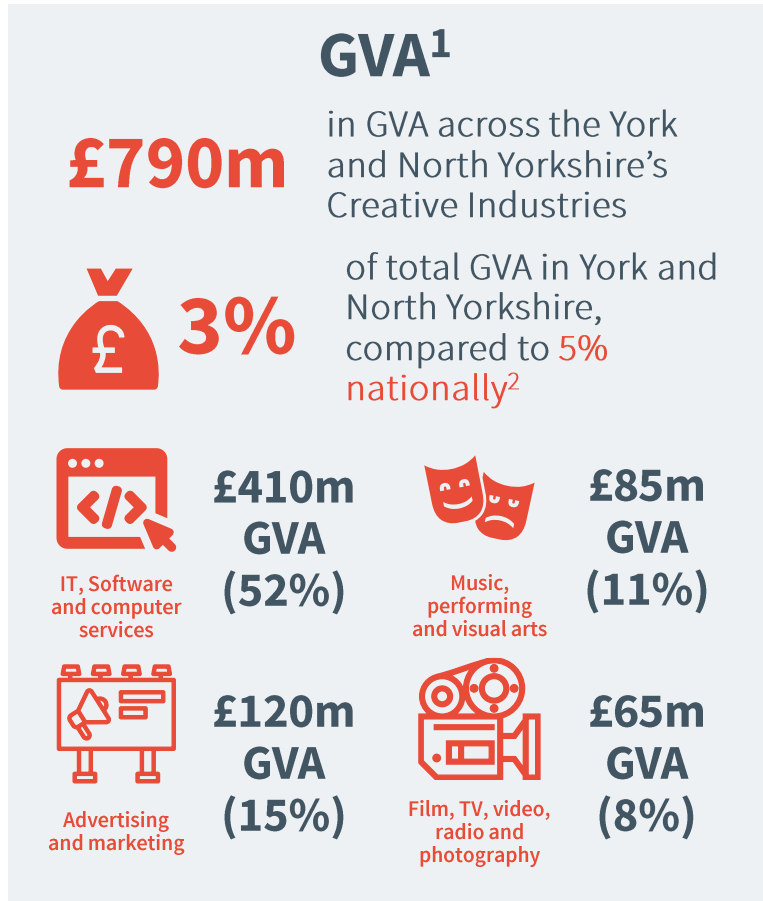
Definitions and Caveats

The LLM developed by Brainnwave for this study identifies **11 unique sub-sectors** within the Extended Reality sector (Digital Creativity and R&D activities) and scrapes web data to provide unique insights into York and North Yorkshire's Creative Industries.

Subsector	Description	Theme
Design	Design refers to the creative and professional domain dedicated to the conceptualization, planning, and realization of visually, functionally, and aesthetically impactful solutions. This subsector spans a wide array of disciplines, including graphic design, industrial design, digital design, user experience (UX) and user interface (UI) design, fashion, and environmental design, among others.	Fashion and Design
Digital Creative	Design refers to the creative and professional domain dedicated to the conceptualization, planning, and realization of visually, functionally, and aesthetically impactful solutions. This subsector spans a wide array of disciplines, including graphic design, industrial design, digital design, user experience (UX) and user interface (UI) design, fashion, and environmental design, among others.	
Audio Innovators	Audio Innovators refers to a specialized segment of the creative and technology industries focused on the development, enhancement, and application of cutting-edge audio technologies and techniques. This subsector includes the creation of innovative tools, platforms, and experiences that push the boundaries of sound design, audio production, and immersive auditory experiences across various fields, including entertainment, communication, gaming, education, and healthcare.	IT
Computer Games	Computer Games refers to the industry focused on the development, design, production, distribution, and marketing of video games played on computers, consoles, and mobile devices. This subsector encompasses a wide range of gaming experiences, from casual mobile games to complex, immersive AAA titles, as well as the technologies that power these games, including game engines, interactive storytelling, graphics, and artificial intelligence (AI). The computer games subsector plays a significant role in entertainment, education, and increasingly, in social interaction through multiplayer and online experiences.	
Animation	Animation refers to the segment of the media and creative industries dedicated to the design, creation, and production of motion graphics, animated visuals, and digitally-rendered storytelling. This subsector encompasses a variety of techniques, styles, and formats, including traditional hand-drawn animation, 2D and 3D digital animation, stop-motion, and real-time rendering.	
Video Production	Video Production refers to the segment of the media and creative industry dedicated to the creation, editing, and distribution of visual storytelling content. This encompasses a wide range of formats, including live-action films, animated videos, commercials, corporate media, documentaries, and interactive experiences, produced for various platforms such as television, cinema, digital streaming, and social media.	

Headlines

There is a **large growth potential** for the Creative Industries in York and North Yorkshire, building on the large number of **smaller businesses**, evidenced by a higher share of businesses than jobs.



Source: ONS BRES, 2024; ONS Businesses Counts, 2023.

¹GVA has been estimated using published sectoral GVA estimates at the national level (DCMS, 2023; ONS, 2023) and adjusted according to the proportional share of sectoral employment in Birmingham (ONS BRES, 2022) and the average productivity ratio for Birmingham (ONS, 2023). CAGR is the compound annual growth rate.

²Cultural and Creative Industries Stats - Q1 2025 26 - Creative UK

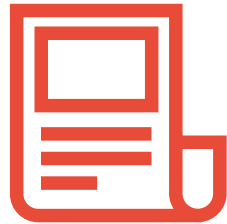
Headlines: Businesses

The Creative Industries comprise of a **diverse set of sectors** in York and North Yorkshire, with some **unique business specialisation despite the data suggesting overall sector decline...**



-1.4%

CAGR of Creative Industries
Businesses 2019-2024



1.8 LQ.B

Publishing of newspapers



1.1 LQ.B

Architectural Activities



1.5 LQ.B

Museum Activities

Creative Industries businesses in York and North Yorkshire have some unique specialisms, particularly in architecture, newspaper publishing and museum activities.

There have also been some considerable challenges, however, with declining business counts in the Creative Industries. Between 2019 and 2024, there has been a slight decrease in business counts of 1.4% per annum and overall business concentration is below the national average (less London) with a LQ of 0.78.

Nevertheless, Broadcasting and Communications as well as Fashion and Design business counts have grown 1.6% per annum and 2.4% per annum, respectively.

Headlines: Employment

Challenges also persist with employment in the Creative Industries, signalling there is now **some sectoral stagnation and decline**, though some sectors still drive York and North Yorkshire's Creative Economy



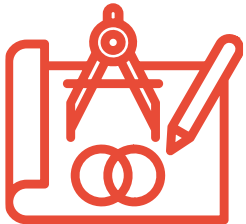
-3.6%

CAGR of Creative Industries
Jobs 2018-2023



2.4 LQ.E

Museum activities



1.7 LQ.E

Architectural Activities



1.9 LQ.E

Support activities to
performing arts

Employment in the Creative Industries is also facing headwinds with the data suggesting a 3.6% per annum drop in jobs between 2018 and 2023.

Of the themes identified, IT employs nearly half of all Creative Industries jobs. However, employment in the sector has decreased by 295 between 2018 and 2023.

Despite these challenges, there are still some strong areas of employment concentration within York and North Yorkshire's Creative Industries in sub sectors like Architectural Activities, Support activities to performing arts, Museum activities and Artistic Creation.



Analysis of Published Data



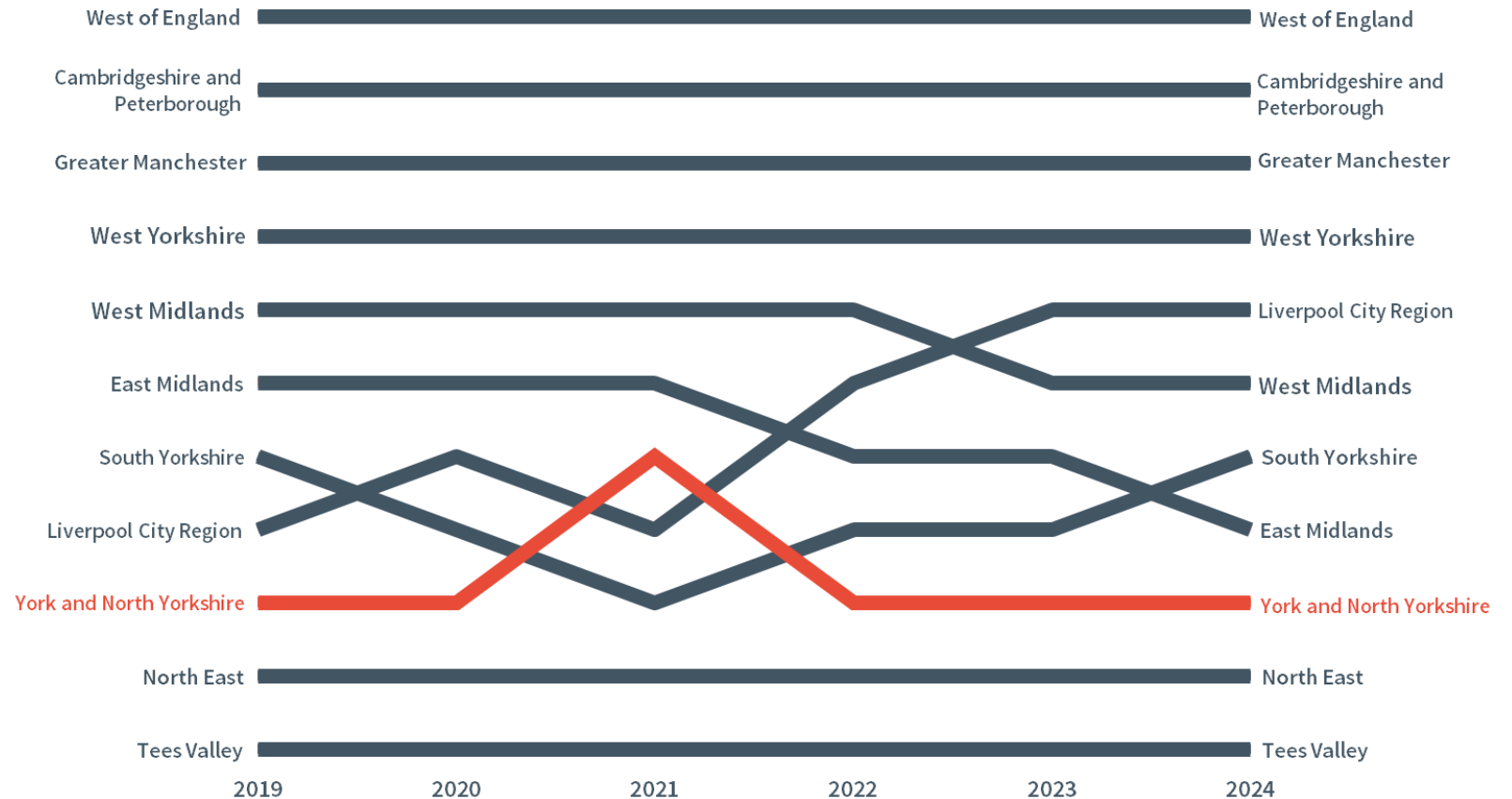
Analysis of Published Data | Businesses Overview

Key Takeaways

- Compared to other Combined Authorities, the proportionate business counts and specialisation of the Creative Industries is **relatively low** in York and North Yorkshire.
- A significant **barrier to business concentration** are established geographies in the sector (West of England, Greater Manchester) and emerging geographies (Liverpool City Region).

Combined Authority Area	Total Businesses (2024)	% of all Businesses	Concentration
Cambridgeshire and Peterborough	3,600	8.4%	1.17
East Midlands	5,100	5.7%	0.79
Greater Manchester	9,400	7.6%	1.06
Liverpool City Region	3,100	6.0%	0.83
North East	3,700	5.5%	0.76
South Yorkshire	2,800	5.8%	0.80
Tees Valley	1,000	4.5%	0.62
West Midlands	6,300	5.8%	0.80
West Yorkshire	6,300	6.8%	0.94
West of England	5,000	11.4%	1.55
York and North Yorkshire	2,600	5.6%	0.78

Combined Authorities, ranked by business concentration in the Creative Industries





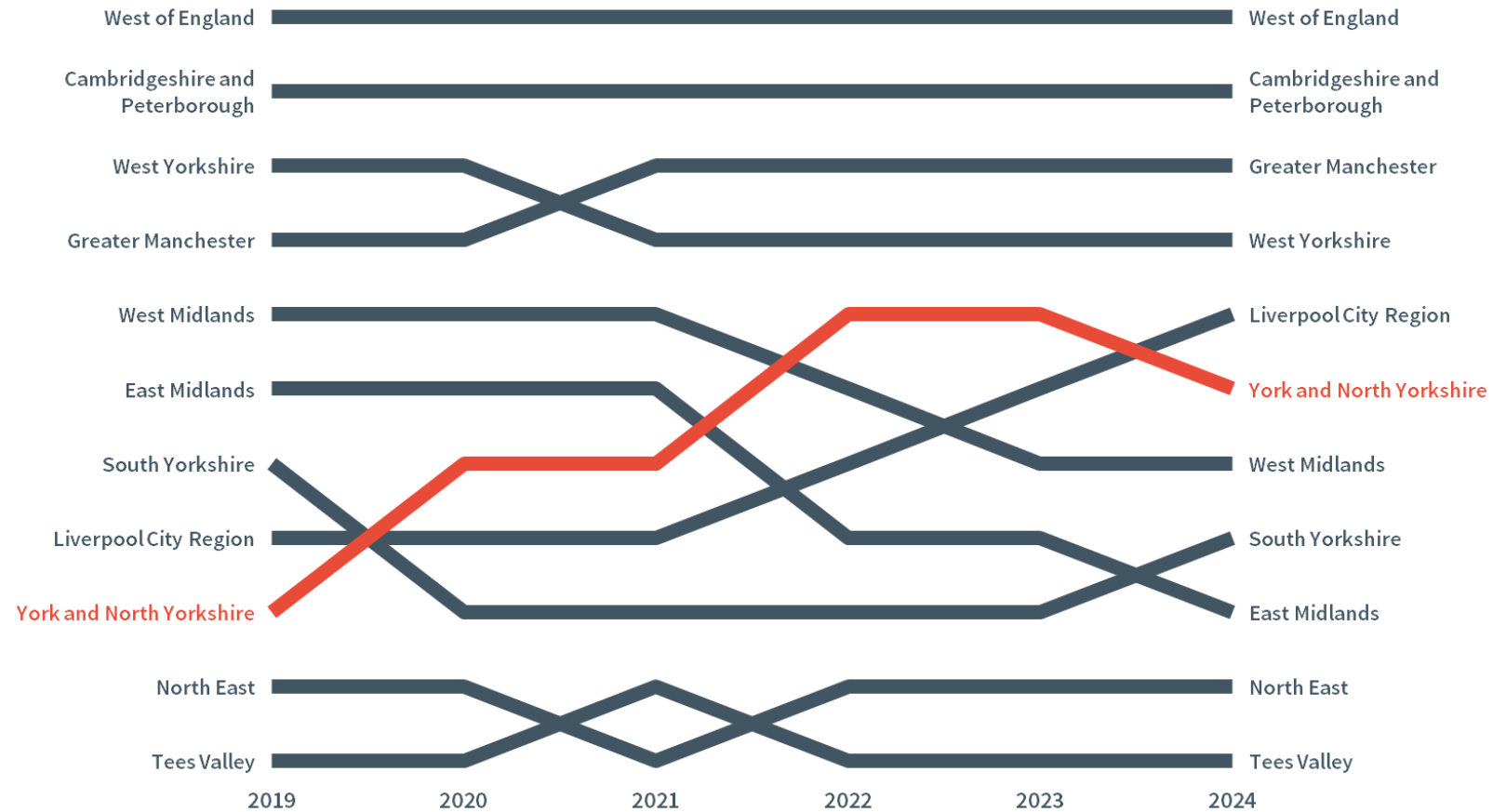
Analysis of Published Data | Businesses Composition

Key Takeaways

- The concentration of Micro and Small businesses of York and North Yorkshire's Creative Industries is slightly higher than the overall concentration of Creative Industries.
- Nevertheless, there is **no significant overall specialisation of Micro and Small businesses** in York and North Yorkshire's Creative Industries

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	3,500	8.2%	1.17
East Midlands	5,000	5.6%	0.79
Greater Manchester	9,200	7.5%	1.01
Liverpool City Region	3,100	5.8%	0.83
North East	3,700	5.5%	0.72
South Yorkshire	2,800	5.7%	0.80
Tees Valley	1,000	4.4%	0.62
West Midlands	6,300	5.7%	0.81
West Yorkshire	6,300	6.7%	0.94
West of England	5,000	10.8%	1.54
York and North Yorkshire	2,600	5.5%	0.82

Combined Authorities, ranked by business concentration (Small and Micro) in the Creative Industries

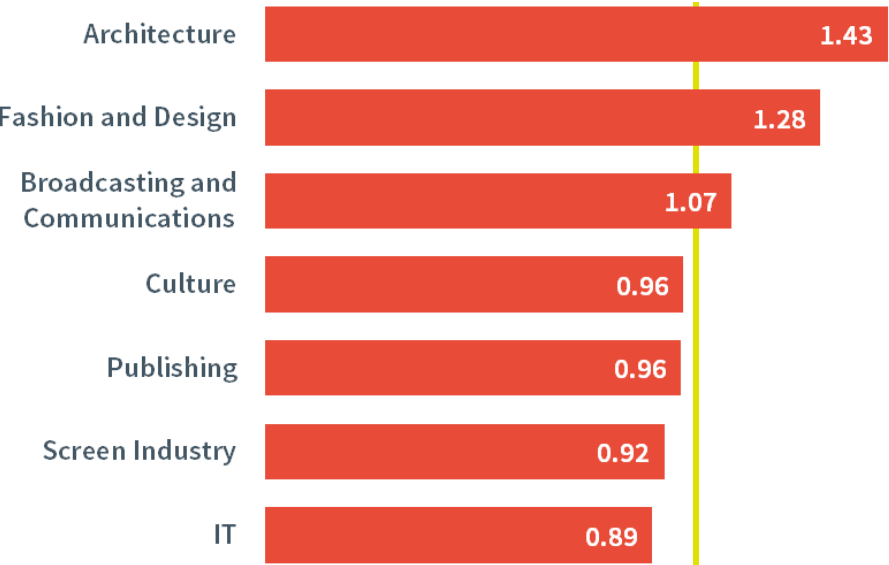


* Micro businesses are defined as businesses with 0 to 9 employees and small businesses as businesses with 10 to 49 employees.



Analysis of Published Data | Subsector Specialisation and Growth

Business concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- Creative businesses in the IT sub-theme make up the largest large portion of businesses in York and North Yorkshire’s Creative Industries. Nevertheless, the sector has been declining at a rate of 4.5% per annum since 2019.
- Though third-smallest in terms of business counts, Fashion and Design enterprises are the most specialised in York and North Yorkshire and have the highest annual growth rate within the Creative Industries.
- With low business concentration, business counts and negative annual growth, the Publishing sub-theme contains many Creative Industries sub-sectors that are at risk.

	Architecture	Fashion and Design	Broadcasting and Communications	Culture	Publishing	Screen Industry	IT
CAGR	-0.4%	2.4%	-0.4%	0.6%	-1.9%	3.8%	-4.5%
Total Businesses	255	315	285	360	100	295	1,000
% of Creative Industries	9.8%	12.1%	10.9%	13.8%	3.8%	11.3%	38.3%
Status	Stable	Driver	Stable	Stable	At Risk	Emerging	Declining

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



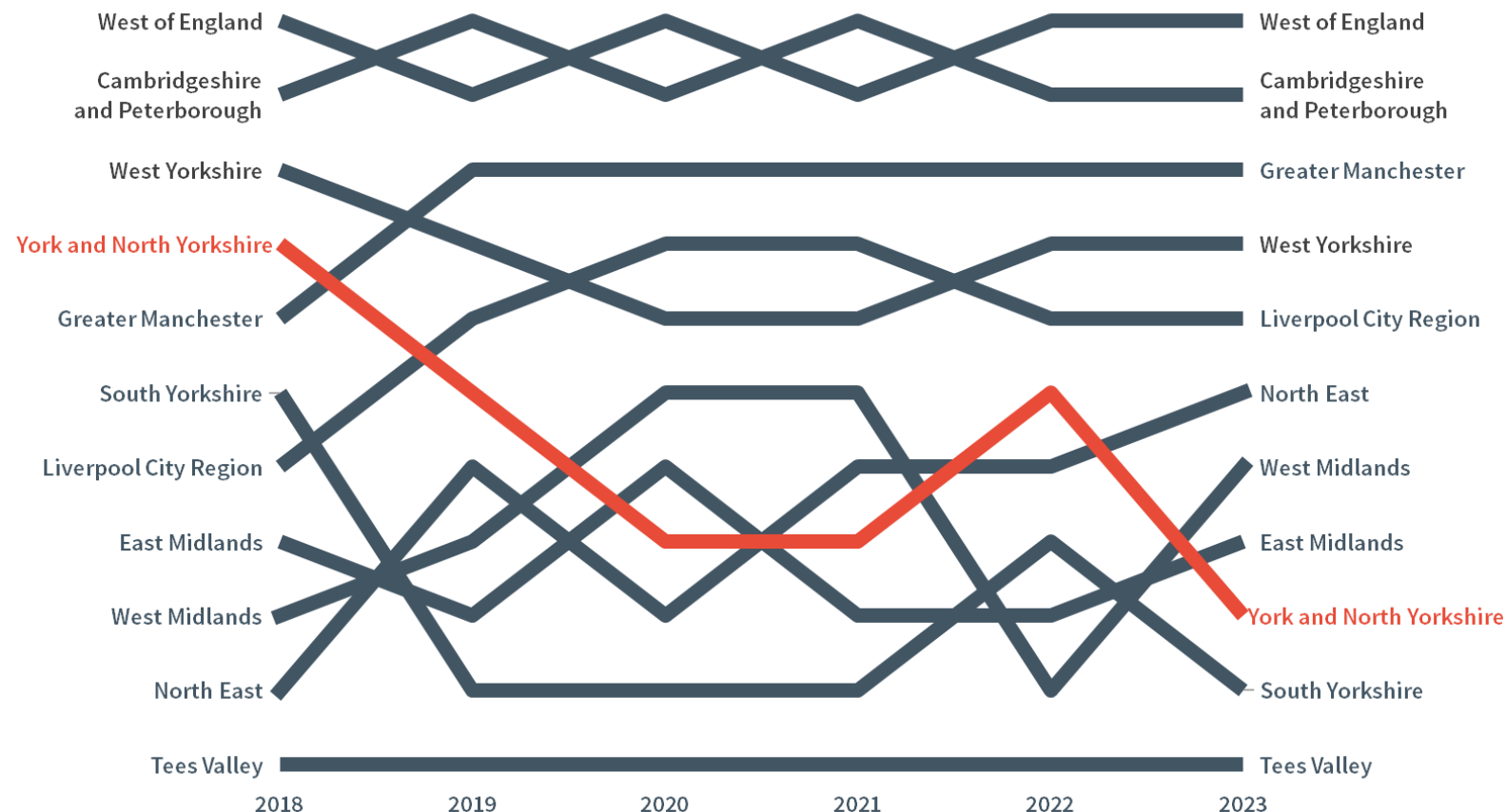
Analysis of Published Data | Employment Overview

Key Takeaways

- Similarly to Business Counts, York and North Yorkshire has a **lower proportion of total employment** in the Creative Industries than other Combined Authorities.
- Nevertheless, York and North Yorkshire has a concentration nearing 1.0, indicating **concentration of Employment is similar to that of Great Britain**, excluding London.

Combined Authority Area	% of all Employment	Employment	Concentration
Cambridgeshire and Peterborough	5.5%	27,200	1.95
East Midlands	2.7%	32,100	0.97
Greater Manchester	4.4%	65,200	1.56
Liverpool City Region	3.4%	16,700	1.20
North East	3.2%	27,200	1.12
South Yorkshire	2.3%	13,700	0.81
Tees Valley	2.2%	6,000	0.78
West Midlands	2.8%	37,700	0.98
West Yorkshire	3.7%	41,500	1.30
West of England	6.3%	36,800	2.22
York and North Yorkshire	2.7%	11,400	0.95

Combined Authorities, ranked by employment concentration in the Creative Industries



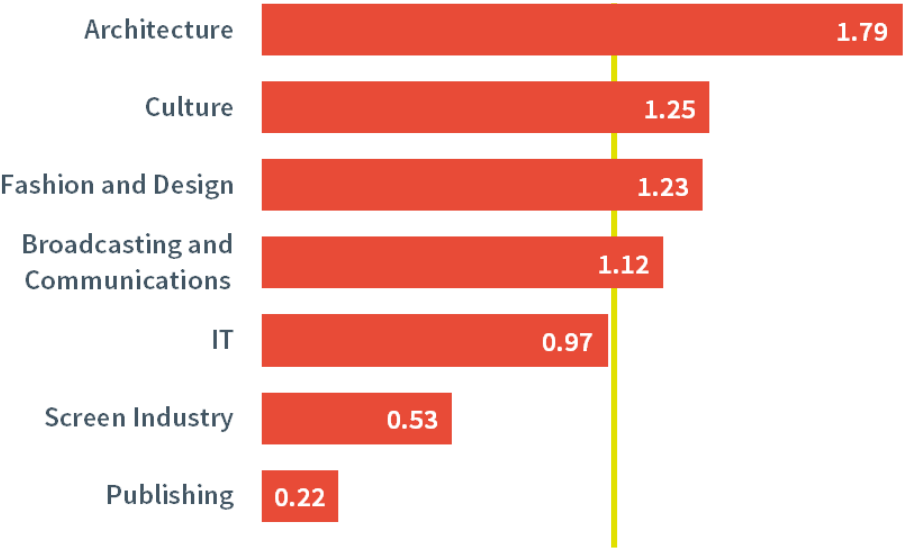
Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Analysis of Published Data | Subsector Specialisation and Growth

Employment concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- Apart from IT, Employment in York and North Yorkshire’s Creative Industries is concentrated primarily in the Architecture and Culture sub-themes (~28% combined). However, sectors in these sub-themes have seen negative annual growth rates between 2018 and 2023.
- Employment in the Fashion and Design sub-theme, much like in business counts, has seen substantial per annum growth in recent years and is emerging as an integral player of York and North Yorkshire’s Creative Industries.
- Employment in Broadcasting and Communications (-11.6%) and Publishing (-5.3%) has declined substantially over the few years, placing sectors in this sub-theme at risk.

	Architecture	Culture	Fashion and Design	Broadcasting and Communication	IT	Screen Industry	Publishing
CAGR	-3.6%	-2.3%	5.3%	-14.9%	-1.0%	0.2%	-5.3%
Total Employment	1,250	1,990	615	1,275	5,555	575	145
% of Creative Industries	11.0%	17.5%	5.4%	11.2%	48.7%	5.0%	1.3%
Status	Stagnant	Declining	Emerging	Declining	Stagnant	Stagnant	At Risk

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



Architecture



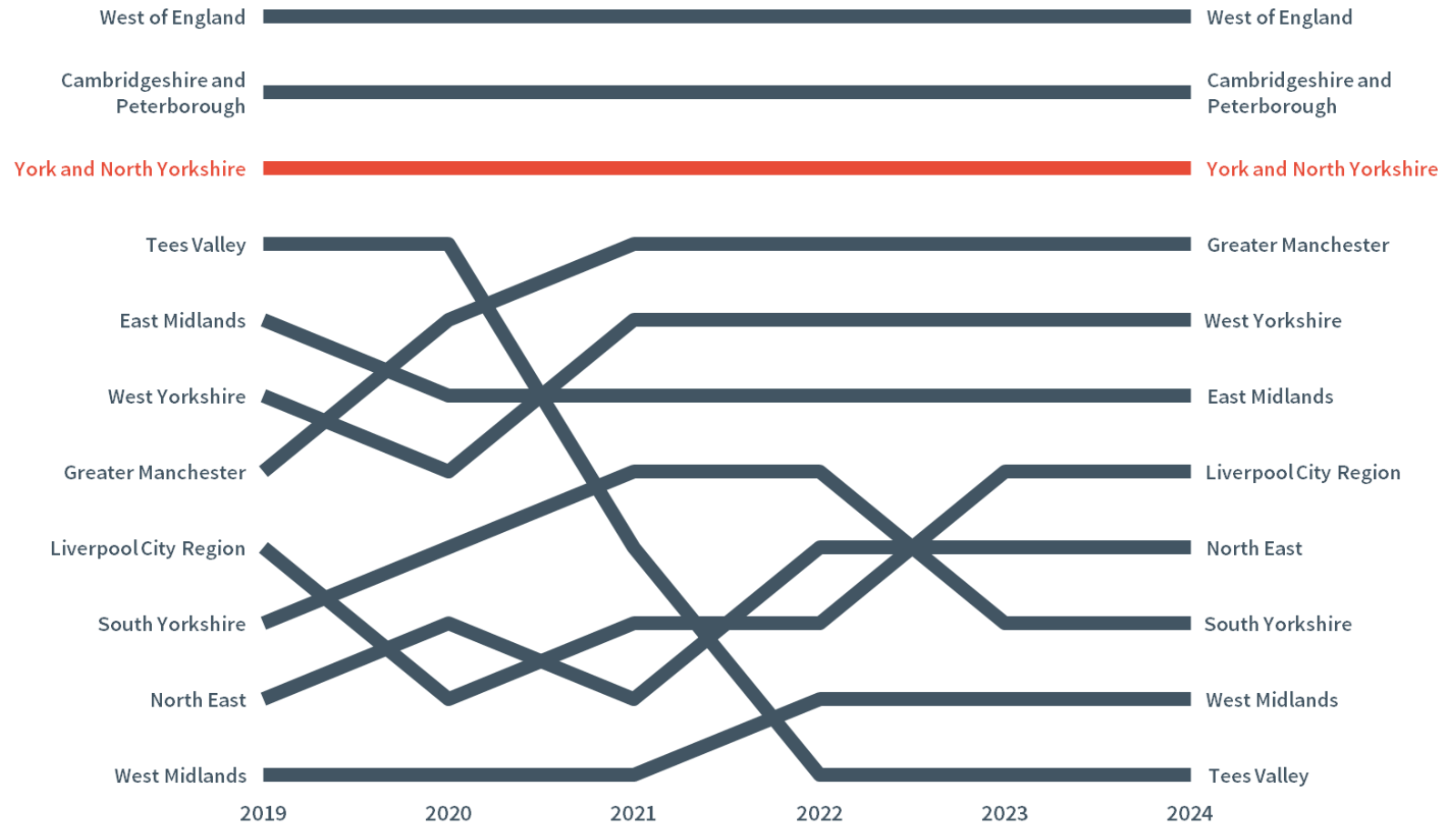
Analysis of Published Data | Architecture Businesses Overview

Key Takeaways

- York and North Yorkshire **has a significant concentration** of Architectural businesses, being the third-highest Combined Authorities with businesses in this sector.
- Architectural activities businesses make up just under 10% of York and North Yorkshire's Creative Industries, the **largest share among comparators**.

Combined Authority Area	Total Businesses (2024)	% of all Creative Businesses	Concentration
Cambridgeshire and Peterborough	250	6.9%	1.19
East Midlands	390	7.7%	0.90
Greater Manchester	590	6.3%	0.97
Liverpool City Region	215	6.9%	0.84
North East	270	7.2%	0.81
South Yorkshire	185	6.6%	0.77
Tees Valley	75	7.7%	0.69
West Midlands	400	6.3%	0.75
West Yorkshire	425	6.7%	0.93
West of England	325	6.5%	1.48
York and North Yorkshire	255	9.8%	1.12

Combined Authorities, ranked by business concentration in Architecture



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



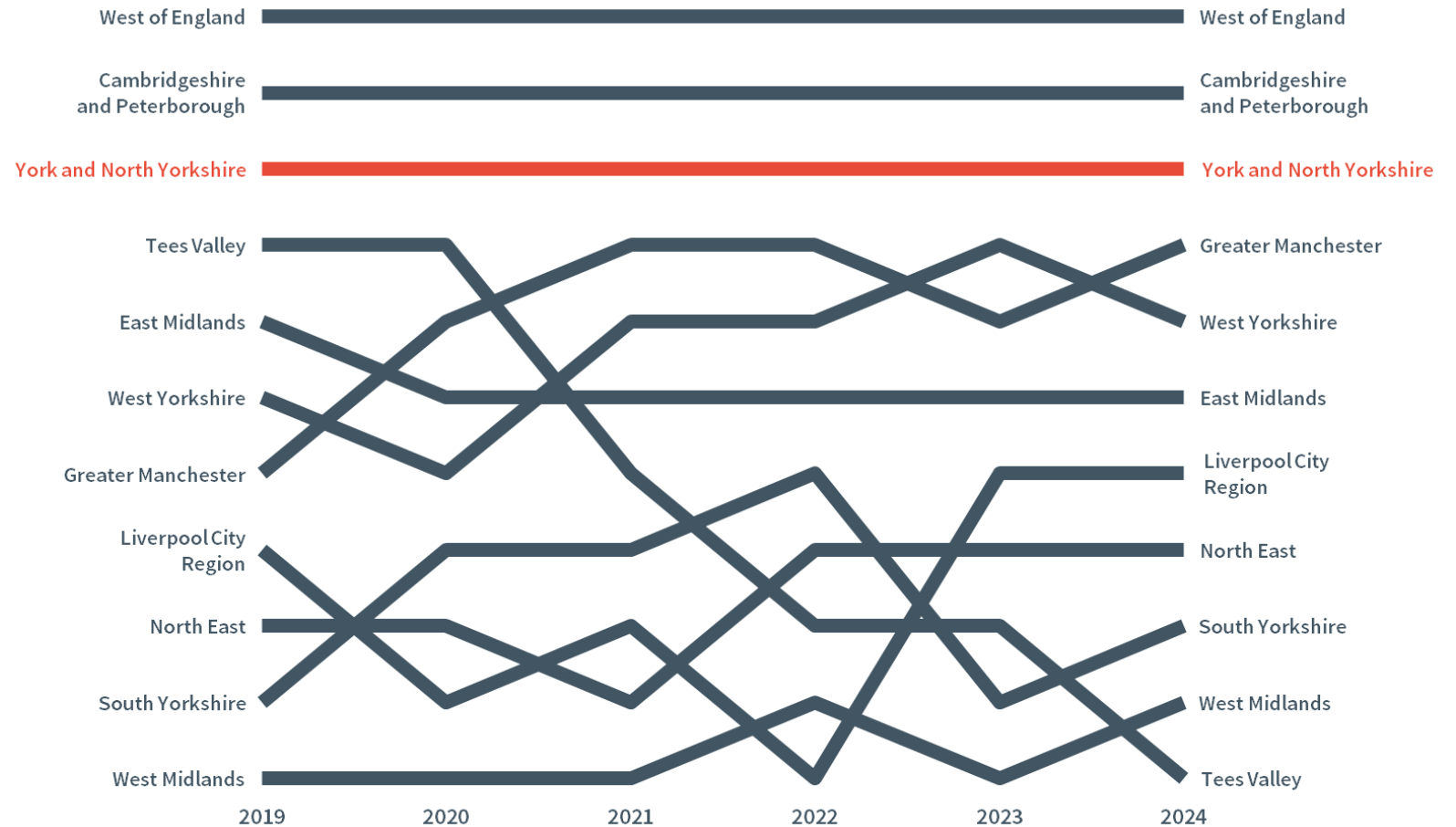
Analysis of Published Data | Architecture Businesses Composition

Key Takeaways

- Micro and Small Businesses form an **integral part** of York and North Yorkshire's Architectural services sector, with 98% of businesses being classified as Small or Micro.
- **Competition** from areas like Greater Manchester or West Yorkshire **may threaten** York and North Yorkshire's high-ranking specialisation in Architecture.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Architecture Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	250	100.0%	1.21
East Midlands	380	97.4%	0.88
Greater Manchester	575	97.5%	0.96
Liverpool City Region	215	100.0%	0.86
North East	215	79.6%	0.81
South Yorkshire	180	97.3%	0.76
Tees Valley	75	100.0%	0.71
West Midlands	400	100.0%	0.75
West Yorkshire	420	94.1%	0.93
West of England	315	96.2%	1.46
York and North Yorkshire	250	98.0%	1.10

Combined Authorities, ranked by business concentration (Small and Micro) in Architecture



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



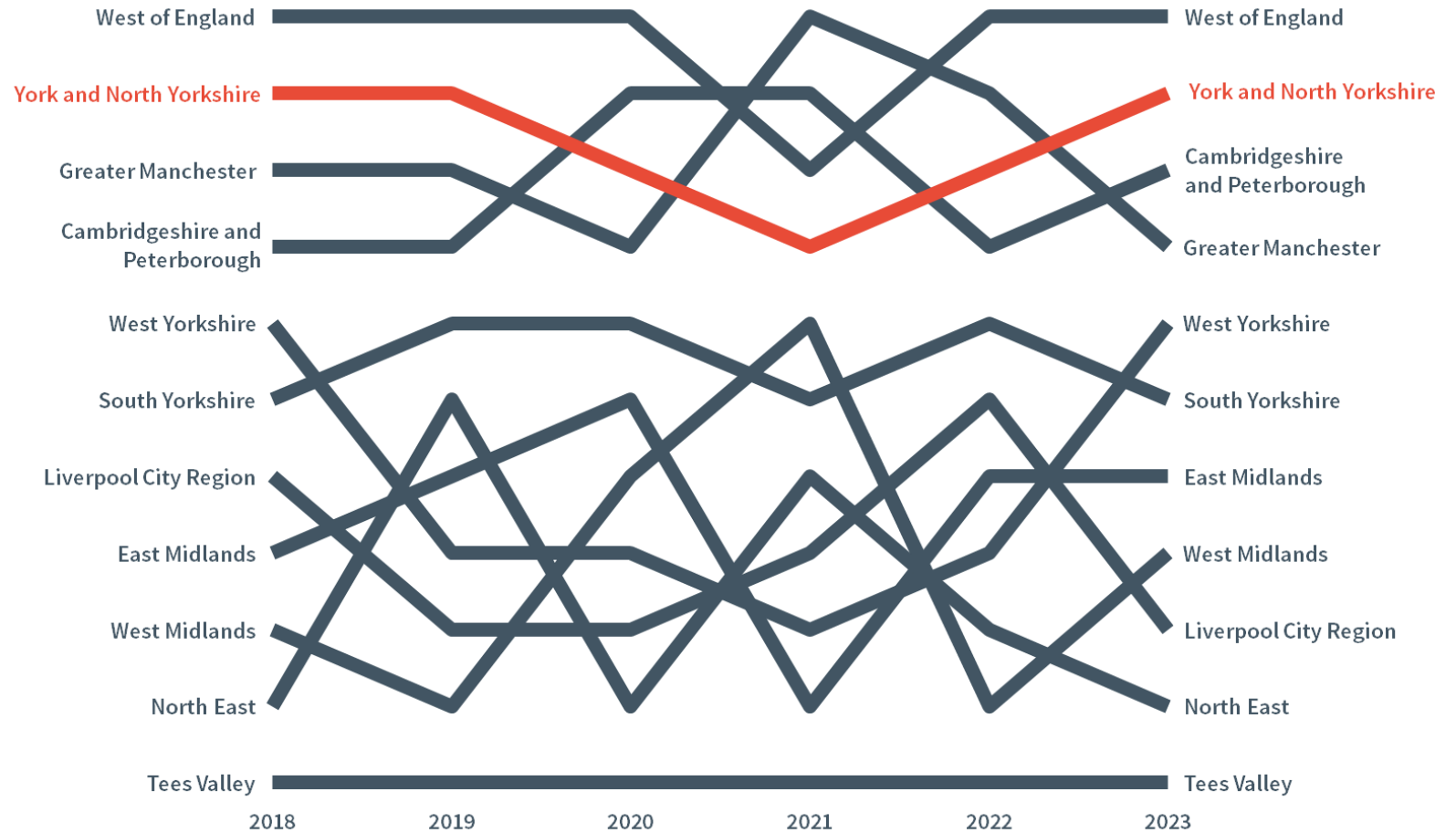
Analysis of Published Data | Architecture Employment Overview

Key Takeaways

- Employment in Architecture is also very concentrated in York and North Yorkshire, **ranking second** among all other Combined Authorities.
- Employment in Architecture makes up over 10% of all employment in York and North Yorkshire's Creative Industries.

