



SOUTH AFRICAN CULTURAL OBSERVATORY

**Economic Mapping Study Research Services to
SACO**

**Technical Research Report 4 (of 5): Provincial
Location and Clusters of Cultural and Creative
Industries**

Submitted to:

Department of Arts and Culture

Submitted by:

Nelson Mandela University

In Partnership with:

Rhodes University, University of Fort Hare and University of KwaZulu-Natal

NELSON MANDELA
UNIVERSITY



arts & culture

Department:
Arts and Culture
REPUBLIC OF SOUTH AFRICA



RHODES UNIVERSITY
Where leaders learn



University of Fort Hare
Together in Excellence



**UNIVERSITY OF
KWAZULU-NATAL**
INYUVESI
YAKWAZULU-NATAI

Economic Mapping Study Research Services

Technical Research Report 4 (of 5): Provincial Location and Clusters of Cultural and Creative Industries

March 2020

Final Report

Contents

1. Introduction and Background	8
1.1 Scope of Work of the 2020 Study	8
1.2 Objective of this Report.....	9
1.3 Data Sources	10
1.4 Organisation of this Report	10
2. Methodology	11
3. Provincial Location of the Cultural and Creative Industries	14
3.1 Introduction and Methodology for Updating the Provinces and Clusters.....	14
3.2 Contribution of Cultural and Creative Industries Towards GDP	14
3.2.1 Presentation of CCI Domain GDP According to Provinces	14
3.2.2 Presentation of Provincial GDP by CCI Domain	16
3.3 Contribution of Cultural and Creative Industries to Employment.....	17
3.3.1 Provincial Employment and CCI Domains	17
3.3.2 Provincial Employment by CCI Domain	20
3.3.3 Historical CCI Employment by Province.....	21
3.4 Capital Utilisation per CCI Domain.....	27
3.4.1 CCI Domain GDP per Capital Utilisation	28
4. Identification of Possible Clusters within Cultural and Creative Industries	30
4.1 Introduction	30
4.2 The Concept of a Cluster	30
4.3 Identification of Clusters.....	31
4.4 UNESCO Cultural Domains as Clusters	32
4.5 Cluster development of Identified Metro's and Local Municipalities in regard to Cultural and Creative Industries.....	32
4.6 Economic Size and Structural Analysis of Cultural and Creative Clusters	33
4.6.1 Methodology to Calculate the Relative Importance of Clusters (Geographical Location Quotients).....	33
4.6.2 CCI Cluster Turnover Mapping by Metro and Local Municipality	33
4.3 The importance of CCI Activities for specific CCI Clusters in regard to a specific geographic location.....	44
4.3.1 Summary of Key CCI Clusters by Metro/Local Municipality	44
5. Summary and Recommendations	77
5.1 Analyse the Provincial distribution of the CCIs per Domain in terms of key macroeconomic impact indicators Analysis	77
5.2 Conduct a cluster analysis within the CCIs which includes a mapping exercise of the main findings in terms of selected macroeconomic impact indicators.....	77
5.3 Recommendations and way-forward.....	79
6. Appendix A.....	81
7. Appendix B.....	82
8. References	95

LIST OF TABLES

Table 1.1: Scope of Work and Research Reports.....	9
Table 2.1: SIC Input Structure of the Cultural Satellite Account for South Africa	12
Table 3.1: Direct GDP/Capital ratios of the CCI Domains and Provinces.....	28
Table 4.1: Metros and Local Municipalities by province.....	33
Table 4.2: Culture and Creative Industry's Clusters turnover mapping per Metro's and Local Municipalities (2018, Rand Million)	35
Table 4.3: Culture and Creative Industry's Clusters percentage turnover mapping per Metro's and Local Municipalities in terms of Percentage	36
Table 4.4: Relative Importance of the Culture and Creative Industry's Clusters per Metro's and Local Municipalities.....	38
Table 4.5: More Important CCI Clusters by Province and Metro/Local Municipality	39
Table 4.6: CCI Activities for specific CCI Clusters I regard to a specific geographic location	44

LIST OF FIGURES

Figure 3.1: CCI Domain GDP by Province (R million, 2018 prices).....	15
Figure 3.2: GDP Contribution of the CCI Sector to Provincial and National Economies (percentages)	16
Figure 3.3: Domain Contribution to Provincial GDP (R million, 2018 prices)	16
Figure 3.4: Domain Contribution to Provincial GDP (percentages)	17
Figure 3.5: Total National and Provincial Employment Distribution in 2018 (numbers)	18
Figure 3.6: National and Provincial CCI Employment Distribution in 2018 (numbers)	18
Figure 3.7: CCI Domain Employment by Province (numbers).....	19
Figure 3.8: Contribution of CCI Sector Employment to Provincial and National Economies (percentages)	20
Figure 3.9: Provincial Employment by CCI Domain (numbers)	20
Figure 3.10: Provincial Employment by CCI Domain (percentage)	21
Figure 3.11: Historical Increase in CCI Employment in South Africa (numbers).	22
Figure 3.12: Historical Increase in CCI Employment in Eastern Cape (numbers).....	22
Figure 3.13: Historical Increase in CCI Employment in the Free State (numbers).	23
Figure 3.14: Historical Increase in CCI Employment in Gauteng (numbers).....	23
Figure 3.15: Historical Increase in CCI Employment in KwaZulu-Natal (numbers).	24
Figure 3.16: Historical Increase in CCI Employment in Limpopo (numbers).....	24
Figure 3.17: Historical Increase in CCI Employment in Mpumalanga (numbers).	25
Figure 3.18: Historical Increase in CCI Employment in the Northern Cape (numbers).....	25
Figure 3.19: Historical Increase in CCI Employment in the North West (numbers).....	26
Figure 3.20: Historical Increase in CCI Employment in the Western Cape (numbers).	26
Figure 3.21: Capital Utilisation per CCI Domain by Province (R million, 2018 prices)	27
Figure 3.22: CCI Domain Capital Utilisation per Province (R million, 2018 prices)	28

Figure 4.1: Mapping of the Cultural & Natural Heritage Cluster i.t.o Relative Importance of Turnover.....	40
Figure 4.2: Mapping of the Performance & Celebration Cluster i.t.o Relative Importance of Turnover.....	41
Figure 4.3: Mapping of the Visual Arts & Crafts Cluster i.t.o Relative Importance of Turnover.....	41
Figure 4.4: Mapping of the Books & Press Cluster i.t.o Relative Importance of Turnover.....	42
Figure 4.5: Mapping of the Audio-visual & Interactive Media Cluster i.t.o Relative Importance of Turnover.....	42
Figure 4.6: Mapping of the Design & Creative Services Cluster i.t.o Relative Importance of Turnover.....	43
Figure 4.7: Mapping of the Transversal Cultural Education Cluster i.t.o Relative Importance of Turnover	43
Figure 4.8: Example of mapping a chosen cluster for the Nelson Mandela Bay Metro	45
Figure 6.1: SIC Input Structure of the Cultural Satellite Account for South Africa	81

ACRONYMS

AFS	:	Annual Financial Statistics
CCI	:	Cultural and Creative Industries
CID	:	Conningarth Infrastructure Database
CPC	:	Central Product Classification
CSA	:	Cultural Satellite Accounts
CSAM	:	Cultural SAM
CFCS	:	Canadian Framework for Culture Statistics
DET	:	Department of Education and Training
DAC	:	Department of Arts and Culture
DTI	:	Department of Trade and Industry
EBOPS	:	Extended Balance of payment Services Classification
FCS	:	2009 UNESCO Framework for Cultural Statistics
FDM	:	Freight Demand Model
GDP	:	Gross Domestic Product
GDP	:	Gross Value Added
HS	:	Harmonised Commodity Description and coding system
ICATUS	:	Intelligent Classification of Activities for Time Use Statistics
ICH	:	Intangible Cultural Heritage
ICT	:	Information and Communication Technology
ILO	:	International Labour Organisation
IO	:	Input Output Table
IP	:	Intellectual Property
ISCO	:	International Standard Classification of Occupations
ISIC	:	International Standard Industrial Classification
MEIA	:	Macroeconomic Impact Assessment Model
NMMU	:	Nelson Mandela Metropolitan University
OECD	:	Organisation for Economic Co-operation and Development

OFO	:	Organising Framework for Occupation
RSA	:	Republic of South Africa
SAM	:	Social Accounting Matrix
SACO	:	South African Cultural Observatory
SASCO	:	South African Standard Classification of Occupations
SIC	:	Standard Industrial Classification
SNA	:	System of National Accounts
SU	:	Supply and Use Tables
StatsSA	:	Statistics South Africa
TSA	:	Tourism Satellite Accounts
UIS	:	UNESCO Institute for Statistics
UN	:	United Nations
UNCTAG	:	United Nations Conference on Trade and Development
UNESCO	:	United Nations Educational, Scientific & Cultural Organisation
QLFS	:	Quarterly Labour Force Survey

1. Introduction and Background

In 2017/18, Conningarth Economists undertook an Economic Mapping Study for the South African Cultural Observatory (SACO) to determine the impact of the Cultural and Creative Industries (CCI) on the South African economy. This original study has now been updated to reflect more current information to 2020.

Both the original 2017/18 and this updated 2020 study apply the same basic modelling structure for economic impact analysis of the CCI, with the principal difference being updated data inputs. The previous study relied to some extent on information from other Department of Sports Arts and Culture (DSAC) mapping studies. However, this current study is based mainly on new datasets sourced from StatsSA.

This Technical Research Report 4 is the fourth in a series of five reports that make up the specified deliverables of the updated 2020 economic mapping study. It is important to note that the methodological approach used in this 2020 study is similar to the approach used in the 2017/18 study, with the exception that the cluster analysis has been extended so that the mapping of this cluster analysis is also quantified for the various geographical locations involved.

This current study is conducted under the auspices of the Nelson Mandela University in partnership with Rhodes University, University of Fort Hare, and the University of KwaZulu-Natal.

1.1 Scope of Work of the 2020 Study

Table 1.1 below reflects the scope of work undertaken in this 2020 study, as well as the titles of the reports produced as part of the overall study.

Table 1.1: Scope of Work and Research Reports

Scope of Work	Research Report
1. Inception Report	Research Report 1: Summary of Work Undertaken
2. Macroeconomic Impact Analysis: - The contribution of the CCIs towards GDP (economic output), as well as demonstrating the relative size of the CCIs sector in relation to other economic sectors across the UNESCO defined Domains - An estimation of the forward and backward linkages (multipliers) in the CCIs sector itself, as well as linkages with other economic sectors	Research Report 2: Updating a Cultural and Creative Industries Satellite Account Embedded into a Social Accounting Matrix for South Africa. - Technical Report - Summary / Abstract Report Research Report 3: Macroeconomic Impact Assessment Modelling System and Macroeconomic Impact Analysis of the Cultural and Creative Industries - Technical Report - Summary / Abstract Report
3. Provincial Location and Cluster Analysis: - Provincial distribution of the CCIs (as per the macro-economic analysis stated above – this section should include maps detailing provincial distribution patterns) - Identification of possible clusters within the CCIs (this should include maps pertaining to the relevant findings) - Employment from a provincial and geo spatial spread, i.e. mapping exercise & GIS Mapping	Research Report 4: Provincial Location and Clusters of the Cultural and Creative Industries Sector in South Africa - Technical Report - Summary / Abstract Report
4. Shifting Transformation and Ownership Analysis: Determine the transformation and ownership patterns within the South African CCIs across the UNESCO Domains, noting that transformation and ownership levels must also be presented in the above-mentions section dealing with provincial distribution and clustering	Research Report 5: Transformation, Ownership and Employment in the Cultural and Creative Industries - Technical Report - Summary / Abstract Report

This specific report relates to item number three (Provincial Location and Cluster Analysis) of the overall study.

1.2 Objective of this Report

The focus of this Technical Research Report 4 is on the mapping of the CCIs in order to reveal the existing patterns of spatial clustering in terms of provinces, metros and selected cities. The CCIs, like other industries, are not evenly distributed across geographical areas, but can be spatially concentrated. CCIs tend to concentrate in provinces, cities and local areas, and are significant drivers of creative and cultural activities. In most instances, CCIs connect to more than one economic sector, especially in large Metropolitan areas. This report also presents a comparative analysis across the various CCI clusters.

This study calculates the size of provincial CCI activities in terms of macroeconomic variables such as:

- GDP¹, which is the main indicator for economic activity;
- Employment, which is a good indicator of income distribution; and
- Capital, which is an indicator of the utilisation of scarce resources.

1.3 Data Sources

This 2020 study makes use of the following data sources:

- The 2009 UNESCO Framework for Cultural Statistics (FCS);
- Conningarth Infrastructure Database (CID);
- National Level audited trade and economic data from StatsSA or other relevant national entities; and
- Labour Market Dynamics Survey (StatsSA).

1.4 Organisation of this Report

This report will consist of the following sections:

- Section 1: Introduction and Background
- Section 2: Methodology
- Section 3: Provincial Location of the Cultural and Creative Industries
- Section 4: Identification of Possible Clusters within Cultural and Creative Industries, and
- Section 5: Summary and Recommendations

¹ This report makes use of Gross Domestic Product (GDP) to quantify economic activity and not Gross Value Added (GVA). In some cases, it can be argued that GVA is technically more correct; however, GDP is more commonly used and more widely understood by the general public. The difference between the two concepts is marginal – according to National Accounts, in calculating the magnitude of economic activity, GDP includes taxes and subsidies on products, whereas GVA excludes these two items.

2. Methodology

The methodology employed in this study entails disaggregation of the total national production of the CCI sectors to a local municipality level. These detailed local municipality figures could then be used for the provincial and cluster analysis

The key requirement in mapping the geographic location of the various CCIs involves matching the CCI sectors with sectors based on the Standard Industrial Classification of all Economic Activities (SIC) system.

The Standard Industrial Classification of All Economic Activities (SIC) consists of a coherent and consistent classification structure of economic activities based on a set of agreed concepts, definitions, principles and classification rules. It is derived from the International Standard Industrial Classification (ISIC) Rev 4.0, adjusted for South African conditions. It provides a comprehensive framework within which economic data can be collected and reported in a format that is designed for purposes of economic analysis, decision-taking and policy-making. The classification structure represents a standard format to organize detailed information about the state of an economy according to economic principles and perceptions.

In practice, the classification is used for providing a continuing flow of information that is indispensable for the monitoring, analysis and evaluation of the performance of an economy over time. In addition to its primary application in statistics and subsequent economic analysis, where information needs to be provided for narrowly defined economic activities (also referred to as "industries"), SIC can also be used for administrative purposes, such as in tax collection, issuing of business licenses etc.

The scope of SIC in general covers productive activities, i.e., economic activities within the production boundary of the System of National Accounts (SNA). A few exceptions have been made to allow for the classification of activities beyond the production boundary but which are of importance for various other types of statistics. These economic activities are subdivided in a hierarchical, five-level structure of mutually exclusive categories, facilitating data collection, presentation and analysis at detailed levels of the economy in a standardized way. The categories at the highest level are called sections, which are alphabetically coded categories intended to facilitate economic analysis. The sections subdivide the entire spectrum of productive activities into broad groupings, such as "Agriculture, forestry and fishing", "Manufacturing" and "Information and communication". The classification is then organized into successively more detailed categories, which are numerically coded: two-digit divisions, three-digit groups, and, at the greatest level of detail, four-digit classes and five-digit subclasses.

The 7th edition of SIC enhances the relevance of the classification by better reflecting the current structure of the economy, recognizing new industries that have emerged over the past 20 years and facilitates improved international comparison as it is fully aligned to the International Standard Industrial Classification (ISIC) Revision 4 up to the 4th digit level.

From a technical perspective, two main datasets were used to achieve the required level of matching. The first dataset used is the Conningarth Infrastructure Database (CID), which is based on the SIC system, and presents production at a Metropolitan and local municipality level.

The Conningarth Infrastructure Database (CID) is an extension of the Transnet Freight Demand Model (FDM), where Conningarth produces long-term forecasts of 114 products and services that are of strategic importance for this SOE. The main focus of this forecasting exercise is producing medium to long-term projections; however, given that forecasts are made on an annual basis, results can also be used for short term budgeting purposes.

Conningarth has undertaken this forecasting exercise for Transnet on an annual basis for the past 20 years. The level of detail required for these sectoral forecasts includes:

- Forecasts of balanced supply of (i.e. local RSA production and imports) and demand for (i.e. local RSA consumption and exports) for 114 products and services at a national level;
- National supply and demand forecasts are then broken down to Provincial, Metropolitan and Local Municipality levels - this exercise includes 9 provinces, 8 metropolises, and 226 local municipalities;

Forecasts are projected on an annual basis for 31 years into the future; with forecasts being updated on a rolling annual basis where one year falls away and another is added.

The second dataset incorporates CCI production - and other related information - derived from the work undertaken as part of the macroeconomic impact analysis performed in this study and presented in Reports 2 and 3 of the overall study (see Table 1.1 above). The matching of these two datasets was made possible due to the fact that both were originally developed from the Annual Financial Statistics of South Africa published by StatsSA.

The table below reflects the results of this exercise of matching the CCI Cultural Domains/Clusters and Activities with their corresponding SIC 7/ISIC 4.1 four-digit class codes.

Table 2.1: SIC Input Structure of the Cultural Satellite Account for South Africa

Cultural Domains/Clusters	SIC 7/ISIC 4.1	CCI Activities
A. Cultural & Natural Heritage	9000	A. Creative, arts and entertainment activities - Stamps and collectors' Items
	9102	Museums activities and operation of historical sites
	9103	Botanical and Zoological Gardens and Nature Reserve Activities
	4774	Retail sale of second-hand goods
B. Performance & Celebration	9000	B. Creative, arts and entertainment activities - Performing arts and Cultural events
	3220	Manufacture of musical instruments
	5920	Sound recording and music publishing activities
	4762	Retail sale of music and video recordings in specialised stores
C. Visual Arts & Crafts	9000	C. Creative, arts and entertainment activities - Fine Art and other visual art ex. Cartoonists
	7420	Photographic activities
	5819	C. Visual Arts & Crafts - Other publishing activities
	3211	Manufacture of jewellery and related articles
	7220	Research and experimental development on social sciences and humanities
D. Books & Press	9101	Library and Archives activities
	5811	Book publishing
	5813	Publishing of newspapers, journals and periodicals
	5819	D. Books & Press - Other publishing activities
	4761	Retail sale of books, newspapers and stationery in specialised stores
	6391	News agency activities
	6399	Other information service activities n.e.c.
	4649	Wholesale of other household goods*
	9000	D. Creative arts and entertainment activities - Services of authors, composers, sculptors and other artists, except performing artists
E. Audio-Visual & Interactive Media	5820	Software Publishing
	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
	5920	Sound recording and music publishing activities
	5914	Motion picture projection activities
	6010	Radio broadcasting
	6020	Television programming and broadcasting activities
	6312	Web portals
	7722	Renting of video tapes and disks
	6391	News agency activities
	4762	Retail sale of music and video recordings in specialised stores
F. Design & Creative Services	4791	Retail sale via mail order houses or via Internet
	7410	Specialised design activities
	7110	Architectural and engineering activities and related technical consultancy
	7310	Advertising
Transversal Cultural Education Domain	8522 & 8530	Education

A further step involved converting the estimated production values of the CCI sectors into other macroeconomic variables such as:

- GDP (or Gross Value Added) is the main indicator for economic activity;
- Employment is a good indicator for income distribution; and
- Capital is an indicator for the utilisation of scarce resources.

The objective of this step is to make use of this information, as well as of other secondary information, to calculate the size of CCI activities by province.

3. Provincial Location of the Cultural and Creative Industries

3.1 Introduction and Methodology for Updating the Provinces and Clusters

The mapping of the CCI sectors on a geographical location basis was performed for the 2018 base year. The research team calculated 2018 production values for the various CCI activities² on a provincial basis by making use of the following calculation process:

The data compiled for the cluster calculations was aggregated to a provincial level and expressed in percentage terms (as was the case in the 2017/18 study). This data was then used to obtain production values per CCI activity per province.

These provincial CCI production values were then multiplied by the percentage structure of CCI activities per province as presented in the CCI activity satellite account. To convert the estimated provincial production values, the CCI national multipliers for GDP, labour and capital as estimated in Report 3 were used.

Given that the objective of optimising future investment in the CCIs is to foster economic growth and create employment through effective and efficient utilisation of scarce capital resources, understanding the current provincial location of CCI activities will provide an indication of the viability of further extending CCI activities in specific provinces.

The analysis of the provincial location of CCI activities undertaken in this 2020 study reveals that there are significant differences across the National and Provincial economies. For instance, the film industry is mostly concentrated in the Western Cape province; whilst museums, zoos and performing arts are mostly located in big cities. Similarly, Game Parks are mostly situated in rural areas such as the Kruger National Park in Mpumalanga.

3.2 Contribution of Cultural and Creative Industries Towards GDP

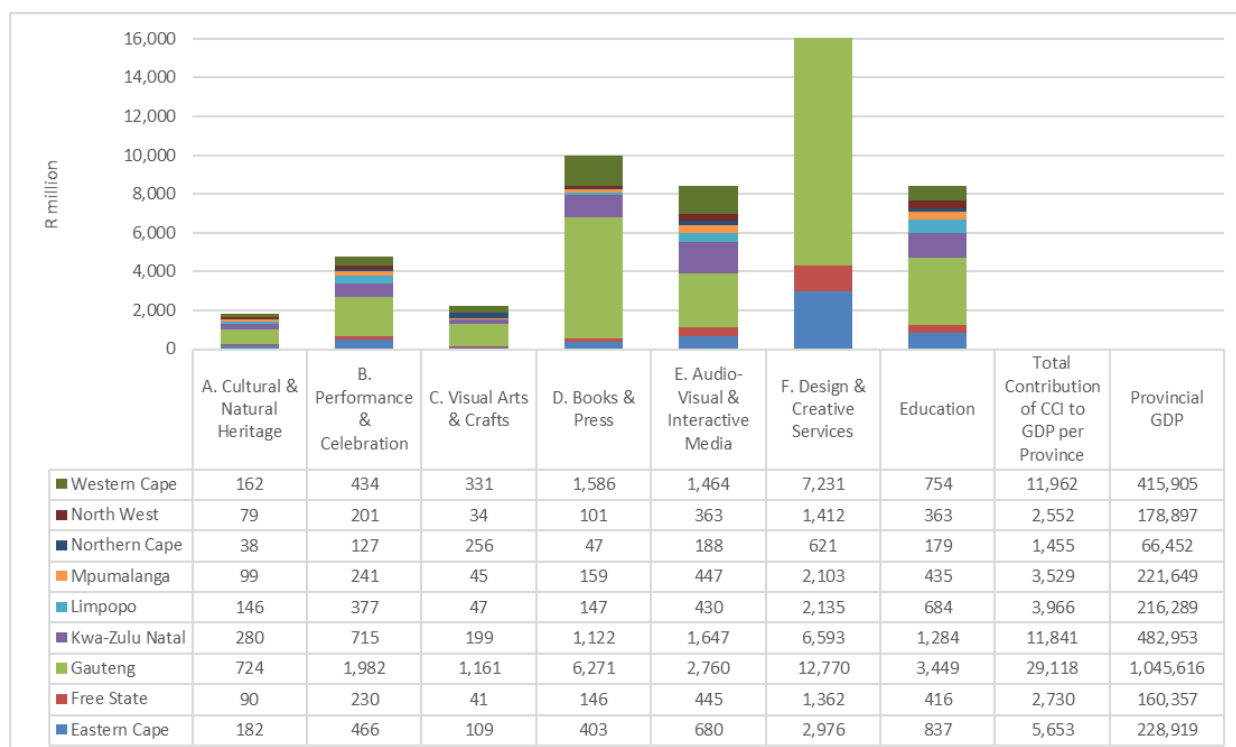
The contribution of the CCIs to GDP has been analysed from two perspectives. Firstly, the presentation of provincial GDP across CCI Domains; and, secondly, the distribution of CCI Domain GDPs across provinces.