Combined Authority Area	Employment	% of Creative Industries employment	Concentration
Cambridgeshire and Peterborough	1,250	5.5%	1.47
East Midlands	2,000	6.2%	1.16
Greater Manchester	3,500	5.4%	1.37
Liverpool City Region	1,000	6.0%	0.84
North East	1,250	4.6%	0.84
South Yorkshire	1,250	9.1%	1.21
Tees Valley	225	3.7%	0.47
West Midlands	2,250	6.0%	0.96
West Yorkshire	2,500	6.0%	1.28
West of England	1,250	6.8%	2.47
York and North Yorkshire	1,250	11.0%	1.71

Combined Authorities, ranked by employment concentration in the Creative Industries



Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Broadcasting and Communications



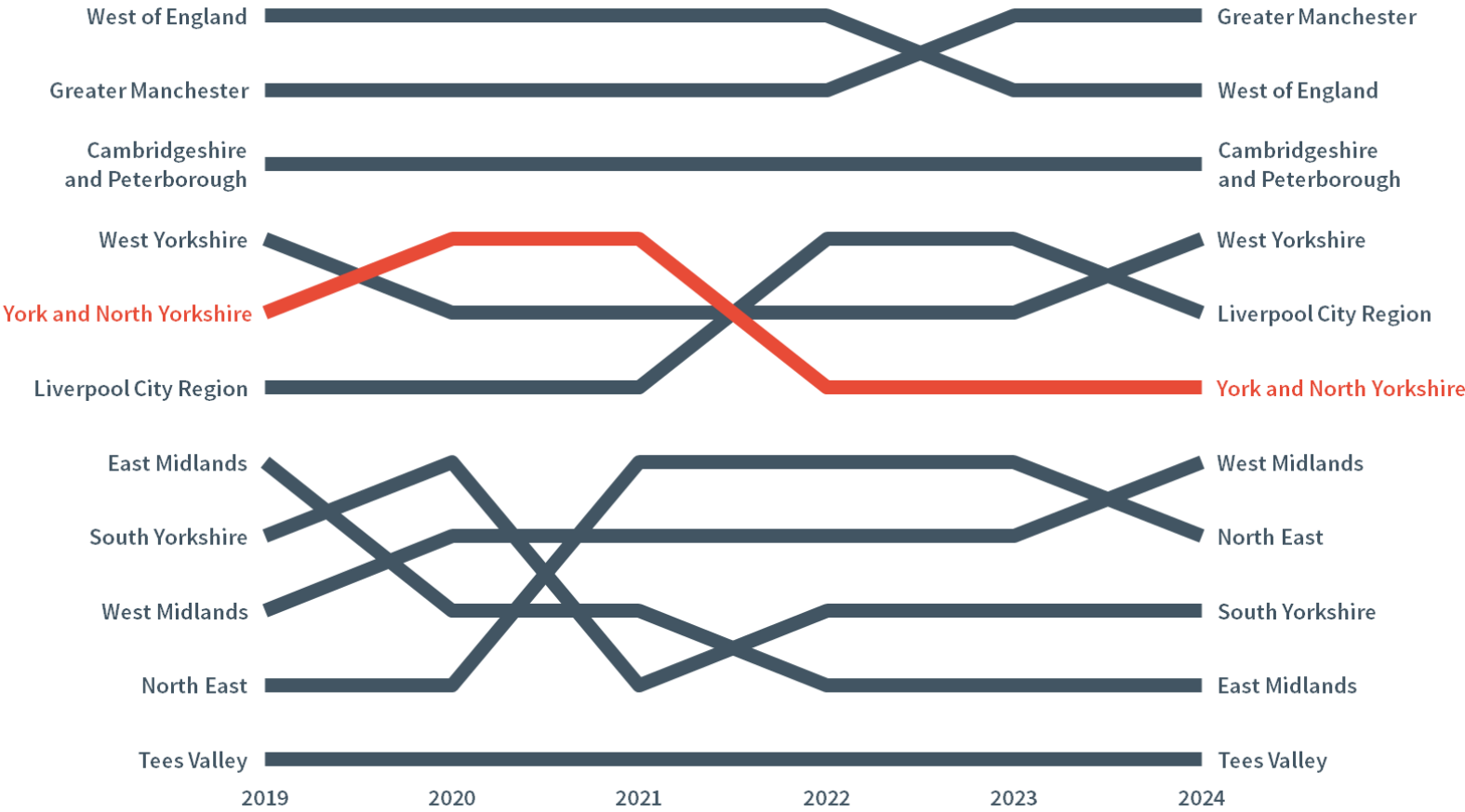
Analysis of Published Data | Broadcasting and Communications Business Overview

Key Takeaways

- Published data suggests that York and North Yorkshire has 285 businesses in Broadcasting and Communications, representing over 10.9% of all businesses in the Creative Industries.
- Whilst this ranks York and North Yorkshire sixth out of all combined authorities, the reality is that only two combined authorities have a concentration above the national average.

Combined Authority Area	Total Businesses (2024)	% of all Creative Industries	Concentration
Cambridgeshire and Peterborough	305	8.4%	0.97
East Midlands	485	9.6%	0.75
Greater Manchester	1,295	13.8%	1.43
Liverpool City Region	350	11.3%	0.92
North East	400	10.7%	0.80
South Yorkshire	280	9.9%	0.78
Tees Valley	115	11.7%	0.71
West Midlands	645	10.2%	0.81
West Yorkshire	735	11.6%	0.92
West of England	465	9.4%	1.42
York and North Yorkshire	285	10.9%	0.84

Combined Authorities, ranked by business concentration in the Broadcasting and Communications



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Broadcasting and Communications Businesses Composition

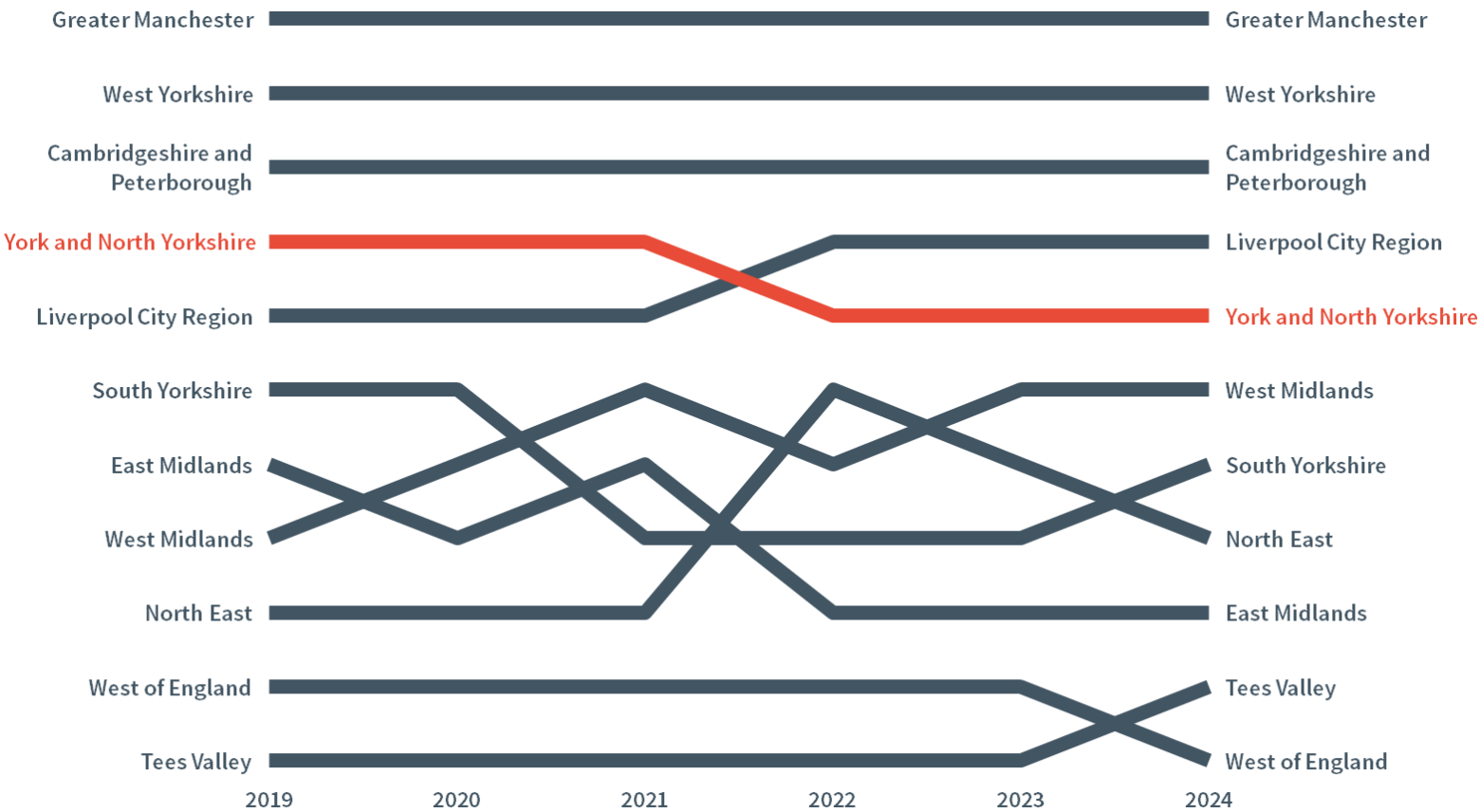
Key Takeaways

- Small and micro businesses in the Broadcasting and Communications sectors make up 96.5% of all businesses in these sectors. **This is in line with the average in these sectors**, across all Combined Authorities.
- Only two Combined Authorities (Greater Manchester and West Yorkshire) has a concentration above the national average on this measure.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Broadcasting and Comms	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	300	98.4%	0.98
East Midlands	470	96.9%	0.74
Greater Manchester	1,270	98.1%	1.43
Liverpool City Region	335	95.7%	0.90
North East	360	90.0%	0.74
South Yorkshire	275	98.2%	0.78
Tees Valley	110	95.7%	0.70
West Midlands	630	97.7%	0.81
West Yorkshire	715	97.3%	1.07
West of England	455	97.8%	0.68
York and North Yorkshire	275	96.5%	0.86

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

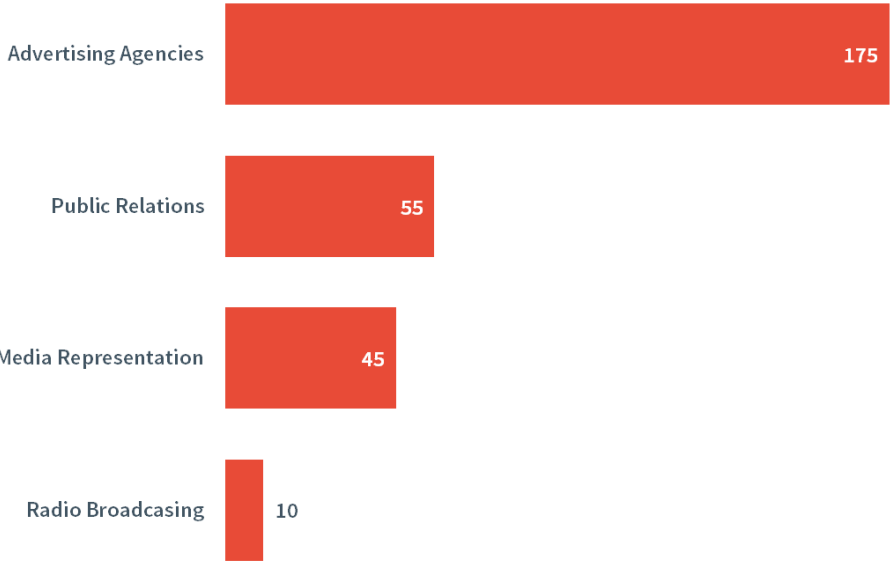
Combined Authorities, ranked by business concentration (Small and Micro) in Broadcasting and Communications





Analysis of Published Data | Broadcasting and Communications Subsector Business Specialisation and Growth

Business Counts of Broadcasting and Communications in York and North Yorkshire



Key Takeaways

- Overall, **no subsectors** within Broadcasting and Communications have specialisation greater than the Great Britain (less London) level. However, **Media Representation** has a specialisation approaching similar levels to the Great Britain (less London) specialisation, as well as a high CAGR (2.4%).
- **Advertising Agencies** are one of the **largest sub-sectors** within Broadcasting and Communications in York and North Yorkshire with 175 local business units. However, it is also the only sub-sector with a **negative growth rate** (-1.1%).
- With low business concentration, business counts and negative annual growth, the Publishing sub-theme contains many Creative Industries sub-sectors that are at risk.

	Advertising Agencies	Public Relations	Media Representation	Radio Broadcasting
CAGR	-1.1%	0.0%	2.4%	0.0%
Total Businesses	175	55	45	10
% of Broadcasting and Comms	30.2%	9.5%	7.8%	1.7%
Specialisation	0.82	0.81	0.96	0.85
Status	Stable	Stable	Emerging	Stable

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Broadcasting and Communications Employment Overview

Key Takeaways

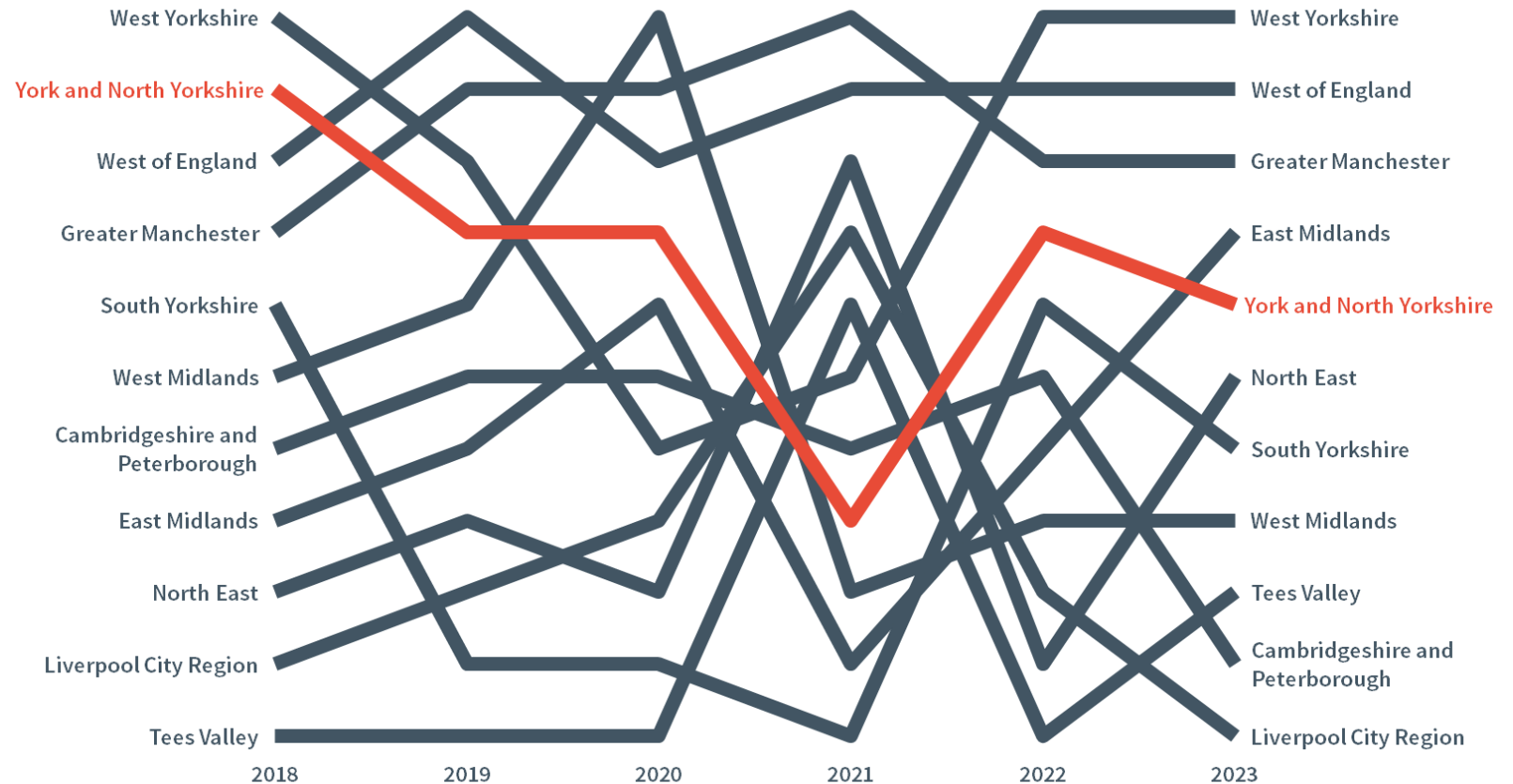
- Similarly to Business Counts, York and North Yorkshire has a **lower proportion of total employment** in the Creative Industries than some other Combined Authorities.
- Nevertheless, York and North Yorkshire has a concentration nearing 1.0, indicating **concentration of Employment is similar to that of Great Britain**, excluding London.

Combined Authority Area	Employment	% of Creative Industries Employment	Concentration
Cambridgeshire and Peterborough	850	3.13%	0.57
East Midlands	4,000	12.45%	1.33
Greater Manchester	7,800	11.96%	1.75
Liverpool City Region	1,075	6.45%	0.52
North East	2,525	9.27%	0.98
South Yorkshire	1,550	11.31%	0.86
Tees Valley	515	8.55%	0.62
West Midlands	3,400	9.02%	0.83
West Yorkshire	7,225	17.39%	2.12
West of England	3,325	9.04%	1.89
York and North Yorkshire	1,275	11.18%	1.00

Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.

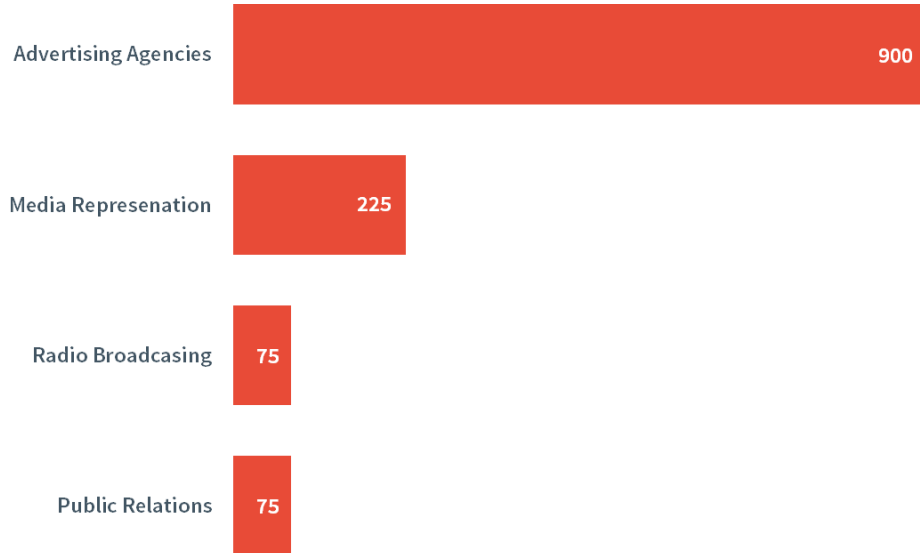
Combined Authorities, ranked by employment concentration in Broadcasting and Communications





Analysis of Published Data | Broadcasting and Communications Employment Subsector Specialisation and Growth

Employment in Broadcasting and Communications in York and North Yorkshire



Key Takeaways

- Employment in Broadcasting and Communications is, in general, declining. Most sub-sectors have seen negative double-digit growth in employment and are **at risk**.
- Advertising Agencies and Media Representation are the **largest** and **most-specialised** sub-sectors within Broadcasting and Communications' employment, however both have seen **negative growth** rates between 2018 and 2023.
- Despite an overall decline in employment within Broadcasting and Communications sub-sectors, Motion Picture Production and Photography have seen growth.

	Advertising Agencies	Media Representation	Public Relations	Radio Broadcasting
CAGR	-12.5%	-8.5%	-24.2%	-30.1%
Total Employment	900	225	75	75
% of Broadcasting and Comms	48.7%	12.2%	4.1%	4.1%
Specialisation	1.08	1.91	0.48	0.96
Status	Declining	Declining	At Risk	At Risk

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



Culture



Analysis of Published Data | Culture Businesses Overview

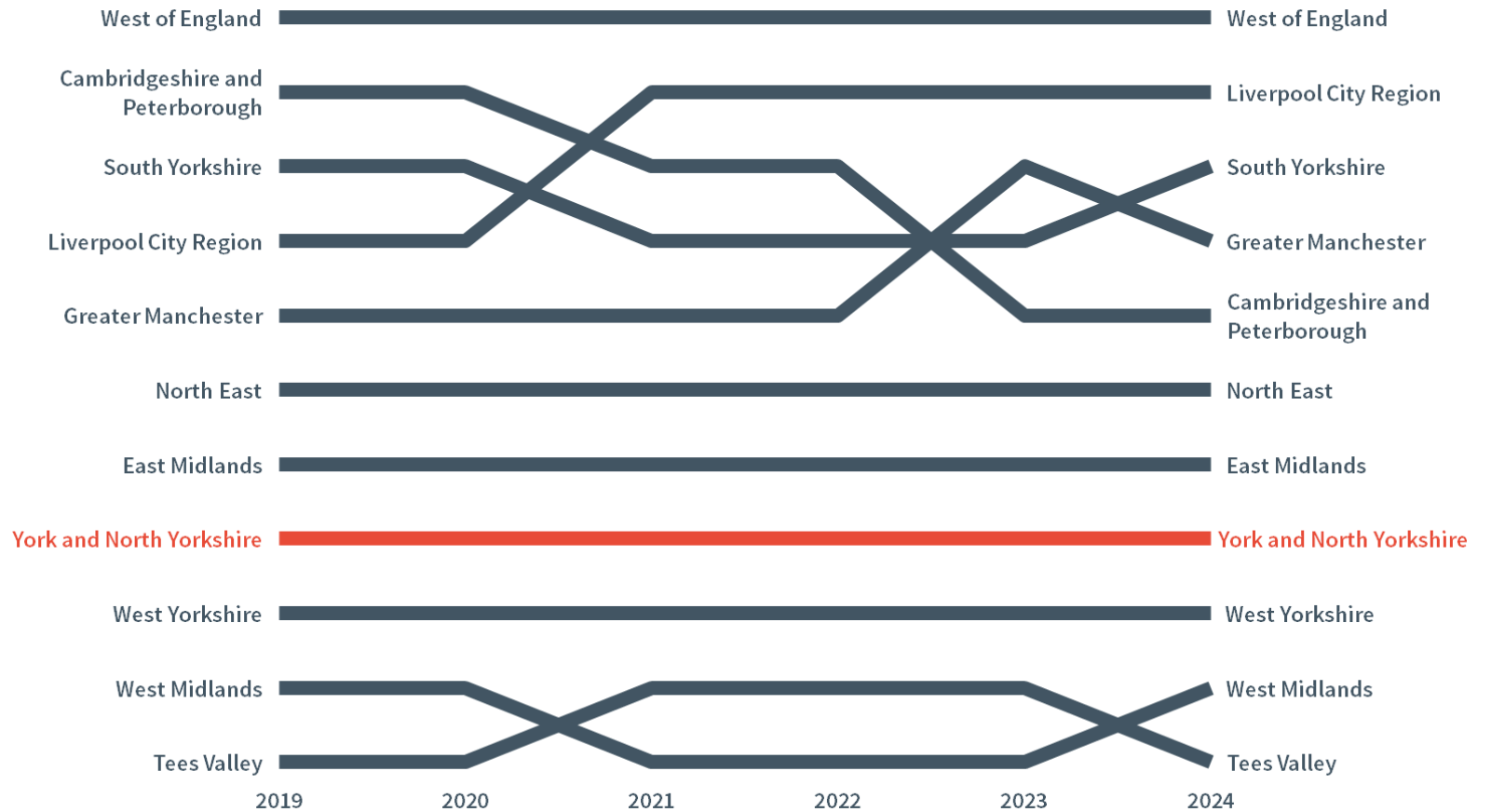
Key Takeaways

- Published data identifies 360 businesses as being within the culture sector.
- This is somewhat below the national average in terms of concentration overall, however, as we show in later slides, this masks some parts of the culture sector that have a very strong presence.

Combined Authority Area	Total Businesses (2024)	% of all Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	425	11.8%	0.96
East Midlands	700	13.9%	0.77
Greater Manchester	1,285	13.7%	1.01
Liverpool City Region	595	19.2%	1.11
North East	620	16.6%	0.89
South Yorkshire	520	18.5%	1.03
Tees Valley	140	14.3%	0.62
West Midlands	745	11.8%	0.66
West Yorkshire	815	12.9%	0.73
West of England	730	14.7%	1.59
York and North Yorkshire	360	13.8%	0.75

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in the Creative Industries





Analysis of Published Data | Culture Businesses Composition

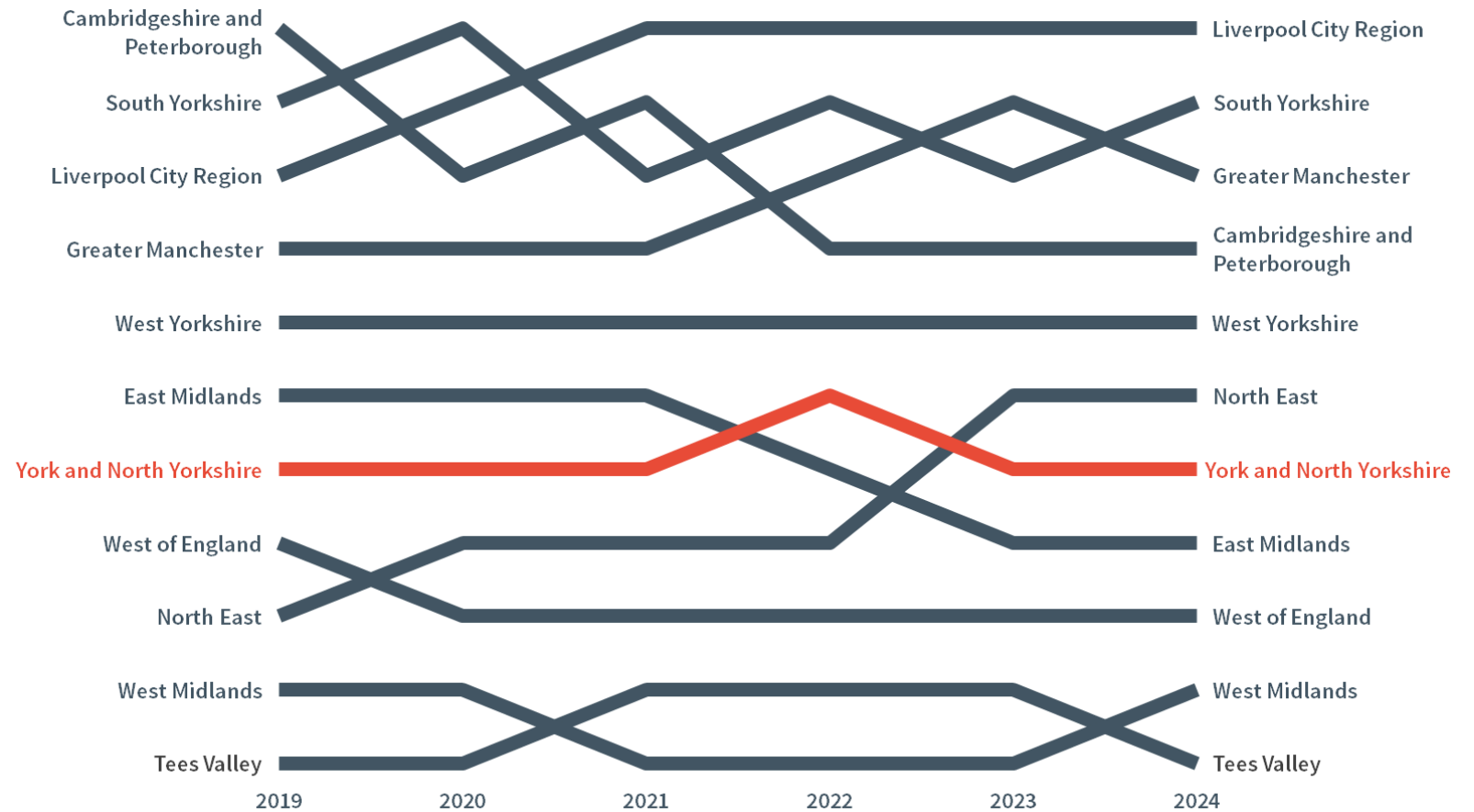
Key Takeaways

- The vast majority of these outfits are classed as micro and small businesses.
- Interestingly, focussing on these micro and small businesses changes the CA rankings – for example, the West of England moves from the top ranked CA when considering all businesses, to 9th on this measure. Y&NY's rank moves from 8th to 7th.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Culture Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	415	97.7%	0.96
East Midlands	685	97.9%	0.76
Greater Manchester	1,265	98.4%	1.01
Liverpool City Region	580	97.5%	1.11
North East	580	93.6%	0.84
South Yorkshire	525	100.0%	1.06
Tees Valley	140	100.0%	0.64
West Midlands	725	97.3%	0.66
West Yorkshire	805	98.8%	0.86
West of England	715	98.0%	0.76
York and North Yorkshire	355	98.6%	0.79

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

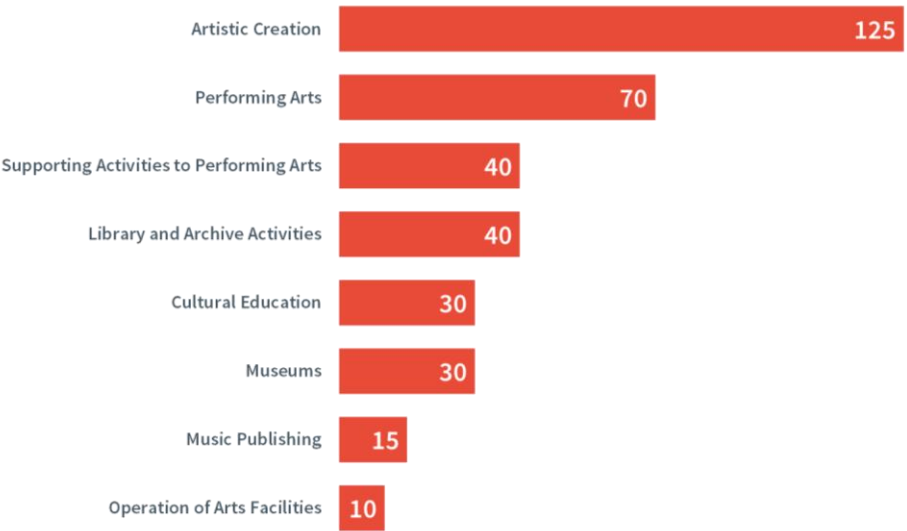
Combined Authorities, ranked by business concentration (Small and Micro) in the Culture theme





Analysis of Published Data | Subsector Specialisation and Growth

Businesses by Culture sub-sectors



Key Takeaways

- York and North Yorkshire has a large and vibrant Artistic Creation sector, with 125 registered businesses, representing 24.7% of the culture sector.
- The museums sector is almost 50% more concentrated than the national average. However, the data suggests that there has been some contraction in recent years.
- Cultural education also has an above average concentration in the area, and it has been growing strongly in recent years.

	Artistic Creation	Performing Arts	Supporting Activities to Performing Arts	Library and Archive Activities	Cultural Education	Museums	Music Publishing	Operation of Arts Facilities
CAGR	0.0%	-1.4%	5.9%	2.7%	8.5%	-4.5%	-5.6%	0.0%
Total Businesses	125	70	40	40	30	30	15	10
% of Culture Businesses	34.7%	19.4%	11.1%	11.1%	8.3%	8.3%	4.2%	2.8%
Specialisation	0.77	0.66	0.66	0.91	1.03	1.49	0.35	0.74
Status	Stable	Stagnant	Emerging	Emerging	Driver	Driver	At Risk	Stagnant

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Culture Employment Overview

Key Takeaways

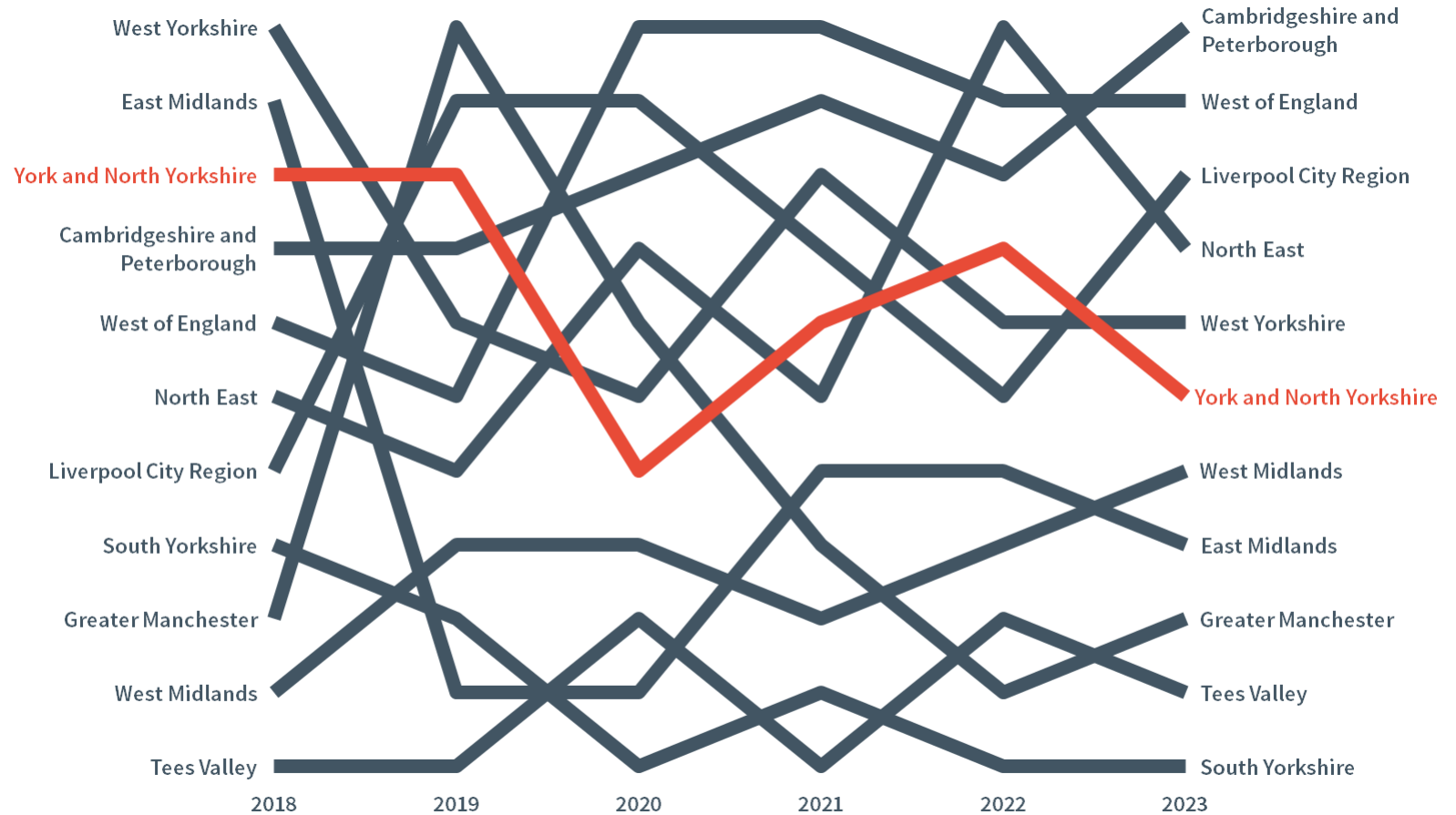
- In terms of employment, the concentration of the sector in York & North Yorkshire is close to the national average, being only 5% more concentrated.
- York and North Yorkshire ranks sixth for Culture employment, whilst ranking eighth for business counts and seventh for micro and small business counts.

Combined Authority Area	Employment	% of Creative Industries Employment	Concentration
Cambridgeshire and Peterborough	3,850	14.2%	1.75
East Midlands	4,075	12.7%	0.92
Greater Manchester	6,000	9.2%	0.91
Liverpool City Region	2,630	22.8%	1.24
North East	4,440	16.3%	1.16
South Yorkshire	1,650	12.0%	0.62
Tees Valley	765	12.7%	0.62
West Midlands	6,000	15.9%	0.99
West Yorkshire	5,500	13.2%	1.09
West of England	3,875	10.5%	1.48
York and North Yorkshire	1,990	17.5%	1.05

Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.

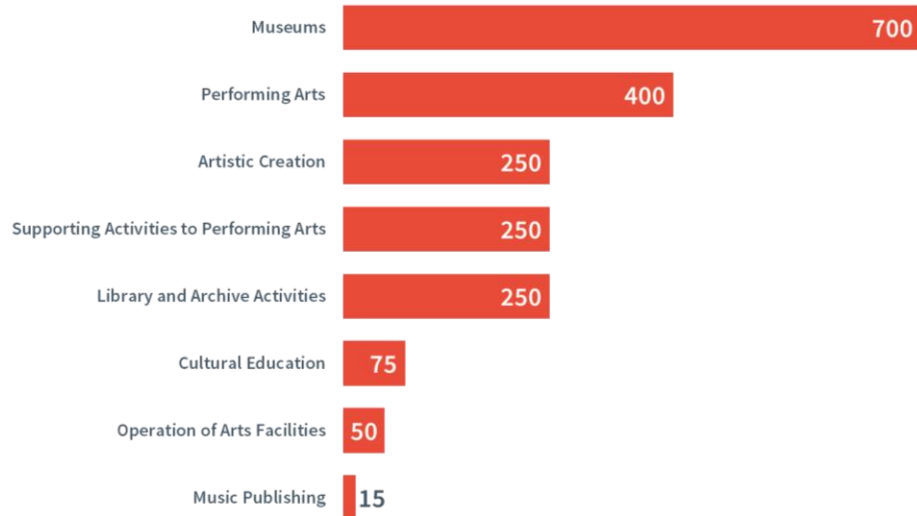
Combined Authorities, ranked by employment concentration in Culture sub-sectors





Analysis of Published Data | Culture Subsector Specialisation and Growth

Business concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- The employment picture is similar to that of businesses, with employment in Artistic Creation ranking third-highest in York and North Yorkshire. However, Museums are by far the largest component of the sub-sector, and with a concentration over double that of the national average.
- The employment data also reveals that supporting activities to performing arts (1.91) are also highly concentrated, at nearly double the national average, albeit with considerable decline since before the pandemic.
- The Operation of Arts Facilities is relatively small in outright employment numbers but has been growing at over 7% per annum since the pandemic.

	Artistic Creation	Performing Arts	Supporting Activities to Performing Arts	Library and Archive Activities	Cultural Education	Museums	Music Publishing	Operation of Arts Facilities
CAGR	3.1%	-4.4%	-9.0%	0.0%	0.0%	3.1%	-9.7%	7.4%
Total Employment	250	400	250	250	75	700	15	50
% of Culture Employment	12.6%	20.1%	12.6%	12.6%	3.8%	35.2%	0.8%	2.5%
Specialisation	1.01	1.13	1.91	0.80	0.88	2.44	0.23	0.27
Status	Driver	Declining	Declining	Stagnant	Stagnant	Driver	At Risk	Emerging

Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Sector Deep Dive: 59.20 Sound Recording & Music Production



Analysis of Published Data | Business Overview

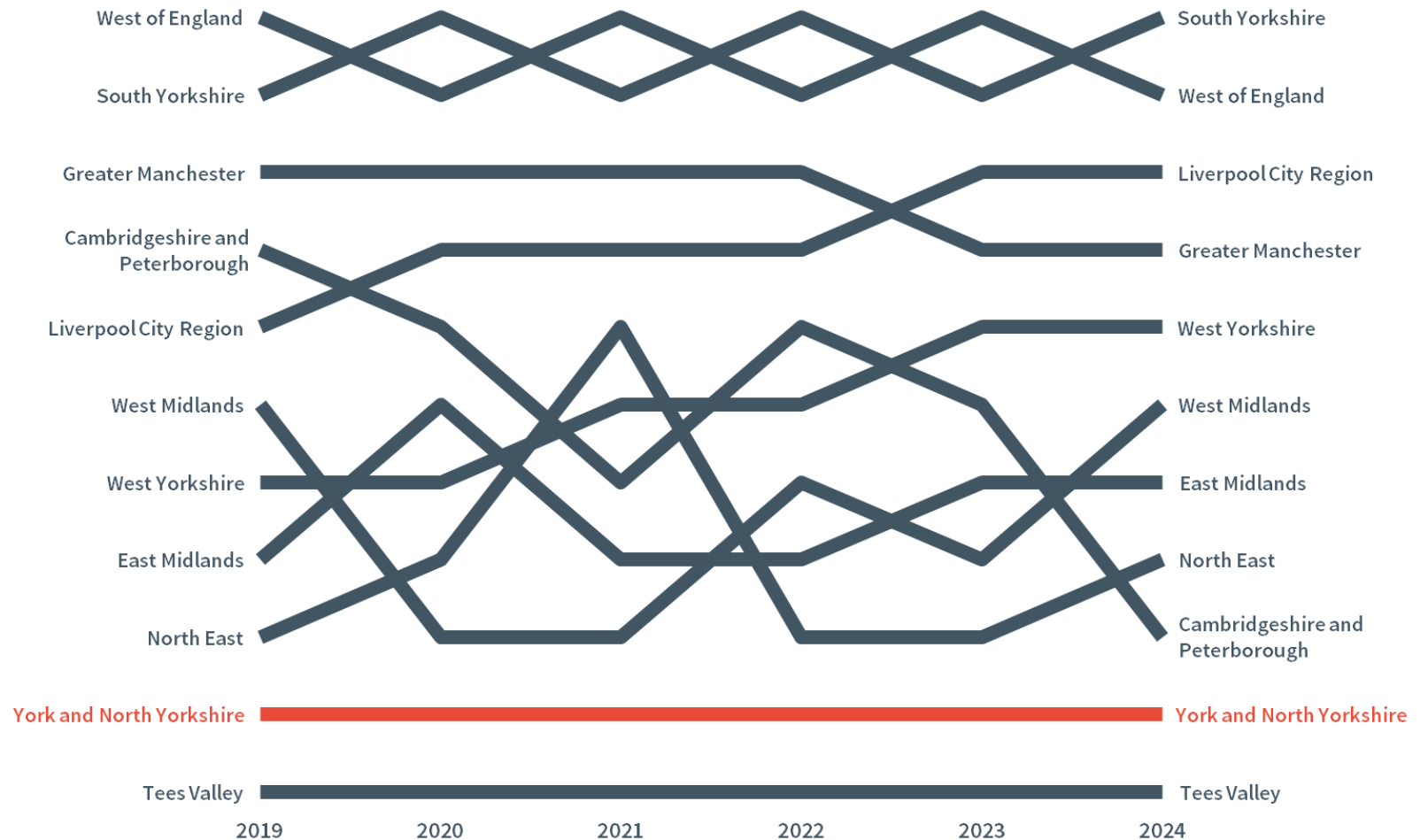
Key Takeaways

- Overall, there are **very few businesses** in Sound Recording & Music Production in York and North Yorkshire. This is reflected also in the **very low concentration** of businesses in this sector.
- York and North Yorkshire ranks 10th among Combined Authorities.

Combined Authority Area	Total Businesses (2024)	% of Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	20	0.6%	0.51
East Midlands	55	1.1%	0.68
Greater Manchester	140	1.5%	1.24
Liverpool City Region	65	2.1%	1.36
North East	40	1.1%	0.64
South Yorkshire	95	3.4%	2.11
Tees Valley	5	0.5%	0.25
West Midlands	75	1.2%	0.75
West Yorkshire	75	1.2%	0.88
West of England	85	1.7%	2.08
York and North Yorkshire	15	0.6%	0.35

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in Sound Recording & Music Production





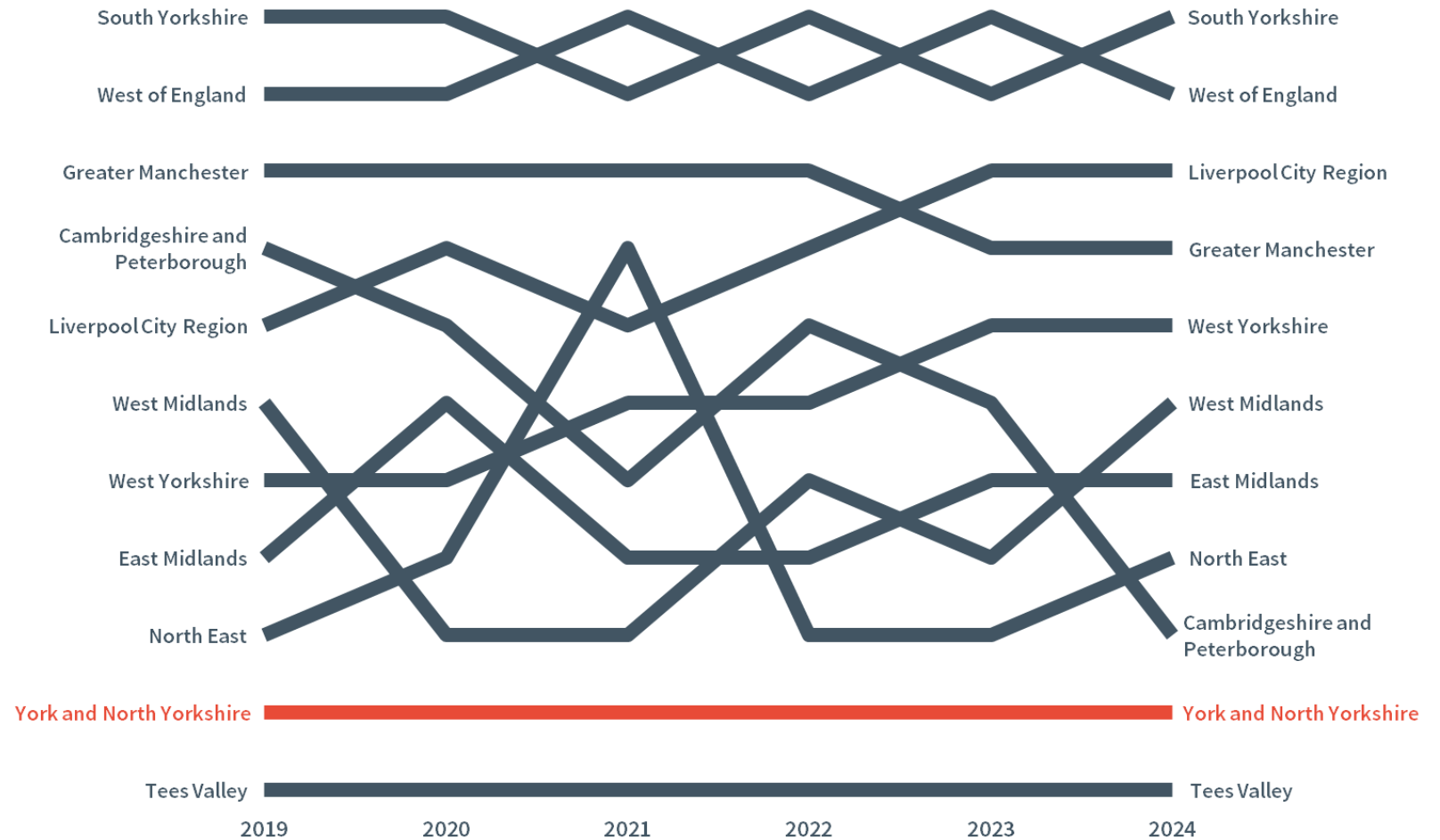
Analysis of Published Data | Business Overview

Key Takeaways

- Despite the low business count in Sound Recording & Music Production, **all** of York and North Yorkshire's businesses in the sector **are small or micro businesses**.
- York and North Yorkshire ranks 10th among Combined Authorities.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all 60.20 Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	20	100.0%	0.51
East Midlands	55	100.0%	0.68
Greater Manchester	60	42.9%	1.20
Liverpool City Region	10	15.4%	1.28
North East	10	25.0%	0.65
South Yorkshire	20	21.1%	2.25
Tees Valley	5	100.0%	0.25
West Midlands	30	40.0%	0.76
West Yorkshire	30	40.0%	0.89
West of England	20	23.5%	2.10
York and North Yorkshire	15	100.0%	0.35

Combined Authorities, ranked by business concentration (Small and Micro) in Sound Recording & Music Production



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



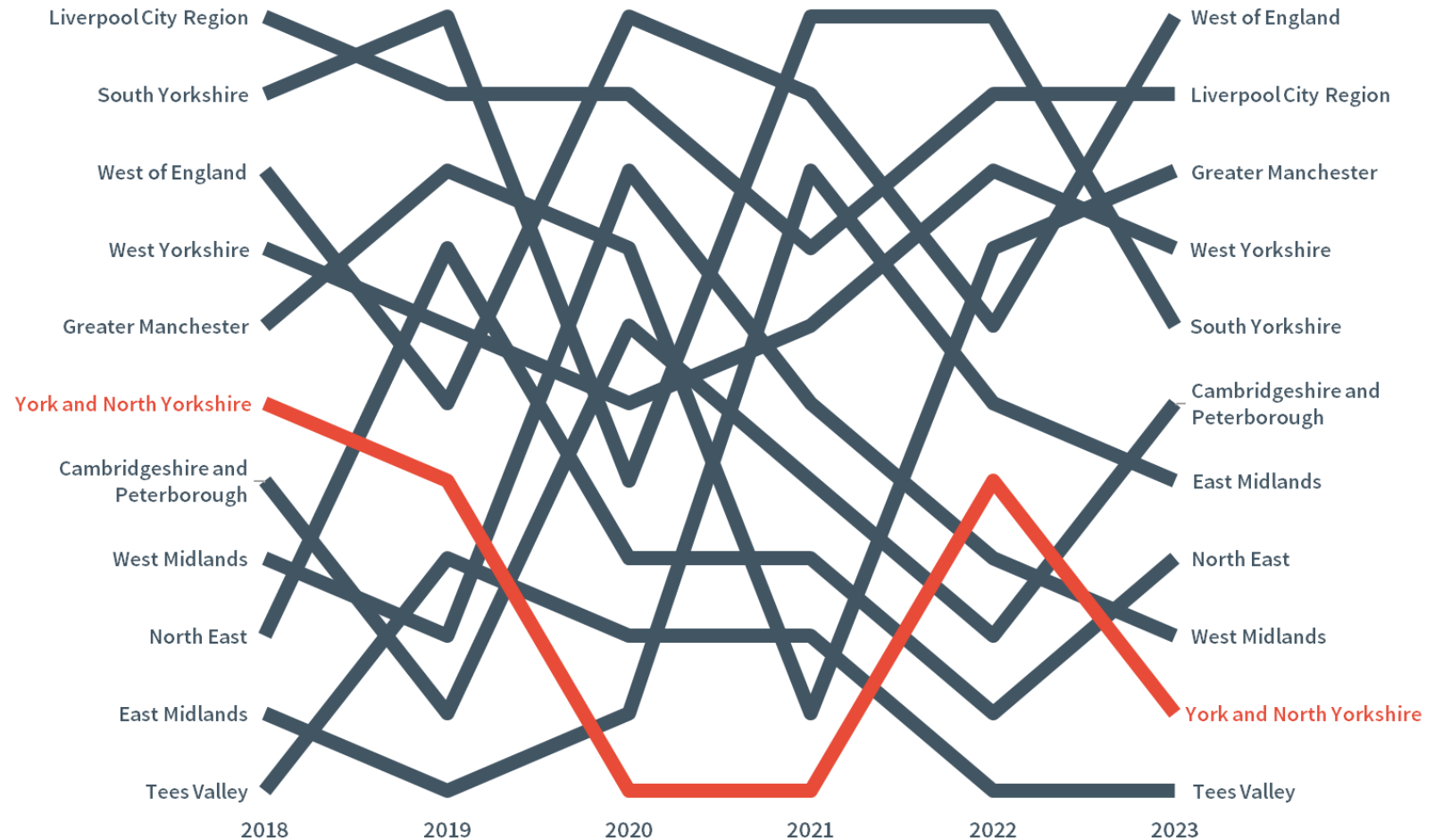
Analysis of Published Data | Employment

Key Takeaways

- In 2023 **15 people** are employed in this sector in York and North Yorkshire, **down from 75 people** in 2019.
- Overall, employment in Sound Recording & Music Production only makes up 0.13% of all Creative Industries' employment in York and North Yorkshire.

Combined Authority Area	Total Employees (2023)	% of all Creative Industry employment	Concentration of Employment
Cambridgeshire and Peterborough	75	0.28%	0.99
East Midlands	100	0.31%	0.65
Greater Manchester	350	0.54%	1.53
Liverpool City Region	300	1.80%	2.83
North East	40	0.15%	0.30
South Yorkshire	100	0.73%	1.08
Tees Valley	5	0.08%	0.12
West Midlands	50	0.13%	0.24
West Yorkshire	75	0.18%	1.32
West of England	400	1.09%	4.43
York and North Yorkshire	15	0.13%	0.23

Combined Authorities, ranked by employment in Sound Recording & Music Production



Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Fashion and Design



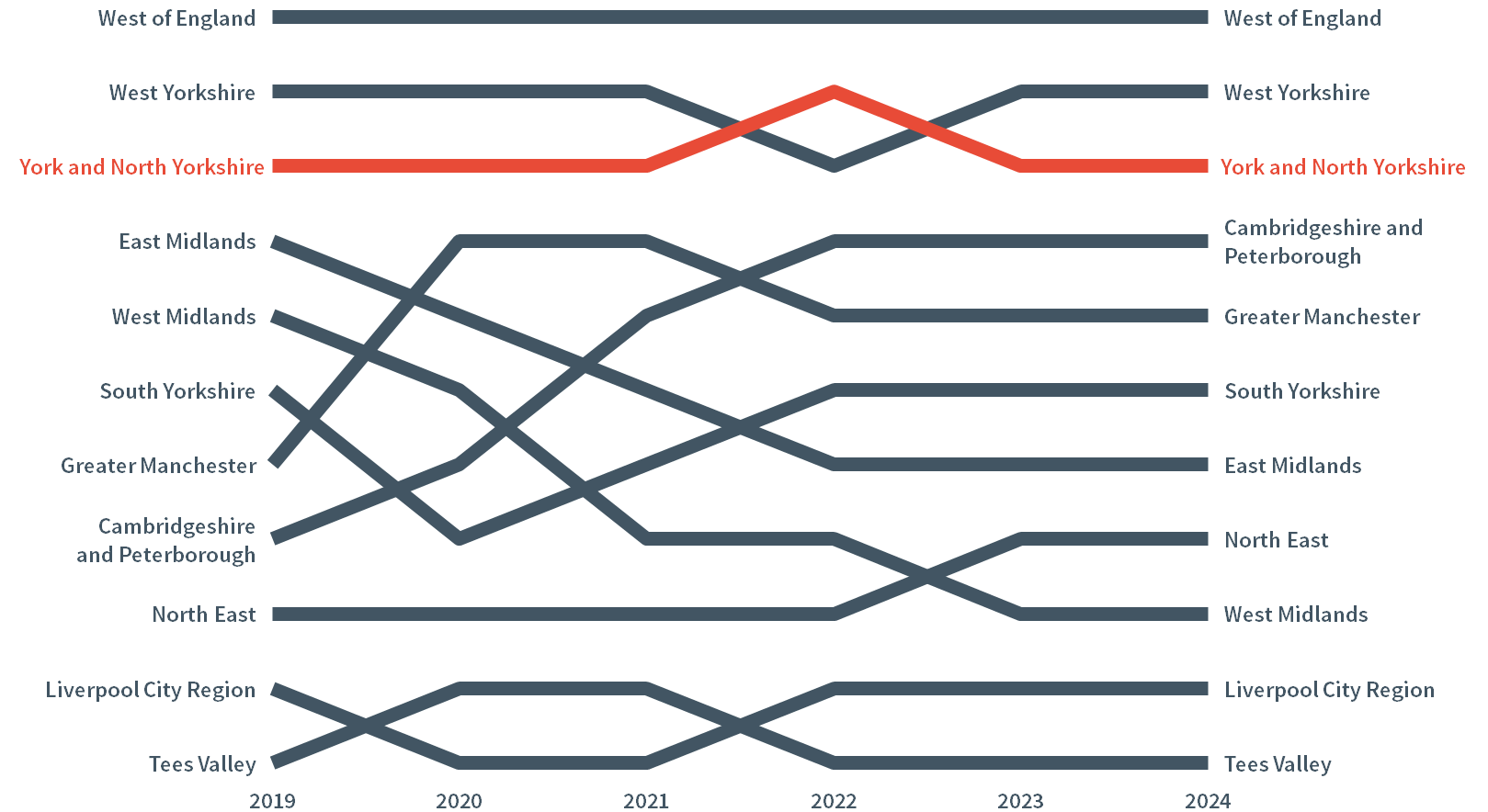
Analysis of Published Data | Fashion and Design Businesses Overview

Key Takeaways

- The fashion and design sector has 315 registered businesses, which makes its **concentration on par** with the national average (1.00).
- The CA area ranks third on this measure of concentration out of all CAs, and is only marginally behind West Yorkshire.

Combined Authority Area	Total Businesses (2024)	% Creative Industries	Concentration
Cambridgeshire and Peterborough	280	7.8%	0.96
East Midlands	505	14.0%	0.84
Greater Manchester	750	20.8%	0.89
Liverpool City Region	240	6.7%	0.68
North East	385	10.7%	0.83
South Yorkshire	290	8.0%	0.87
Tees Valley	95	2.6%	0.63
West Midlands	585	16.2%	0.79
West Yorkshire	655	18.1%	1.03
West of England	485	13.4%	1.60
York and North Yorkshire	315	8.7%	1.00

Combined Authorities, ranked by business concentration in Fashion and Design



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Fashion and Design Businesses Composition

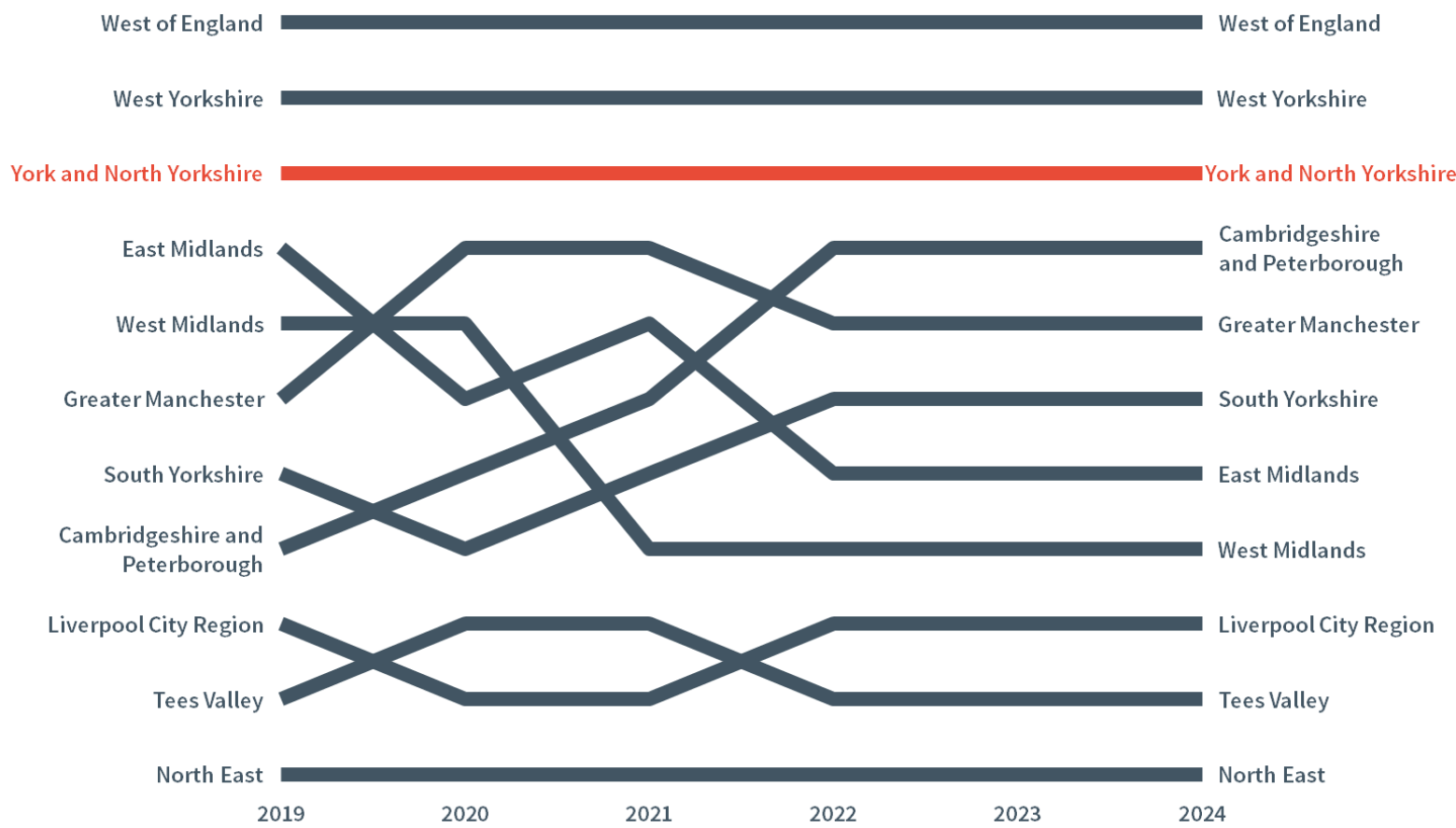
Key Takeaways

- Looking at micro and small businesses, York and North Yorkshire has a comparable level of specialisation compared to the national average.
- Similarly to other Combined Authorities, small and micro businesses **make up an overwhelming share** of York and North Yorkshire's Fashion and Design business composition.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Fashion and Design Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	275	98.2%	0.95
East Midlands	500	99.0%	0.84
Greater Manchester	745	99.3%	0.89
Liverpool City Region	240	100.0%	0.69
North East	240	62.3%	0.52
South Yorkshire	290	100.0%	0.88
Tees Valley	95	100.0%	0.65
West Midlands	585	100.0%	0.80
West Yorkshire	650	99.2%	1.04
West of England	475	97.9%	1.58
York and North Yorkshire	310	98.4%	0.98

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

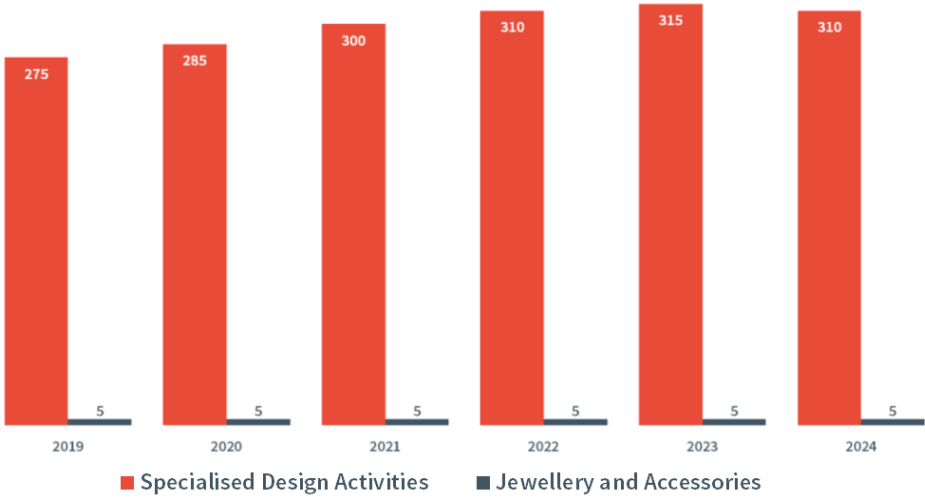
Combined Authorities, ranked by business concentration (Small and Micro) in Fashion and Design





Analysis of Published Data | Fashion and Design Subsector Specialisation and Growth

Fashion and Design Businesses in York and North Yorkshire



Key Takeaways

- York and North Yorkshire has seen a **steady increase in specialised design businesses** (which includes non-portrait specialist photography and film processing), which dominates Fashion and Design business activity in the are (98.4%). There is **some local specialisation** in this sub-sector (1.04).
- The business count of Jewellery and Accessories manufacturing makes up a **negligible portion** of Fashion and Design (1.6%) and has a **very low concentration** (0.28). The business count has remained at 5 between 2019 and 2024.

	Specialised Design Activities	Jewellery and Accessories
CAGR	2.4%	0.0%
Total Employment	310	5
% of Fashion and Design	98.4%	1.6%
Specialisation	1.04	0.28
Status	Driver	Stagnant

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Fashion and Design Employment Overview

Key Takeaways

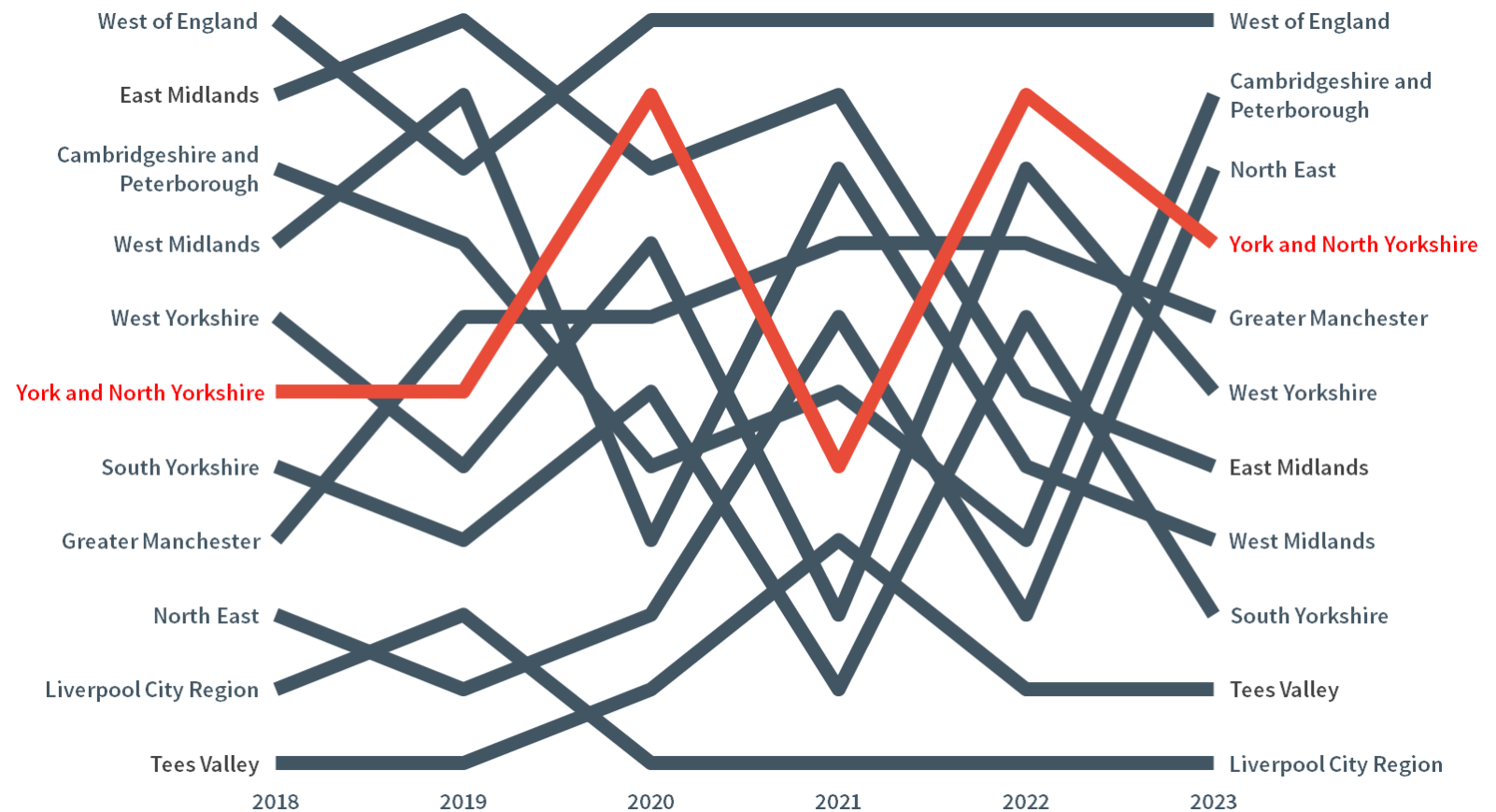
- York and North Yorkshire has 615 people employed in the fashion and design sector, which is close to the national average in terms of concentration.
- The CA area ranks fourth out of all of the CAs on this measure, and is well in excess of large CA areas including Liverpool City Region and Greater Manchester.

Combined Authority Area	Employment	% of Creative Industries Employment	Concentration
Cambridgeshire and Peterborough	1,005	3.7%	1.28
East Midlands	1,350	4.2%	0.85
Greater Manchester	2,100	3.2%	0.89
Liverpool City Region	630	3.8%	0.58
North East	1,300	4.8%	0.95
South Yorkshire	725	5.3%	0.76
Tees Valley	270	4.5%	0.62
West Midlands	1,750	4.6%	0.81
West Yorkshire	1,600	3.9%	0.89
West of England	1,525	4.1%	1.64
York and North Yorkshire	615	5.4%	0.91

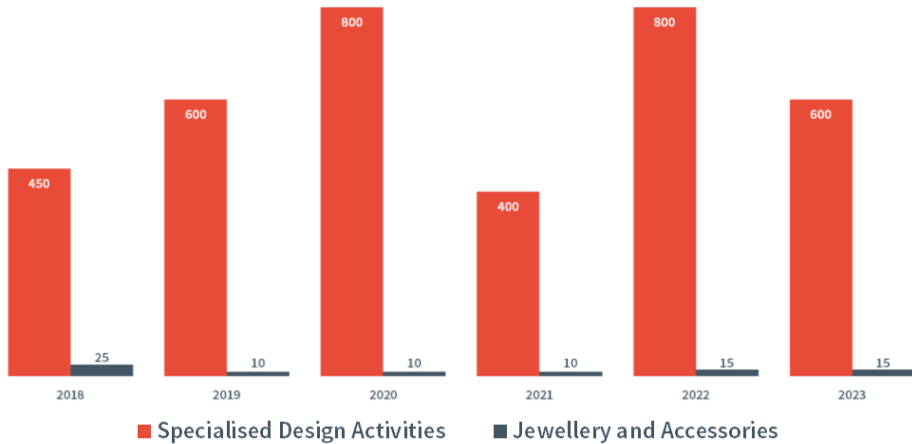
Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.

Combined Authorities, ranked by employment concentration in the Creative Industries



Business concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- Employment in York and North Yorkshire’s Fashion and Design sub-sectors follows the business count profile, with **Specialised Design Activity dominating** (97.6% of all Fashion and Design employment and a LQ of 1.24).
- On the other hand, employment in **Jewellery and Accessories has been declining** at a rate of -9.7% annually, **placing the sub-sector at risk**.

	Specialised Design Activities	Jewellery and Accessories
CAGR	5.9%	-9.7%
Total Employment	600	15
% of Fashion and Design Employment	97.6%	2.4%
Specialisation	1.24	0.38
Status	Driver	At Risk

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



IT



Analysis of Published Data | IT Businesses Overview

Key Takeaways

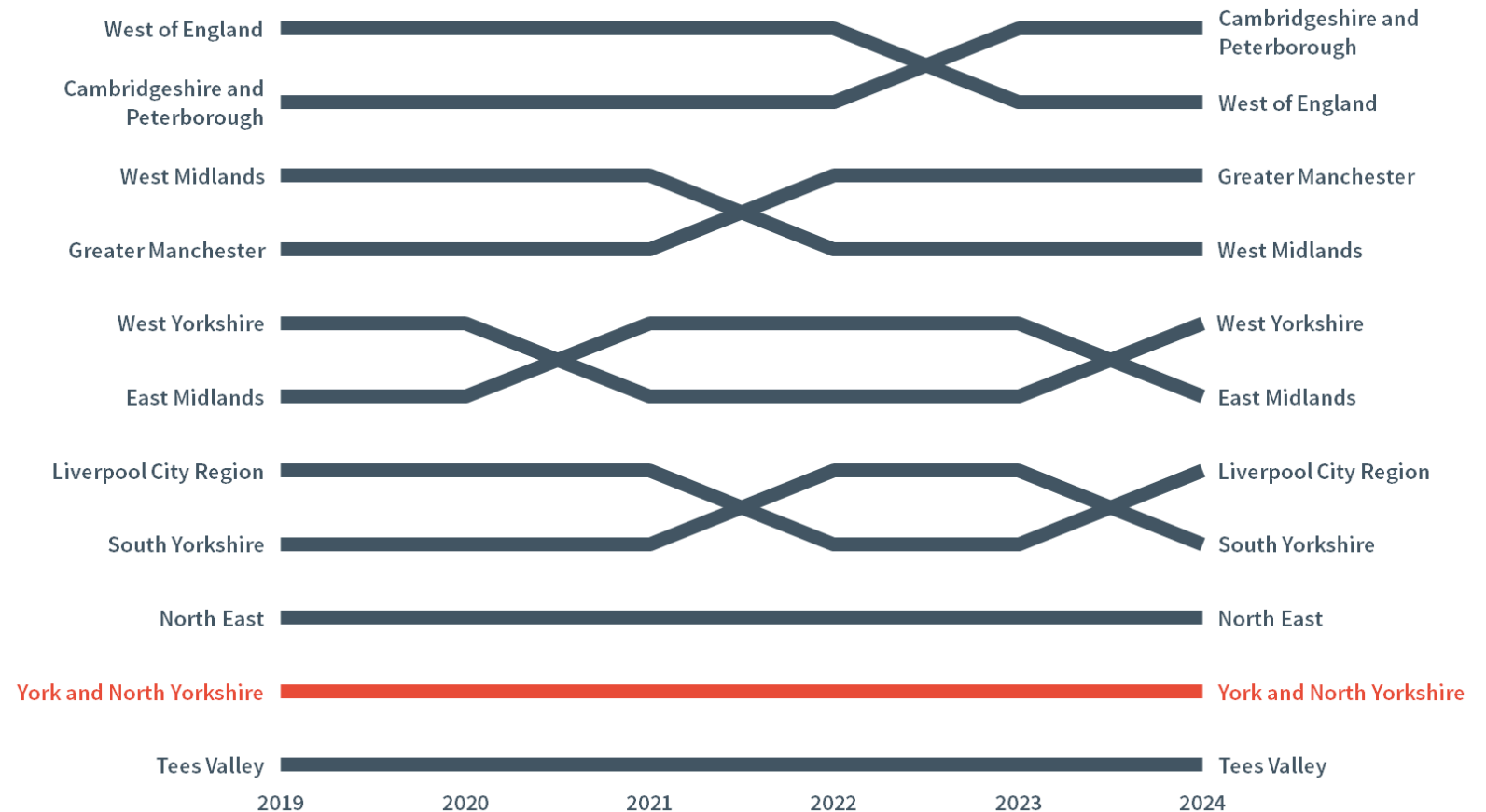
- IT sub-sectors make up a **large portion** of all combined authorities' Creative Industries business counts, with some combined authorities' Creative Industries being dominated by IT sub-sectors (Cambridgeshire and Peterborough; the West Midlands)
- In York and North Yorkshire, IT Creative Industries make up **38.3%** of Creative Industries' businesses.