3.2.1 Presentation of CCI Domain GDP According to Provinces

Figure 3.1 below reflects the provincial composition of CCI Domain GDPs. The figure indicates that the CCI Domains are concentrated in three provinces, namely Gauteng, Western Cape and Kwa-Zulu Natal.

² The CCI activities are depicted in Appendix A to this report.

Figure 3.1: CCI Domain GDP by Province (R million, 2018 prices)

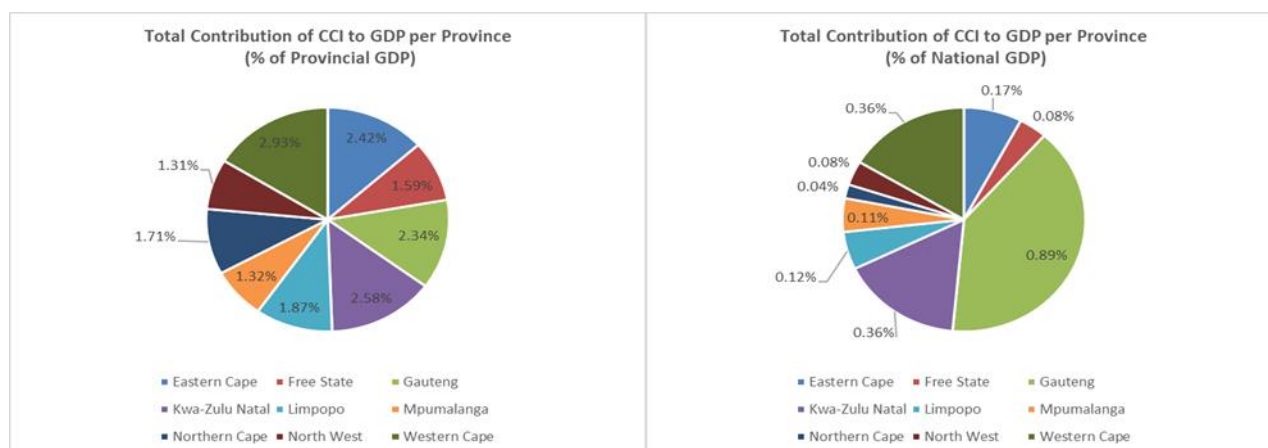


Source: Conningarth own calculation

Figure 3.2 below reflects the GDP contribution that the CCI sector makes to provincial economies and to the National economy, i.e. the GDP of the CCI sector in the Eastern Cape makes up 2.42% of the Eastern Cape economy; whilst the GDP contribution of the CCI sector to national GDP is 2.5%.

These contributions are lower than the contributions that CCIs make to the national GDP of developed countries such as the USA and Europe where the contribution is well above 3%. The South African contribution figures are also significantly lower than those of many developing countries – for example, in Indonesia, the contribution of this country's CCI is above 7% of GDP. These comparisons between South Africa and other countries suggests that there is room for the South African CCI to grow and to play a more meaningful role in the South African economy.

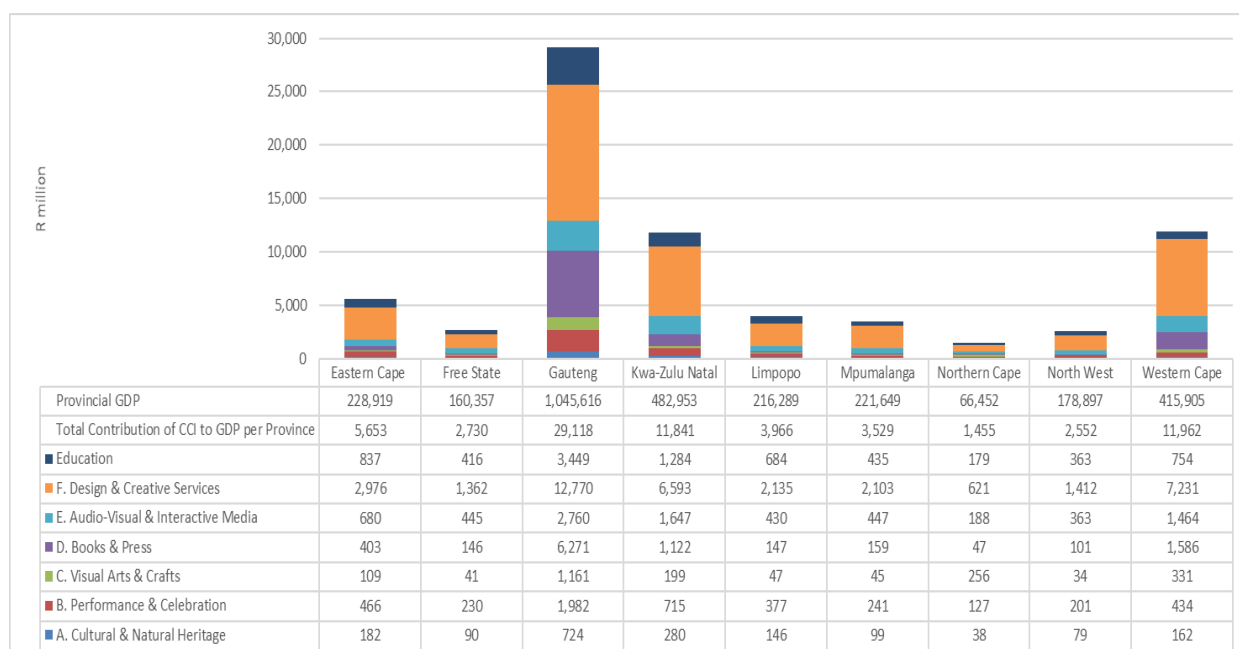
Figure 3.2: GDP Contribution of the CCI Sector to Provincial and National Economies (percentages)



3.2.2 Presentation of Provincial GDP by CCI Domain

The contribution of CCI Domains towards provincial GDP is illustrated in Figures 3.3. and 3.4 below, where Figure 3.3 reflects GDP values and Figure 3.4 reflects percentages.

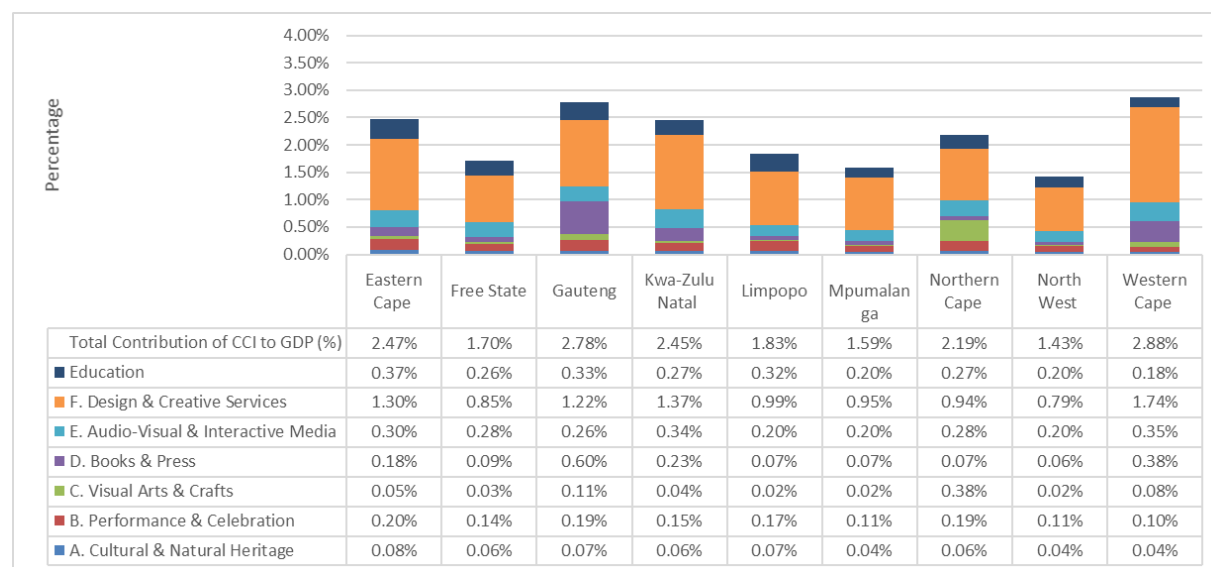
Figure 3.3: Domain Contribution to Provincial GDP (R million, 2018 prices)



Source: Conningarth own calculation

The figure above indicates that, measured in rand value terms, the largest CCI contributions are unsurprisingly found in the Gauteng, Western Cape and KZN provinces, which are the Provinces with the largest provincial GDPs.

Figure 3.4: Domain Contribution to Provincial GDP (percentages)



Source: Conningarth own calculation.

Figure 3.4 above indicates that, measured in percentage contribution terms, the CCI contribution to Provincial GDP is highest in the Western Cape (2.9%), Gauteng (2.8%) and KwaZulu-Natal (2.5%). The CCI contributions to Provincial GDP are also significant in the Eastern Cape and Northern Cape provinces.

The Design and Creative Services Domain is the major contributor to GDP in all provinces, followed by the Audio-Visual & Interactive Media Domain in most provinces, with the exception of the Free State, where the Books & Press Domain makes the second highest contribution.

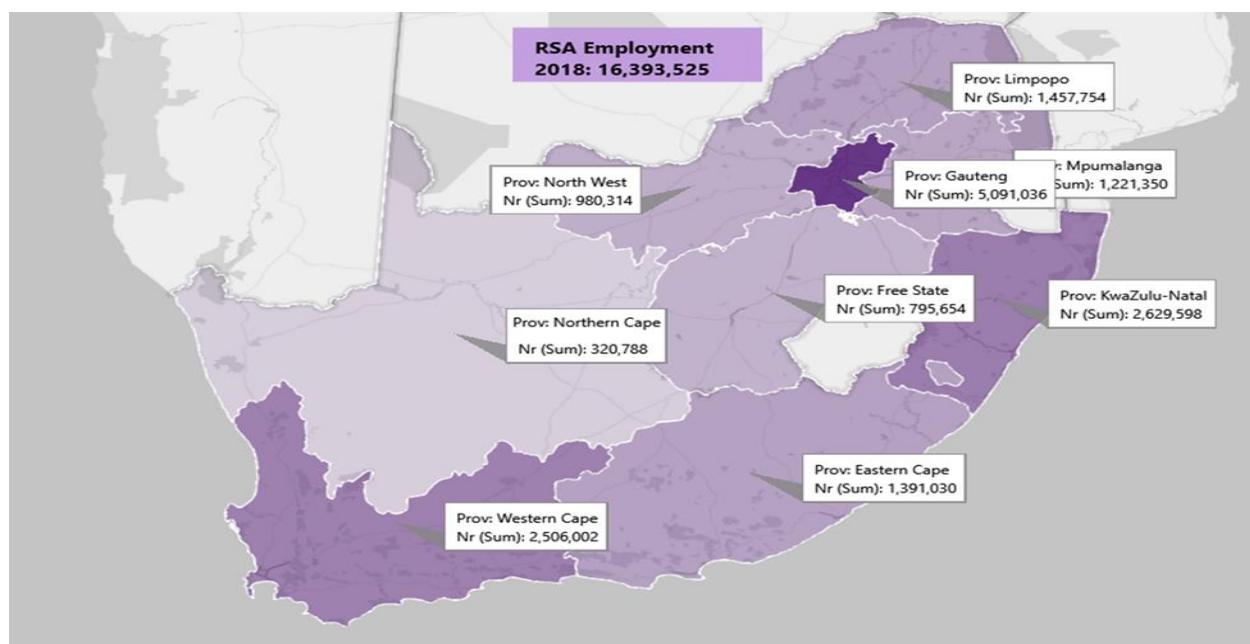
3.3 Contribution of Cultural and Creative Industries to Employment

The contribution of the CCI to employment is presented from two perspectives. Firstly, employment within CCI Domain is presented by province; and, secondly, CCI Domain employment is presented by province. A more detailed analysis of CCI employment can be found in **Technical Research Report 3: The Macroeconomic Impact Assessment Modelling System and Macroeconomic Impact Analysis of the Cultural and Creative Industries Sector**, where skilled, semi-skilled and unskilled employment numbers are provided for each CCI Domain in **Research Report 5: CCI Transformation and Ownership**, where employment figures are provided for CCI Domains by racial group.