Combined Authority Area	Total Businesses (2024)	% of Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	1,860	51.5%	1.40
East Midlands	2,285	42.3%	0.83
Greater Manchester	3,845	41.0%	1.01
Liverpool City Region	1,195	38.6%	0.74
North East	1,515	40.7%	0.72
South Yorkshire	1,095	38.9%	0.72
Tees Valley	435	44.4%	0.64
West Midlands	3,190	50.4%	0.95
West Yorkshire	2,815	44.6%	0.84
West of England	1,930	38.9%	1.40
York and North Yorkshire	1,000	38.3%	0.70

Source: ONS UK Business Counts, 2024

CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in the Creative Industries





Analysis of Published Data | IT Businesses Composition

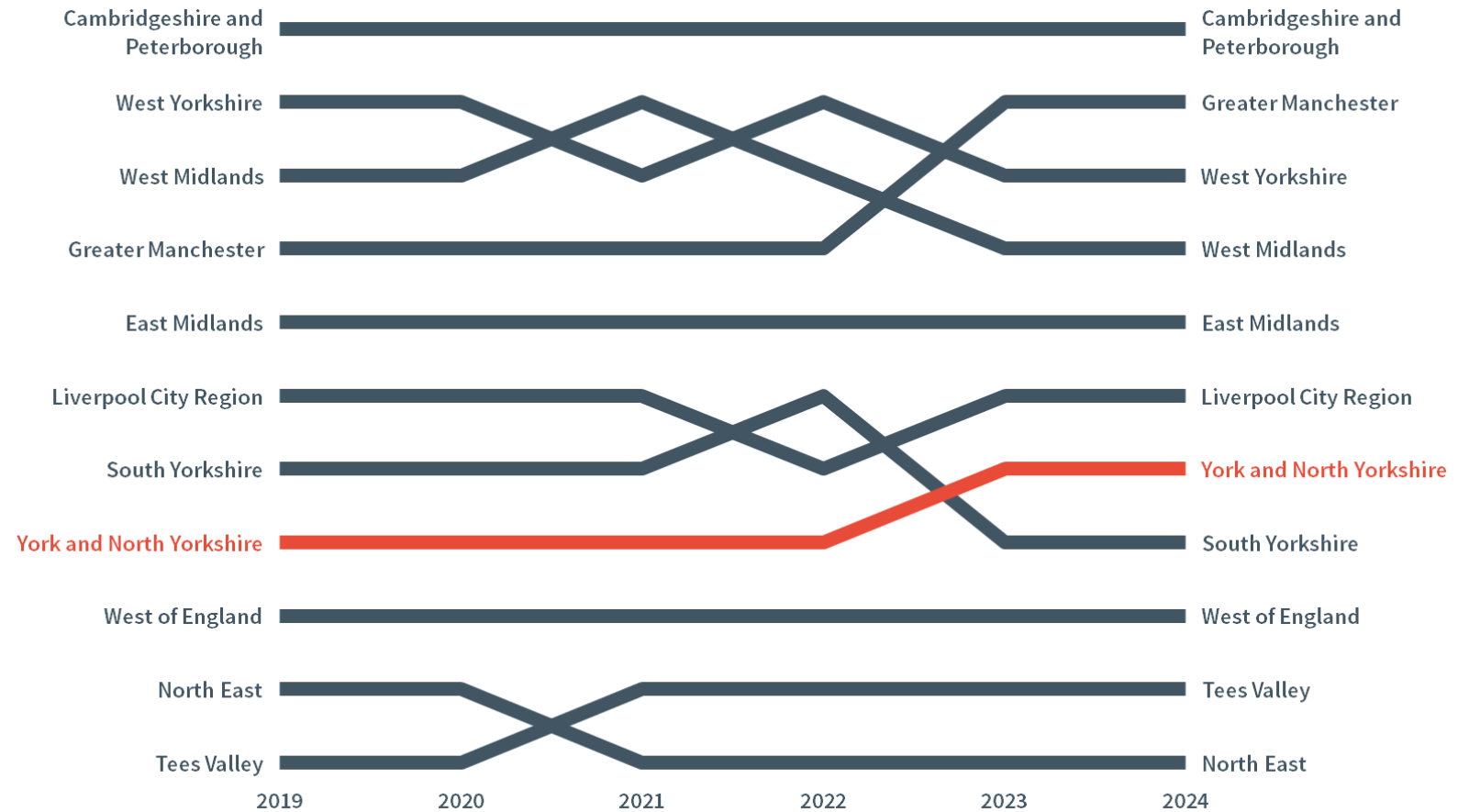
Key Takeaways

- Micro and Small businesses make up 99.0% of York and North Yorkshire's IT Creative .
- York and North Yorkshire ranks seventh among all combined authorities in terms of small business concentration, up from 10th in terms of all businesses. Nevertheless, there is no concentration of Micro and Small businesses.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all IT Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	1,805	97.0%	1.40
East Midlands	2,235	97.8%	0.83
Greater Manchester	3,740	97.3%	1.00
Liverpool City Region	1,175	98.3%	0.75
North East	1,175	77.6%	0.57
South Yorkshire	1,075	98.2%	0.73
Tees Valley	420	96.6%	0.64
West Midlands	3,135	98.3%	0.95
West Yorkshire	2,750	97.7%	0.98
West of England	1,865	96.6%	0.66
York and North Yorkshire	990	99.0%	0.74

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

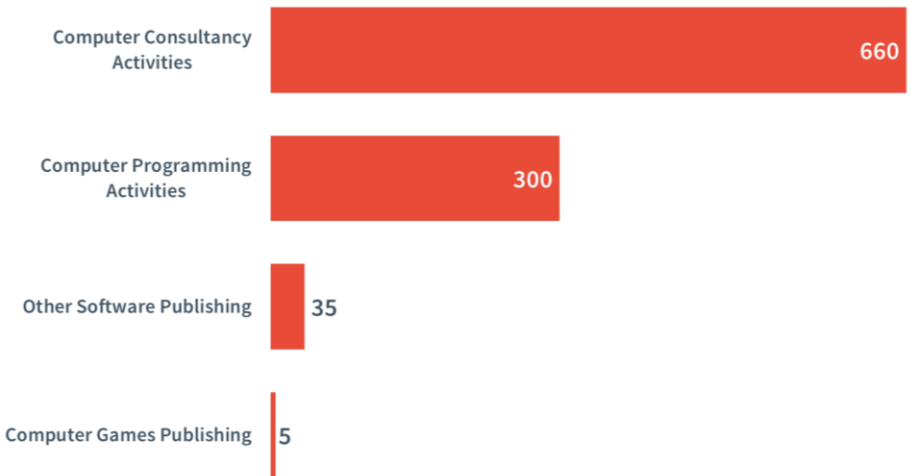
Combined Authorities, ranked by business concentration (Small and Micro) in the Creative Industries





Analysis of Published Data | IT Subsector Specialisation and Growth

Business concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- Creative businesses in the IT sub-theme make up the largest large portion of businesses in York and North Yorkshire’s Creative Industries. Nevertheless, the sector has been declining at a rate of 4.5% per annum since 2019.
- The largest component of the IT sector is computer consultancy activities, with 660 registered businesses. However, this sector appears to have been declining and has no specialisation locally.
- Other software publishing is a small sector locally but has been growing at a double digital annual rate since before the pandemic.

	Computer Consultancy Activities	Computer Programming Activities	Other Software Publishing	Computer Games Publishing
CAGR	-7.1%	1.03%	11.8%	0.0% ¹
Total Businesses	660	300	35	5
% of IT	66.0%	30.0%	3.5%	0.5%
Specialisation	0.65	0.77	0.98	0.81
Status	At Risk	Stable	Emerging	Stable

¹0 Businesses in 2019, 5 in 2024.

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



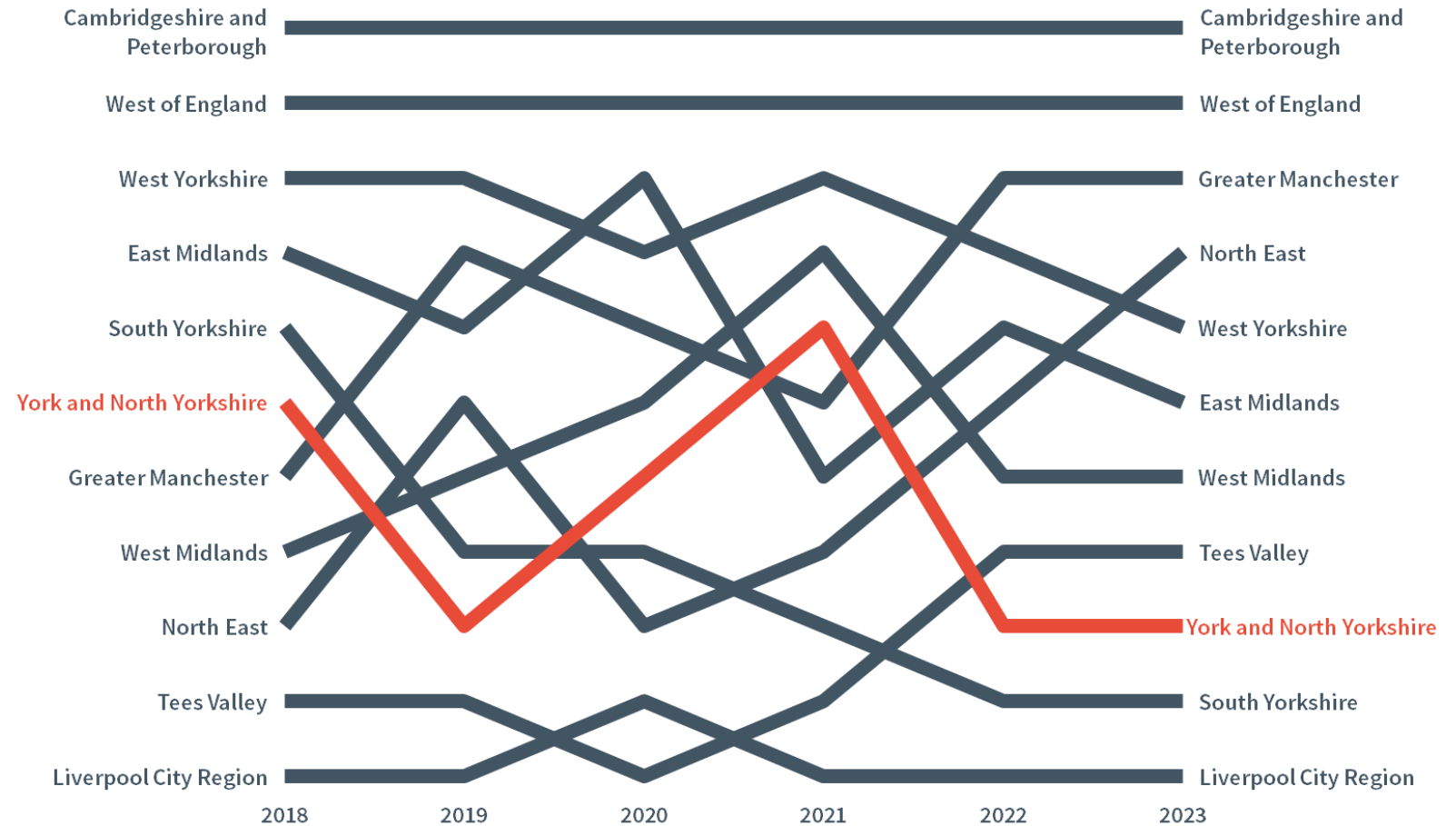
Analysis of Published Data | IT Employment Overview

Key Takeaways

- Turning to employment, there are over 5,500 people employed in IT in York and North Yorkshire, nearly half of all creative industries employment.
- In line with business counts, concentration is below the national average and the CA area ranks ninth most other CAs.

Combined Authority Area	Employment	% of all Creative Industries	Concentration
Cambridgeshire and Peterborough	16,525	60.8%	2.06
East Midlands	17,000	52.9%	1.05
Greater Manchester	32,125	49.3%	1.33
Liverpool City Region	5,750	34.5%	0.51
North East	15,700	57.7%	1.12
South Yorkshire	7,030	51.3%	0.72
Tees Valley	3,795	63.0%	0.85
West Midlands	20,400	54.1%	0.92
West Yorkshire	20,605	49.6%	1.12
West of England	1,525	44.9%	1.64
York and North Yorkshire	5,555	48.7%	0.80

Combined Authorities, ranked by employment concentration in the Creative Industries



Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Analysis of Published Data | IT Subsector Specialisation and Growth

Employment York and North Yorkshire IT Creative Industries

Computer Consultancy Activities

3500

Computer Programming Activities

2000

Other Software Publishing

50

Computer Games Publishing

5

Key Takeaways

- Computer Consultancy Activities dominate York and North Yorkshire’s IT employment, making up 63% of the sector’s employment. Concentration in the sector is also close to the national average, though employment growth is decreasing.
- Computer Programming Activities also makes up a large share of employment (36%), and with positive employment growth and a high employment concentration, it is emerging as a leading sub-sector within IT.

	Computer Consultancy Activities	Computer Programming Activities	Other Software Publishing	Computer Games Publishing
CAGR	-2.6%	2.7%	-12.9%	0.0% ¹
Total Employment	3,500	2,000	50	5
% of IT	63.0%	36.0%	0.9%	0.1%
Specialisation	0.95	0.92	0.38	0.19
Status	Stable	Emerging	At Risk	At Risk

¹ 0 jobs in Computer Games Publishing in 2018, 5 in 2023.

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



Sector Deep Dive: 58.21 Publishing of Computer Games



Analysis of Published Data | Business Overview

Key Takeaways

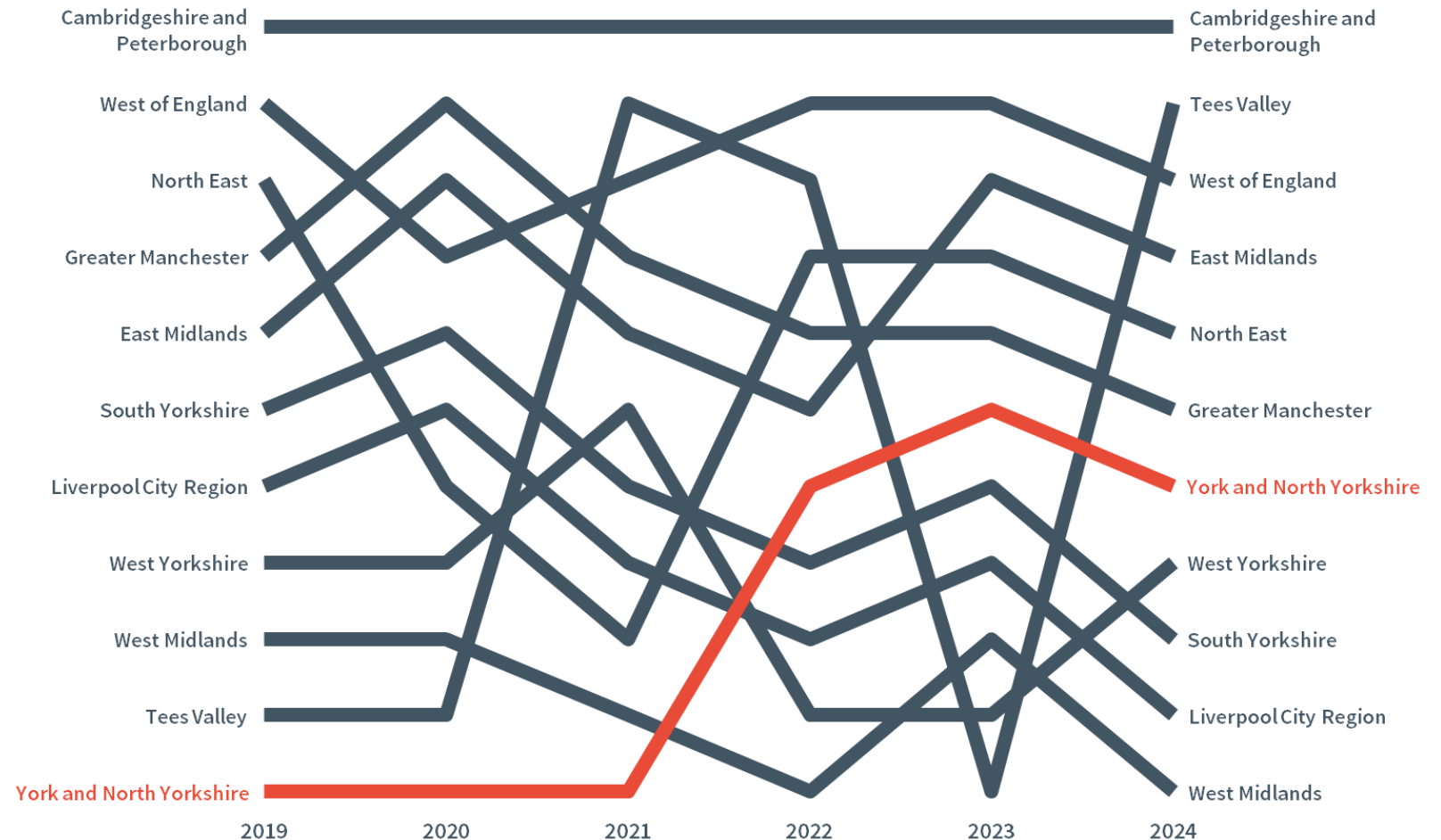
- Computer Game publishing made up **only 0.2% of all Creative Industries businesses** in York and North Yorkshire.
- There is **no concentration** of the sector when compared to the national level (less London).
- Of the 11 Combined Authorities, York and North Yorkshire ranks seventh.

Combined Authority Area	Total Businesses (2024)	% of Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	15	0.4%	2.64
East Midlands	15	0.3%	1.28
Greater Manchester	15	0.2%	0.92
Liverpool City Region	5	0.2%	0.73
North East	10	0.3%	1.11
South Yorkshire	5	0.2%	0.77
Tees Valley	5	0.1%	1.71
West Midlands	10	0.2%	0.69
West Yorkshire	10	0.2%	0.81
West of England	10	0.2%	1.69
York and North Yorkshire	5	0.2%	0.81

Source: ONS UK Business Counts, 2024

CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in Publishing of Computer Games





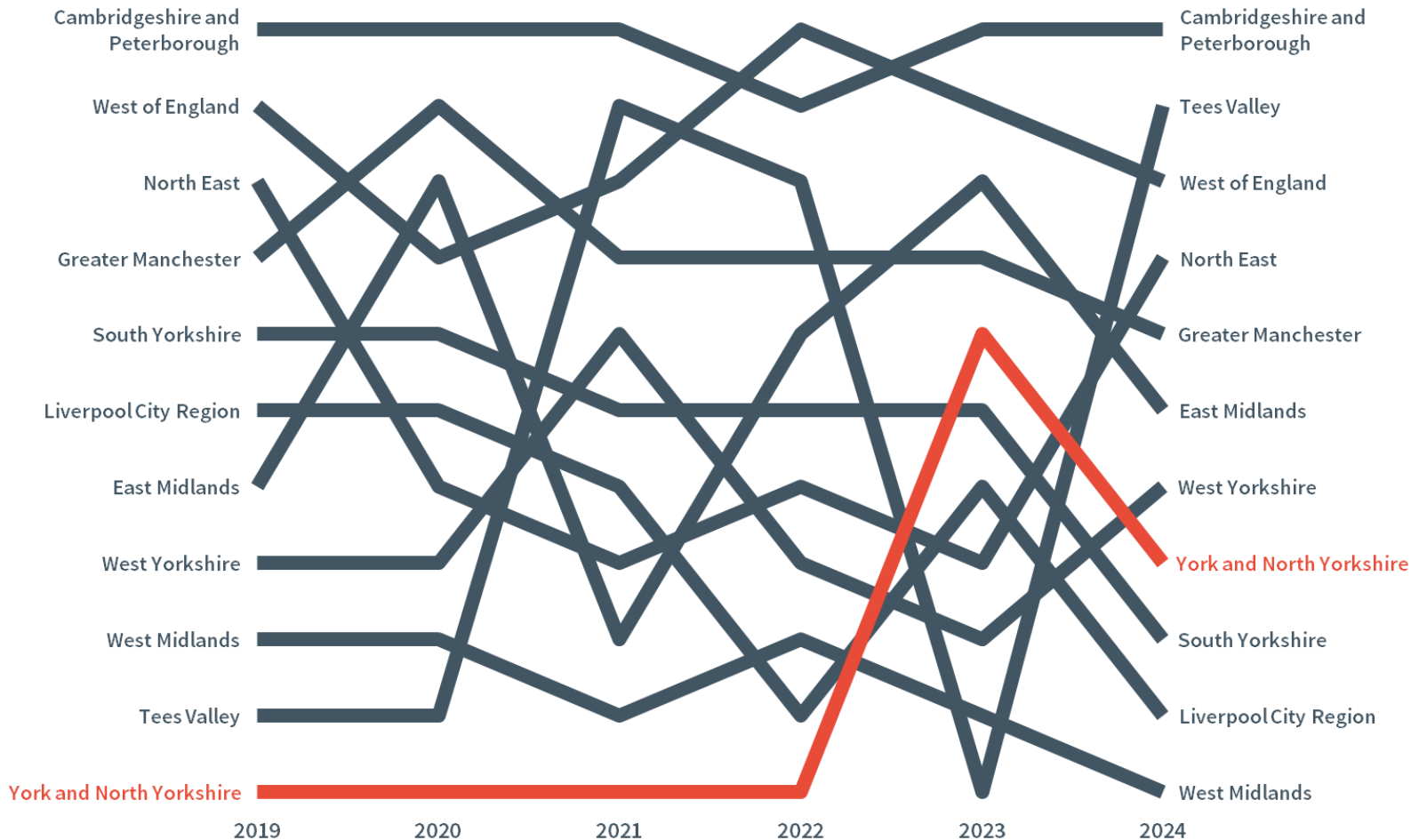
Analysis of Published Data | Business Composition

Key Takeaways

- **All of York and North Yorkshire’s** Computer Games Publishing businesses were small or micro businesses (fewer than 50 employees).
- Again, there is **no concentration** of small or micro businesses in York and North Yorkshire compared to the national average (less London).
- York and North Yorkshire **rank 8th** out of the 11 Combined Authorities.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all 58.21 Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	15	100.0%	2.79
East Midlands	10	66.7%	0.90
Greater Manchester	15	100.0%	0.97
Liverpool City Region	5	100.0%	0.77
North East	5	50.0%	1.17
South Yorkshire	5	100.0%	0.81
Tees Valley	5	100.0%	1.83
West Midlands	5	50.0%	0.37
West Yorkshire	10	100.0%	0.86
West of England	10	100.0%	1.79
York and North Yorkshire	5	100.0%	0.85

Combined Authorities, ranked by business concentration (Small and Micro) in Computer Game Publishing



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



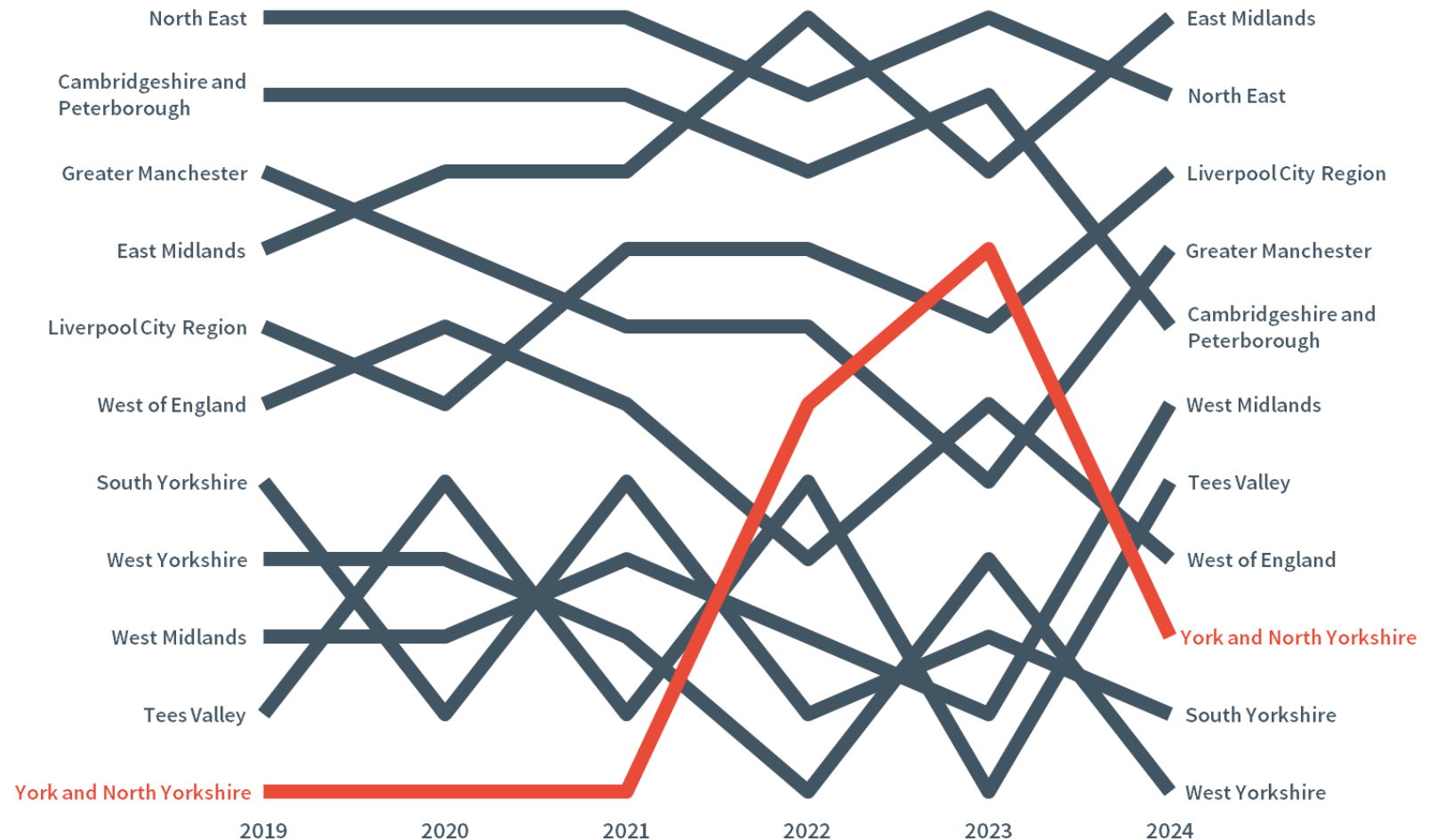
Analysis of Published Data | Employment

Key Takeaways

- Overall, York and North Yorkshire **does not have** a substantial concentration of employment in 58.12: Publishing of Video Games.
- In 2023, there were only 5 people were employed in the sector, **down from 25 in 2022**.
- Compared to other Combined Authorities, York and North Yorkshire ranks 9th.

Combined Authority Area	Total Employees (2023)	% of all Creative Industry employment	Concentration of Employment
Cambridgeshire and Peterborough	25	0.09%	0.82
East Midlands	400	1.24%	6.50
Greater Manchester	125	0.19%	1.37
Liverpool City Region	75	0.45%	1.77
North East	250	0.92%	4.71
South Yorkshire	5	0.04%	0.14
Tees Valley	5	0.08%	0.30
West Midlands	50	0.13%	0.59
West Yorkshire	5	0.01%	0.07
West of England	10	0.03%	0.28
York and North Yorkshire	5	0.04%	0.19

Combined Authorities, ranked by business concentration (Small and Micro) in Computer Game Publishing



Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Publishing



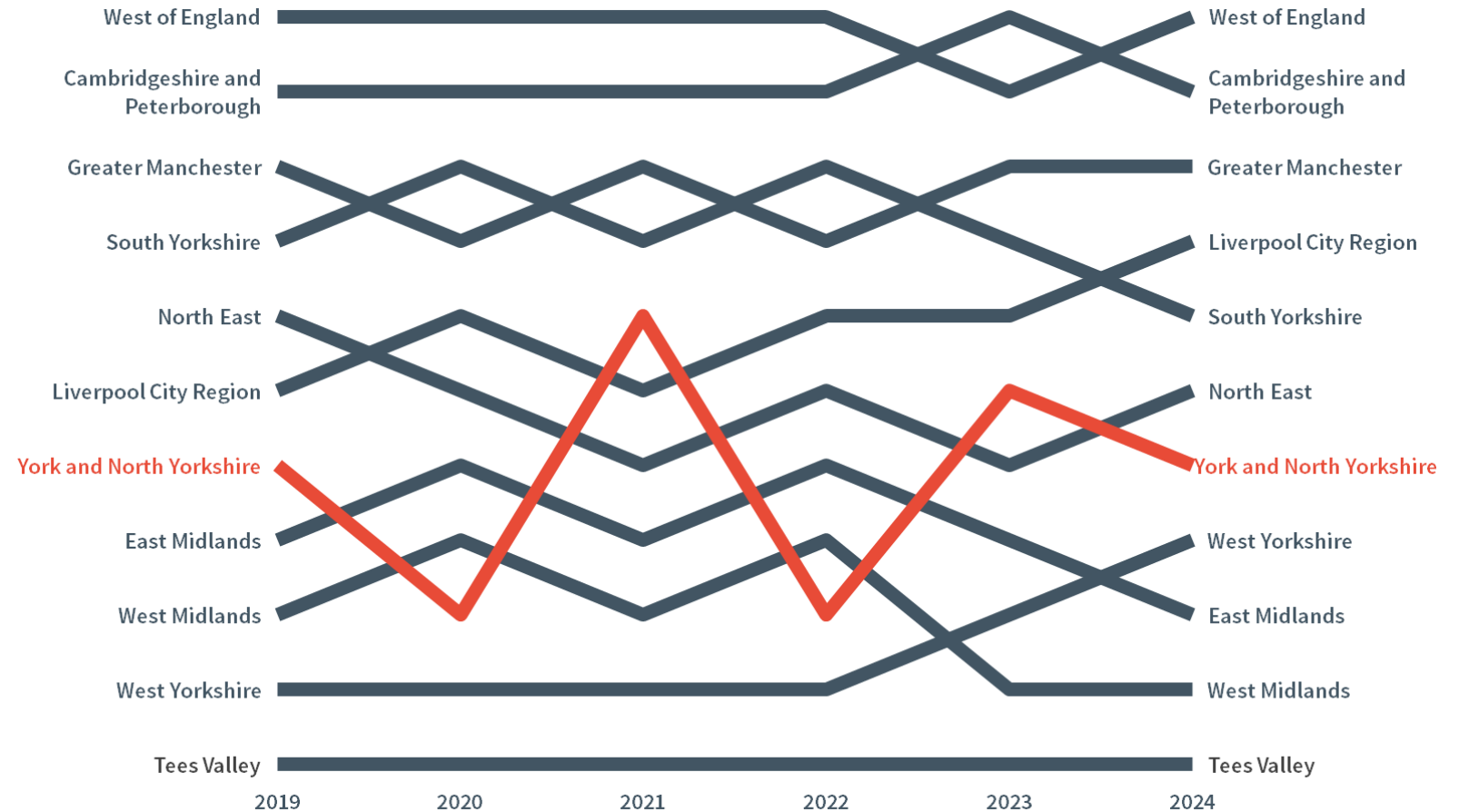
Analysis of Published Data | Publishing Businesses Overview

Key Takeaways

- In total, there are 100 businesses registered under Publishing SIC codes in York and North Yorkshire, representing 3.8% of all businesses in the Creative Industries.
- Overall, York and North Yorkshire ranks 7th of all combined authorities in Publishing.

Combined Authority Area	Total Businesses (2024)	% of all Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	200	5.5%	1.62
East Midlands	180	3.6%	0.71
Greater Manchester	345	3.7%	0.97
Liverpool City Region	140	4.5%	0.93
North East	150	4.0%	0.77
South Yorkshire	125	4.4%	0.88
Tees Valley	30	3.1%	0.47
West Midlands	210	3.3%	0.67
West Yorkshire	225	3.6%	0.72
West of England	220	4.4%	1.71
York and North Yorkshire	100	3.8%	0.75

Combined Authorities, ranked by business concentration in Publishing



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Publishing Businesses Composition

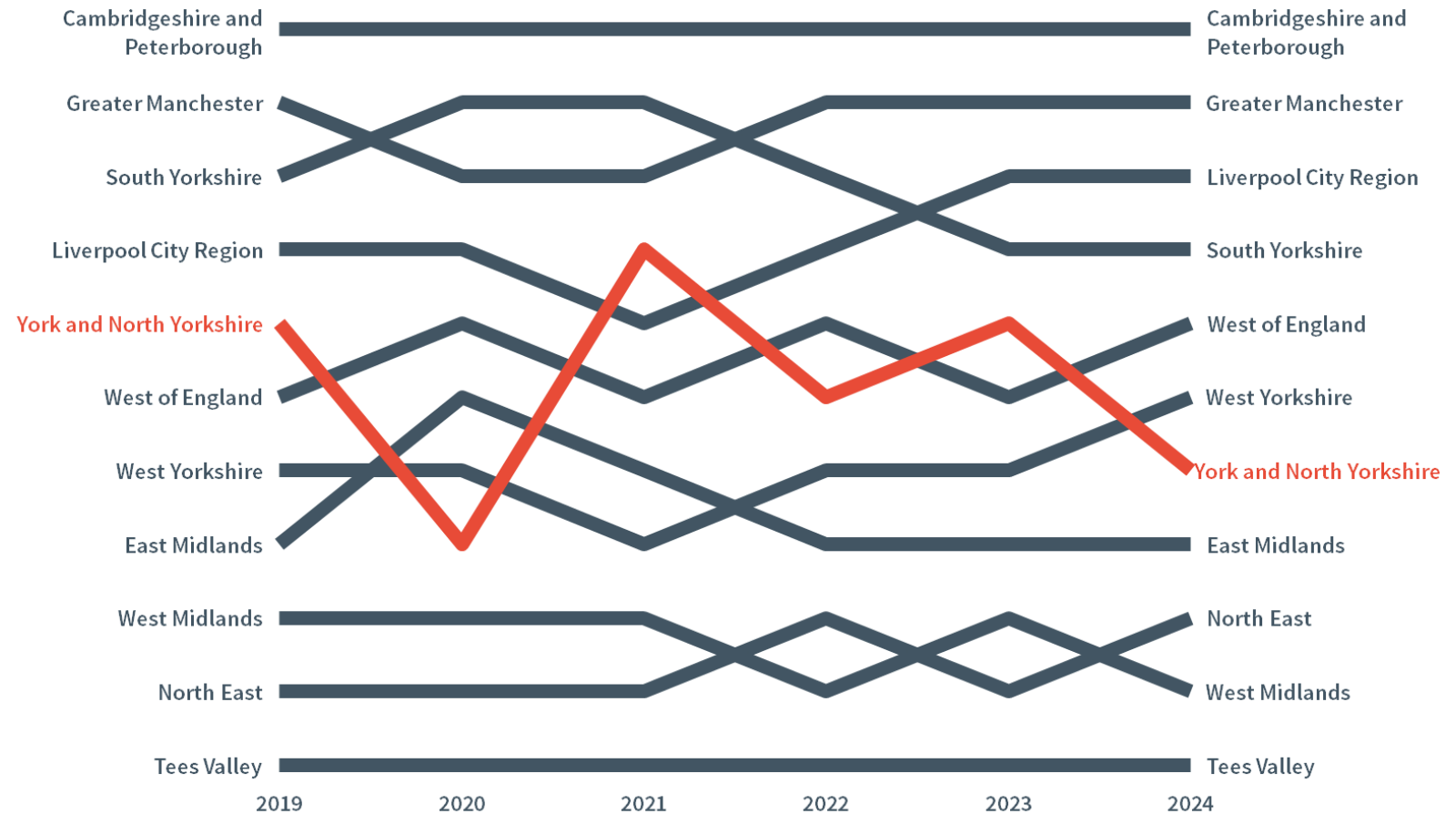
Key Takeaways

- Micro and Small businesses make up 95% of all Publishing businesses in York and North Yorkshire.
- Nevertheless, York and North Yorkshire has no concentration of micro and small Publishing businesses, ranking seventh among all combined authorities.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Publishing Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	185	92.5%	1.54
East Midlands	180	100.0%	0.72
Greater Manchester	340	98.6%	0.98
Liverpool City Region	130	92.9%	0.89
North East	130	86.7%	0.68
South Yorkshire	115	92.0%	0.83
Tees Valley	30	100.0%	0.49
West Midlands	205	97.6%	0.67
West Yorkshire	215	95.6%	0.82
West of England	215	97.7%	0.82
York and North Yorkshire	95	95.0%	0.76

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

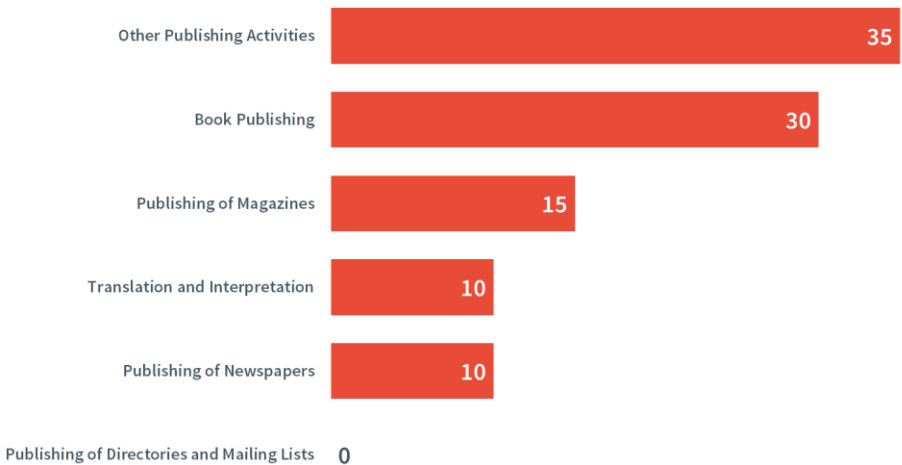
Combined Authorities, ranked by business concentration (Small and Micro) in Publishing





Analysis of Published Data | Publishing Subsector Specialisation and Growth

Publishing business counts in York and North Yorkshire



Key Takeaways

- Book Publishing is among the leading sub-sectors in Publishing with a concentration 2% above the national average, though the number of businesses in this subsector as remained constant in the last five years.
- Publishing of Newspapers in an emerging subsector in York and North Yorkshire, with an annual growth rate of 14.9% and a concentration 79% above the national average.
- Nevertheless, the largest subsector is Other Publishing activities, making up 35.0% of the subsector. But with a low specialisation and negative annual growth rate, it underscores the lack of specialisation of Publishing in York and North Yorkshire.

	Other Publishing Activities	Book Publishing	Publishing of Magazines	Translation and Interpretation	Publishing of Newspapers	Publishing of Directories and Mailing Lists
CAGR	-2.6%	0.0% ¹	5.6%	-7.8%	14.9%	0.0%
Total Businesses	35	30	15	10	10	0
% of Publishing	35.0%	30.0%	15.0%	10.0%	10.0%	0.0%
Specialisation	0.73	1.02	0.54	0.48	1.79	0.0
Status	Declining	Stable	Emerging	At Risk	Emerging	-

¹Business count for Book Publishing has stayed at 30 between 2019 to 2024.