3.3.1 Provincial Employment and CCI Domains

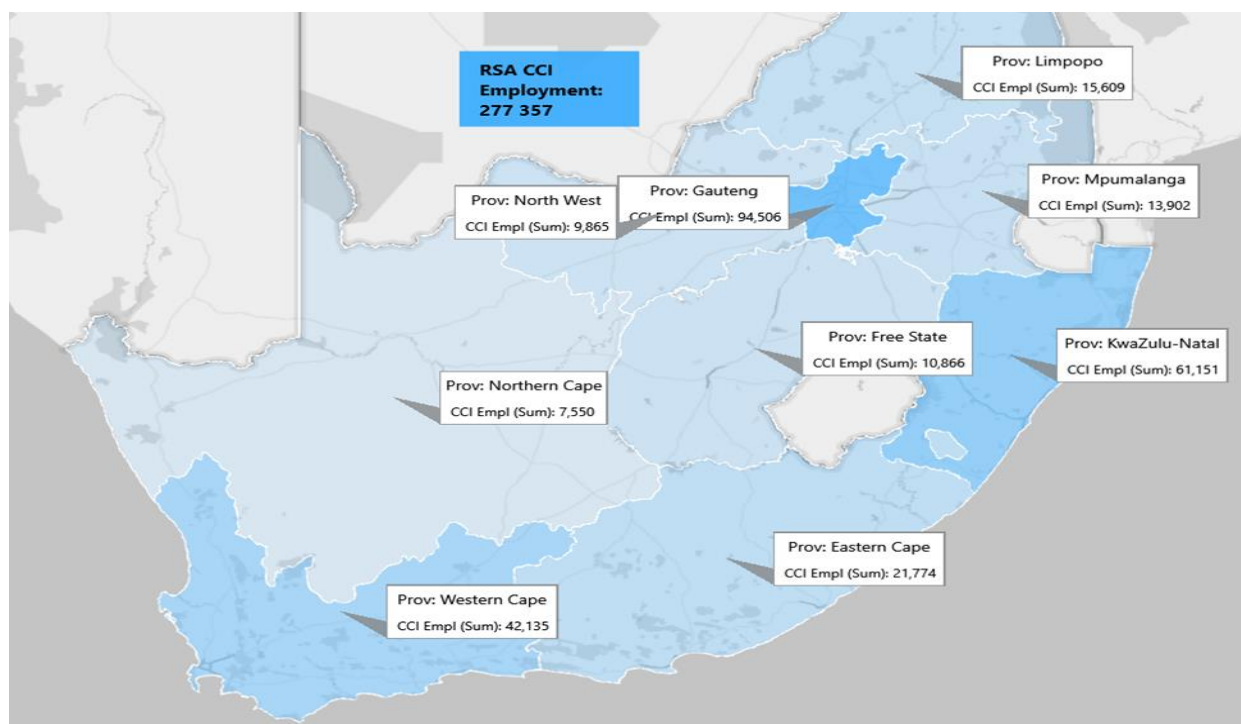
Figure 3.5 below presents total employment across all economic sectors for the national and provincial economies in South Africa. The darker colours in Figure 3.5 show a higher density of provincial employment distribution.

Figure 3.5: Total National and Provincial Employment Distribution in 2018 (numbers)



Source: Adapted from Labour Force Survey 2019, StatsSA.

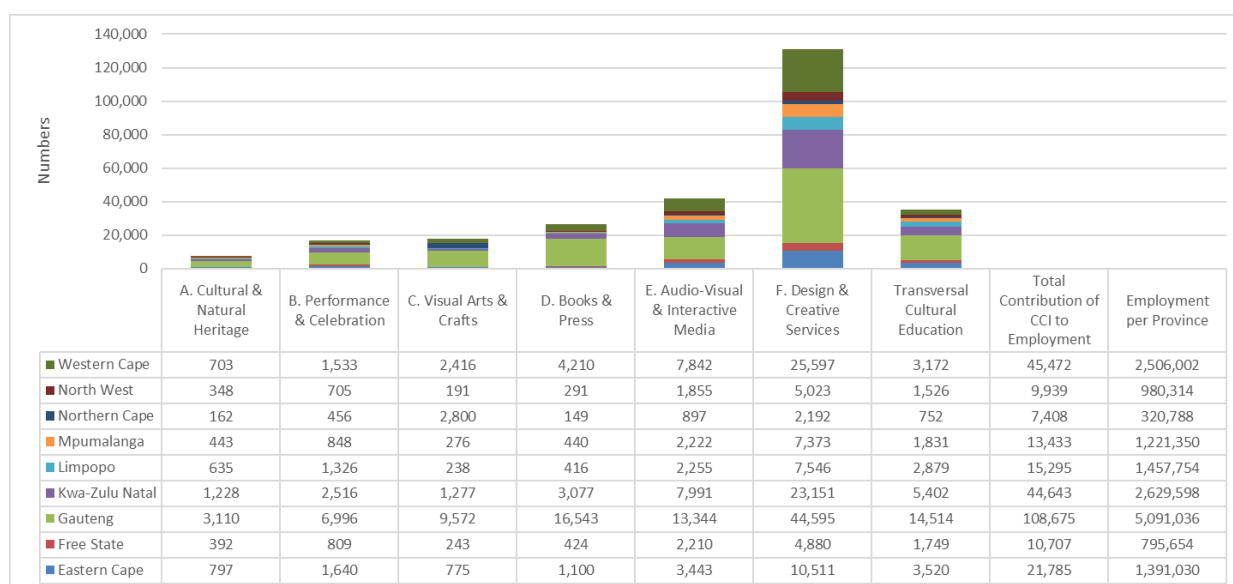
Figure 3.6: National and Provincial CCI Employment Distribution in 2018 (numbers)



Source: Adapted from Labour Force Survey (StatsSA) and Conningarth own Calculations

The figures above indicate that, despite the fact that Gauteng has the smallest geographical area, it is the major employment centre in the country followed by KwaZulu-Natal and the Western Cape. Figure 3.7 below reflects CCI Domain employment by province.

Figure 3.7: CCI Domain Employment by Province (numbers)

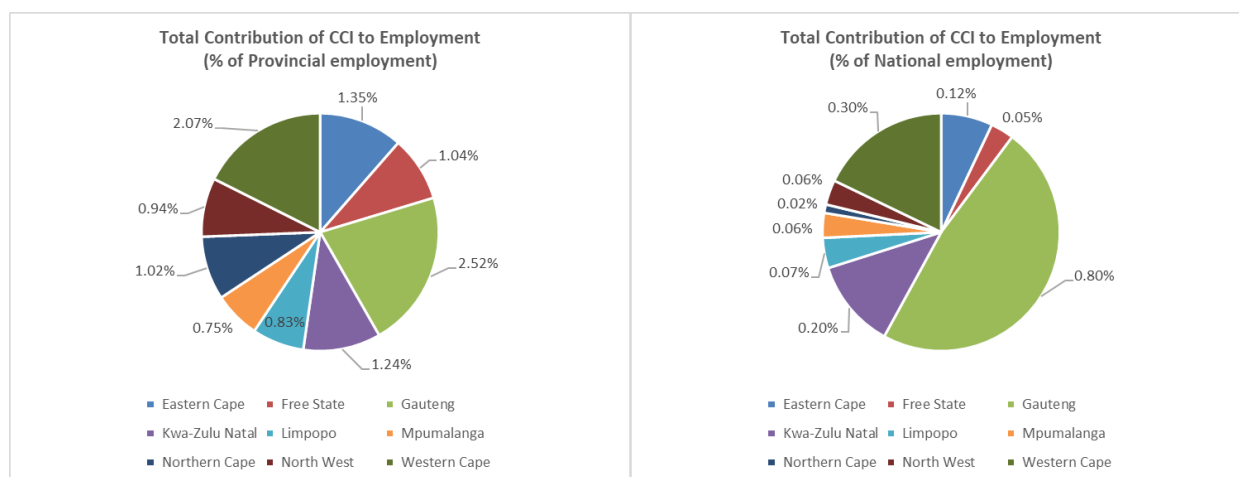


Source: Conningarth own calculation.

As in the case of GDP, the Provinces with the largest CCI Domain employment numbers are Gauteng, the Western Cape, and KZN. Similarly, the Design & Creative Services, Audiovisual & Interactive Media, Visual Arts & Crafts Domains employ the largest number of people in most provinces.

Figure 3.8 below reflects the employment contribution that the CCI sector makes to the national and provincial economies expressed in percentage terms, i.e. employment in the CCI sector in the Eastern Cape makes up 1.35% of the Eastern Cape economy, and 0.12% of the National economy.

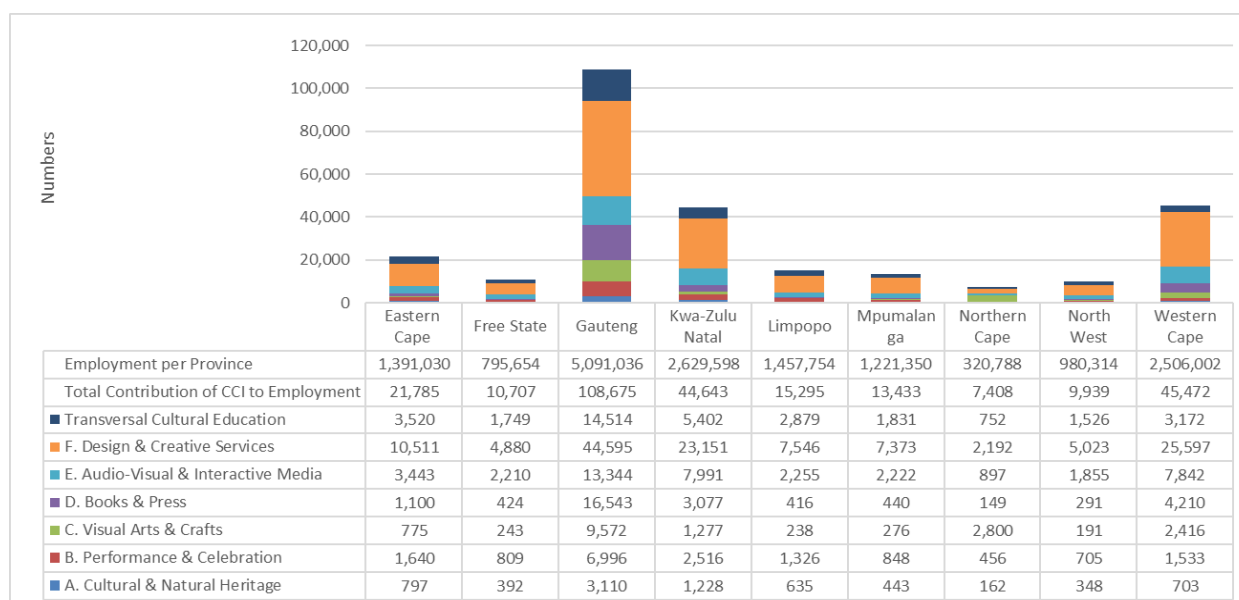
Figure 3.8: Contribution of CCI Sector Employment to Provincial and National Economies (percentages)



3.3.2 Provincial Employment by CCI Domain

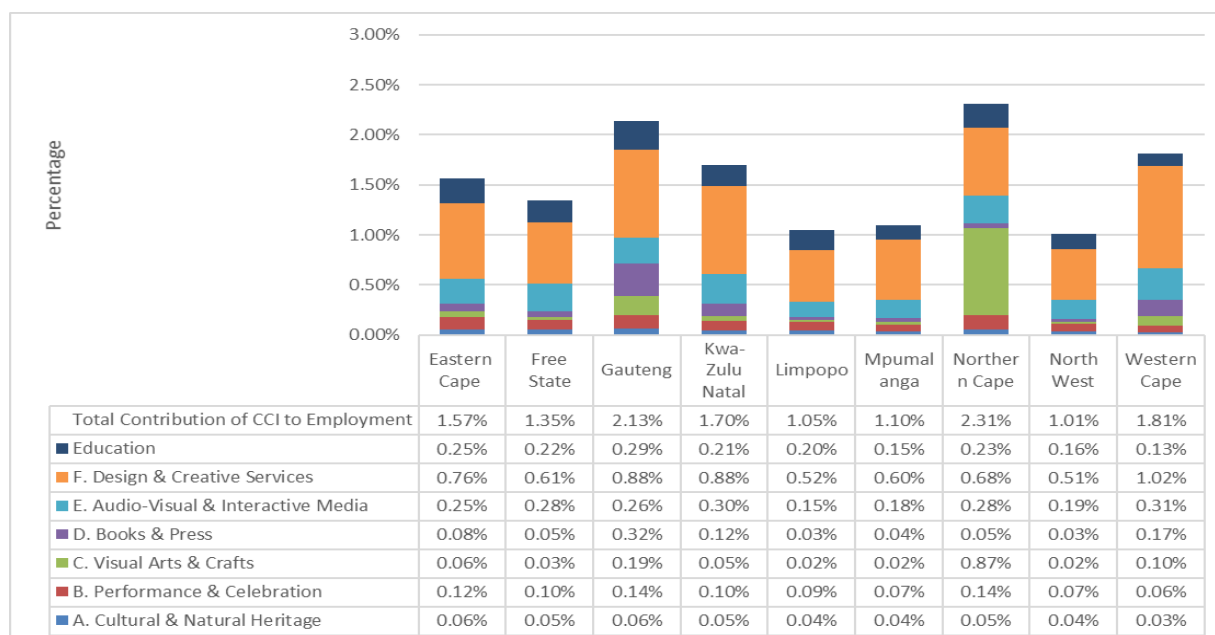
Figures 3.9 and 3.10 below reflect CCI sector and Domain employment by province – Figure 3.9 reflects CCI employment numbers, whilst Figure 3.10 presents percentages of employment within each province.

Figure 3.9: Provincial Employment by CCI Domain (numbers)



Source: Conningarth own calculation.

Figure 3.10: Provincial Employment by CCI Domain (percentage)



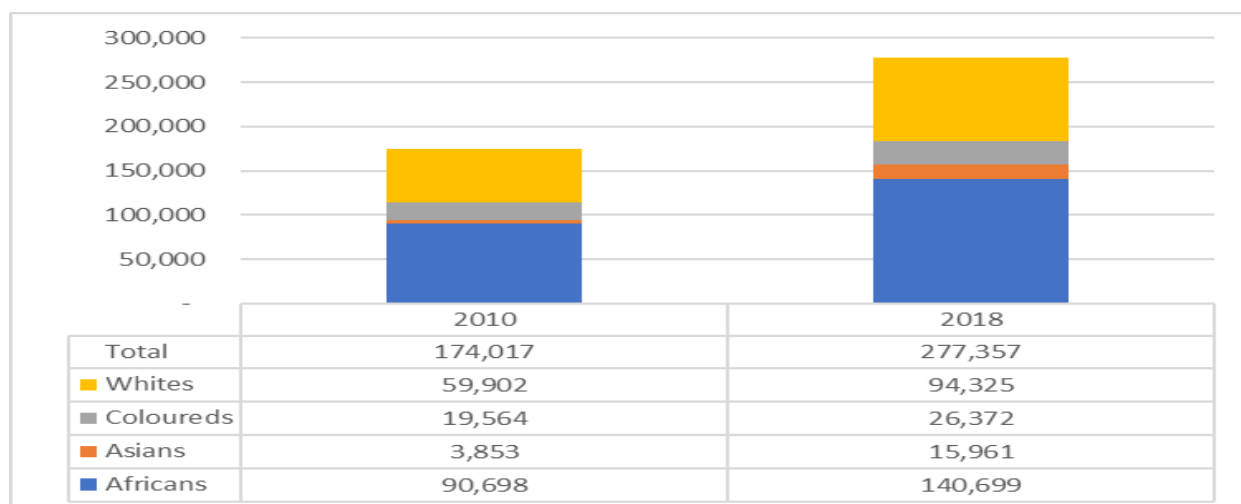
Source: Conningarth own calculation.

The figures above indicate that the Design & Creative Services is a major source of employment across most provinces. This phenomena is also consistence with regard to the RSA situation. Audio–Visual & Interactive Media is also a major source of employment in most of the provinces.

3.3.3 Historical CCI Employment by Province

Figure 3.11 illustrates CCI employment numbers by province and race group for 2010 and 2018.

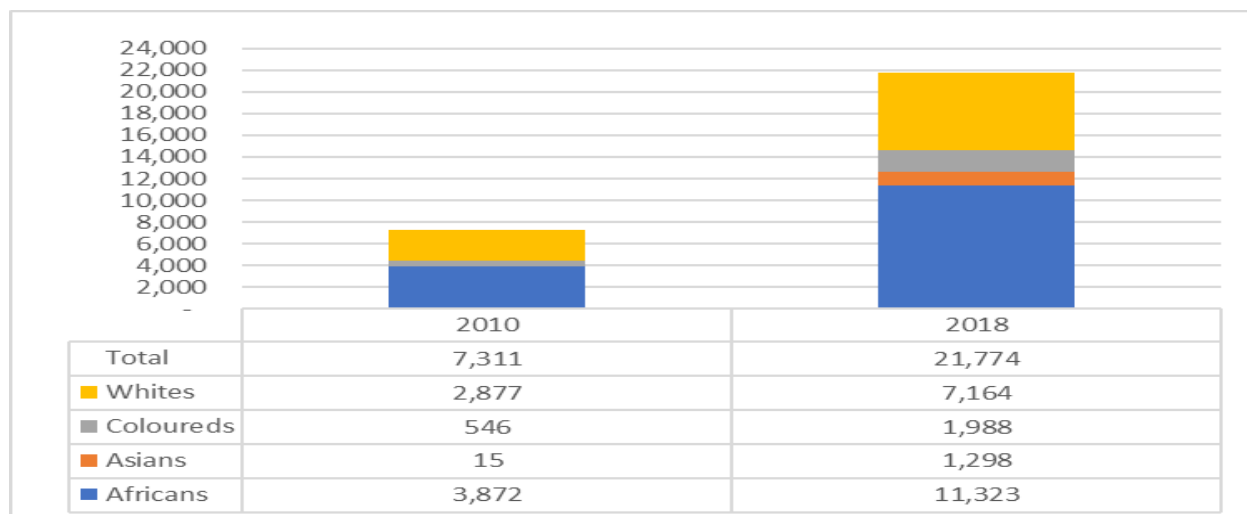
Figure 3.11: Historical Increase in CCI Employment in South Africa (numbers).



Source: Conningarth own calculation

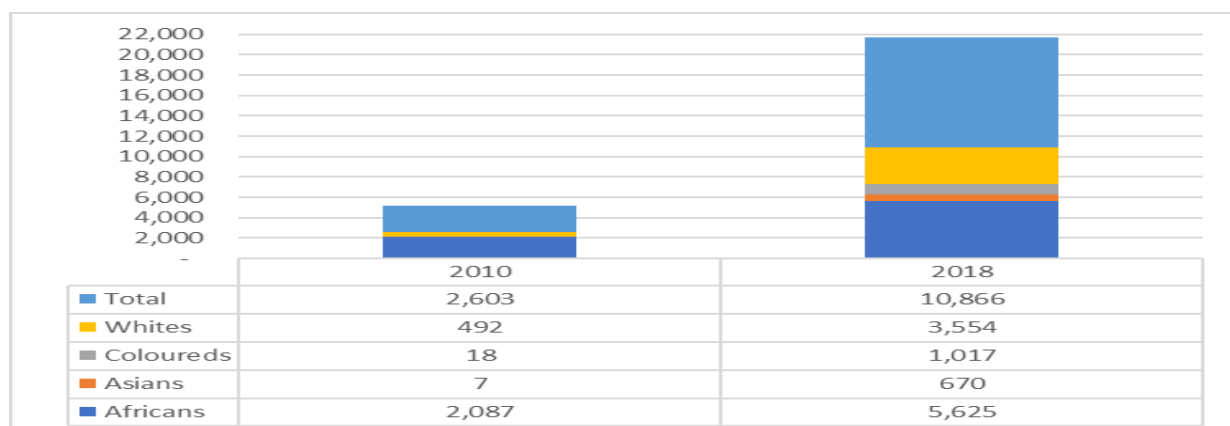
The figure above indicates that employment in the CCI has grown by more than 100,000 people between 2010 and 2018, an increase of 59%. The figures below (i.e. Figure 3.12 to Figure 3.20) present similar figures for the nine provinces.

Figure 3.12: Historical Increase in CCI Employment in Eastern Cape (numbers).



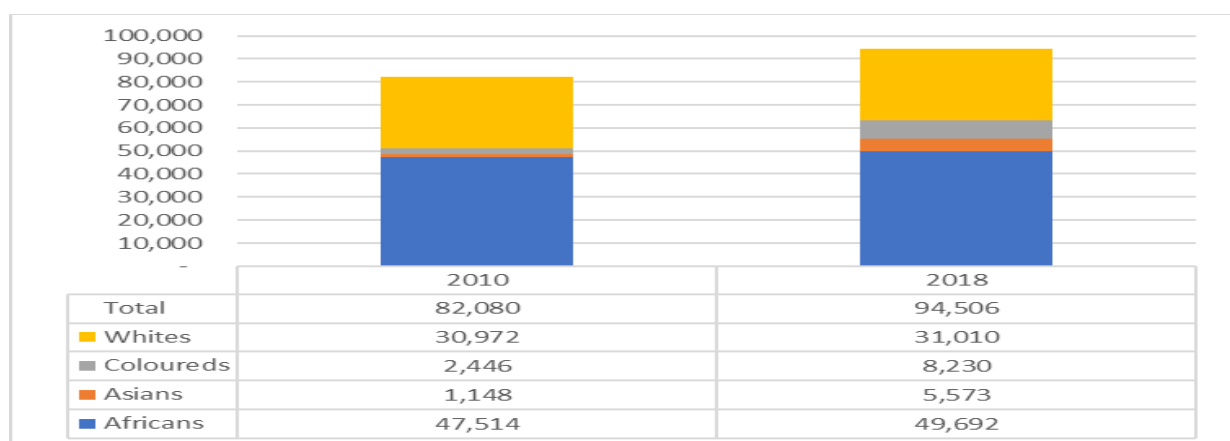
Source: Conningarth own calculation

Figure 3.13: Historical Increase in CCI Employment in the Free State (numbers).