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



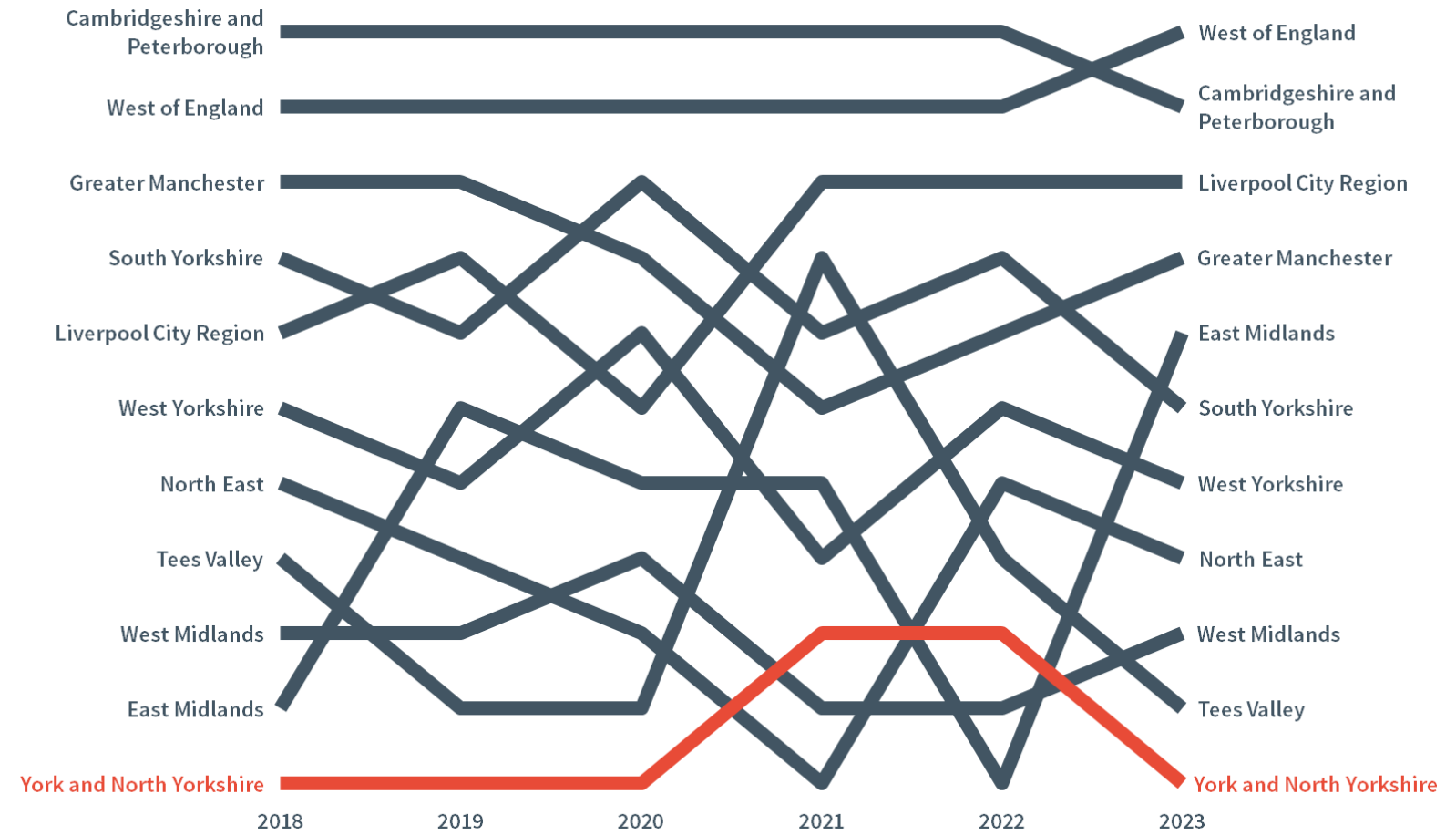
Analysis of Published Data | Publishing Employment Overview

Key Takeaways

- There are only 145 employees in Publishing in York and North Yorkshire, making up less than 1% of Creative Industries employment. Accordingly, York and North Yorkshire ranks last among combined authorities.
- This suggests an average of 15 employees for each company in Publishing, corresponding with the high portion of small businesses.

Combined Authority Area	Employment	% of all Creative Industries	Concentration
Cambridgeshire and Peterborough	2,545	9.4%	2.34
East Midlands	1,475	5.4%	0.67
Greater Manchester	3,575	13.2%	1.09
Liverpool City Region	2,630	9.7%	1.74
North East	685	2.5%	0.36
South Yorkshire	720	2.7%	0.54
Tees Valley	150	0.6%	0.25
West Midlands	1,025	3.8%	0.34
West Yorkshire	995	3.7%	0.40
West of England	3,135	11.5%	2.42
York and North Yorkshire	145	0.5%	0.16

Combined Authorities, ranked by employment concentration in the Creative Industries



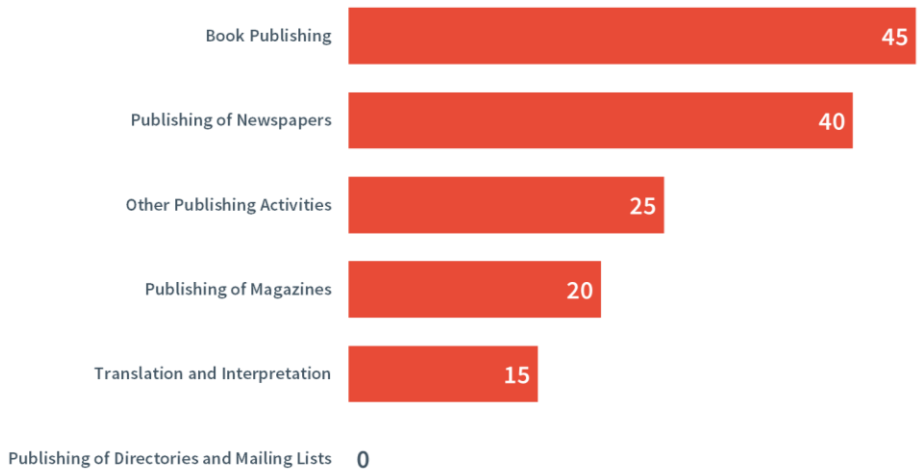
Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Analysis of Published Data | Publishing Subsector Specialisation and Growth

Business concentration of the Creative Industries in York and North Yorkshire



Key Takeaways

- Employment in York and North Yorkshire's Creative Industries is concentrated primarily in the Architecture and Culture sub-themes (~28% combined). However, sectors in these sub-themes have seen negative annual growth rates between 2018 and 2023.
- Employment in the Fashion and Design sub-theme, much like in business counts, has seen substantial per annum growth in recent years and is emerging as an integral player of York and North Yorkshire's Creative Industries.
- Employment in Broadcasting and Communications (-11.6%) and Publishing (-5.3%) has declined substantially over the few years, placing sectors in this sub-theme at risk.

	Book publishing	Publishing of Newspapers	Other Publishing Activities	Publishing of Magazines	Translation and Interpretation	Publishing of Directories and Mailing Lists
CAGR	5.2%	-11.8%	-6.5%	-10.6%	8.5%	0.0% ¹
Total Employment	45	40	25	20	15	0
% of Publishing	31.0%	27.6%	17.2%	13.8%	10.3%	0.0%
Specialisation	0.22	0.38	0.17	0.11	0.31	0.00
Status	Emerging	At Risk	At Risk	At Risk	Emerging	-

¹ 0 jobs in Publishing of Directories and Mailing Lists in 2018 and in 2023.

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



Screen Industry



Analysis of Published Data | Screen Industries Businesses Overview

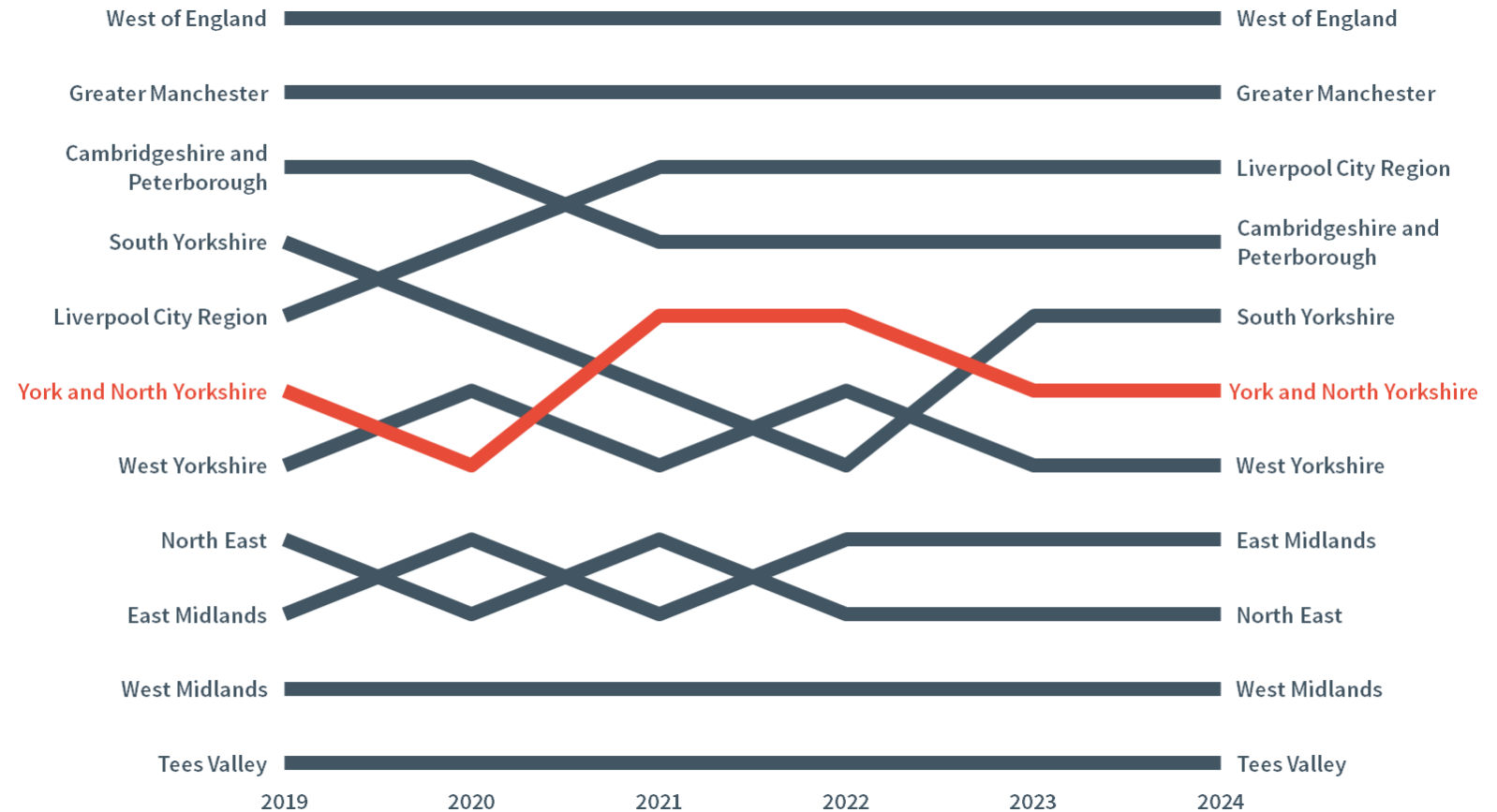
Key Takeaways

- With 295 businesses in the Screen Industries, the subsectors make up over 11% of all the businesses in the Combined Authority's Creative Industries.
- Nevertheless, on the whole, there is no concentration of the Screen Industries in York and North Yorkshire.

Combined Authority Area	Total Businesses (2024)	% of all Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	290	8.0%	0.76
East Midlands	505	10.0%	0.64
Greater Manchester	1275	13.6%	1.17
Liverpool City Region	360	11.6%	0.78
North East	385	10.3%	0.64
South Yorkshire	320	11.4%	0.74
Tees Valley	90	9.2%	0.46
West Midlands	555	8.8%	0.58
West Yorkshire	645	10.2%	0.67
West of England	810	16.3%	2.05
York and North Yorkshire	295	11.3%	0.72

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in the Screen Industries





Analysis of Published Data | Screen Industries Businesses Composition

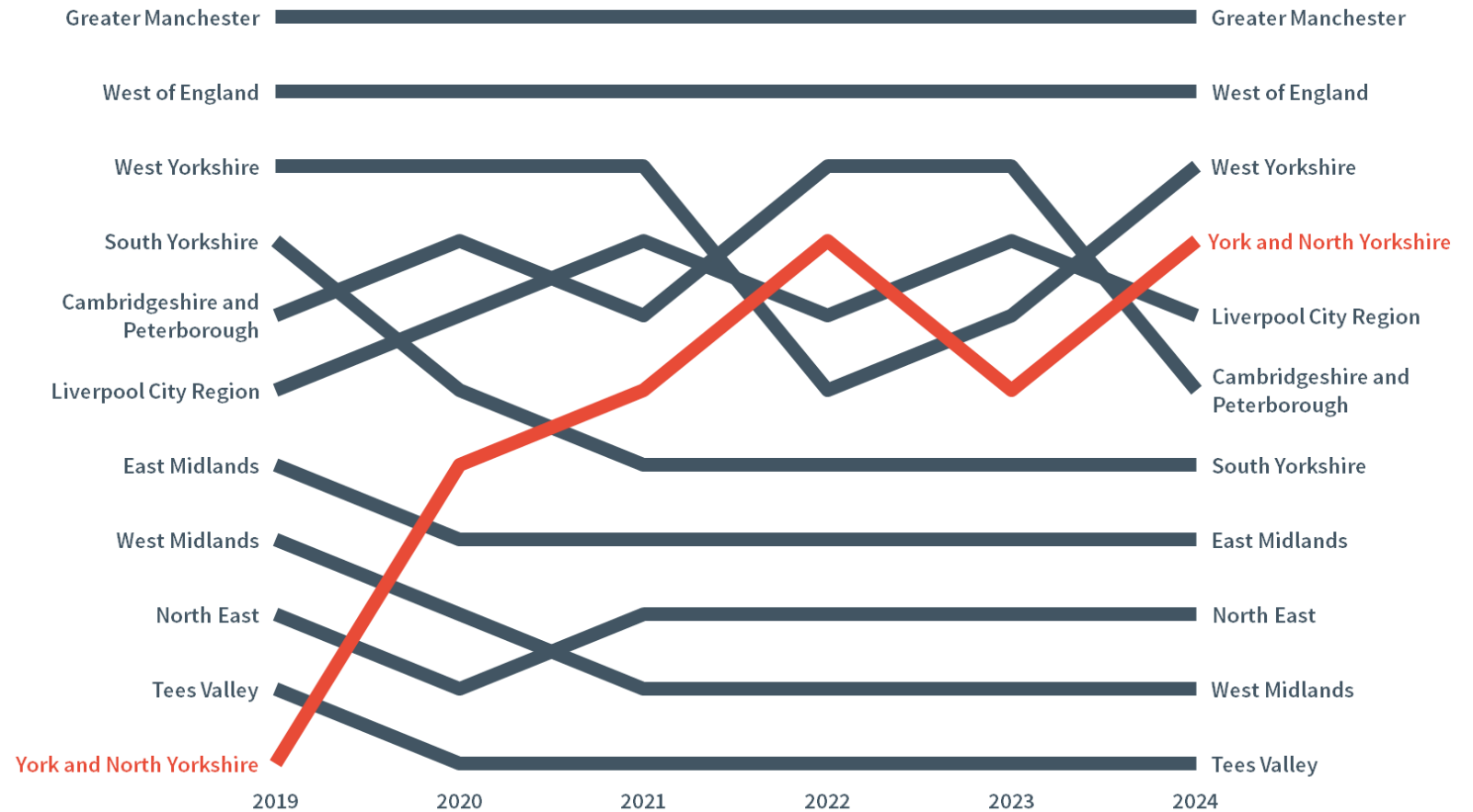
Key Takeaways

- Despite the low count of businesses in the Screen Industries, all of them are Small or Micro businesses. This makes York and North Yorkshire, along with Tees Valley, where this is the case.
- Indeed, small businesses in the Screen Industries are slightly more concentrated. This places York and North Yorkshire fourth out of all combined authorities in terms of small business concentration.

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all Publishing Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	280	96.6%	0.75
East Midlands	500	99.0%	0.65
Greater Manchester	1245	97.6%	1.15
Liverpool City Region	355	98.6%	0.79
North East	355	92.2%	0.60
South Yorkshire	315	98.4%	0.74
Tees Valley	90	100.0%	0.47
West Midlands	540	97.3%	0.57
West Yorkshire	645	100.0%	0.80
West of England	795	98.1%	0.98
York and North Yorkshire	295	100.0%	0.79

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

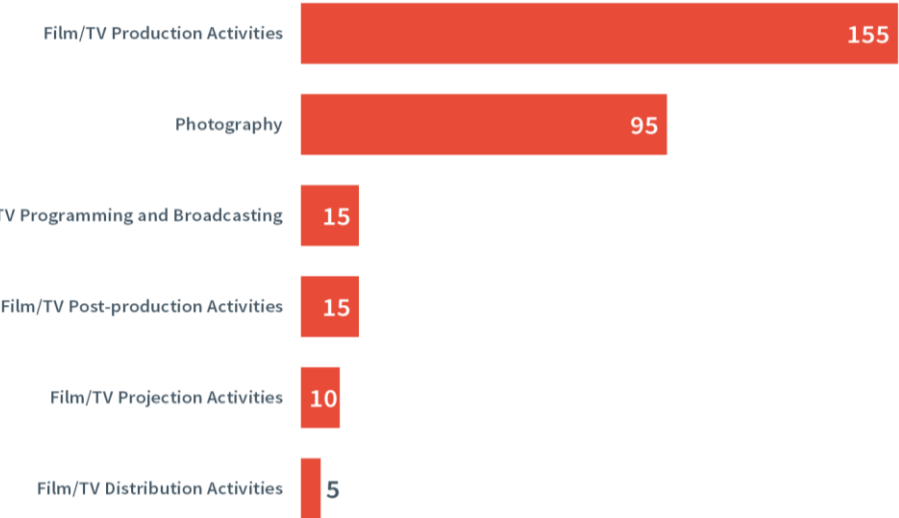
Combined Authorities, ranked by business concentration (Small and Micro) in the Screen Industries





Analysis of Published Data | Screen Industries Businesses Specialisation and Growth

Publishing business counts in York and North Yorkshire



Key Takeaways

- Film and TV series production activities dominate York and North Yorkshire’s Screen Industries with 155 businesses. Despite the low specialisation, the sector has been growing 6.2% annually in terms of business counts.
- Though far smaller in business count, TV Programming and Broadcasting has been growing at 8.5% annually, with a concentration of 0.93.

	Film and TV Production Activities	Photography	TV Programming and Broadcasting	Film and TV Post-production Activities	Film and TV Projection Activities	Film and TV Distribution Activities
CAGR	6.2%	0.0% ¹	8.5%	8.5%	0.0% ¹	0.0% ¹
Total Businesses	155	95	15	15	10	5
% of Screen Industries	43.1%	26.4%	4.2%	4.2%	2.8%	1.4%
Specialisation	0.64	0.91	0.93	0.47	0.91	0.78
Status	Emerging	Stable	Emerging	Emerging	Stable	Stable

¹No growth between 2019 and 2024.

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



Analysis of Published Data | Screen Industries Employment

Key Takeaways

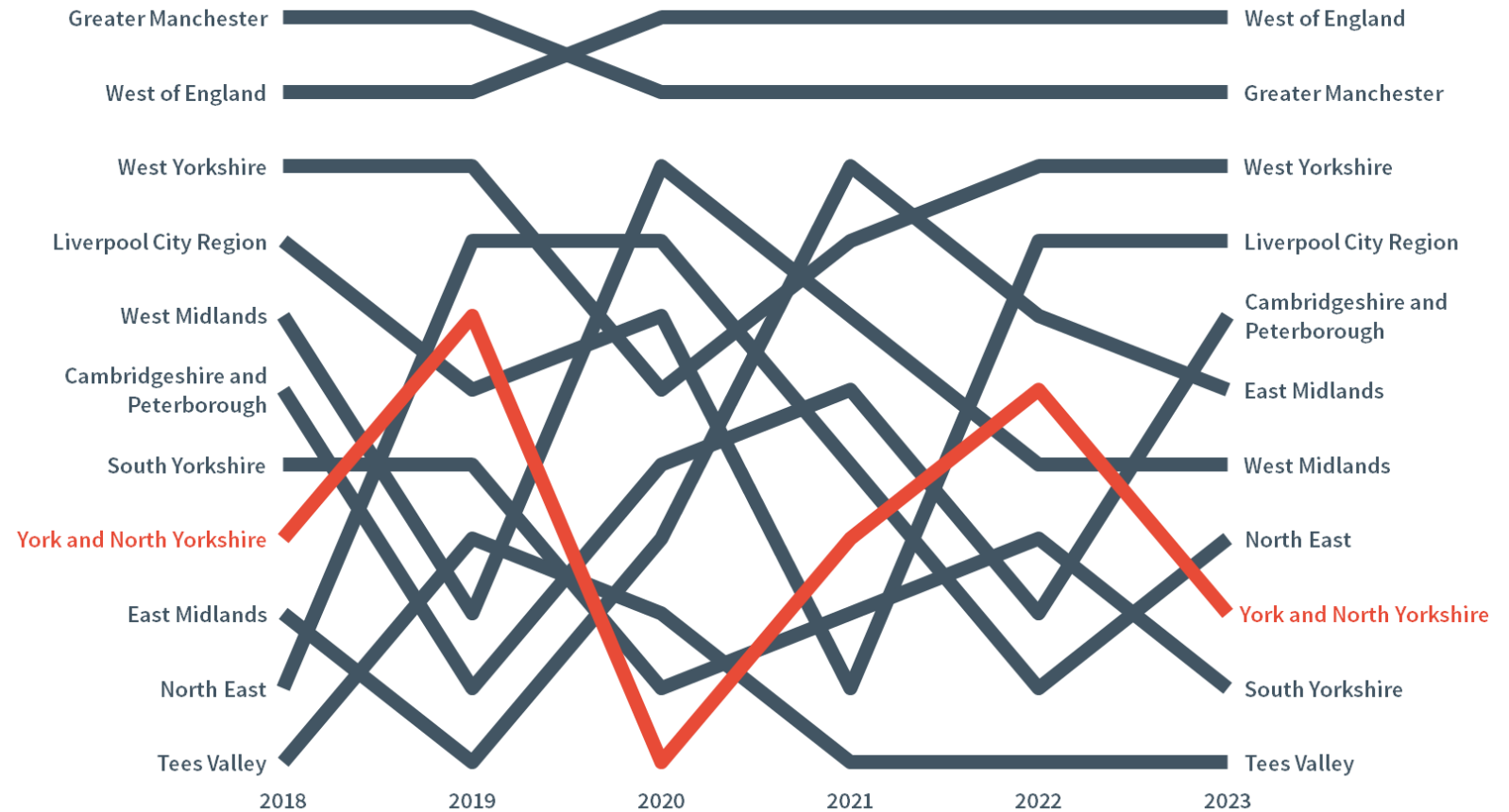
- Employment in the Screen Industries makes up only 5% of York and North Yorkshire's Creative Industries employment, with a very low concentration.
- Of all combined authorities, York and North Yorkshire has the second-lowest number of employees in the Screen Industries, however only the third-lowest concentration.

Combined Authority Area	Employment	% of all Creative Industries	Concentration
Cambridgeshire and Peterborough	1,165	4.3%	0.90
East Midlands	2,240	7.0%	0.86
Greater Manchester	10,100	15.5%	2.61
Liverpool City Region	1,790	10.7%	1.00
North East	1,335	4.9%	0.59
South Yorkshire	785	5.7%	0.50
Tees Valley	305	5.1%	0.43
West Midlands	2,885	7.7%	0.81
West Yorkshire	3,120	7.5%	1.05
West of England	5,895	16.0%	3.85
York and North Yorkshire	575	5.0%	0.52

Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.

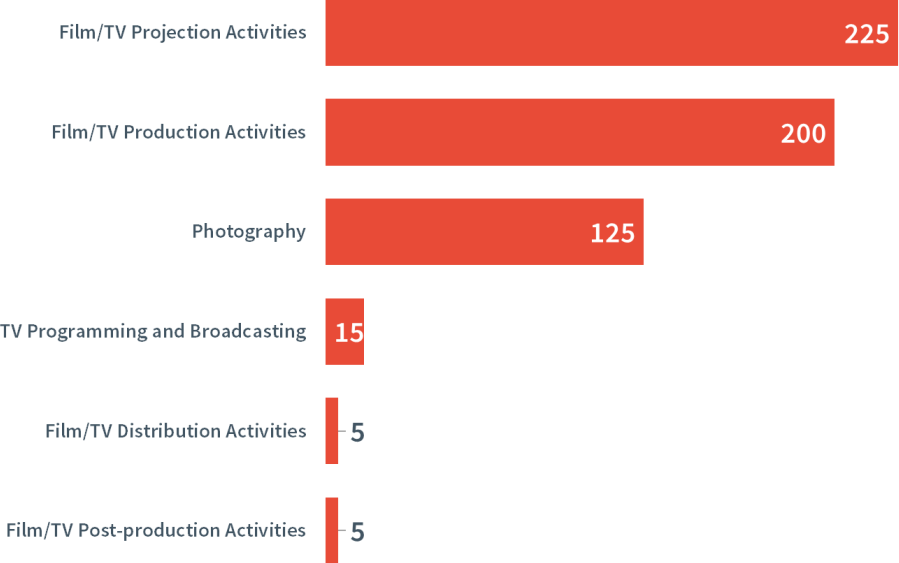
Combined Authorities, ranked by employment concentration in the Screen Industries





Analysis of Published Data | Screen Industries Specialisation and Growth

Businesses in the Screen Industries in York and North Yorkshire



Key Takeaways

- Employment in York and North Yorkshire’s Creative Industries is concentrated primarily in the Architecture and Culture sub-themes (~28% combined). However, sectors in these sub-themes have seen negative annual growth rates between 2018 and 2023.
- Employment in the Fashion and Design sub-theme, much like in business counts, has seen substantial per annum growth in recent years and is emerging as an integral player of York and North Yorkshire’s Creative Industries.
- Employment in Broadcasting and Communications (-11.6%) and Publishing (-5.3%) has declined substantially over the few years, placing sectors in this sub-theme at risk.

	Film and TV Projection Activities	Film and TV Production Activities	Photography	TV Programming and Broadcasting	Film and TV Distribution Activities	Film and TV Post-production Activities
CAGR	0.0% ¹	5.9%	4.6%	-27.5%	-12.9%	-12.9%
Total Employment	225	200	125	15	5	5
% of Screen Industries	39.1%	34.8%	21.7%	2.6%	0.9%	0.9%
Specialisation	0.98	0.40	0.80	0.09	0.38	0.08
Status	Stable	Emerging	Emerging	At Risk	At Risk	At Risk

¹ No growth between 2018 and 2023.

Source: ONS BRES, 2023
CAGR is the compound annual growth rate 2018-2023.



Sector Deep Dive: 60.20 Television Programming and Broadcasting



Analysis of Published Data | Business Overview

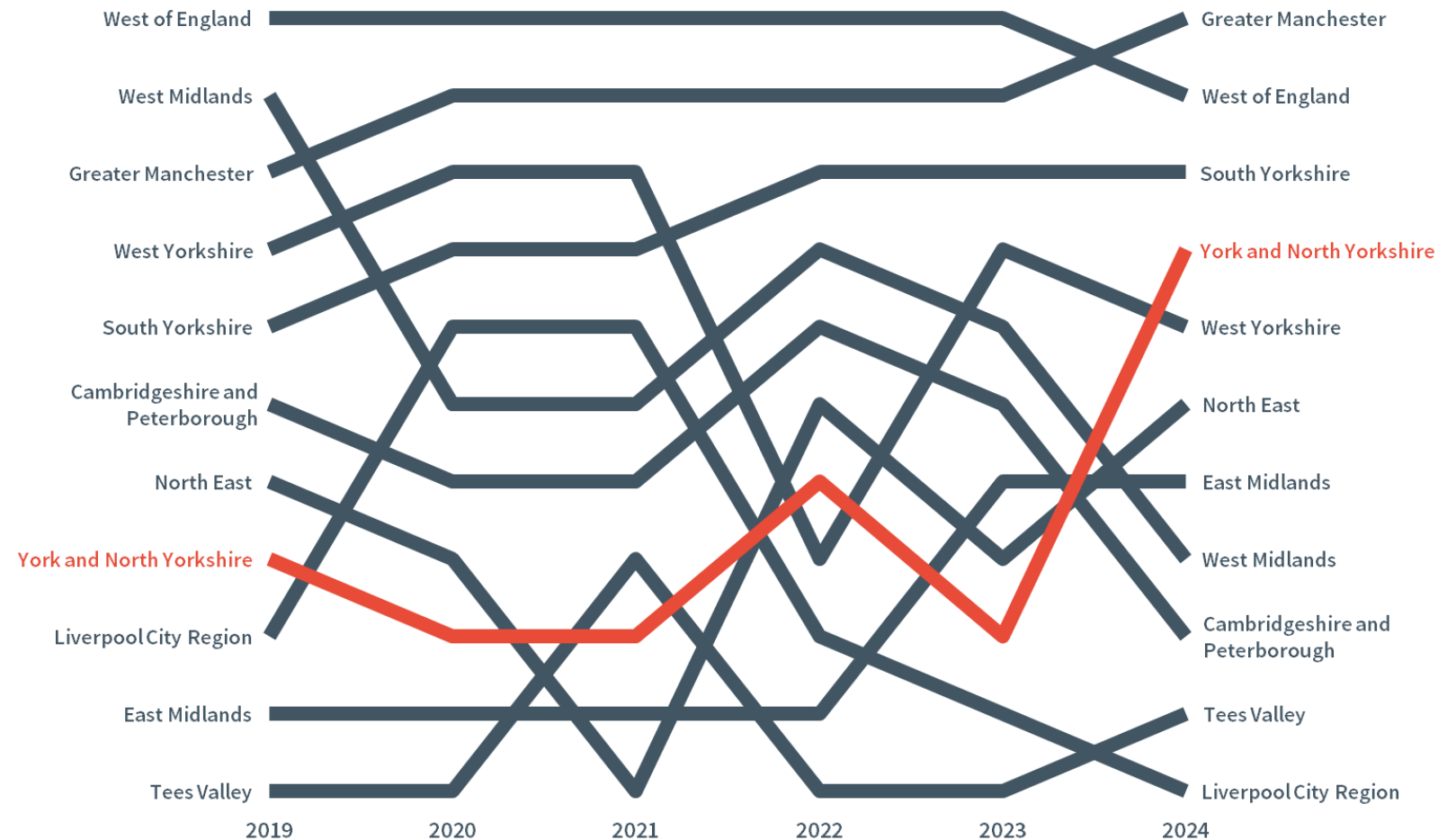
Key Takeaways

- Though there are only 15 business in the sector, York and North Yorkshire is the **fourth-most concentrated** Combined Authority.
- Overall, businesses in Television Programming and Broadcasting makes up 0.6% of all Creative Industries Businesses.

Combined Authority Area	Total Businesses (2024)	% of Creative Industries Businesses	Concentration
Cambridgeshire and Peterborough	10	0.3%	0.67
East Midlands	25	0.5%	0.81
Greater Manchester	70	0.7%	1.63
Liverpool City Region	10	0.3%	0.55
North East	20	0.5%	0.85
South Yorkshire	20	0.7%	1.17
Tees Valley	5	0.5%	0.65
West Midlands	30	0.5%	0.79
West Yorkshire	30	0.5%	0.93
West of England	25	0.5%	1.61
York and North Yorkshire	15	0.6%	0.93

Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.

Combined Authorities, ranked by business concentration in Television Programming and Broadcasting





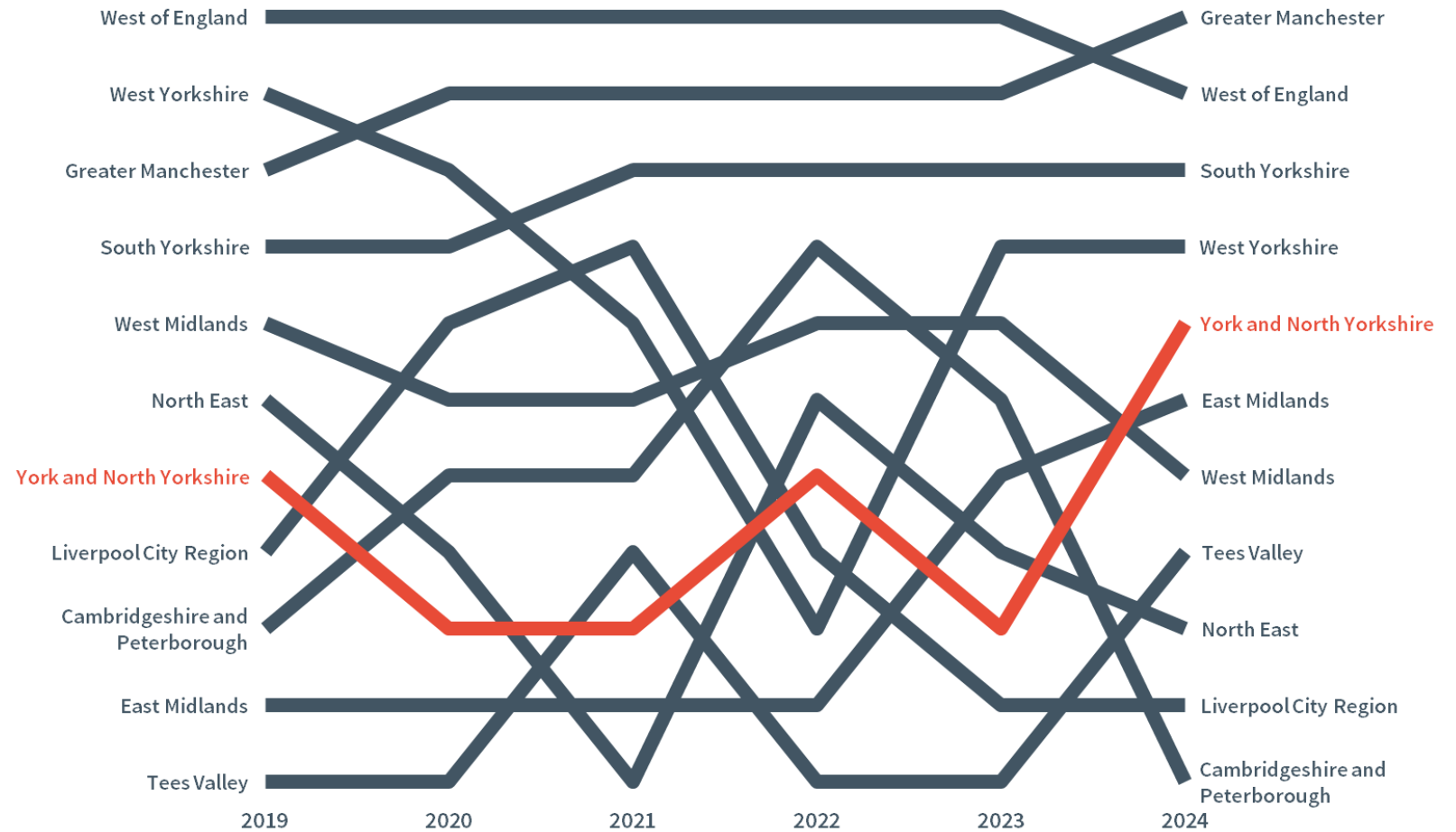
Analysis of Published Data | Business Overview

Key Takeaways

- The proportion of small and micro businesses in the sector is only marginally lower than the proportion of sector businesses at the national level.
- Among the 11 Combined Authorities, York and North Yorkshire ranks 5th, with **all businesses in the sector being small or micro businesses.**

Combined Authority Area	Total Micro and Small Businesses (2024)	% of all 60.20 Businesses	Concentration of Micro and Small Businesses
Cambridgeshire and Peterborough	5	50.0%	0.35
East Midlands	25	100.0%	0.85
Greater Manchester	60	85.7%	1.46
Liverpool City Region	10	100.0%	0.58
North East	10	50.0%	0.66
South Yorkshire	20	100.0%	1.23
Tees Valley	5	100.0%	0.69
West Midlands	30	100.0%	0.83
West Yorkshire	30	100.0%	0.97
West of England	20	80.0%	1.35
York and North Yorkshire	15	100.0%	0.96

Combined Authorities, ranked by business concentration (Small and Micro) in Television Programming and Broadcasting



Source: ONS UK Business Counts, 2024
CAGR is the compound annual growth rate 2019-2024.



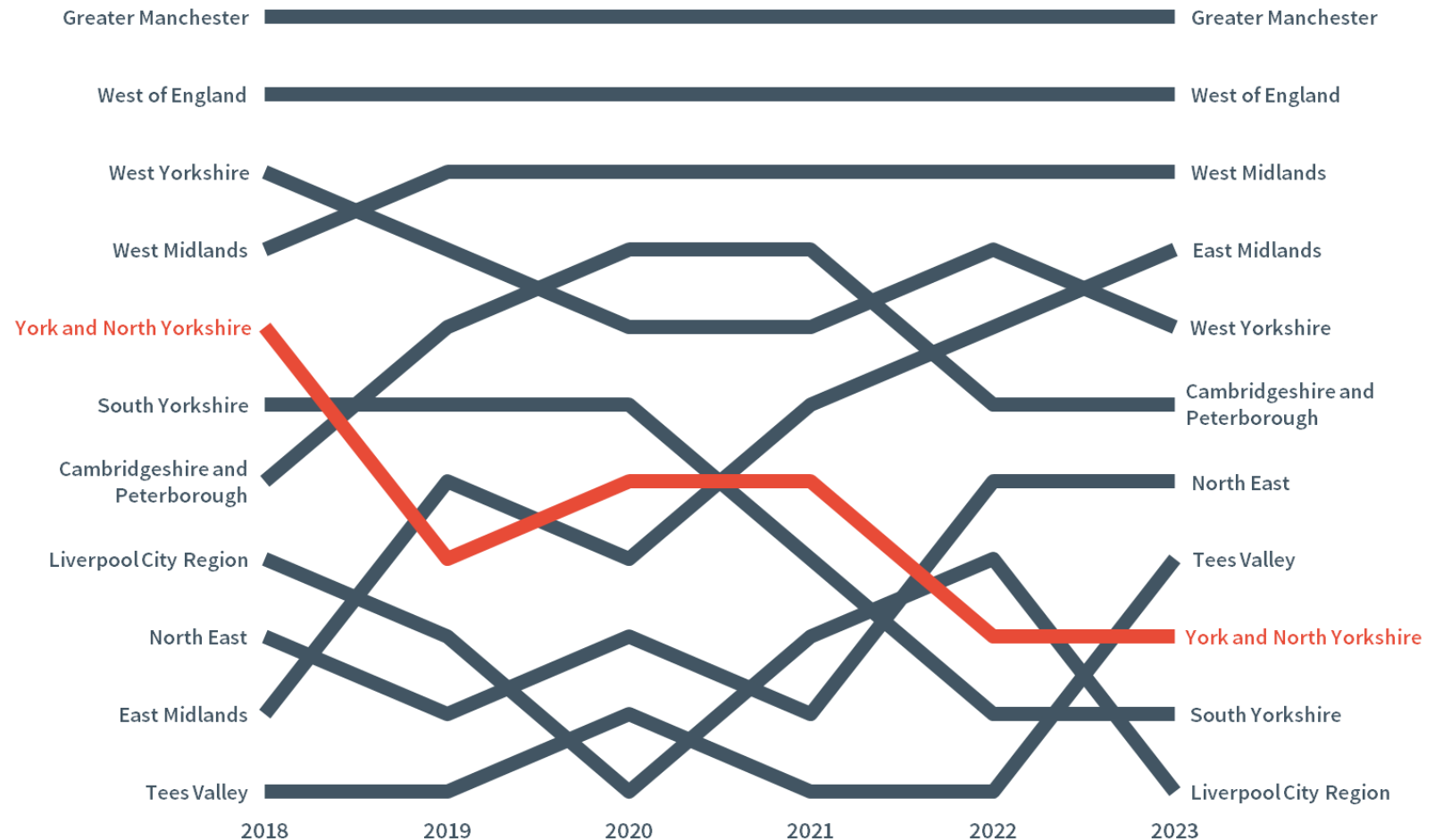
Analysis of Published Data | Employment

Key Takeaways

- Overall, York and North Yorkshire **does not have** a substantial concentration of employment in Publishing of Video Games.
- In 2023, 15 people were employed in the sector, **down from 75 in 2018**.
- Compared to other Combined Authorities, York and North Yorkshire ranks 9th in terms of sector employment concentration.