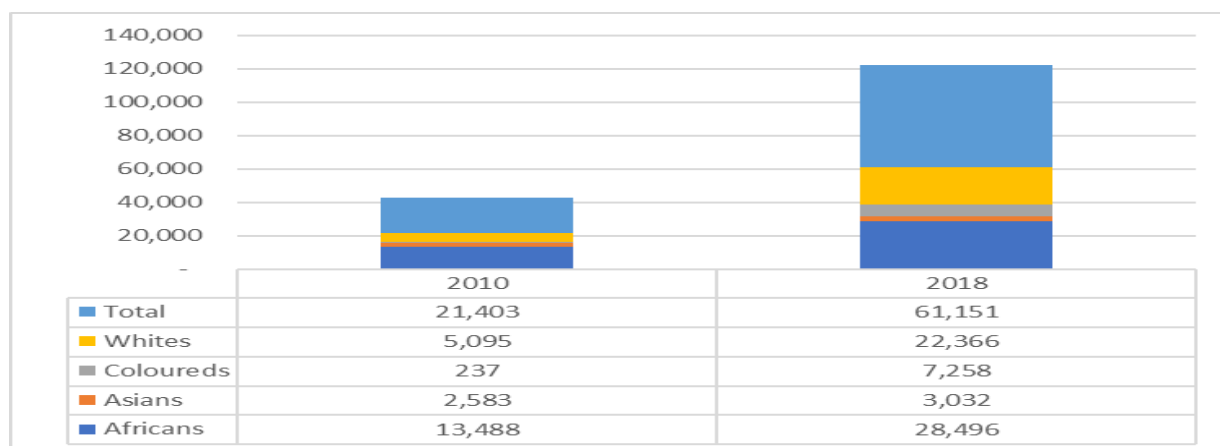
Source: Conningarth own calculation.

Figure 3.14: Historical Increase in CCI Employment in Gauteng (numbers).



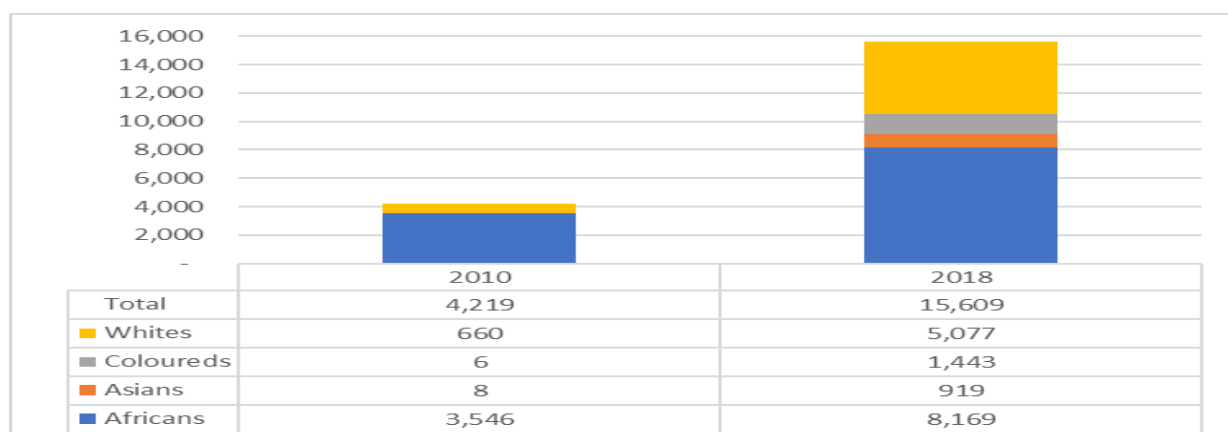
Source: Conningarth own calculation

Figure 3.15: Historical Increase in CCI Employment in KwaZulu-Natal (numbers).



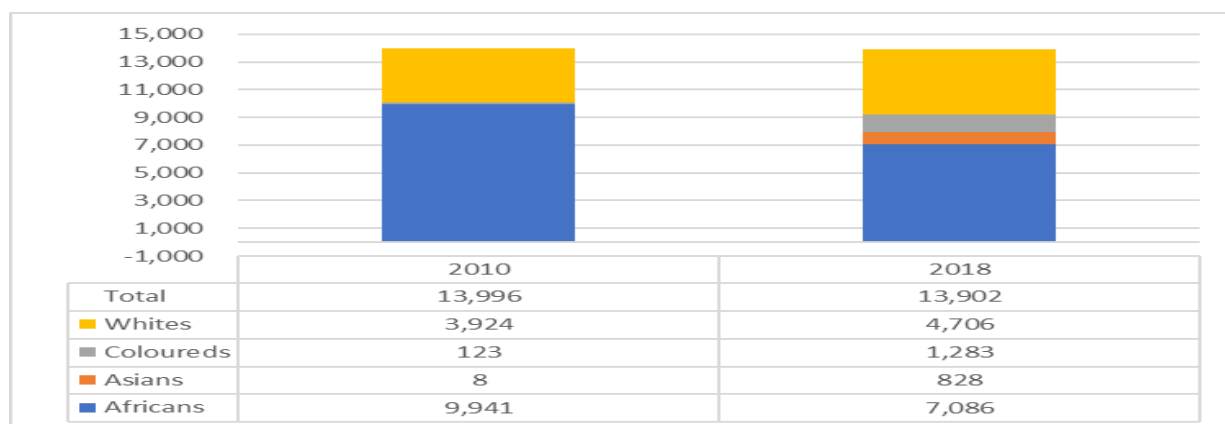
Source: Conningarth own calculation.

Figure 3.16: Historical Increase in CCI Employment in Limpopo (numbers).



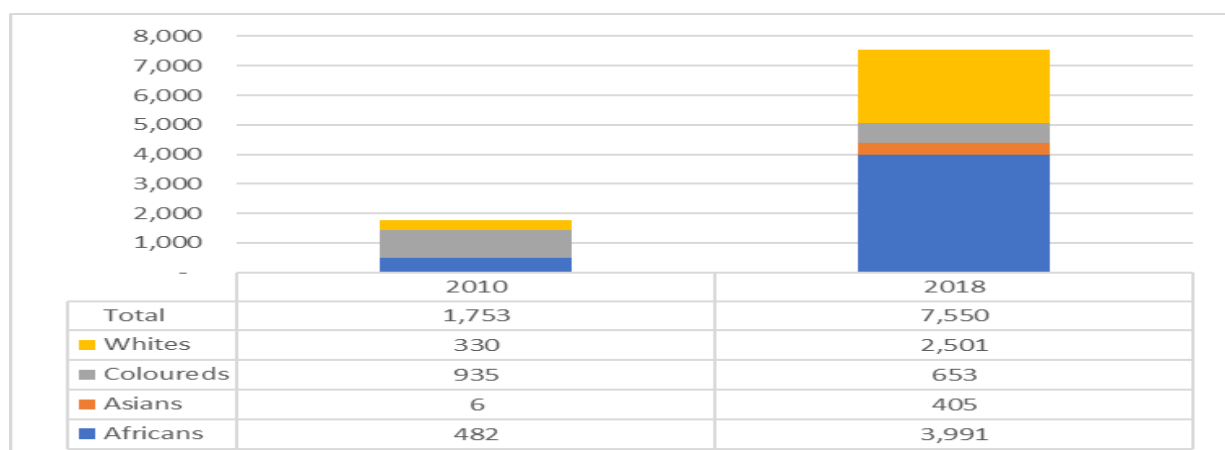
Source: Conningarth own calculation.

Figure 3.17: Historical Increase in CCI Employment in Mpumalanga (numbers).



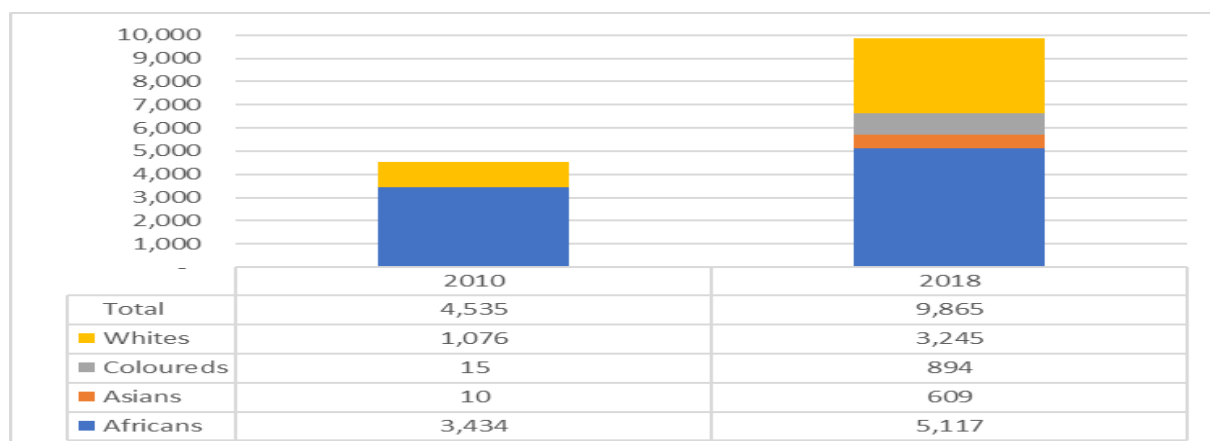
Source: Conningarth own calculation.

Figure 3.18: Historical Increase in CCI Employment in the Northern Cape (numbers).



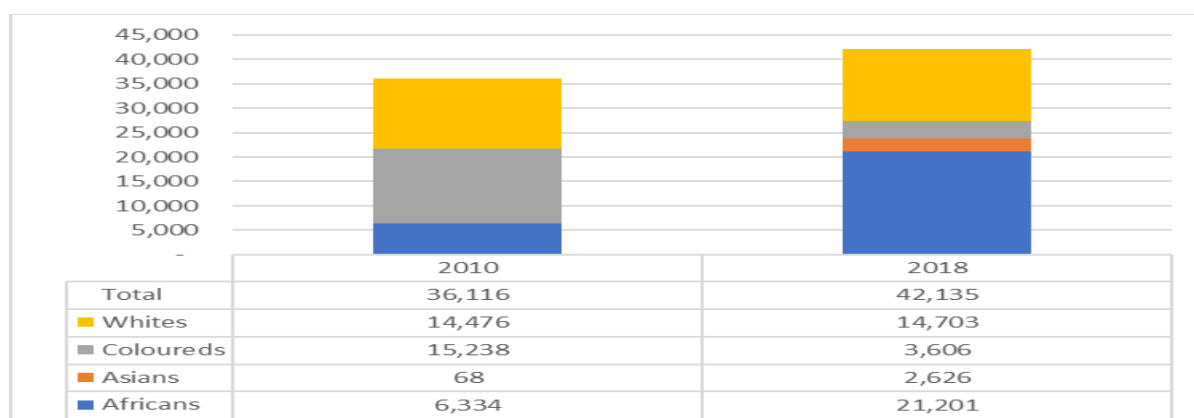
Source: Conningarth own calculation.

Figure 3.19: Historical Increase in CCI Employment in the North West (numbers).



Source: Conningarth own calculation.

Figure 3.20: Historical Increase in CCI Employment in the Western Cape (numbers).



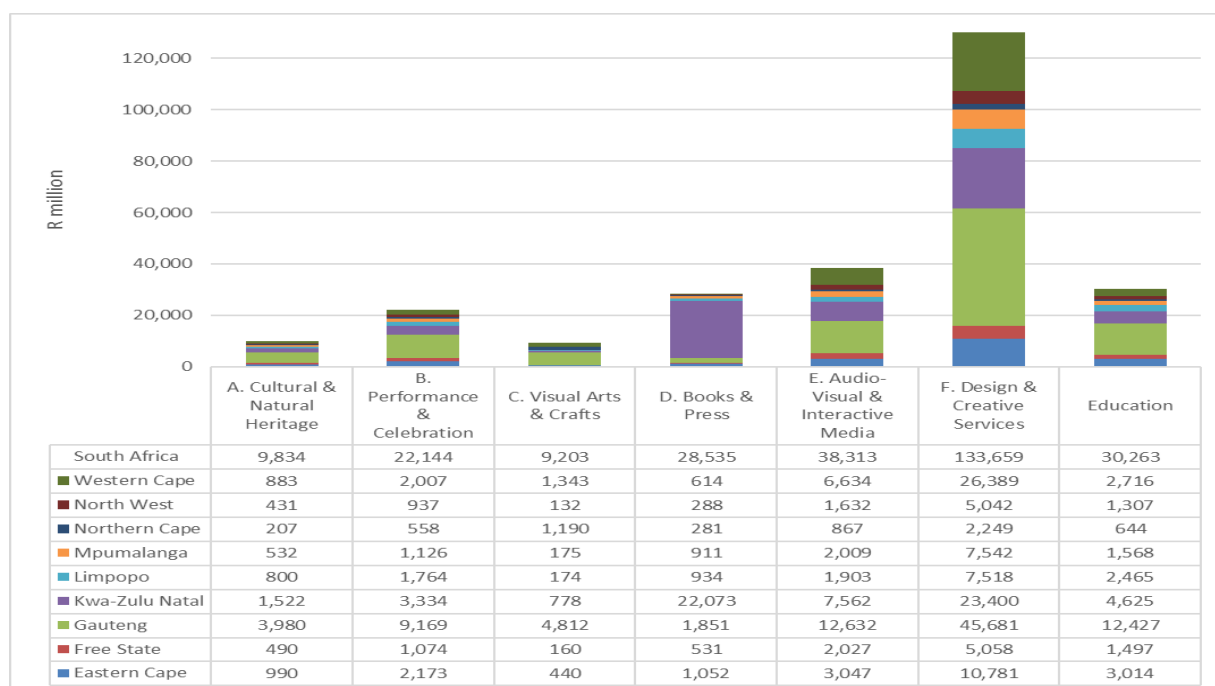
Source: Conningarth own calculation.

3.4 Capital Utilisation per CCI Domain

Capital is a scarce resource that must be employed in an optimum manner so that balanced economic growth can be achieved. Economists often use capital and labour - specifically the labour/capital ratio – to define the extent to which a CCI maximises scarce resources in the economy with the objective being to increase employment whilst using the minimum amount of capital, i.e. the higher the labour/capital ratio, the more efficient is the use of scarce capital resources.

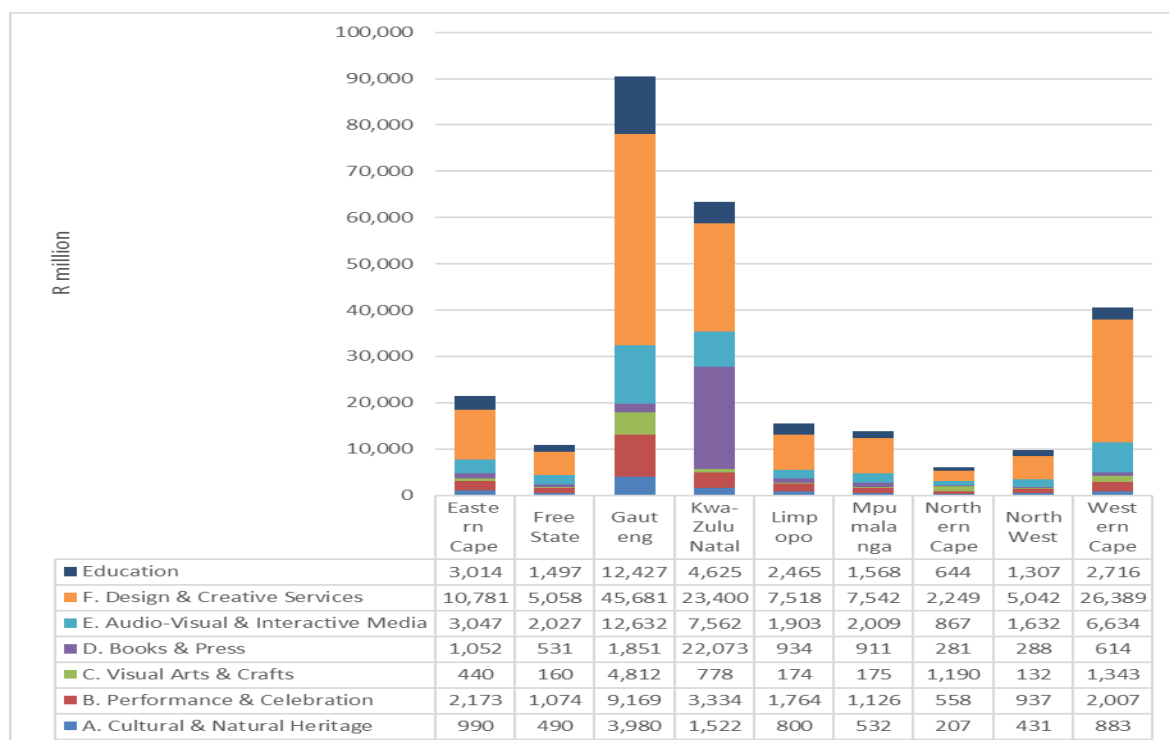
Capital Utilisation by CCI Domain has been measured in two ways. Firstly, capital utilisation within CCI Domain has been broken down according to provinces; and, secondly, capital utilisation within provinces has been broken down by CCI Domain. Figures 3.21 and 3.22 below present these results.

Figure 3.21: Capital Utilisation per CCI Domain by Province (R million, 2018 prices)



Source: Conningarth own calculation.

Figure 3.22: CCI Domain Capital Utilisation per Province (R million, 2018 prices)



Source: Conningarth own calculation.

3.4.1 CCI Domain GDP per Capital Utilisation

A further measure of capital utilisation involves calculating the ratio of GDP created relative to capital employed. The table below reflects the direct GDP/Capital ratios of each CCI Domain across the nine provincial economies and for the South African national economy.

Table 3.1: Direct GDP/Capital ratios of the CCI Domains and Provinces

	Eastern Cape	Free State	Gauteng	Kwa-Zulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	South Africa
A. Cultural & Natural Heritage	0.184	0.184	0.182	0.184	0.183	0.186	0.182	0.184	0.183	0.183
B. Performance & Celebration	0.214	0.214	0.216	0.214	0.214	0.214	0.227	0.214	0.216	0.216
C. Visual Arts & Crafts	0.248	0.258	0.241	0.256	0.268	0.255	0.215	0.260	0.246	0.242
D. Books & Press	0.367	0.368	0.346	0.353	0.394	0.394	0.365	0.387	0.346	0.350
E. Audio-Visual & Interactive Media	0.223	0.220	0.219	0.218	0.226	0.223	0.217	0.222	0.221	0.220
F. Design & Creative Services	0.277	0.272	0.281	0.279	0.277	0.280	0.277	0.274	0.276	0.278
Education	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278
Total	0.263	0.256	0.273	0.265	0.261	0.265	0.249	0.259	0.270	0.268

Source: Conningarth own calculation.

The table above indicates that the Books & Press Domain has the highest multiplier effect, with a national direct GDP/Capital ratio of 0.350; followed by the Design & Creative Services Domain with a ratio of 0.278. These ratios (along with Education) are above the national average GDP/Capital ratio of 0.268. Nationally, the lowest ratio of 0.183 is recorded for the Cultural and Natural Heritage Domain.

On a provincial level, Gauteng, with a ratio of 0.273, and the Western Cape at 0.270 are also above the national average.

4. Identification of Possible Clusters within Cultural and Creative Industries

4.1 Introduction

In a series of papers and reports, UNESCO provides an illustration of the connection between culture and economics through a better understanding of the role of cultural industries in the new cultural policy emphasis and economic reality. These reports emphasise that there is a need for governments to take steps to integrate the concept of cultural industries in development strategies and to ensure that it is necessary for countries to recognise the potential of cultural industries.

The cultural Domains as defined by UNESCO are grouped under the following headings:

- A: Cultural and Natural Heritage
- B: Performance and Celebration
- C: Visual Arts and Crafts
- D: Books and Press
- E: Audio-visual and Interactive Media; and
- F: Design and Creative Services.

In addition, four transversal Domains are included in the UNESCO framework:

- Intangible Cultural Heritage
- Archiving and Preserving
- Education and Training, and
- Equipment and Supporting Materials

4.2 The Concept of a Cluster

A cluster is different from the conventional SIC definition in that it represents the entire value chain of a broadly defined industry from suppliers to end producers, including supporting services and specialised infrastructure.

There are a number of different types of cluster definitions, involving, amongst others, different types of partners from industry, research, education, policy makers, politicians and society. Some of the more influential definitions are provided by:

Porter (2000): A cluster is “a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities”.

Krugman (1991): “Clusters are not seen as fixed flows of goods and services, but rather as dynamic arrangements based on knowledge creation, increasing returns to scale and innovation in a broad sense”.

Morosini (2004): A cluster is a “socioeconomic entity characterised by a social community of people and a population of economic agents localised in close proximity in a specific geographic region”.

Most definitions, though, will have the following characteristics:

- A geographic concentration of firms, interconnected by being part of the same industry supply chain; a common market or resource; a similar philosophy and facing similar opportunities and challenges.
- A critical mass of actors, resources and competences to sustain interaction among actors in the long run.
- Existing cooperation and interaction of firms.
- Clusters include both vertical links as supplier-manufacture-dealer-customer chain and horizontal production links as in sections of the same industry.

Cluster analysis is a tool that can be used to:

- Better understand a grouping of sectors that belong together from an industry point of view.
- Study comparative advantage of regions.
- Analyse gains that can be achieved from a shared location, cooperation among firms, common goals and a large pool of qualified and specialised employees.

Some of the advantages of a well-functioning cluster include the following:

- Decreased transport costs and supply chains.
- Easier access to resources.
- Opportunities for new companies.
- Higher degree of specialisation.
- Greater cooperation among cluster members.
- Creation of a workforce pool that are experienced and specialisation in their field, and
- Greater exchange of ideas and knowledge due to proximity of firms in the same industry.

4.3 Identification of Clusters

Methods to identify clusters can be broadly grouped into qualitative and quantitative approaches. Qualitative approaches tend to follow a bottom-up methodology that is more suitable for stakeholder involvement. This method normally builds on expert knowledge and opinion. The qualitative approach typically employs interviews, focus groups or a Delphi method to identify clusters. In practice, though, it is highly likely (as was done in this study) that various combinations of the different methods will be employed in deriving useful data.

Quantitative methods tend to use top-down formal statistical instruments to identify clusters. Before selecting a method, the exact informational needs should be defined and a decision should be taken whether a detailed study is required. Furthermore, policy makers often have to make their choices in the face of heavy budget constraints and extensive stakeholder involvement to strengthen buy-in and dedication to a certain policy. This process is not only time-consuming but expensive as well. Some of the quantitative methods available to the researcher for cluster analysis include localisation quotients (Koschatzky and Lo, 2007), Ripley's K-method (Anderson et al, 2006), export data (dii, 2001), graphical analysis (de Bresson and Hu, 1999), input-output and related methods (Hoen, no date) and network analysis (von Hofe and Cheruiyot, 2017). A common method cited in much literature is the location quotient methodology. However, this method should be underpinned by accurate and reliable data for a successful implementation.