Combined Authority Area	Total Employees (2023)	% of all Creative Industry employment	Concentration of Employment
Cambridgeshire and Peterborough	250	0.92%	1.26
East Midlands	600	1.87%	1.50
Greater Manchester	4,000	6.13%	6.73
Liverpool City Region	15	0.09%	0.05
North East	50	0.18%	0.14
South Yorkshire	15	0.11%	0.06
Tees Valley	10	0.17%	0.09
West Midlands	1,250	3.31%	2.29
West Yorkshire	600	1.44%	1.32
West of England	800	2.18%	3.40
York and North Yorkshire	15	0.13%	0.09

Combined Authorities, ranked by employment in Television, Programming and Broadcasting



Source: ONS BRES, 2023

CAGR is the compound annual growth rate 2018-2023.



Analysis of AI-based Data



Analysis of AI Data | Businesses Overview – York and North Yorkshire

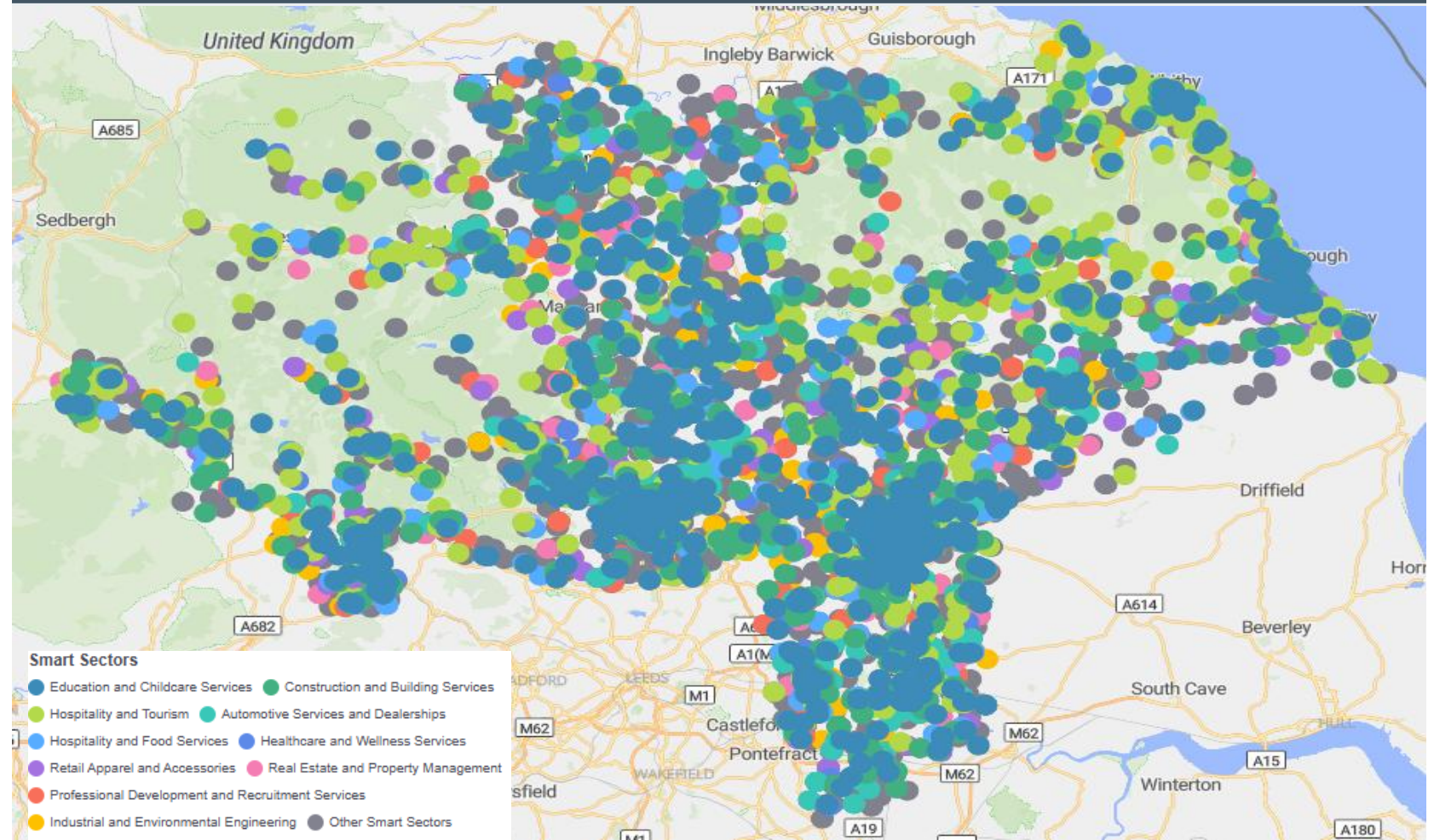
Key Takeaways

The AI-based approach to defining and quantifying the Creative Industries in York and North Yorkshire in this study are underpinned by Brainnwave's Smart Sector Analysis tool, which uses established keywords and themes to scrape websites of companies in York and North Yorkshire to provide a more nuanced and up-to-date count of Creative Industries than that offered by SIC codes, which were last revised in 2007.

Web scraping is limited by the quality of target businesses' websites and their use of certain keywords in online text and the pre-defined themes being used by creative businesses in York and North Yorkshire. This may lead to omissions of businesses in the Creative Industries if certain keywords or website formatting requirements are not met.

Altogether, **Brainnwave's LLM captured 26,348 businesses in 29,192 unique locations. Of these, 546 businesses (3%) were within Creative Industries** priority sectors in 601 unique locations (3%).

Map of all Smart Sectors identified by Brainnwave LLM





Analysis of AI Data | Businesses Overview – York and North Yorkshire

Key Takeaways

The LLM returned 37 naturally occurring 'Smart Sectors', totalling 26,348 businesses with 29,192 unique locations. These businesses, according to the latest Companies House data employ approximately 420,000 people, in line with the latest BRES data by the ONS.

On the surface, the largest Smart Sectors are Health and Social Care Services, Transport, and Cleaning and Health Services.

Art and Decorative Items, Arts and Entertainment and Event Services Smart Sectors also have a strong footprint in York and North Yorkshire, as the published data analysis shows, these industries are not significant drivers of the York and North Yorkshire economy.

These smart sectors identified by the LLM do not necessarily correlate to SIC code categorisation.

Breakdown of Smart Sectors across the York and North Yorkshire Economy

Categories Smart Sectors	Total Businesses	% of all businesses	Locations	% of all Locations	Employment	% of all Employment
Agriculture & Animal Services	1,465	5.50%	1,623	5.60%	14,114	3.30%
Creative						
Art and Decorative Items	1,288	4.90%	1,335	4.60%	12,009	2.80%
Entertainment and Event Services	541	2.10%	689	2.40%	21,524	5.10%
Youth and Community Sports and Performing Arts	746	2.80%	792	2.70%	13,761	3.20%
Heritage and Adventure Tourism	212	0.80%	215	0.70%	1,844	0.40%
Luxury Jewellery and Gifts	409	1.60%	462	1.60%	21,438	5.10%
Creative Total	3,196	12.20%	3,493	12.00%	70,576	16.60%
Automotive, Transport & Logistics	8,669	32.90%	9,825	33.60%	127,971	30.20%
Construction, Home & Environment	2,119	8.00%	2,243	7.60%	26,548	6.20%
Education, Faith & Community	1,288	4.90%	1,413	4.80%	21,560	5.10%
Health, Wellness & Personal Care	4,905	18.60%	5,329	18.20%	80,114	18.90%
Business, Legal & Professional Services	2,189	8.20%	2,365	8.20%	36,672	8.60%
Food, Hospitality & Tourism	1,601	6.10%	1,657	5.70%	8,044	1.90%
Retail & Consumer Goods	652	2.50%	875	3.00%	10,460	2.50%
Other	264	1.00%	369	1.30%	27,896	6.60%



Analysis of AI Data | Creative Industries Overview

Key Takeaways

Overall, Brainnwave's total business location sample of 29,192 represents (~63%) of all businesses in York and North Yorkshire, according to ONS Business Counts data.

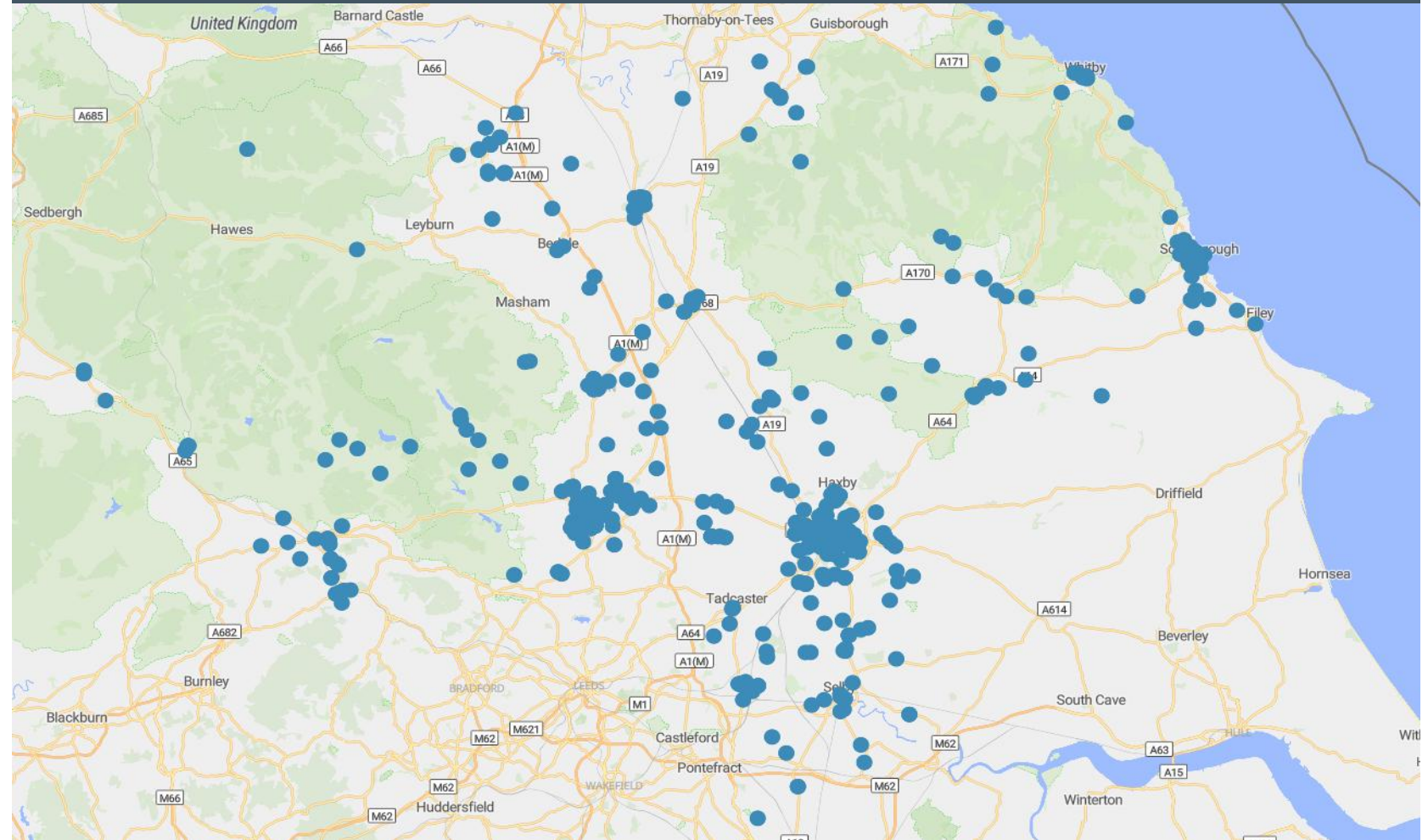
The sample of target businesses in the Extended Reality sector on the other hand covers ~20% of SIC code-based Creative Industries, as defined by DCMS.

There are two things to bear in mind.

Firstly, the LLM focuses on analysing the Extended Reality sector (see [Pages 8-9](#) for all sub sectors and themes), so the discrepancy is expected.

Secondly, the purpose of using AI data is not to mirror SIC code-based business counts, but rather to give an indication of smaller businesses and sole traders that may not typically self-classify under a "creative" SIC code, given how much the Creative Industries have changed since SIC codes were last defined in 2007. This is evident when we track back to the SIC codes attached to identified businesses in the sector.

Map of Creative Industries businesses identified by Brainnwave



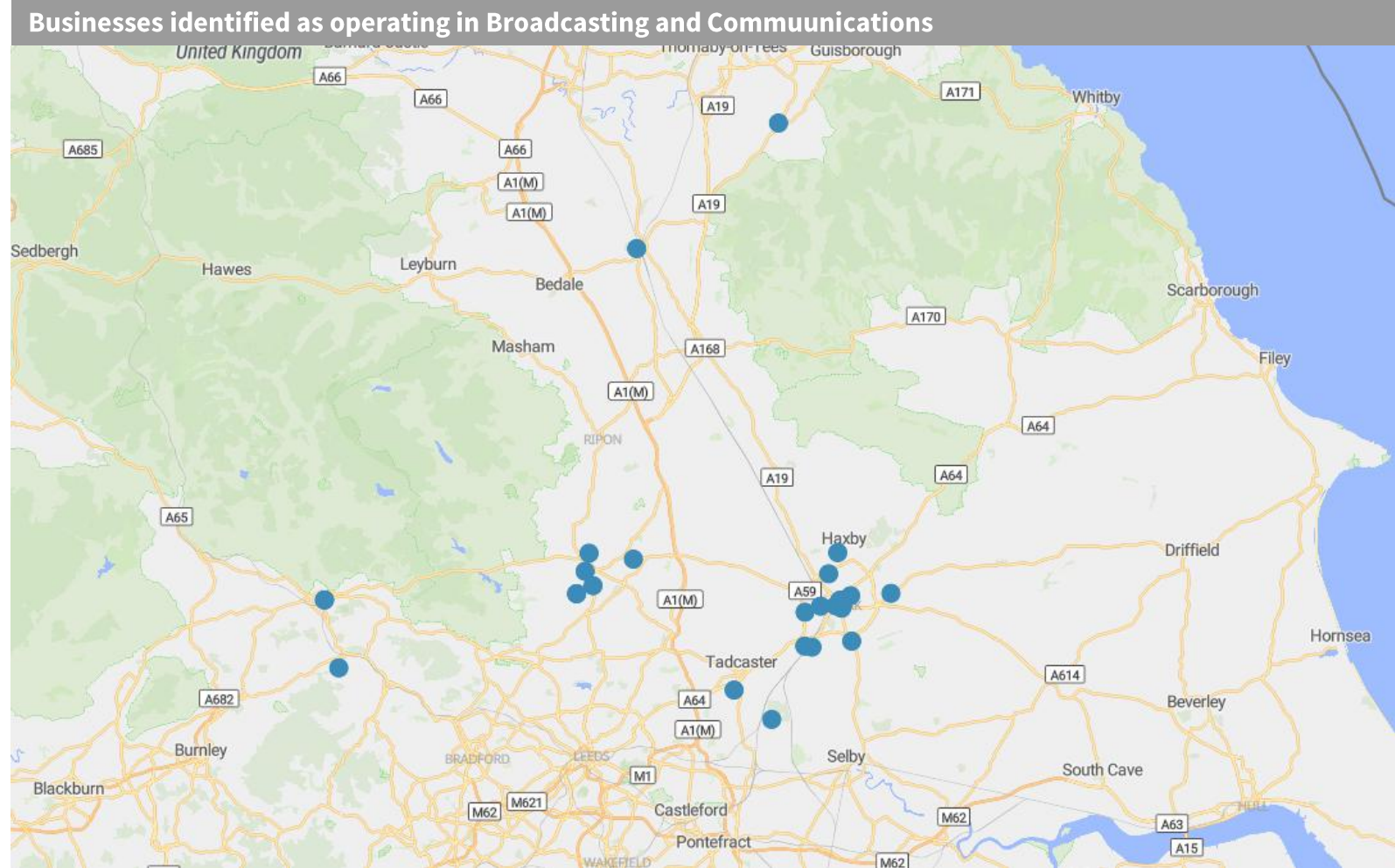


Broadcasting and Communications



Key Takeaways

- There is a concentration of Broadcasting and Communication businesses in York, with few business locations scattered throughout the rest of York and North Yorkshire.
- Of the sample studied, there are 211 Broadcasting and Communications business locations employing 261 people.





Culture

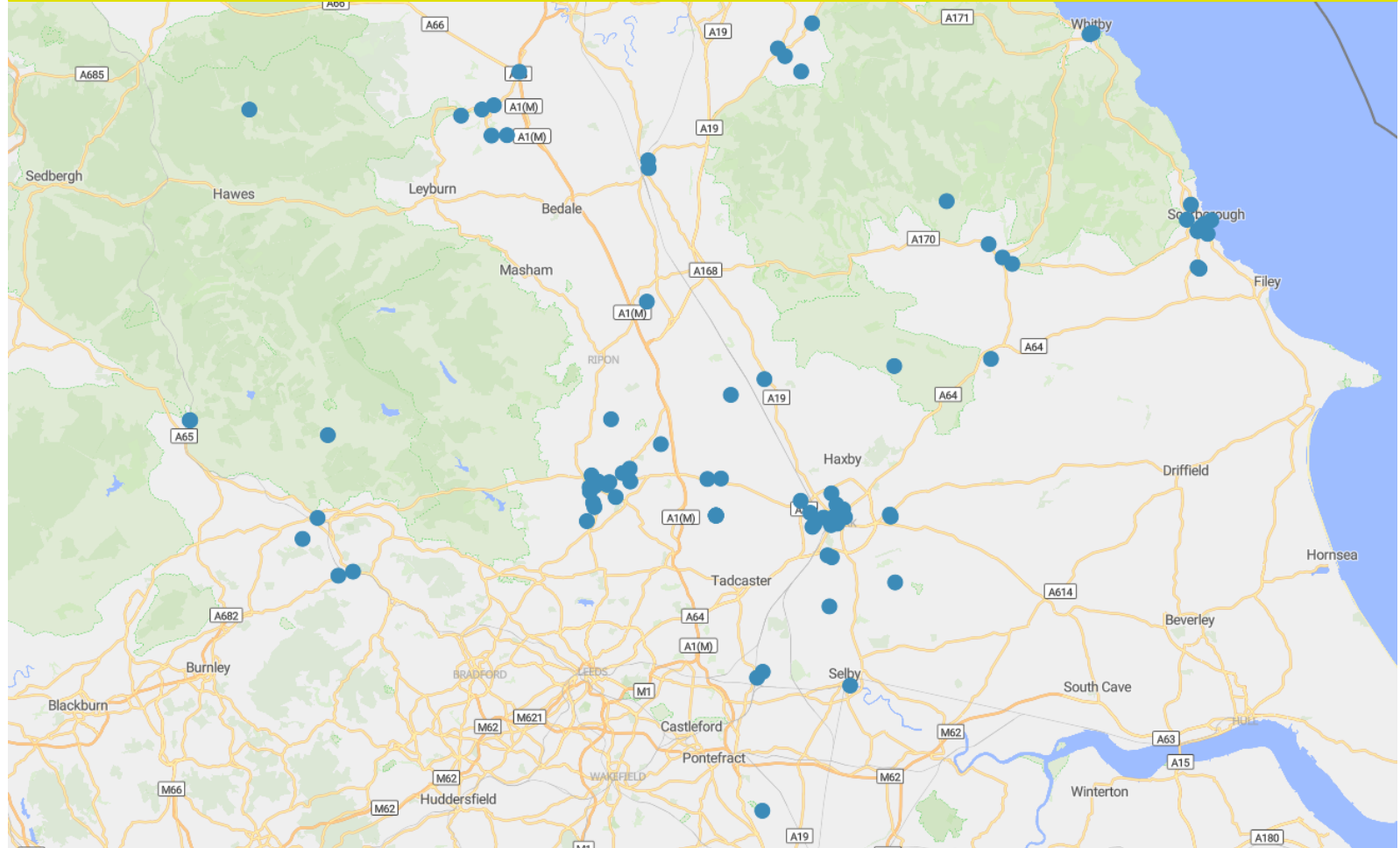


Analysis of AI Data | Culture Businesses Overview

Key Takeaways

- Harrogate, Scarborough and York have a high concentration of Culture business locations, with Culture business locations scattered throughout York and North Yorkshire.
- The sample of companies scraped by the LLM counts 190 business locations, employing some 1,597 people.

Businesses identified as operating in Culture





Fashion and Design

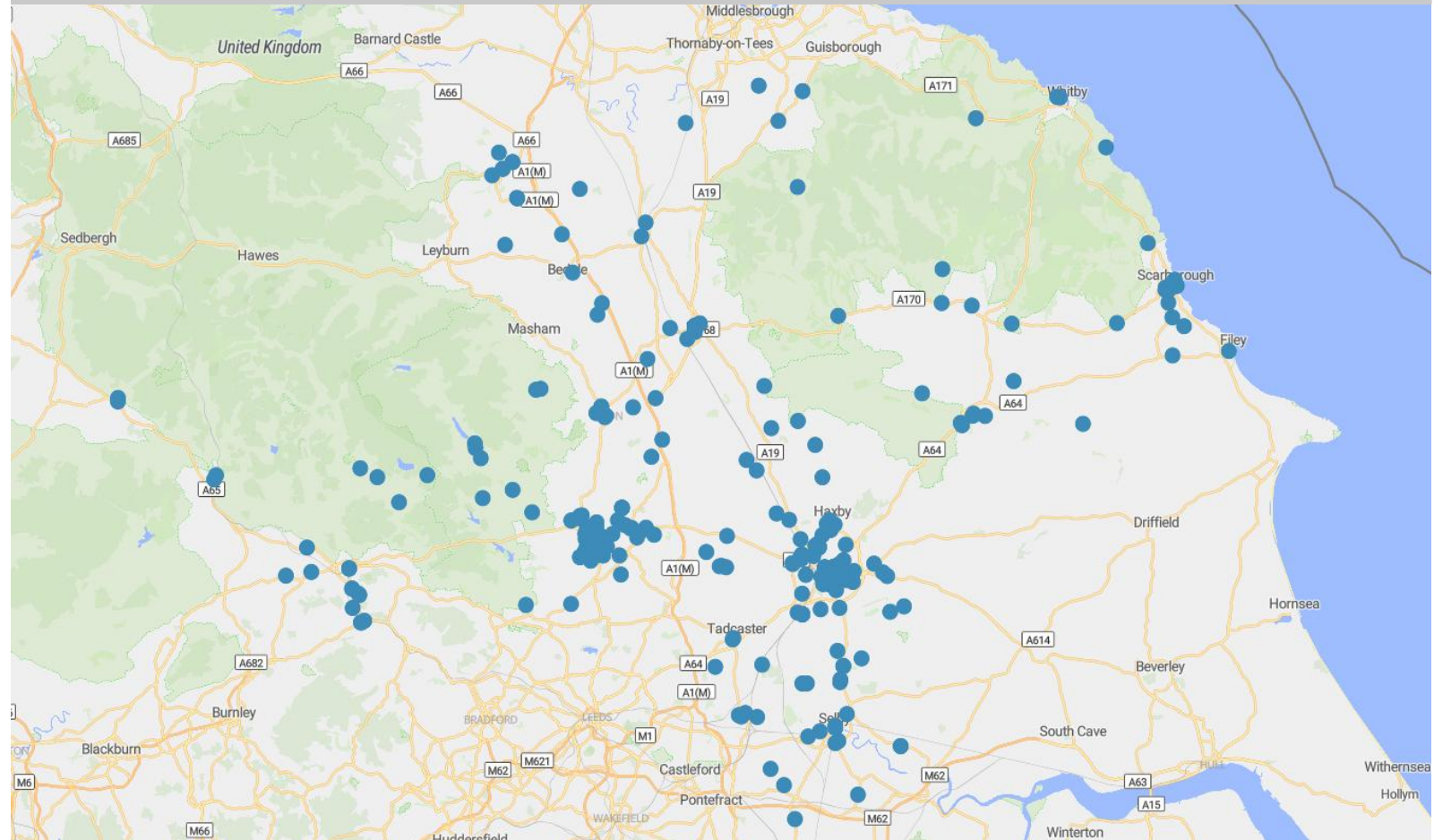


Analysis of AI Data | Fashion and Design Businesses Overview

Key Takeaways

- Major clusters around Harrogate and York, but smaller clusters in Selby, Whitby and Scarborough, as well as along the A1.
- Of the four themes, Fashion and Design is the largest with 1,642 unique business locations identified. It is estimated 8,806 people are employed in Fashion and Design.

Businesses identified as operating in Fashion and Design





IT

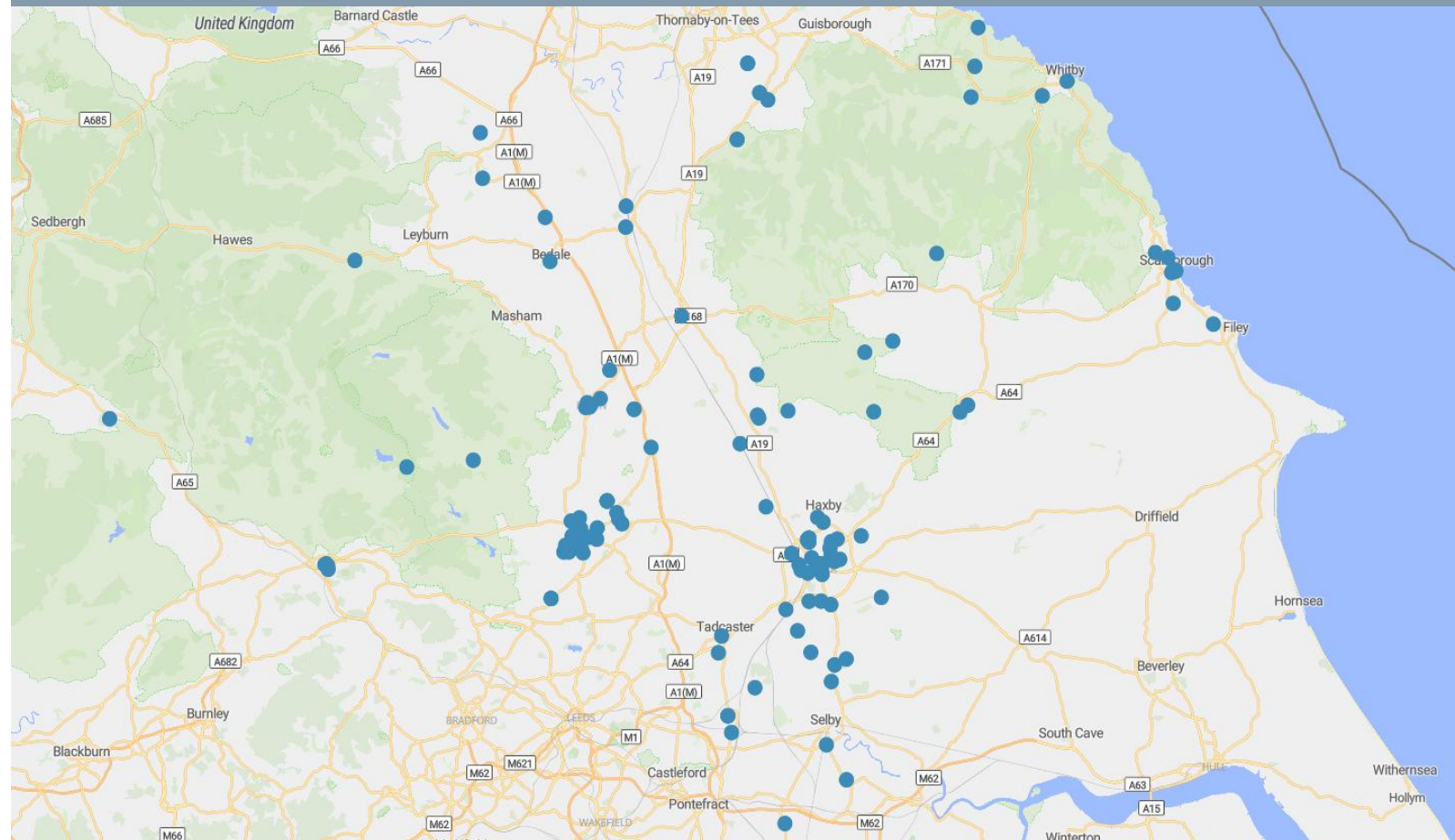


Analysis of AI Data | IT Businesses Overview

Key Takeaways

- IT sub-sectors make up a **large portion** of all combined authorities' Creative Industries business counts, with some combined authorities' Creative Industries being dominated by IT sub-sectors (Cambridgeshire and Peterborough; the West Midlands)
- In York and North Yorkshire, IT Creative Industries make up **38.3%** of Creative Industries' businesses.

Businesses identified as operating in IT





Analysis of AI Data | Link to SIC Code Classifications

Key Takeaways

- The LLM uses topics and keywords to identify businesses that appear to belong to certain sectors. The advantage of this approach is that it avoids the issues identified earlier with SIC code-based analysis.
- To illustrate this, we are able to track back to the SIC codes to which the businesses identified by the LLM identify as belonging. We have done this for Fashion and Design and for Culture.
- These examples illustrate well the relationship with SIC codes. For those companies that the model categorises as operating in fashion and design, the SIC code classification includes categories such as computer programming, consultancy and related activities, as well as management consultancy activities operating in the sector. For culture, the companies include SIC categories such as architectural and engineering activities and related consultancy, along with activities of holding companies.

Fashion and Design

Key SIC Groups	% Company Count	% Employment	% Locations
702: Management consultancy activities	7.2%	17.4%	7.3%
900: Creative, arts and entertainment activities	2.1%	17.0%	2.2%
620: Computer programming, consultancy and related activities	8.2%	15.7%	8.8%
181: Printing and service activities related to printing	2.4%	3.9%	2.2%
829: Business support activities not else classified	2.7%	2.9%	4.0%

Culture

Key SIC Groups	% Company Count	% Employment	% Locations
471: Retail sale in non-specialised stores	2.0%	37.9%	0.9%
711: Architectural and engineering activities and related technical consultancy	6.0%	11.1%	6.7%
702: Management consultancy activities	6.0%	9.5%	2.5%
642: Activities of holding companies	4.0%	6.3%	4.4%
900: Creative, arts and entertainment activities	2.0%	5.8%	1.1%



LinkedIn Talent Pool



LinkedIn Talent Pool Report | Overview

Talent Pool Report

LinkedIn Talent Pool Reports are compilations of industry-level market intelligence based on profiles on the platform. The intelligence contained in the report comes from recruiter profiles, as well as individual profiles, to provide a cross-section of the labour market and talent pool of specific locations and sectors. This should also pick up freelancers operating in the sector, as long as they use LinkedIn.

The Talent Pool Report produced by Hatch focusses on York and North Yorkshire.

The following industries were included in the Talent Pool Report produced by Hatch: Accessible Architecture and Design, Advertising Services, Apparel Manufacturing, Architecture and Planning, Artists and Writers, Book and Periodical Publishing, Broadcast Media Production and Distribution, Computer Games, Dance Companies, Design Services, Fashion Accessories Manufacturing, Graphic Design; Movies, Videos and Sound, Museums, Musicians, Performing Arts, Photography and Regenerative Design.

The report focuses more on workforce and people in the Creative Industries, and less on businesses. Overall, **14,165 professionals were identified in the Creative Industries**. This is larger than the number found in the published data, reflecting the different datasets, and in particular the identification of freelancers, who are not captured in the published data.

56% of all professionals were male whereas only 44% were female, **indicating a 12% split gender gap in York and North Yorkshire's Creative Industries**.

Where is talent located?

Location	Professionals	% total
York	6,325	44.7%
Harrogate	2,534	17.9%
Scarborough	969	6.8%
Skipton	575	4.1%
Selby	534	3.8%
Other	3,228	22.8%

Top Companies

Company	Professionals	1 year growth
Sky	107	-9%
York Museums Trust	89	+11%
Yell	74	-4%
SYSTRA UK & Ireland	73	-11%
National Railway Museum	72	-3%



LinkedIn Talent Pool Report | Skills and Leading Universities

Overview

- **The University of York is the largest producer of creative talent** in York and North Yorkshire's Creative Industries with ~6% of all employees having attended the University in some capacity.
- The top skills and fields of study **largely corroborate the specialisations** observed in ONS data, as do the top employers.
- For example, Museum Activities have an employment concentration of 2.4 and History is the second-most popular degree for professionals with a university degree, identified in the Talent Pool Report.

Who is producing creative talent in the area?

Top Schools	Professionals	% total
University of York	825	5.8%
York St. John University	434	3.0%
Leeds Beckett University	397	2.8%
University of Leeds	299	2.1%
Northumbria University	278	1.9%

What are the most common skills? (includes software and discipline)

Top Skills	Professionals	% total
Adobe Photoshop	1,527	10.7%
Social Media Marketing	1,179	8.2%
Graphic Design	1,073	7.5%
Digital Copywriting	970	6.8%
Digital Marketing	958	6.7%

What did professionals in creative industries study at university?

Top Fields of Study	Professionals	% total
Design and Visual Communications	558	3.9%
History	554	3.9%
Art and Art Studies	478	3.3%
Architecture	445	3.1%
Graphic Design	428	3.0%



Analysis of AI Data | Businesses Overview – York and North Yorkshire

Overview

- Overall, **York-based talent is leaving** to bigger cities and other Combined Authorities like London, Leeds and Manchester. This seems to corroborate much of the evidence arising from the analysis of published data.
- Nevertheless, the increase in self-employed creative professionals has grown by 50%, **evidencing the entrepreneurial nature of the sector**.

Attrition of leading companies

Company	1 year growth	Attrition ¹
Sky	-9%	13%
York Museums Trust	+11%	7%
Yell	-4%	5%
SYSTRA UK & Ireland	-11%	14%
National Railway Museum	-3%	11%
BBC	-1%	14%
Science Museum Group	+9%	5%
York Theatre Royal	+6%	11%
Hemingways Marketing Services	+2%	24%
Self-Employed	+52%	10%

¹The number of professionals leaving an employer divided by the average number of professionals employed by the same in the last 12 months.

Where has York-based talent gone or come from in the last year?

Location	Net Change	Ratio ²
London	-18	-1.4
Leeds	-12	-1.3
Manchester	-6	-1.6
Sheffield	+5	+1.8
Kingston-Upon-Hull	+1	+1.1
Liverpool	-1	-1.1
Tyneside	+1	+1.2
Nottingham	-3	-1.7
Edinburgh	+2	+1.7
Bristol	-2	-1.7
Total	-33	-1.2

² Comparison of the number of professionals gained to professionals lost. Obtained by dividing the number of professionals lost by the number of professionals gained, and multiplying the result by the sign of the net change. So, for example, a ratio of -1.5 demonstrates that for each professional gained, 1.5 were lost.



Summary of Findings

Summary of Findings

The analysis of York and North Yorkshire's Creative Industries **paints a mixed picture** of the industry. However, there are **interesting findings on individual sub-sectors, and opportunities for growth**.

ONS Data

The published ONS data and business counts shows that, overall, York and North Yorkshire has relatively unspecialised Creative Industries. However, there are some areas of strength, closely reflecting the findings of the Growth Plan.



Highly specialised Architectural sector: **1.12 LQ.B & 1.71 LQ.E**



High concentration of Performing Arts employment (**1.12 LQ.E**), **despite low business concentration (0.66 LQ.B)**.



IT sectors employ **5,600 people (~50%)** within York and North Yorkshire's Creative Industries. **0.70 LQ.B** and **0.80 LQ.E**.



Specialised Design Activities has a strong concentration of businesses (**1.04 LQ.B**) and employment (**1.24 LQ.E**).

LLM Modelling

The mapping of businesses using extended reality technology reveals that the technology is not widely adapted across the Creative Industries, but nevertheless, it is employed across the York and North Yorkshire economy more broadly.



Of York and North Yorkshire using extended reality technology, **12% are in the Creative Industries** and **employ 17% of the sample**.



The largest smart sector using extended reality technology is **Automotive, transport & logistics**, followed by Health, Wellness and Personal Care.



Among Priority Subsectors, those within **Culture** and **Fashion and Design** had the most **business locations (~1,830)** and **employment (~10,400)** across the York and North Yorkshire economy.



SIC Groups not explicitly included in the Creative Industries include **Management consultancy activities, Activities of holding companies** and **Retail sale in non-specialised activities**.

LinkedIn Talent Pool

The LinkedIn Talent Pool Report provides granular insights on Creative Industries and skills, as well as talent flows and pipelines, to paint a holistic picture of York and North Yorkshire's Creative Industries. These are useful to contextualise findings from ONS data and LLM modelling.



Creative talent is overwhelmingly concentrated in York, with **6,400 people** report being York-based (~50%)



University of York has produced **6% of creative talent** currently based in the study area, over the last year



For each person coming entering York and North Yorkshire's Creative Industries, **1.2 people** leave.



Self-employment has seen a **50%+ increase** over the last year.



Appendix A – Sector SIC Code Definitions

Themes by subsector and SIC code

Subsector	SIC Code	Description	Theme
Architecture	7111	Architectural activities	Architecture
Advertising and Marketing	7021	Public relations and communication activities	Broadcasting and Communications
	7311	Advertising agencies	
	7312	Media representation	
Film, TV, video, radio and photography	5911	Motion picture, video and television programme production activities	
	5912	Motion picture, video and television programme post-production activities	
	5913	Motion picture, video and television programme distribution activities	
	5914	Motion picture projection activities	
	6010	Radio broadcasting	
	6020	Television programming and broadcasting activities	
	7420	Photographic activities	
Museums, galleries and libraries	9101	Library and archive activities	Culture
	9102	Museum activities	
Music, performing and visual arts	5920	Sound recording and music publishing activities	
	8552	Cultural education	
	9001	Performing arts	

Themes by subsector and SIC code

Subsector	SIC Code	Description	Theme
Music, performing and visual arts (continued)	9002	Support activities to performing arts	Culture (continued)
	9003	Artistic creation	
	9004	Operation of arts facilities	
Crafts	3212	Manufacture of jewellery and related articles	Fashion and Design
Design and designer fashion	7410	Specialised design activities	
IT, software and computer services	5821	Publishing of computer games	IT
	5829	Other software publishing	
	6201	Computer programming activities	
	6202	Computer consultancy activities	
Publishing	5811	Book publishing	Publishing
	5812	Publishing of directories and mailing lists	
	5813	Publishing of newspapers	
	5814	Publishing of journals and periodicals	
	5819	Other publishing activities	
	7430	Translation and interpretation activities	



Appendix B – LLM Priority Topics

Animation Topics

Topic	Description
2D Animation	This topic involves the creation of moving images in a two-dimensional space, often used in various forms of media such as films, television shows, video games, and online content. It encompasses the artistic and technical processes of designing, drawing, and animating characters, backgrounds, and scenes to tell a story or convey a message.
3D Animation	This topic involves the creation of three-dimensional moving images in a digital environment. It is widely used in various industries, including entertainment, education, and marketing, to create engaging and immersive experiences. This topic encompasses the entire process from conceptualization and modeling to rendering and animation.
3D Modeling and Rigging	This topic involves the creation of three-dimensional digital models and the process of setting up these models for animation. It is a crucial aspect of the animation industry, particularly within the realm of extended reality, digital creativity, research, and innovation. This topic encompasses various techniques and tools used to bring characters and environments to life in a virtual space.
Animated Short Films	This topic encompasses the creation, production, and distribution of short animated films, often leveraging cutting-edge technology and innovative storytelling techniques. These films are typically used for entertainment, marketing, education, and research purposes within the animation industry.
Animation for Augmented Reality (AR)	This topic involves the creation and integration of animated content within augmented reality (AR) environments. It encompasses the techniques, tools, and creative processes used to bring animated characters and scenes to life in a way that interacts seamlessly with the real world. This topic is crucial for enhancing user experiences in various applications, including gaming, education, marketing, and entertainment.
Animation for Commercials	This topic involves the use of animation techniques and technologies to create engaging and visually appealing commercials. It encompasses various aspects of digital creativity, research, and innovation within the extended reality sector, focusing on the animation subsector. Companies in this field leverage cutting-edge tools and creative strategies to produce high-quality animated content for advertising purposes.
Animation for Film	This topic involves the creation and integration of animated content specifically for use in films. It encompasses various techniques and technologies used to produce high-quality animations that enhance the storytelling and visual experience of movies. Companies in this sector focus on innovation, digital creativity, and research to push the boundaries of what is possible in film animation.
Animation for TV	This topic involves the creation and production of animated content specifically designed for television. It encompasses various aspects such as character design, storyboarding, animation techniques, and the use of advanced technologies to bring animated stories to life on the small screen. Companies in this sector often focus on innovation, creativity, and the integration of extended reality to enhance the viewing experience.
Animation for Video Games	This topic involves the creation and implementation of animated content specifically designed for video games. It encompasses various aspects such as character animation, environmental animation, and the integration of these animations into the game engine to enhance the gaming experience.
Animation for Virtual Reality (VR)	This topic focuses on the creation and implementation of animated content specifically designed for Virtual Reality (VR) environments. It encompasses the techniques, tools, and creative processes involved in producing immersive and interactive animations that enhance the VR experience.
Animation Post-production	This topic involves the processes and techniques used to refine and enhance animated content after the initial creation phase. It includes tasks such as editing, compositing, color correction, sound design, and visual effects integration to ensure the final product meets the desired quality and artistic vision.
Animation Pre-production	This topic involves the planning and development stages that occur before the actual production of an animation. It includes activities such as concept development, storyboarding, character design, and the creation of animatics. This phase is crucial for ensuring that the final animation is cohesive, visually appealing, and aligns with the intended vision.
Animation Software and Tools	This topic encompasses the various software and tools used in the creation, design, and production of animations. It includes discussions on the latest technologies, features, and innovations in animation software, as well as advice on selecting the right tools for different animation projects.
Augmented Reality (AR) and Animation	This topic explores the integration of Augmented Reality (AR) with animation to create immersive and interactive digital experiences. It encompasses the use of advanced technologies to enhance visual storytelling, provide innovative solutions for various industries, and push the boundaries of digital creativity.
CGI in Animation	This topic involves the use of computer-generated imagery (CGI) to create animated content for various applications, including films, video games, virtual reality, and other digital media. It encompasses the techniques, tools, and innovations that drive the creation of lifelike and imaginative animated visuals.

Animation Topics (continued)

Topic	Description
Character Animation	This topic involves the creation and manipulation of animated characters for various applications, including films, video games, virtual reality, and augmented reality. It encompasses the techniques and technologies used to bring characters to life, making them appear realistic and engaging to the audience.
Immersive Animation Experiences	This topic explores the creation and implementation of highly engaging and interactive animated experiences that immerse users in virtual environments. These experiences leverage advanced technologies in extended reality (XR) to provide users with a sense of presence and participation in animated worlds, enhancing storytelling, education, entertainment, and more.
Interactive Animation	This topic involves the creation and manipulation of animations that allow users to interact with the content in real-time, enhancing the user experience through engagement and immersion.
Motion Graphics	This topic involves the creation and manipulation of digital graphics that give the illusion of motion or transformation. It is widely used in various media, including film, television, video games, and online content, to enhance visual storytelling and engage audiences.
Real-Time Animation	This topic involves the creation and manipulation of animated content that is rendered and displayed in real-time, allowing for interactive and dynamic visual experiences. It is a crucial aspect of extended reality applications, enhancing digital creativity and innovation in various fields such as gaming, virtual reality, and augmented reality.
Stop Motion Animation	This topic involves the creation of animated sequences by capturing individual frames of physical objects, which are then played in rapid succession to create the illusion of movement. It is a meticulous and creative process that requires attention to detail and a deep understanding of animation principles.
Storyboarding	This topic involves the process of planning and organizing the visual sequence of a story, often used in the fields of animation, film, and other visual media. It is a crucial step in the pre-production phase, where ideas are sketched out to create a coherent narrative flow.
Virtual Production and Animation	This topic encompasses the integration of virtual production techniques and animation to create immersive and interactive digital experiences. It involves the use of advanced technologies such as real-time rendering, motion capture, and virtual reality to enhance the creative process and produce high-quality animated content.
Virtual Reality (VR) and Animation	This topic explores the intersection of Virtual Reality (VR) and Animation, focusing on how these technologies are revolutionizing digital creativity, research, and innovation. It encompasses the creation of immersive animated experiences, the development of VR environments, and the application of these technologies in various industries.
Voice Acting and Sound Design in Animation	This topic explores the integral role of voice acting and sound design in the creation of animated content. It delves into how these elements enhance storytelling, character development, and the overall immersive experience in animation. Companies in the extended reality sector, particularly those focused on digital creativity, research, and innovation, often emphasize the importance of high-quality audio production to complement their visual creations.
XR (Extended Reality) in Animation	This topic explores the integration of extended reality technologies in the field of animation, enhancing the creative process and delivering immersive experiences. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create dynamic and interactive animated content.

Audio Innovators Topics

Topic	Description
3D Audio	This topic involves the creation and manipulation of sound in a three-dimensional space, enhancing the auditory experience by making it more immersive and realistic. It is widely used in various applications such as virtual reality, gaming, and multimedia entertainment, providing users with a sense of spatial awareness and depth.
Ambisonic Sound	This topic is a cutting-edge audio technology that captures and reproduces sound in a full 360-degree sphere around the listener, providing an immersive auditory experience. It is widely used in virtual reality, augmented reality, and other extended reality applications to enhance the sense of presence and realism.
Audio Branding	This topic involves the strategic use of sound to create a unique and memorable auditory identity for a brand. It encompasses the creation of audio logos, jingles, soundscapes, and other auditory elements that help to reinforce a brand's image and connect with its audience on an emotional level. Companies in the sector of Extended Reality - Digital creativity, Research & Innovation, particularly those in the subsector of Audio Innovators, often explore this topic to enhance user experiences and differentiate their offerings in a competitive market.
Audio Consultation	This topic involves providing expert advice and guidance on audio technologies and solutions, particularly in the context of extended reality, digital creativity, research, and innovation. It encompasses a range of services including audio design, sound engineering, and the integration of advanced audio systems into immersive experiences.
Audio Engineering	This topic encompasses the technical and creative aspects of recording, manipulating, and reproducing sound. It involves the use of various technologies and techniques to ensure high-quality audio output for various applications, including music production, film, virtual reality, and other digital media.
Audio for Augmented Reality (AR)	This topic focuses on the integration and enhancement of audio experiences within augmented reality environments. It encompasses the development, innovation, and application of audio technologies that create immersive and interactive soundscapes, enhancing the overall user experience in AR.
Audio for Commercials	This topic focuses on the creation, enhancement, and implementation of audio elements specifically designed for use in commercial advertising. It encompasses the latest innovations in sound design, audio technology, and creative strategies to produce compelling and effective audio content that captures the audience's attention and enhances the overall impact of commercials.
Audio for Interactive Media	This topic focuses on the integration and innovation of audio technologies within interactive media, enhancing user experiences in extended reality environments. It encompasses the development, application, and research of audio solutions that contribute to immersive and engaging digital creativity.
Audio for Live Streaming	This topic focuses on the various aspects of audio technology and solutions specifically designed for live streaming applications. It encompasses the development, innovation, and implementation of audio systems that enhance the live streaming experience, ensuring high-quality sound, real-time audio processing, and seamless integration with visual content.
Audio for Podcasts	This topic is essential for companies in the Extended Reality sector, particularly those focused on Digital Creativity, Research & Innovation. It encompasses the various aspects of audio production, enhancement, and integration specifically tailored for podcasts. Companies in this field often discuss the latest technologies, tools, and techniques to create high-quality audio experiences for podcast listeners.
Audio for Virtual Reality (VR)	This topic focuses on the integration and enhancement of audio experiences within virtual reality environments. It encompasses the development of immersive soundscapes, spatial audio technologies, and innovative audio solutions that elevate the overall VR experience.
Audio for VR/AR Experiences	This topic focuses on the integration and enhancement of audio elements within virtual reality (VR) and augmented reality (AR) experiences. It encompasses the development, innovation, and application of immersive sound technologies to create more realistic and engaging environments for users.
Audio for XR (Extended Reality)	This topic focuses on the integration and enhancement of audio experiences within extended reality (XR) environments. It encompasses the development, innovation, and application of audio technologies to create immersive and interactive soundscapes that complement virtual, augmented, and mixed reality experiences.
Audio Innovation	This topic focuses on the advancements and innovations in audio technology, particularly within the realm of extended reality and digital creativity. It encompasses the development of new audio solutions, research into cutting-edge audio techniques, and the integration of immersive sound experiences in various applications.
Audio Post-Production	This topic involves the process of editing and mixing audio recordings to create the final soundtrack for various media formats, including film, television, virtual reality, and other digital experiences. It encompasses a range of activities such as sound design, dialogue editing, Foley, ADR (Automated Dialogue Replacement), and final mixing to ensure the highest quality audio experience.

Audio Innovators Topics (continued)

Topic	Description
Audio Prototyping	This topic involves the creation and testing of audio experiences in the early stages of development, allowing for rapid iteration and refinement. It is particularly relevant in the fields of extended reality, digital creativity, research, and innovation, where immersive and interactive audio plays a crucial role.
Audio Restoration	This topic involves the process of improving the quality of audio recordings by removing imperfections such as noise, clicks, pops, and other distortions. It is a crucial aspect of preserving and enhancing audio content for various applications, including music, film, and virtual reality experiences.
Binaural Audio	This topic involves the use of advanced audio recording and playback techniques to create immersive sound experiences that mimic the way humans naturally hear. By capturing audio with two microphones placed at ear distance, it allows listeners to experience sound in a three-dimensional space, enhancing the realism and depth of audio content.
Foley and Sound Effects	This topic is essential in creating immersive audio experiences in the realm of extended reality. It involves the art and science of producing and integrating sound effects to enhance the realism and emotional impact of digital content. Companies in this sector leverage innovative techniques and technologies to deliver high-quality audio that complements visual elements, thereby enriching the overall user experience.
Immersive Sound Design	This topic focuses on the creation and implementation of high-quality, immersive audio experiences that enhance the realism and emotional impact of digital environments. It involves the use of advanced sound design techniques and technologies to create spatial audio, 3D soundscapes, and interactive audio elements that respond to user actions and environmental changes.
Interactive Audio	This topic focuses on the development and implementation of audio technologies that allow users to interact with sound in innovative and immersive ways. It encompasses advancements in audio software, hardware, and user experiences that enhance digital creativity and research in extended reality environments.
Mixing and Mastering	This topic involves the process of combining and refining audio tracks to achieve a polished and professional sound. It is a critical step in audio production that ensures clarity, balance, and cohesion in the final product. This topic is essential for creating immersive audio experiences in extended reality applications, enhancing the overall quality and impact of digital content.
Real-Time Audio Processing	This topic involves the processing of audio signals in real-time, enabling immediate manipulation, analysis, and enhancement of sound. It is crucial for applications in extended reality, digital creativity, and innovative audio solutions.
Sound Design	This topic is essential for creating immersive and engaging experiences in the realm of extended reality. It involves the art and science of crafting audio elements that enhance the virtual environment, making it more realistic and captivating for users. This topic is crucial for audio innovators who aim to push the boundaries of digital creativity through research and innovation.
Spatial Audio	This topic involves the creation and manipulation of audio experiences that provide a sense of three-dimensional space, enhancing the realism and immersion of digital environments. It is particularly relevant in the fields of virtual reality, augmented reality, and other forms of extended reality, where audio plays a crucial role in creating a convincing and engaging user experience.
Voiceover and Dialogue Recording	This topic involves the process of recording voiceovers and dialogues for various applications, including virtual reality, augmented reality, and other digital experiences. It encompasses the technical and creative aspects of capturing high-quality audio that enhances the immersive experience for users.

Computer Games Topics

Topic	Description
360-Degree Video Games	This topic explores the immersive and interactive experiences provided by 360-degree video games, which allow players to engage with virtual environments in a fully panoramic view. These games leverage advanced technologies to create realistic and captivating gameplay, enhancing the overall user experience in the realm of extended reality.
AR (Augmented Reality) Game Development	This topic encompasses the development of interactive and immersive games that blend digital content with the real world through the use of augmented reality technology devices such as smartphones, tablets, and AR glasses. devices. are used to overlay computer-generated images, sounds, and other sensory enhancements onto a user's perception of the real world, creating a seamless and engaging gaming experience.
Augmented Reality (AR) in Gaming	This topic explores the integration of digital information with the user's environment in real-time, enhancing the gaming experience by overlaying virtual elements onto the real world. It involves the use of advanced technologies to create immersive and interactive gaming experiences that blend the physical and digital realms.
Console Game Development	This topic encompasses the development, design, and production of video games specifically for console platforms. It involves various stages including concept creation, coding, graphic design, sound engineering, and testing. Companies in this sector often focus on creating immersive and engaging experiences for players, leveraging the latest technologies and innovations in the gaming industry.
Extended Reality (XR) in Gaming	This topic explores the integration and application of extended reality technologies in the gaming industry, focusing on how these innovations enhance user experiences, create immersive environments, and drive the future of interactive entertainment.
Game Art and Animation	This topic encompasses the creation and animation of visual elements in computer games, focusing on the artistic and technical aspects that bring game worlds and characters to life. It involves a combination of creativity, technical skills, and software proficiency to produce engaging and immersive experiences for players.
Game Design	This topic encompasses the principles, methodologies, and creative processes involved in the creation and development of interactive digital experiences, particularly within the realm of computer games. It includes aspects such as storytelling, mechanics, user experience, and technological innovation.
Game Development	This topic encompasses the creation, design, and development of interactive digital entertainment experiences. It involves various stages including concept development, programming, graphic design, sound design, and testing. Companies in this sector often focus on innovation and creativity to deliver engaging and immersive experiences to users.
Game Development Tools and Engines	This topic encompasses the various tools and engines used in the development of computer games, particularly within the realm of extended reality and digital creativity. It includes discussions on software, platforms, and technologies that facilitate the creation, design, and deployment of interactive gaming experiences.
Game Engine Optimisation	This topic focuses on improving the performance, efficiency, and overall quality of game engines used in the development of computer games, particularly within the extended reality and digital creativity sectors. It involves techniques and strategies to enhance rendering speeds, reduce latency, and optimize resource usage to deliver a seamless and immersive gaming experience.
Game Localization	This topic involves the process of adapting video games to different languages and cultures, ensuring that the gaming experience is seamless and engaging for players around the world. It encompasses translation, culturalization, and technical adjustments to make games accessible and enjoyable for diverse audiences.
Game Mechanics	This topic encompasses the rules, systems, and structures that govern the interactions and experiences within a game. It includes the design and implementation of various elements that contribute to the gameplay experience, such as objectives, challenges, rewards, and player actions. This topic is crucial for creating engaging and immersive experiences in computer games, particularly within the realm of extended reality.
Game Monetization	This topic focuses on the various strategies and methods used by companies to generate revenue from computer games. It encompasses a range of monetization models, including in-game purchases, subscriptions, advertisements, and more. Companies in the extended reality and digital creativity sector often explore innovative ways to enhance player experience while maximizing profitability.
Game Music Composition	This topic involves the creation and integration of music specifically designed for video games. It encompasses the composition, production, and implementation of music that enhances the gaming experience, providing emotional depth, atmosphere, and immersion. This topic is crucial for creating engaging and memorable gaming experiences.
Game Production	This topic encompasses the entire process of creating, developing, and producing computer games, including concept development, design, programming, testing, and distribution. It involves a multidisciplinary approach that combines creativity, technology, and innovation to deliver engaging and immersive gaming experiences.

Computer Games Topics (continued)

Topic	Description
Game Programming	This topic involves the creation, development, and programming of interactive digital entertainment experiences, often referred to as video games. It encompasses various aspects such as game design, coding, graphics, sound, and user experience, and is a key area of focus for companies in the extended reality and digital creativity sectors.
Game Prototyping	This topic involves the initial creation and testing of game concepts to explore ideas, mechanics, and gameplay before full-scale development. It is a crucial phase in the game development process, allowing developers to experiment, iterate, and refine their ideas to ensure a compelling and engaging final product.
Game Publishing	This topic involves the process of bringing computer games to market, including development, marketing, distribution, and post-launch support. It encompasses various aspects such as game design, production, quality assurance, and player engagement strategies.
Game Sound Design	This topic focuses on the creation and implementation of audio elements in video games, including sound effects, music, and voice acting, to enhance the gaming experience and immerse players in the virtual world.
Game Storytelling	This topic focuses on the art and science of creating compelling narratives within the realm of computer games. It encompasses the development of storylines, character arcs, and immersive worlds that engage players and enhance their gaming experience. This topic is crucial for companies in the extended reality sector, particularly those involved in digital creativity, research, and innovation.
Game Testing and QA	This topic focuses on the processes and methodologies used to ensure the quality and functionality of computer games. It involves identifying and fixing bugs, ensuring the game meets design specifications, and providing a seamless user experience. This topic is crucial for delivering high-quality games that meet player expectations and perform well across various platforms.
Game User Experience (UX) Design	This topic focuses on the design and optimization of user experiences in computer games, ensuring that players have engaging, intuitive, and enjoyable interactions within extended reality environments. It encompasses various aspects such as user interface design, player feedback, accessibility, and immersive storytelling.
Game User Interface (UI) Design	This topic focuses on the design and development of user interfaces specifically for computer games, ensuring an engaging and intuitive experience for players. It encompasses various elements such as layout, visual design, interactivity, and usability, all tailored to enhance the gaming experience in extended reality environments.
Immersive Gaming Experiences	This topic focuses on creating highly engaging and realistic gaming environments that leverage advanced technologies to provide players with a deeply immersive experience. It encompasses the use of virtual reality (VR), augmented reality (AR), and other extended reality (XR) technologies to enhance the sensory and interactive aspects of computer games.
Indie Game Development	This topic involves the creation and development of independent video games, often by small teams or individual developers. It encompasses the entire process from concept and design to production and distribution, with a focus on creativity, innovation, and unique gameplay experiences.
Interactive Storytelling in Games	This topic explores the integration of interactive elements within storytelling in computer games, enhancing player engagement and immersion through dynamic narratives and player choices.
Mobile Game Development	This topic involves the creation, design, and development of games specifically for mobile devices. It encompasses various aspects such as game mechanics, user interface design, graphics, sound, and the use of advanced technologies to enhance the gaming experience. Companies in this sector often focus on innovation, creativity, and the integration of extended reality to create immersive and engaging mobile games.
Motion Capture for Games	This topic involves the use of technology to capture the movements of real-world actors and translate them into digital characters for use in computer games. It is a crucial aspect of creating realistic and immersive gaming experiences.
Multiplayer Game Development	This topic involves the creation and development of games that allow multiple players to interact and compete within the same virtual environment. It encompasses various aspects such as game design, network architecture, user experience, and real-time interaction.
PC Game Development	This topic involves the creation, design, and development of video games for personal computers. It encompasses various aspects such as game design, programming, graphics, sound, and user experience. Companies in this sector often focus on innovation, creativity, and the use of advanced technologies to enhance the gaming experience.

Computer Games Topics (continued)

Topic	Description
Real-Time Rendering for Games	This topic focuses on the techniques and technologies used to generate interactive graphics in real-time for computer games. It encompasses various aspects such as rendering algorithms, hardware acceleration, optimization strategies, and the integration of visual effects to create immersive gaming experiences.
Virtual Reality (VR) in Gaming	This topic explores the use of immersive technology to create interactive and engaging experiences in the realm of computer games. It encompasses the development, application, and impact of virtual reality systems and content designed to enhance the gaming experience.
VR (Virtual Reality) Game Development	This topic involves the creation and development of immersive virtual reality experiences specifically for computer games. It encompasses the design, programming, and implementation of VR environments and interactions that provide users with a highly engaging and interactive gaming experience.

Design Topics

Topic	Description
3D Design	This topic involves the creation and manipulation of three-dimensional objects and environments using specialized software and tools. It is a crucial aspect of digital creativity, research, and innovation, particularly within the extended reality sector. This topic encompasses various techniques and applications, including modeling, rendering, and animation, to produce realistic and immersive experiences.
Augmented Reality (AR) Design	This topic focuses on the design and development of augmented reality (AR) experiences, which blend digital content with the real world to create immersive and interactive environments. It encompasses various aspects such as user interface design, 3D modeling, user experience, and the integration of AR technology into different applications.
Branding and Identity Design	This topic focuses on the creation and development of a unique brand identity through visual and experiential design elements. It encompasses the strategic use of logos, color schemes, typography, and other design components to establish a cohesive and memorable brand presence in the digital and physical realms.
Design Consultation	This topic involves providing expert advice and guidance on the design and development of extended reality (XR) experiences. It encompasses the creative, technical, and strategic aspects of designing immersive digital environments and interactions. Companies in this sector offer consultation services to help clients conceptualize, plan, and execute XR projects effectively.
Design for Virtual Environments	This topic focuses on the creation and optimization of immersive digital spaces that enhance user experience and interaction within virtual environments. It encompasses various aspects such as user interface design, 3D modeling, and the integration of interactive elements to create engaging and realistic virtual experiences.
Design Strategy	This topic focuses on the methodologies and approaches used to create effective and innovative designs within the realm of extended reality, digital creativity, research, and innovation. It encompasses the planning, conceptualization, and execution of design projects that leverage cutting-edge technology to enhance user experiences and drive creative solutions.
Digital Design	This topic encompasses the creation and development of digital content and experiences, often leveraging advanced technologies to enhance user engagement and interaction. It involves the use of various tools and techniques to design visually appealing and functional digital products, such as websites, applications, and virtual environments.
Digital Prototyping	This topic involves the creation of digital models and simulations to visualize, test, and refine designs before they are physically produced. It leverages advanced technologies to enhance the design process, improve accuracy, and reduce time and costs associated with product development.
E-commerce Design	This topic focuses on the design aspects of e-commerce platforms, particularly in the context of extended reality (XR) and digital creativity. It encompasses the creation of immersive and interactive online shopping experiences, leveraging cutting-edge technologies to enhance user engagement and satisfaction. Companies in this sector often discuss innovative design strategies, user interface (UI) and user experience (UX) optimization, and the integration of virtual and augmented reality elements to create compelling e-commerce environments.
Graphic Design	This topic is a crucial element in the realm of Extended Reality, Digital Creativity, Research & Innovation, particularly within the Design subsector. It encompasses the creation and manipulation of visual content to communicate messages, enhance user experiences, and drive engagement through various digital platforms.
Interactive Design	This topic focuses on creating engaging and user-friendly digital experiences through the use of interactive elements. It involves the integration of design principles with advanced technologies to enhance user interaction and immersion in digital environments.
Interactive Design for XR (Extended Reality)	This topic focuses on the creation and implementation of interactive designs within the realm of Extended Reality (XR), which includes Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). It encompasses the principles, techniques, and tools used to develop immersive and engaging user experiences that blend the physical and digital worlds.
Mobile App Design	This topic focuses on the creation and optimization of mobile applications, emphasizing user experience, interface design, and functionality. It involves the integration of innovative technologies and creative solutions to enhance digital interactions in the realm of extended reality.
UI/UX for VR/AR	This topic focuses on the design and user experience aspects of virtual reality (VR) and augmented reality (AR) applications. It encompasses the principles, methodologies, and tools used to create intuitive, engaging, and effective interfaces for immersive environments. The goal is to enhance user interaction and satisfaction by ensuring that the virtual and augmented experiences are seamless and user-friendly.
User-Centered Design for XR	This topic focuses on designing extended reality (XR) experiences that prioritize the needs, preferences, and limitations of users. It involves understanding user behavior, conducting usability testing, and creating intuitive interfaces to ensure that XR applications are accessible, engaging, and effective.

Design Topics (continued)

Topic	Description
User Experience (UX) Design	This topic focuses on the process of enhancing user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction between the user and the product. It involves a deep understanding of users, what they need, what they value, their abilities, and also their limitations.
User Interface (UI) Design	This topic focuses on the design and development of user interfaces that enhance user experience and interaction within digital environments, particularly in the realm of extended reality. It encompasses the principles, techniques, and tools used to create intuitive, engaging, and efficient interfaces for applications in virtual reality, augmented reality, and other immersive technologies.
Virtual Reality (VR) Design	This topic focuses on the creation and development of immersive virtual environments and experiences. It involves the use of advanced technologies and design principles to craft interactive and engaging virtual spaces for various applications, including entertainment, education, training, and more.
Web Development and Design	This topic encompasses the creation and design of websites, focusing on both the aesthetic and functional aspects to enhance user experience and engagement. It involves various disciplines including graphic design, user interface design, user experience design, and search engine optimization.
XR Design Integration	This topic focuses on the integration of extended reality (XR) technologies into design processes to enhance digital creativity, research, and innovation. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create immersive and interactive design experiences.
User Experience (UX) Design	This topic focuses on the process of enhancing user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction between the user and the product. It involves a deep understanding of users, what they need, what they value, their abilities, and also their limitations.
User Interface (UI) Design	This topic focuses on the design and development of user interfaces that enhance user experience and interaction within digital environments, particularly in the realm of extended reality. It encompasses the principles, techniques, and tools used to create intuitive, engaging, and efficient interfaces for applications in virtual reality, augmented reality, and other immersive technologies.
Virtual Reality (VR) Design	This topic focuses on the creation and development of immersive virtual environments and experiences. It involves the use of advanced technologies and design principles to craft interactive and engaging virtual spaces for various applications, including entertainment, education, training, and more.
Web Development and Design	This topic encompasses the creation and design of websites, focusing on both the aesthetic and functional aspects to enhance user experience and engagement. It involves various disciplines including graphic design, user interface design, user experience design, and search engine optimization.
XR Design Integration	This topic focuses on the integration of extended reality (XR) technologies into design processes to enhance digital creativity, research, and innovation. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create immersive and interactive design experiences.

Digital Creative Topics

Topic	Description
Augmented Reality (AR) Content Creation	This topic involves the creation and development of immersive digital experiences that overlay virtual elements onto the real world, enhancing user interaction and engagement through the use of augmented reality technology.
Content Creation	This topic is essential for companies in the Extended Reality sector, particularly those focused on Digital Creativity, Research, and Innovation. It involves the creation, management, and distribution of digital content that enhances user experiences through immersive technologies.
Digital Advertising	This topic involves the use of digital platforms and technologies to promote products, services, or brands. It encompasses various strategies and tools to reach and engage target audiences through online channels.
Digital Art	This topic encompasses the creation and manipulation of visual content using digital tools and technologies. It includes various forms of media such as illustrations, animations, and 3D models, and is often used in industries like gaming, film, and virtual reality. Companies in this sector focus on pushing the boundaries of creativity and innovation through the use of advanced digital techniques.
Digital Illustration	This topic involves the creation of artwork using digital tools and software, often for use in various multimedia projects, including virtual and augmented reality experiences. It encompasses a wide range of styles and techniques, from vector illustrations to digital painting, and is a key component in the fields of digital creativity, research, and innovation.
Digital Photography	This topic encompasses the art and science of capturing images using digital technology. It involves the use of digital cameras, editing software, and various techniques to produce high-quality photographs. This topic is essential for professionals and enthusiasts in the field of digital creativity, offering innovative solutions and advancements in image capturing and processing.
Digital Strategy	This topic focuses on the strategic planning and implementation of digital technologies and innovations to enhance creativity, research, and innovation within the extended reality sector. It encompasses the development and execution of digital initiatives that drive business growth, improve user experiences, and foster innovation in digital creative industries.
Digital Video Content	This topic encompasses the creation, production, and distribution of video content in digital formats, often leveraging advanced technologies such as virtual reality (VR), augmented reality (AR), and other immersive media. It is a key area of focus for companies involved in digital creativity, research, and innovation, particularly those aiming to enhance user experiences through cutting-edge digital video solutions.
Immersive Digital Experiences	This topic encompasses the creation and utilization of highly engaging and interactive digital environments that leverage advanced technologies to provide users with a sense of presence and immersion. These experiences often involve the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to blend the physical and digital worlds seamlessly.
Immersive Experiences	This topic focuses on creating highly engaging and interactive digital environments that captivate users by simulating real-world experiences or creating entirely new virtual worlds. These experiences are designed to be immersive, leveraging advanced technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) to provide users with a sense of presence and participation.
Interactive Content Design	This topic focuses on the creation and implementation of engaging, interactive digital content that leverages extended reality technologies to enhance user experience and drive innovation in digital creativity. It encompasses a range of techniques and tools designed to create immersive and interactive experiences for users.
Interactive Media	This topic encompasses the creation, development, and implementation of interactive digital content that engages users through immersive experiences. It includes various forms of media such as virtual reality (VR), augmented reality (AR), and mixed reality (MR), which are used to enhance user interaction and creativity in digital environments.
Social Media Content	This topic encompasses the creation, management, and optimization of content for social media platforms, focusing on engaging audiences, promoting brands, and leveraging digital creativity and innovation to enhance user experience and interaction.
Virtual and Augmented Reality (VR/AR) Design	This topic focuses on the design and development of immersive experiences using Virtual Reality (VR) and Augmented Reality (AR) technologies. It encompasses the creation of interactive environments, user interfaces, and content that enhance the user's perception and interaction with the digital world.
Virtual Reality (VR) Content Creation	This topic involves the creation of immersive and interactive digital environments using virtual reality technology. It encompasses the development of 3D models, animations, and experiences that can be explored and interacted with through VR headsets and other related devices. This topic is essential for industries such as gaming, education, training, and entertainment, where engaging and realistic virtual experiences are highly valued.

Digital Creative Topics (continued)

Topic	Description
Visual Storytelling	This topic involves the use of visual elements to convey narratives, enhance user engagement, and create immersive experiences. It leverages advanced technologies in extended reality to push the boundaries of digital creativity, research, and innovation.
XR (Extended Reality) Solutions	This topic encompasses the development, implementation, and innovation of immersive technologies that blend the physical and digital worlds. It includes virtual reality (VR), augmented reality (AR), and mixed reality (MR) solutions designed to enhance user experiences across various industries.

Film Topics

Topic	Description
360-Degree Video for Film	This topic explores the use of 360-degree video technology in the film industry, focusing on its applications, benefits, and innovations. It encompasses the creation, production, and distribution of immersive video content that allows viewers to experience a scene from every angle, enhancing storytelling and audience engagement.
Augmented Reality (AR) in Film Production	This topic explores the integration of augmented reality (AR) technology in the film production process, enhancing visual storytelling, and creating immersive experiences for audiences. It covers the use of AR in pre-production, on-set visualization, post-production, and marketing of films.
Casting and Talent	This topic focuses on the process of selecting and hiring actors, performers, and other talent for film projects within the extended reality sector. It encompasses the strategies, tools, and innovations used to identify and secure the right individuals to bring creative visions to life, leveraging digital creativity, research, and innovation.
Cinematography	This topic encompasses the art and technology of capturing visual images for film and other media, focusing on the creative and technical aspects of visual storytelling. It involves the use of cameras, lighting, and other equipment to create compelling and visually appealing scenes.
Commercial Film Production	This topic encompasses the process of creating films for commercial purposes, utilizing advanced technologies and innovative techniques to produce high-quality visual content. It involves various stages including pre-production, production, and post-production, often integrating extended reality (XR) elements to enhance the storytelling experience.
Documentary Filmmaking	This topic involves the creation of non-fiction films that document reality for the purposes of instruction, education, or maintaining a historical record. It often includes the use of extended reality technologies to enhance the storytelling experience and provide immersive content for viewers.
Feature Film Production	This topic involves the creation, development, and production of feature-length films, often incorporating advanced technologies and innovative storytelling techniques. Companies in this sector focus on leveraging digital creativity and research to push the boundaries of traditional filmmaking, often integrating extended reality (XR) elements to enhance the viewer experience.
Film Direction	This topic involves the art and craft of overseeing and managing the creative aspects of film production, including the visualization of the script, guiding the technical crew and actors, and shaping the overall style and structure of the film. It is a critical component in the creation of immersive and engaging cinematic experiences, especially within the realm of extended reality and digital creativity.
Film Distribution	This topic involves the process of making films available to the public through various channels, including theaters, streaming platforms, and other digital media. It encompasses the strategies, technologies, and partnerships necessary to ensure that films reach their intended audiences effectively.
Film Editing	This topic involves the process of selecting and combining shots into sequences to create a finished motion picture. It is a crucial aspect of post-production that shapes the narrative, pacing, and overall impact of a film. Professionals in this field use various techniques and tools to enhance the visual storytelling and ensure a seamless viewing experience.
Film Equipment and Technology	This topic encompasses the various tools, devices, and technological advancements used in the creation, production, and post-production of films. It includes discussions on the latest camera equipment, lighting setups, sound recording devices, editing software, and other innovative technologies that enhance the filmmaking process.
Film Festivals and Awards	This topic encompasses the various film festivals and awards that recognize and celebrate achievements in the film industry, particularly focusing on innovations and creativity in extended reality (XR) and digital media. It highlights the importance of these events in showcasing groundbreaking work, fostering industry connections, and driving forward research and innovation in the film sector.
Film Marketing	This topic involves the strategies and techniques used to promote films, leveraging digital creativity, research, and innovation within the extended reality sector. It encompasses various aspects such as audience targeting, content creation, distribution channels, and the use of emerging technologies to enhance viewer engagement and drive box office success.
Film Production	This topic encompasses the various stages and processes involved in creating a film, from initial concept and scriptwriting to post-production and distribution. It includes the use of advanced technologies and innovative techniques to enhance the storytelling and visual experience. Companies in this sector often focus on leveraging digital creativity and extended reality to push the boundaries of traditional filmmaking.
Film Production Consulting	This topic involves providing expert advice and guidance to filmmakers and production companies to enhance the quality and efficiency of their film projects. It encompasses various aspects of film production, including pre-production planning, budgeting, scheduling, technical support, and creative direction.
Film Scoring	This topic involves the art and craft of creating music specifically for films, enhancing the storytelling and emotional impact of the visual narrative. It encompasses various aspects such as composition, orchestration, recording, and integration of music with film.

Film Topics (continued)

Topic	Description
Film Set Design	This topic involves the creation and arrangement of physical and digital environments for film production, utilizing innovative technologies and creative design principles to enhance storytelling and viewer immersion.
Film Streaming	This topic involves the delivery of films and other video content over the internet, allowing users to watch movies and shows on demand. It encompasses various aspects such as technology, user experience, content creation, and distribution methods. Companies in this sector often focus on innovation, digital creativity, and research to enhance the streaming experience.
Immersive Filmmaking	This topic involves the use of advanced technologies to create highly engaging and interactive film experiences that immerse the audience in the story. It leverages virtual reality (VR), augmented reality (AR), and other extended reality (XR) technologies to push the boundaries of traditional filmmaking.
Interactive Film Experiences	This topic explores the integration of interactive elements within film experiences, allowing audiences to engage with the narrative in dynamic and immersive ways. It leverages advanced technologies to create a participatory environment where viewers can influence the storyline, character decisions, and outcomes.
Lighting Design	This topic is essential in creating immersive and visually compelling experiences in the film industry. It involves the strategic use of light to enhance the mood, atmosphere, and storytelling of a scene. Professionals in this field leverage advanced technologies and creative techniques to design lighting that complements the digital environments and characters in extended reality productions.
Location Scouting	This topic involves the process of finding and securing locations for film production, utilizing advanced technologies in extended reality and digital creativity to enhance the scouting process. It is a crucial step in pre-production that ensures the chosen locations align with the creative vision and logistical needs of the project.
Post-Production Services	This topic encompasses the various services and processes involved in the final stages of film production, where raw footage is transformed into a polished, finished product. These services include editing, visual effects, sound design, color correction, and more, ensuring that the final film meets the highest standards of quality and creativity.
Production Management	This topic involves the planning, coordination, and control of the processes involved in the creation and delivery of film projects, particularly within the realm of extended reality and digital creativity. It encompasses various aspects such as resource allocation, workflow optimization, quality control, and the integration of innovative technologies to enhance the production process.
Real-Time Rendering for Film	This topic focuses on the use of advanced technology to create high-quality visual effects and animations in real-time for the film industry. It involves leveraging powerful hardware and software to render scenes instantly, allowing filmmakers to see the final product as they work, which significantly enhances the creative process and efficiency.
Scriptwriting and Screenplay Development	This topic encompasses the process of crafting scripts and developing screenplays, particularly within the realm of extended reality and digital creativity. It involves the creation of narratives and dialogue for films, integrating innovative technologies and research to enhance storytelling.
Short Film Production	This topic involves the creation and production of short films, often leveraging the latest in digital creativity, research, and innovation within the extended reality sector. It encompasses various stages of filmmaking, from conceptualization and scripting to filming, editing, and distribution, often utilizing advanced technologies and creative techniques to enhance the storytelling experience.
Sound Design for Film	This topic involves the creation and manipulation of audio elements to enhance the storytelling and immersive experience in films. It encompasses various techniques and technologies used to produce sound effects, dialogue, and music that align with the visual components of a film.
Virtual Production for Film	This topic involves the use of advanced technologies to create immersive and interactive environments for film production. It leverages tools such as virtual reality, augmented reality, and mixed reality to enhance the creative process, streamline production workflows, and enable filmmakers to visualize and manipulate digital elements in real-time.
Virtual Reality (VR) Film Experiences	This topic explores the immersive and interactive experiences created through the use of virtual reality technology in the film industry. It encompasses the development, production, and distribution of VR films, as well as the innovative techniques and creative storytelling methods employed to engage audiences in a fully immersive cinematic experience.
Visual Effects (VFX) in Film	This topic encompasses the creation and integration of computer-generated imagery (CGI) and other digital effects into live-action footage to enhance or create scenes that would be difficult, dangerous, or impossible to film in real life. It involves a combination of artistry and technology to bring imaginative worlds and characters to life on screen.
XR (Extended Reality) in Film Production	This topic explores the integration of extended reality technologies in film production, enhancing the creative process and providing innovative solutions for filmmakers. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create immersive experiences, streamline production workflows, and push the boundaries of visual storytelling.

Music Topics

Topic	Description
3D Audio for Music	This topic explores the innovative use of three-dimensional audio technology in the music industry, enhancing the listening experience by creating immersive soundscapes that surround the listener. It involves advanced audio engineering techniques and is often discussed in the context of extended reality, digital creativity, and research and innovation within the music sector.
Augmented Reality (AR) Music Experiences	This topic explores the integration of augmented reality technology into music experiences, enhancing the way audiences interact with and perceive music through immersive and interactive digital elements.
Immersive Audio Experiences	This topic focuses on creating audio experiences that fully immerse the listener, often using advanced technologies to enhance the depth, clarity, and spatial aspects of sound. It is particularly relevant in the context of extended reality, where digital creativity, research, and innovation intersect with the music industry to provide listeners with a more engaging and realistic auditory experience.
Immersive Music Experiences	This topic explores the integration of advanced technologies to create deeply engaging and interactive music experiences. It encompasses the use of virtual reality (VR), augmented reality (AR), and other extended reality (XR) technologies to transform how audiences experience music, from live concerts to personal listening sessions.
Interactive Music	This topic explores the integration of interactive elements within music experiences, leveraging extended reality technologies to create immersive and engaging musical environments. It encompasses innovations in digital creativity, research, and the development of new tools and platforms that allow users to interact with music in novel ways.
Interactive Music for VR/AR	This topic explores the integration of interactive music within virtual reality (VR) and augmented reality (AR) environments. It focuses on how immersive audio experiences can enhance user engagement and create dynamic, responsive soundscapes that adapt to user interactions and movements within digital spaces.
Music Arranging	This topic involves the art and science of creating musical arrangements, which includes the adaptation and orchestration of music for various formats and ensembles. It is a crucial aspect of music production, especially in the context of digital creativity and innovation within the extended reality sector.
Music Branding	This topic focuses on the strategic use of music to create a unique identity and enhance the overall experience in digital creativity, research, and innovation within the extended reality sector. It involves the integration of sound and music to build a brand's image, engage audiences, and differentiate from competitors.
Music Composition	This topic involves the creation and arrangement of music using various tools and techniques, often enhanced by digital technologies and extended reality. It encompasses the entire process from ideation to final production, integrating innovative methods to push the boundaries of traditional music composition.
Music Distribution	This topic involves the methods and technologies used to distribute music to listeners, including digital platforms, streaming services, and innovative solutions in the realm of extended reality. It encompasses the strategies and tools that artists, producers, and companies use to reach their audience and monetize their music.
Music Editing	This topic involves the manipulation and enhancement of audio recordings to achieve a desired sound or effect. It encompasses a range of techniques and tools used to edit, mix, and produce music, often leveraging advanced software and hardware solutions. This topic is crucial for creating high-quality audio content in the music industry, particularly within the realm of extended reality and digital creativity.
Music for Augmented Reality (AR)	This topic explores the integration of music within augmented reality (AR) environments, enhancing user experiences through immersive audio-visual interactions. It encompasses the creation, implementation, and innovation of musical elements that adapt to and enhance AR applications.
Music for Virtual Reality (VR)	This topic explores the integration of music into virtual reality (VR) environments, enhancing the immersive experience through innovative audio solutions. It encompasses the creation, implementation, and optimization of music specifically designed for VR applications, aiming to elevate user engagement and emotional connection within virtual spaces.
Music for XR Experiences	This topic explores the integration of music into extended reality (XR) experiences, focusing on how soundscapes and musical elements can enhance immersive environments. It encompasses the creation, implementation, and innovation of audio solutions tailored for virtual, augmented, and mixed reality applications.
Music in Virtual Environments	This topic explores the integration and application of music within virtual environments, focusing on how digital creativity, research, and innovation are transforming the way music is experienced and produced in extended reality settings.

Music Topics (continued)

Topic	Description
Music Licensing	This topic involves the legal and administrative processes required to obtain permission to use music in various forms of media, including virtual and augmented reality experiences. It ensures that creators and rights holders are fairly compensated for the use of their work.
Music Marketing	This topic focuses on the strategies and techniques used to promote music through various digital and extended reality platforms. It encompasses the use of innovative technologies, creative content, and research-driven approaches to enhance the visibility and reach of music artists and their work.
Music Mastering	This topic involves the final step in the audio production process, where the recorded audio is polished and prepared for distribution. It ensures that the music sounds cohesive and professional across all playback systems. This topic is crucial for achieving the highest quality sound and is often discussed by companies involved in digital creativity, research, and innovation within the music sector.
Music Mixing	This topic involves the process of combining multiple audio tracks into a final version, ensuring that all elements of a song or audio piece are balanced, cohesive, and polished. It is a crucial step in music production that enhances the overall sound quality and listener experience.
Music Production	This topic encompasses the processes, techniques, and technologies involved in creating, recording, and producing music. It includes everything from sound design and mixing to mastering and distribution, often leveraging the latest advancements in digital creativity and extended reality to enhance the music production experience.
Music Publishing	This topic involves the management, promotion, and monetization of musical compositions and recordings. It encompasses the rights, royalties, and licensing agreements that ensure creators are compensated for their work. Companies in this sector often leverage digital tools and innovative technologies to streamline these processes and maximize revenue for artists.
Music Technology	This topic encompasses the intersection of music and technology, focusing on innovations that enhance the creation, production, and consumption of music. It includes advancements in software, hardware, and digital platforms that enable new forms of musical expression and interaction.
Real-Time Music Processing	This topic involves the use of advanced technology to process and manipulate music in real-time, enhancing the experience for both creators and listeners. It encompasses various techniques and tools that allow for live audio effects, interactive music experiences, and seamless integration with extended reality environments.
Sound Design for Music	This topic involves the creation and manipulation of audio elements to enhance the auditory experience in music production. It encompasses various techniques and tools used to design unique sounds, effects, and atmospheres that contribute to the overall aesthetic and emotional impact of a musical piece.
Sound Recording	This topic involves the process of capturing, editing, and producing audio recordings, often for music, podcasts, or other digital media. It encompasses various techniques and technologies used to ensure high-quality sound output, including the use of specialized equipment and software.
Studio Recording Services	This topic encompasses the various services and technologies involved in the professional recording of music within a studio environment. It includes the use of advanced recording equipment, sound engineering expertise, and innovative techniques to produce high-quality audio tracks. Companies in the extended reality and digital creativity sector often leverage cutting-edge technology to enhance the recording experience and deliver superior sound quality.
Virtual Concerts	This topic explores the innovative use of extended reality technologies to create immersive and interactive live music experiences. It encompasses the development, production, and delivery of concerts in virtual environments, allowing artists to reach global audiences in new and engaging ways.
XR (Extended Reality) in Music	This topic explores the integration of extended reality technologies in the music industry, enhancing the way music is created, performed, and experienced. It encompasses virtual reality (VR), augmented reality (AR), and mixed reality (MR) applications that transform traditional music experiences into immersive, interactive, and innovative encounters.

Performing Arts Topics

Topic	Description
Augmented Reality (AR) in Live Theater	This topic explores the integration of augmented reality (AR) technology into live theater performances, enhancing the audience's experience by overlaying digital elements onto the physical stage. This innovative approach allows for more immersive storytelling, dynamic set designs, and interactive elements that engage viewers in new and exciting ways.
Augmented Reality for Live Music	This topic explores the integration of augmented reality (AR) technology into live music performances, enhancing the audience's experience by overlaying digital elements onto the physical world. It involves the use of AR to create immersive and interactive environments that can transform traditional concerts into multi-sensory events.
Choreography	This topic involves the art of designing and directing the movements, sequences, and patterns of performers, often integrating digital creativity and innovative technologies to enhance the overall experience. It is a crucial element in the performing arts, particularly in dance, theater, and other live performances, where it helps to convey stories, emotions, and artistic expressions.
Costume Design	This topic involves the creation and design of costumes for performances, integrating digital creativity and innovation to enhance the visual storytelling in extended reality environments. It encompasses the artistic and technical aspects of designing costumes that are both functional and visually appealing, often utilizing advanced technologies and materials.
Dance Production	This topic involves the integration of dance and technology to create immersive and innovative performances. It encompasses the use of extended reality (XR) technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) to enhance the creative process, production, and presentation of dance. Companies in this sector focus on research and innovation to push the boundaries of traditional performing arts, offering new ways for audiences to experience dance.
Hybrid Performances (In-Person & Virtual)	This topic explores the integration of both in-person and virtual elements in performances, leveraging extended reality technologies to create immersive and innovative experiences in the performing arts sector. It encompasses the use of digital creativity, research, and innovation to enhance audience engagement and expand the reach of performances.
Immersive Dance Experiences	This topic explores the integration of immersive technologies with dance performances, creating unique and engaging experiences for audiences. It involves the use of virtual reality (VR), augmented reality (AR), and other digital innovations to enhance the artistic expression and interactivity of dance.
Immersive Theater	This topic involves creating interactive and engaging theatrical experiences that immerse the audience in the performance, often using advanced technology and innovative storytelling techniques. It aims to blur the lines between performers and spectators, making the audience an integral part of the narrative.
Interactive Performance Experiences	This topic explores the integration of interactive elements within performance art, leveraging extended reality technologies to create immersive and engaging experiences for audiences. It encompasses the use of digital creativity, research, and innovation to transform traditional performing arts into dynamic, participatory events.
Lighting Design for Performances	This topic focuses on the art and science of designing lighting for performances, which is crucial in creating the desired atmosphere, mood, and visual impact for various types of live and virtual performances. It involves the strategic use of light to enhance the storytelling, highlight performers, and immerse the audience in the experience.
Live Performances	This topic involves the integration of extended reality technologies in the performing arts sector to create immersive and interactive live performances. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to enhance the audience's experience and provide innovative ways for artists to express their creativity.
Live Streaming of Performances	This topic involves the use of digital platforms and technologies to broadcast live performances to a remote audience. It leverages extended reality and other innovative technologies to enhance the viewing experience, making it more immersive and interactive. This topic is particularly relevant for companies in the performing arts sector that are looking to expand their reach and engage with audiences in new and creative ways.
Music and Concert Production	This topic encompasses the planning, organization, and execution of live music performances and concerts, often incorporating advanced technologies such as virtual reality, augmented reality, and other digital innovations to enhance the audience experience.
Opera Production	This topic involves the integration of extended reality technologies into the production of opera, enhancing the traditional performing arts experience through digital creativity, research, and innovation.
Real-Time Motion Capture for Performances	This topic involves the use of advanced technology to capture and analyze the movements of performers in real-time, allowing for enhanced creativity and innovation in the performing arts. It is commonly used in various applications such as live performances, virtual reality experiences, and digital content creation.

Performing Arts Topics (continued)

Topic	Description
Rehearsal and Performance Scheduling	This topic involves the planning and organization of practice sessions and live performances, ensuring that all elements of a production are coordinated effectively. It is crucial for the seamless execution of performing arts projects, particularly those that incorporate extended reality and digital creativity.
Set Construction	This topic involves the design, creation, and implementation of physical and virtual environments for performances, utilizing advanced technologies and innovative techniques to enhance the audience's experience. It is a crucial aspect of the performing arts sector, particularly within the realm of extended reality and digital creativity.
Sound Design for Performances	This topic involves the creation and manipulation of audio elements to enhance the immersive experience of live and virtual performances. It encompasses the technical and creative aspects of producing soundscapes that complement the visual and narrative components of a performance, whether in theater, virtual reality, or other extended reality environments.
Stage Design	This topic involves the conceptualization, design, and implementation of immersive and interactive environments for performances, utilizing advanced technologies in extended reality to enhance the audience's experience. It encompasses the creative and technical aspects of crafting dynamic and engaging stage settings that integrate digital elements with traditional performing arts.
Stage Management	This topic involves the coordination and management of all elements of a performance, including the use of digital tools and extended reality technologies to enhance the creative process and audience experience. It encompasses the planning, organization, and execution of various aspects of a production, ensuring that everything runs smoothly from rehearsals to the final performance.
Talent and Casting	This topic focuses on the processes and strategies involved in identifying, recruiting, and managing talent for performances and productions within the extended reality and digital creativity sectors, particularly in the performing arts. It encompasses the selection of actors, dancers, musicians, and other performers, as well as the innovative methods used to enhance their performances through technology.
Theater Production	This topic involves the creation, development, and presentation of live performances that combine traditional theater elements with cutting-edge extended reality technologies. It encompasses various aspects such as digital creativity, innovative research, and the integration of immersive experiences in performing arts.
Virtual Reality (VR) for Performances	This topic explores the use of Virtual Reality (VR) technology to enhance and transform performances in the performing arts sector. It involves the integration of immersive digital experiences to create innovative and interactive performances that engage audiences in new and exciting ways.
Virtual Staging and Sets for Performances	This topic involves the use of digital technology to create virtual environments and sets for live performances, enhancing the visual experience and providing new creative possibilities for artists and producers. It leverages extended reality (XR) technologies, including augmented reality (AR) and virtual reality (VR), to transform traditional stage design and production.
XR (Extended Reality) in the Performing Arts	This topic explores the integration of Extended Reality (XR) technologies in the performing arts, enhancing the audience's experience through immersive and interactive digital environments. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create innovative performances and productions.
XR Integration in Live Shows	This topic explores the integration of Extended Reality (XR) technologies in live performances, enhancing the audience's experience through immersive and interactive elements. It encompasses the use of augmented reality (AR), virtual reality (VR), and mixed reality (MR) to create dynamic and engaging live shows.

TV Topics

Topic	Description
360-Degree Video for TV	This topic explores the use of immersive 360-degree video technology in television, enhancing viewer engagement by providing a more interactive and realistic viewing experience. It involves the creation, production, and distribution of spherical video content that allows viewers to navigate and explore scenes from multiple angles, offering a unique and dynamic way to consume TV content.
Animated TV Shows	This topic encompasses the creation, production, and distribution of animated television shows, leveraging advanced digital creativity and extended reality technologies to innovate and enhance viewer experiences. Companies in this sector focus on pushing the boundaries of animation through research and innovation, offering cutting-edge solutions and captivating content.
Augmented Reality (AR) in TV Shows	This topic explores the integration of Augmented Reality (AR) technology into television shows, enhancing viewer engagement and creating immersive experiences. It covers the use of AR to overlay digital content onto the real world, providing interactive elements and enriching storytelling in TV productions.
Immersive TV Content	This topic focuses on the creation and delivery of television content that leverages extended reality technologies to provide viewers with an immersive and interactive experience. It encompasses advancements in virtual reality (VR), augmented reality (AR), and mixed reality (MR) to enhance storytelling, viewer engagement, and content consumption.
Interactive TV Content with AR/VR	This topic explores the integration of augmented reality (AR) and virtual reality (VR) technologies into interactive television content, enhancing viewer engagement and creating immersive experiences. Companies in the extended reality sector are leveraging these technologies to innovate and transform traditional TV viewing.
Interactive TV Experiences	This topic focuses on the integration of interactive elements into television experiences, enhancing viewer engagement through immersive and participatory content. It encompasses advancements in technology that allow for real-time interaction, personalized content, and augmented reality features, transforming traditional TV viewing into a dynamic and engaging activity.
Live TV Production	This topic involves the real-time production and broadcasting of television content, utilizing advanced technologies and innovative techniques to create immersive and engaging viewer experiences. It encompasses various aspects such as live event coverage, virtual and augmented reality integration, and the use of cutting-edge equipment and software to enhance the quality and interactivity of live broadcasts.
Location Scouting for TV	This topic involves the process of identifying and securing locations for TV productions, ensuring they meet the creative, logistical, and technical requirements of the project. It encompasses various aspects such as site visits, negotiations, permits, and the integration of digital technologies to enhance the scouting process.
Reality TV Production	This topic involves the creation, development, and production of reality television content, leveraging innovative digital technologies and creative strategies to engage audiences. It encompasses various aspects such as concept development, filming, editing, and post-production, often utilizing extended reality (XR) technologies to enhance viewer experiences.
Real-Time Rendering for TV	This topic focuses on the use of advanced technologies to create and display graphics in real-time for television broadcasts. It encompasses various aspects such as rendering techniques, hardware acceleration, and software solutions that enable dynamic and interactive visual experiences for viewers.
Scriptwriting for TV	This topic involves the creation and development of scripts specifically tailored for television programming. It encompasses the process of writing dialogue, crafting storylines, and developing characters to produce engaging and compelling TV content. This topic is essential for ensuring that TV shows resonate with audiences and meet the creative and technical standards of the industry.
TV Broadcasting	This topic encompasses the transmission of television content through various digital and traditional platforms, integrating innovative technologies to enhance viewer experience and engagement. It involves the creation, production, and distribution of TV programs, leveraging extended reality and digital creativity to push the boundaries of traditional broadcasting.

TV Topics (continued)

Topic	Description
TV Budgeting and Scheduling	This topic involves the strategic planning and allocation of financial resources and time for television production, including the creation, development, and broadcasting of TV content. It encompasses the management of budgets, schedules, and resources to ensure the efficient and effective delivery of TV programs.
TV Casting and Talent	This topic focuses on the processes and considerations involved in selecting and managing talent for television productions, particularly within the realm of extended reality, digital creativity, research, and innovation. It encompasses the strategies for finding the right actors, hosts, and other on-screen personalities, as well as the technological advancements that support these efforts.
TV Cinematography	This topic encompasses the art and technology of capturing visual content for television, focusing on the creative and technical aspects of camera work, lighting, and shot composition to enhance storytelling and viewer engagement.
TV Commercial Production	This topic involves the creation, development, and production of television commercials, utilizing advanced digital creativity, research, and innovation techniques to enhance viewer engagement and brand impact.
TV Commercials with AR/VR	This topic explores the integration of augmented reality (AR) and virtual reality (VR) technologies into television commercials, enhancing viewer engagement and creating immersive advertising experiences.
TV Editing	This topic involves the process of selecting, arranging, and modifying television content to create a polished final product. It encompasses various techniques and tools used to enhance the visual and auditory experience of TV programs, ensuring they meet the desired quality and storytelling standards.
TV Lighting Design	This topic focuses on the design and implementation of lighting solutions for television production, enhancing visual storytelling and creating immersive viewing experiences. It encompasses various aspects such as the selection of lighting equipment, the arrangement of lights, and the integration of advanced technologies to achieve desired visual effects.
TV Music Composition	This topic involves the creation and arrangement of music specifically for television programs, including shows, commercials, and other TV content. It encompasses various aspects such as composing original scores, selecting appropriate tracks, and integrating music seamlessly with visual elements to enhance the viewer's experience.
TV Network Partnerships	This topic involves the collaboration between TV networks and companies in the extended reality sector to enhance digital creativity, research, and innovation. These partnerships aim to create immersive and interactive experiences for viewers, leveraging advanced technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR).
TV Pilots	This topic involves the initial episodes created for television series, which are used to sell the show to networks and producers. These episodes are crucial in determining whether a series will be picked up for further production and broadcast.
TV Post-Production	This topic involves the processes and techniques used to enhance, edit, and finalize television content after the initial filming has been completed. It encompasses a range of activities including video editing, sound design, visual effects, color correction, and the integration of extended reality elements to create immersive viewing experiences.
TV Production	This topic encompasses the processes, techniques, and innovations involved in creating television content. It includes everything from pre-production planning and scriptwriting to filming, editing, and post-production. Companies in this sector leverage cutting-edge technology and creative expertise to produce high-quality TV shows, series, and other visual content.

TV Topics (continued)

Topic	Description
TV Production Consulting	This topic involves providing expert advice and services to enhance the production quality and efficiency of television content. It encompasses various aspects such as script development, technical support, creative direction, and the integration of innovative technologies to create immersive viewing experiences.
TV Production Management	This topic involves the planning, coordination, and execution of television production processes, ensuring that all elements of a TV show or broadcast are managed efficiently from pre-production to post-production. It encompasses various aspects such as budgeting, scheduling, resource allocation, and team management to deliver high-quality content.
TV Series Production	This topic involves the creation, development, and production of television series, incorporating innovative digital creativity and extended reality technologies to enhance storytelling and viewer engagement.
TV Set Design	This topic encompasses the design and development of television sets, focusing on the integration of advanced technologies, user experience, and aesthetic appeal. It involves the innovation of display technologies, sound systems, connectivity options, and ergonomic designs to enhance the viewing experience.
TV Show Development	This topic involves the creation, development, and production of television shows, leveraging extended reality (XR) technologies to enhance digital creativity, research, and innovation within the TV industry. It encompasses various stages from concept development to post-production, integrating cutting-edge XR tools to create immersive and engaging content.
TV Show Direction	This topic involves the creative and technical aspects of guiding and managing the production of television shows, particularly within the realm of extended reality, digital creativity, research, and innovation. It encompasses the roles, techniques, and technologies used to bring TV shows to life, ensuring they are engaging, visually appealing, and effectively communicate their intended message.
TV Show Distribution	This topic involves the methods and strategies used to distribute TV shows, including the use of digital platforms, streaming services, and traditional broadcasting. It encompasses the technological advancements, market trends, and innovative approaches that companies in the extended reality and digital creativity sectors employ to enhance TV show distribution.
TV Show Marketing	This topic focuses on the strategies and techniques used to promote television shows, leveraging the latest advancements in extended reality, digital creativity, research, and innovation. It encompasses various aspects such as audience engagement, content creation, and the use of cutting-edge technology to enhance viewer experiences.
TV Sound Design	This topic focuses on the creation and enhancement of audio elements for television, ensuring that sound effects, dialogue, and music are effectively integrated to create an immersive viewing experience. It involves various techniques and technologies to produce high-quality audio that complements the visual components of TV content.
TV Streaming	This topic encompasses the delivery of television content over the internet, allowing users to stream shows, movies, and live broadcasts on various devices. It involves the use of digital platforms and services that provide on-demand access to a wide range of TV programming, often with innovative features and interactive experiences.
Virtual Production for TV	This topic involves the use of advanced digital technologies and extended reality to create immersive and interactive environments for television production. It leverages virtual sets, real-time rendering, and augmented reality to enhance the storytelling and visual experience for TV audiences.
Virtual Reality (VR) in TV Production	This topic explores the integration and application of Virtual Reality (VR) technology in the production of television content. It encompasses the use of VR to create immersive experiences, enhance storytelling, and innovate production techniques within the TV industry.

VFX and Post-Production Topics

Topic	Description
360-Degree Video Games	This topic explores the immersive and interactive experiences provided by 360-degree video games, which allow players to engage with virtual environments in a fully panoramic view. These games leverage advanced technologies to create realistic and captivating gameplay, enhancing the overall user experience in the realm of extended reality.
AR (Augmented Reality) Game Development	This topic encompasses the development of interactive and immersive games that blend digital content with the real world through the use of augmented reality technology devices such as smartphones, tablets, and AR glasses. devices. are used to overlay computer-generated images, sounds, and other sensory enhancements onto a user's perception of the real world, creating a seamless and engaging gaming experience.
Augmented Reality (AR) in Gaming	This topic explores the integration of digital information with the user's environment in real-time, enhancing the gaming experience by overlaying virtual elements onto the real world. It involves the use of advanced technologies to create immersive and interactive gaming experiences that blend the physical and digital realms.
Console Game Development	This topic encompasses the development, design, and production of video games specifically for console platforms. It involves various stages including concept creation, coding, graphic design, sound engineering, and testing. Companies in this sector often focus on creating immersive and engaging experiences for players, leveraging the latest technologies and innovations in the gaming industry.
Extended Reality (XR) in Gaming	This topic explores the integration and application of extended reality technologies in the gaming industry, focusing on how these innovations enhance user experiences, create immersive environments, and drive the future of interactive entertainment.
Game Art and Animation	This topic encompasses the creation and animation of visual elements in computer games, focusing on the artistic and technical aspects that bring game worlds and characters to life. It involves a combination of creativity, technical skills, and software proficiency to produce engaging and immersive experiences for players.
Game Design	This topic encompasses the principles, methodologies, and creative processes involved in the creation and development of interactive digital experiences, particularly within the realm of computer games. It includes aspects such as storytelling, mechanics, user experience, and technological innovation.
Game Development	This topic encompasses the creation, design, and development of interactive digital entertainment experiences. It involves various stages including concept development, programming, graphic design, sound design, and testing. Companies in this sector often focus on innovation and creativity to deliver engaging and immersive experiences to users.
Game Development Tools and Engines	This topic encompasses the various tools and engines used in the development of computer games, particularly within the realm of extended reality and digital creativity. It includes discussions on software, platforms, and technologies that facilitate the creation, design, and deployment of interactive gaming experiences.
Game Engine Optimisation	This topic focuses on improving the performance, efficiency, and overall quality of game engines used in the development of computer games, particularly within the extended reality and digital creativity sectors. It involves techniques and strategies to enhance rendering speeds, reduce latency, and optimize resource usage to deliver a seamless and immersive gaming experience.
Game Localization	This topic involves the process of adapting video games to different languages and cultures, ensuring that the gaming experience is seamless and engaging for players around the world. It encompasses translation, culturalization, and technical adjustments to make games accessible and enjoyable for diverse audiences.
Game Mechanics	This topic encompasses the rules, systems, and structures that govern the interactions and experiences within a game. It includes the design and implementation of various elements that contribute to the gameplay experience, such as objectives, challenges, rewards, and player actions. This topic is crucial for creating engaging and immersive experiences in computer games, particularly within the realm of extended reality.
Game Monetization	This topic focuses on the various strategies and methods used by companies to generate revenue from computer games. It encompasses a range of monetization models, including in-game purchases, subscriptions, advertisements, and more. Companies in the extended reality and digital creativity sector often explore innovative ways to enhance player experience while maximizing profitability.
Game Music Composition	This topic involves the creation and integration of music specifically designed for video games. It encompasses the composition, production, and implementation of music that enhances the gaming experience, providing emotional depth, atmosphere, and immersion. This topic is crucial for creating engaging and memorable gaming experiences.
Game Production	This topic encompasses the entire process of creating, developing, and producing computer games, including concept development, design, programming, testing, and distribution. It involves a multidisciplinary approach that combines creativity, technology, and innovation to deliver engaging and immersive gaming experiences.

VFX and Post-Production Topics (continued)

Topic	Description
VFX Consulting	This topic involves providing expert advice and guidance on visual effects (VFX) for various media projects, including film, television, and digital content. It encompasses a range of services from initial concept development to final post-production, ensuring that the visual effects align with the creative vision and technical requirements of the project.
VFX for Commercials	This topic involves the use of visual effects (VFX) in the creation of commercials, enhancing the visual appeal and storytelling of advertisements through digital creativity and innovation. Companies in the VFX and post-production sector leverage cutting-edge technology and artistic expertise to produce captivating and memorable commercials.
VFX for Film	This topic involves the use of visual effects (VFX) in the film industry to create or enhance imagery that cannot be captured during live-action shooting. It encompasses a range of techniques and technologies used to produce realistic environments, characters, and effects that elevate the storytelling experience.
VFX for Immersive Experiences	This topic focuses on the use of visual effects (VFX) to create immersive experiences in the realm of extended reality. It encompasses the latest advancements in digital creativity, research, and innovation, aiming to enhance user engagement and realism in virtual, augmented, and mixed reality environments.
VFX for Live Streaming	This topic involves the integration of visual effects (VFX) into live streaming environments, enhancing the viewer experience with real-time graphics, animations, and interactive elements. It is a cutting-edge area within the VFX and post-production industry, leveraging advanced technologies to create immersive and engaging live content.
VFX for TV	This topic involves the use of visual effects (VFX) in television production, enhancing the visual storytelling by integrating computer-generated imagery (CGI), digital compositing, and other post-production techniques. It plays a crucial role in creating immersive and visually stunning content for TV shows, commercials, and other televised media.
VFX for Video Games	This topic focuses on the use of visual effects (VFX) in the development and enhancement of video games. It encompasses the creation of realistic environments, characters, and special effects that enhance the gaming experience. Companies in this sector leverage advanced technologies and creative techniques to produce immersive and visually stunning game content.
VFX for Virtual Production	This topic involves the use of visual effects (VFX) in virtual production, which combines live-action footage and computer-generated imagery in real-time to create immersive and dynamic environments for film, television, and other digital media. It leverages advanced technologies to enhance storytelling and streamline the production process.
VFX Integration	This topic involves the seamless integration of visual effects (VFX) into various forms of media, enhancing the storytelling and immersive experience. It encompasses the use of advanced technologies and creative techniques to blend computer-generated imagery with live-action footage, ensuring a cohesive and visually stunning final product.
VFX Tools and Software	This topic encompasses the various tools and software used in the creation and enhancement of visual effects (VFX) in the fields of extended reality, digital creativity, research, and innovation. It includes discussions on the latest technologies, software applications, and techniques employed in VFX and post-production to create immersive and visually stunning experiences.
VFX (Visual Effects)	This topic involves the creation and integration of computer-generated imagery and other visual effects into live-action footage to enhance or create environments, characters, and other elements that would be difficult or impossible to capture on film. It is a crucial aspect of modern filmmaking, television production, and other forms of digital media.
Virtual Reality (VR) Post-Production	This topic involves the processes and techniques used to refine and enhance virtual reality content after the initial production phase. It includes tasks such as editing, compositing, adding special effects, and optimizing the VR experience for various platforms. This topic is crucial for creating immersive and high-quality VR experiences that meet the expectations of users and clients.
Virtual Sets and Environments	This topic involves the creation and utilization of digitally constructed environments and sets for use in film, television, and other media productions. These virtual sets and environments allow for greater flexibility, creativity, and cost-efficiency in the production process, enabling filmmakers and content creators to craft immersive and visually stunning scenes without the need for physical sets.
Visual Effects Supervision	This topic involves overseeing the creation and integration of visual effects in film, television, and other media. It requires a deep understanding of both the artistic and technical aspects of visual effects to ensure that the final product meets the desired vision and quality standards.
XR Integration in VFX and Post-Production	This topic explores the integration of Extended Reality (XR) technologies in the fields of Visual Effects (VFX) and post-production. It encompasses the use of augmented reality (AR), virtual reality (VR), and mixed reality (MR) to enhance the creative process, streamline workflows, and create immersive experiences in film, television, and digital media.

Video Production Topics

Topic	Description
4K/8K Cinematography	This topic is a significant area of focus for companies involved in Extended Reality, Digital Creativity, Research & Innovation, particularly within the Video Production subsector. It encompasses the use of ultra-high-definition video formats, such as 4K and 8K, to create immersive and visually stunning content. This topic is essential for enhancing the quality and realism of video productions, making it a critical aspect of modern cinematography.
Aerial & Drone Videography	This topic involves the use of aerial and drone technology to capture high-quality video footage from unique perspectives. It is commonly utilized in various industries for creative, research, and innovative purposes, enhancing the visual storytelling and data collection capabilities of video production.
Augmented Reality (AR) for Video Production	This topic explores the integration of Augmented Reality (AR) technology into video production processes, enhancing the creative possibilities and immersive experiences in digital content creation. It encompasses the use of AR tools and techniques to overlay digital elements onto real-world footage, creating a seamless blend of virtual and physical environments.
Cameras and Lighting	This topic encompasses the essential elements of capturing high-quality video content, focusing on the technical aspects of camera equipment and lighting setups. It is crucial for achieving the desired visual effects and ensuring that the final product meets professional standards.
Corporate Videos	This topic encompasses the creation, production, and distribution of videos for corporate purposes, including marketing, training, and internal communications. It involves leveraging digital creativity and innovation to produce engaging and effective video content that meets the specific needs of businesses.
Documentaries and Short Films	This topic encompasses the creation, production, and distribution of documentaries and short films, often leveraging the latest in extended reality and digital creativity. Companies in this sector focus on innovative storytelling, immersive experiences, and cutting-edge research to push the boundaries of video production.
Editing Software	This topic is essential for professionals in the video production industry, offering tools and techniques to enhance digital creativity and innovation. It encompasses a range of software solutions designed to edit, manipulate, and produce high-quality video content.
Event Videography	This topic involves the professional recording and production of video content for events, utilizing advanced technologies and creative techniques to capture and enhance the experience. It is a critical aspect of the extended reality sector, focusing on digital creativity, research, and innovation in video production.
Extended Reality (XR) in Video Production	This topic explores the integration of Extended Reality (XR) technologies in video production, enhancing the creative process and enabling innovative storytelling techniques. It encompasses the use of virtual reality (VR), augmented reality (AR), and mixed reality (MR) to create immersive and interactive video content.
High-Definition Video Production	This topic involves the creation, editing, and distribution of video content with high resolution and clarity, often used in various applications such as entertainment, marketing, education, and virtual reality experiences. It encompasses the use of advanced technology and techniques to produce visually stunning and immersive video content.
Immersive Video Experiences	This topic focuses on creating highly engaging and interactive video content that immerses viewers in a virtual or augmented reality environment. It leverages advanced technologies to enhance the viewer's experience, making them feel as if they are part of the scene. This topic is particularly relevant for companies involved in extended reality, digital creativity, research, and innovation within the video production industry.
Interactive Video Content	This topic involves the creation and utilization of video content that allows viewers to interact with the media in various ways, enhancing engagement and providing a more immersive experience. It is particularly relevant in the fields of extended reality, digital creativity, research, and innovation, where cutting-edge technology is used to produce dynamic and engaging video content.
Live Streaming with XR Integration	This topic involves the integration of extended reality (XR) technologies with live streaming to create immersive and interactive video content. It is commonly discussed in the context of enhancing viewer engagement, providing innovative solutions for virtual events, and pushing the boundaries of digital creativity in video production.
Motion Capture for Video Production	This topic involves the use of technology to capture the movement of objects or people, which is then used in video production to create realistic animations and effects. It is a crucial aspect of creating immersive and engaging content in the field of extended reality, digital creativity, research, and innovation.
Music Video Production	This topic involves the creation and production of music videos, which combine audio and visual elements to promote and enhance the experience of a musical piece. It encompasses various stages including concept development, filming, editing, and post-production, often utilizing advanced technologies and creative techniques to deliver engaging and innovative content.

Video Production Topics (continued)

Topic	Description
Post-Production with XR Effects	This topic involves the integration of Extended Reality (XR) effects in the post-production phase of video production. It encompasses the use of augmented reality (AR), virtual reality (VR), and mixed reality (MR) technologies to enhance visual storytelling, create immersive experiences, and add interactive elements to video content. Companies in this sector leverage cutting-edge technology and creative expertise to deliver innovative and engaging video productions.
Sound Equipment	This topic is essential for ensuring high-quality audio in video production, which is a critical aspect of creating immersive and engaging content in the field of extended reality. Companies in this sector often discuss the latest advancements, best practices, and available products related to this topic to help creators achieve the best possible sound for their projects.
Trends in Video Production	This topic encompasses the latest developments, techniques, and innovations in the field of video production, particularly within the realm of extended reality (XR) and digital creativity. It includes discussions on new technologies, creative trends, and research advancements that are shaping the future of video content creation.
Video Production	This topic encompasses the creation, editing, and distribution of video content, often leveraging advanced technologies and innovative techniques to produce high-quality visual media. It is a critical aspect of digital creativity and innovation, particularly within the realm of extended reality.
Video Production Best Practices	This topic encompasses the essential guidelines and strategies for creating high-quality video content, particularly within the realm of extended reality and digital creativity. It includes best practices for pre-production, production, and post-production phases, ensuring that the final product is engaging, professional, and meets the intended objectives.
Virtual Reality (VR) Production	This topic involves the creation and development of immersive virtual environments and experiences, often used in entertainment, training, and various other applications. It encompasses the entire process from conceptualization to the final production of VR content.
Virtual Sets & Environments	This topic involves the creation and utilization of digitally generated sets and environments for video production. These virtual sets and environments allow for greater flexibility, creativity, and cost-effectiveness in producing high-quality visual content. They are widely used in film, television, and other media industries to create immersive and dynamic scenes without the need for physical sets.
XR Equipment for Video Production.	This topic focuses on the use of extended reality (XR) equipment in the field of video production. It encompasses the latest technologies and innovations that enhance digital creativity and research, enabling the creation of immersive and interactive video content. Companies in this sector provide a range of XR tools and services designed to elevate the video production process, from pre-production to post-production.



Appendix C – LLM Limitations

Common Limitations

LLM Limitations

Web scraping

There are a few reasons that websites are not successfully scraped:

- Companies actively block scraping attempts
- The website was down when we tried to scrape it. We've ran the scraper a few times to try to mitigate this
- The website is faulty (e.g. it has an invalid SSL certificate)
- The website does not actually exist or is unreachable.

Sector assignment

Companies cannot be assigned to more than one sector. This limitation is also why subsectors are less accurate: if you try to use a precise classification for a company you end up only catching one of the services that they offer, and most companies offer more than one service. This might lead to companies who do not primary use or sell extended reality products/services being omitted.

Companies assigned to 'wrong' sector

On the other hand, where companies that use targeted keywords or topics, but do not actually belong in the extended reality sector or Creative Industries, they may be assigned to a Priority Sub-sector even though their main operations is in a different sector. Such companies are removed as much as possible, which results in a smaller sample size.

Data validation

There is no "ground truth" in the smart sector analysis - the closest thing to the truth are the assigned SIC codes for companies, but they may not be very accurate or precise so they cannot be used to measure accuracy (also measuring against SIC codes defeats the point of smart sector analysis). So, validation must be done manually using a sample of approximately 200 companies. The assignment is also not always clear-cut: there could be a company that is assigned to an "Investment" sector, but also provides accounting services.



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