4.4 UNESCO Cultural Domains as Clusters

Although not often used in this context, it can be argued that UNESCO Domains can be viewed as a type of clustering. This argument is based on the similarities between Domains and clusters, where both Domains and clusters are constructed based on the philosophical view that sub-Domains and sectors that logically belong together should be grouped together.

Input-Output methodologies (including SAM's and satellite accounts) group activities together according to the input structure or value chain of a sector - it is sectors that logically belong together. Similarly, CCI Domains, as defined in the UNESCO Framework for Cultural Statistics (2009), represent a common set of economic and social activities that traditionally have been regarded as cultural.

4.5 Cluster development of Identified Metro's and Local Municipalities in regard to Cultural and Creative Industries

In principle, a cluster is defined in this document as being very similar to a domain. This is due to the fact that the backward and forward linkages of a domain/cluster is in most cases not happening in the same geographical area. If an analysis of a specific geographical area is conducted, a false indication can be given of the importance of that area in terms of a specific cluster. This is due to the unavailability of detailed geographical information. This study tries to overcome this shortcoming by identifying the linkages, specifically the backward linkages, of a sub-sector of a cluster for a specific regional area.

It will be noticed that later in the document the sub Cultural and Creative Industry Sectors are analysed in terms of their backward linkages in their demand for intermediate goods and services. This gives the opportunity for further insight in the development of a cluster in a specific geographical location. The mapping of the backward linkages is also quantified. This provides an indication of the opportunities to produce locally more of the commodities that are linked to the specific clusters and that are currently sourced from other locations in South Africa and abroad.

To eliminate confusion in what follows in this section and to place the emphasis on clusters, reference will be made to clusters rather than domains, keeping in mind that in this study the two concepts are seen as similar.

The following table shows the different metros and local municipalities located in the provincial sphere that were analysed for purposes of this study.

Table 4.1: Metros and Local Municipalities by province

Province	Metro/Large Provincial City
Eastern Cape	Buffalo City (East London)
	Nelson Mandela Bay (Port Elizabeth)
Free State	Mangaung (Bloemfontein)
Gauteng	City of Johannesburg
	City of Tshwane (Pretoria)
	Ekurhuleni (East Rand)
Kwa-Zulu Natal	eThekweni (Durban)
Limpopo	Polokwane (Pietersburg)
Mpumalanga	Mbombela (Nelspruit)
Northern Cape	Sol Plaatje (Kimberley)
North-West	Tlokwe City Council (Potchefstroom)
Western Cape	City of Cape Town

In general, creative and cultural industries tend to concentrate mainly in and around metros as well as around large and medium-sized cities located in various local municipalities, forming creative local production systems. For purposes of the study, a fair representation of the creative and cultural industry clusters was identified to ensure that each province will be represented by at least one specific geographic location. Thus, metros and larger towns such as Sol Plaatje local municipality in the Northern Cape were included in this study.

4.6 Economic Size and Structural Analysis of Cultural and Creative Clusters

4.6.1 Methodology to Calculate the Relative Importance of Clusters (Geographical Location Quotients)

In the 2017 study the platform was laid to conceptualise the cluster format for the South African cultural and creative industries (CCIs). For this 2020 study, the emphasis was more on identifying clusters at a geographical level in order to determine the importance of specific clusters in the context of a specific geographic location.

Technically, the importance of a cluster is measured in terms of the extent to which it has a higher or lower contribution to the economy (expressed by turnover, see Table 4.2), relative to the average contribution of the total CCIs to the economy at large. The economic importance of the various clusters, as well as the importance of the CCIs generally to a local municipality, is measured by way of their percentage impact on the specific local geographical location (see Table 4.2).

The next step is to estimate a “relative importance index” for the various clusters (domains) in the broader cultural and creative industry of a specific geographic location. This is done by dividing the percentage importance of a specific cluster to a specific geographic location by the percentage importance of the total RSA distribution of the cultural and creative industry to the economy. For example, if the Visual Arts and Crafts cluster in terms of total industry is 2.3% and that of Buffalo

City is 3.2%, the relative importance index (the geographic location quotient) of the cluster for Buffalo City equals $(3.2\% / 2.3\%) = 1.39$.

In order to gain further insight into the clusters and to move closer to the traditional definition of a cluster, a backward linkage analysis was conducted. In the context of this study, the emphasis is on the direct (on-site) linkages and not on indirect linkages connected to entities outside or away from the location and area of the cluster. The reason for this is that such linkages reflect leakages from outside the local area. By providing information on these linkages local authorities will be in a position to determine which non-local sectors and industries could potentially be encouraged or enticed to relocate or form new enterprises, at a particular area. The mapping in regard to the geographical location distribution of the Cultural and Creative Industries was based directly on the Conningarth Infrastructure Database (CID). This database makes use of broad Standard Industrial Classification sectors (SICs) to determine the importance of regions (local municipalities).

4.6.2 CCI Cluster Turnover Mapping by Metro and Local Municipality

Table 4.2 below presents the 12 geographical area cluster turnover amounts, along with the Rest of South Africa turnover, which totals R211 897 million for 2018. For the selected local municipalities, the clusters turnover amounts to R134 584 million.

The City of Johannesburg has the largest CCI turnover in the selected geographical areas and, except for the Design and Creative Services cluster, also has the biggest individual cluster turnover amounts. The City of Cape Town has in monetary terms the largest Design & Creative Services cluster.

Table 4.3 provides Culture and Creative Industry's Clusters percentage turnover mapping per Metros and Local Municipalities. Table 4.4 depicts the relative importance of the Cultural and Creative Industry's main Clusters per Metros and Local municipalities (the geographic location quotients).

Table 4.2: Culture and Creative Industry's Clusters turnover mapping per Metro's and Local Municipalities (2018, Rand Million)

	Eastern Cape		Free State	Gauteng			Kwa-Zulu Natal	Limpopo	Mpumalanga	Northern Cape	North-West	Western Cape		
Metro/Local Municipality	Buffalo City (East London)	Nelson Mandela Bay (Port Elizabeth)	Mangaung (Bloemfontein)	City of Johannesburg	City of Tshwane (Pretoria)	Ekurhuleni (East Rand)	eThekweni (Durban)	Polokwane (Pietersburg)	Mbombela (Nelspruit)	Sol Plaatje (Kimberley)	Tlokwe City Council (Potchefstroom)	City of Cape Town	Total Clusters	RSA
A. Cultural and Natural Heritage	93	264	72	1,161	235	292	373	54	18	17	9	377	2,965	4,665
B. Performance and Celebration	241	669	209	3,424	705	838	954	150	52	49	24	1,138	8,453	12,969
C. Visual Arts and Crafts	97	519	56	2,930	3,172	2,723	797	18	106	14	4	1,920	12,358	18,480
D. Books and Press	175	401	96	11,247	2,690	2,337	1,262	35	15	16	11	3,665	21,951	26,113
E. Audio-visual and Interactive Media	541	1,738	431	5,209	1,999	2,485	3,683	256	93	141	67	4,496	21,138	33,222
F. Design and Creative Services	1,496	4,404	842	11,974	6,716	8,799	8,999	805	348	352	173	14,161	59,068	93,838
Transversal Cultural Education Domain	254	697	221	3,579	651	806	994	159	51	51	25	1,161	8,651	13,268
Total	2,897	8,692	1,927	39,524	16,169	18,281	17,062	1,476	684	641	313	26,918	134,584	202,555

Table 4.3: Culture and Creative Industry's Clusters percentage turnover mapping per Metro's and Local Municipalities in terms of Percentage

	Eastern Cape		Free State	Gauteng			Kwa-Zulu Natal	Limpopo	Mpumalanga	Northern Cape	North-West	Western Cape	
Metro/Local Municipality	Buffalo City (East London)	Nelson Mandela Bay (Port Elizabeth)	Mangaung (Bloemfontein)	City of Johannesburg	City of Tshwane (Pretoria)	Ekurhuleni (East Rand)	eThekweni (Durban)	Polokwane (Pietersburg)	Mbombela (Nelspruit)	Sol Plaatje (Kimberley)	Tlokwe City Council (Potchefstroom)	City of Cape Town	RSA
A. Cultural and Natural Heritage	3.2%	3.0%	3.8%	2.9%	1.5%	1.6%	2.2%	3.7%	2.7%	2.7%	2.8%	1.4%	2.3%
B. Performance and Celebration	8.3%	7.7%	10.9%	8.7%	4.4%	4.6%	5.6%	10.1%	7.6%	7.6%	7.5%	4.2%	6.4%
C. Visual Arts and Crafts	3.3%	6.0%	2.9%	7.4%	19.6%	14.9%	4.7%	1.3%	15.5%	2.3%	1.3%	7.1%	9.1%
D. Books and Press	6.0%	4.6%	5.0%	28.5%	16.6%	12.8%	7.4%	2.4%	2.2%	2.5%	3.6%	13.6%	12.9%
E. Audio-visual and Interactive Media	18.7%	20.0%	22.3%	13.2%	12.4%	13.6%	21.6%	17.3%	13.7%	22.0%	21.4%	16.7%	16.4%
F. Design and Creative Services	51.6%	50.7%	43.7%	30.3%	41.5%	48.1%	52.7%	54.5%	50.8%	54.9%	55.3%	52.6%	46.3%
Transversal Cultural Education Domain	8.8%	8.0%	11.5%	9.1%	4.0%	4.4%	5.8%	10.8%	7.5%	8.0%	8.0%	4.3%	6.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.4 depicts the relative importance of the Cultural and Creative Industry’s main Clusters per Metros and Local municipalities (geographic location quotients).

Table 4.4: Relative Importance of the Culture and Creative Industry's Clusters per Metro's and Local Municipalities

Eastern Cape			Free State		Gauteng		Kwa-Zulu Natal	Limpopo	Mpumalanga	Northern Cape	North-West	Western Cape
Metro/ Local Municipality	Buffalo City (East London)	Nelson Mandela Bay (Port Elizabeth)	Mangaung (Bloemfontein)	City of Johannesburg	City of Tshwane (Pretoria)	Ekurhuleni (East Rand)	eThekweni (Durban)	Polokwane (Pietersburg)	Mbombela (Nelspruit)	Sol Plaatje (Kimberley)	Tlokwe City Council (Potchefstroom)	City of Cape Town
A. Cultural and Natural Heritage	1.39	1.32	1.63	1.28	0.63	0.69	0.95	1.59	1.15	1.17	1.21	0.61
B. Performance and Celebration	1.30	1.20	1.70	1.35	0.68	0.72	0.87	1.58	1.18	1.19	1.18	0.66
C. Visual Arts and Crafts	0.37	0.65	0.32	0.81	2.15	1.63	0.51	0.14	1.70	0.25	0.15	0.78
D. Books and Press	0.47	0.36	0.38	2.21	1.29	0.99	0.57	0.18	0.17	0.19	0.28	1.06
E. Audio-visual and Interactive Media	1.14	1.22	1.36	0.80	0.75	0.83	1.32	1.06	0.83	1.34	1.31	1.02
F. Design and Creative Services	1.11	1.09	0.94	0.65	0.90	1.04	1.14	1.18	1.10	1.19	1.19	1.14
Transversal Cultural Education	1.34	1.22	1.75	1.38	0.61	0.67	0.89	1.64	1.15	1.23	1.22	0.66

4.6.2.1 Important Clusters for specific Geographic Locations

Table 4.5 identify one cluster for specific Metros and Local Municipalities. The choice of a specific cluster was made after an inspection of the results of Table 4.3. The ultimate choice represent not always the cluster with the highest location quotient but at times based on the professional judgement of the researchers taking into account the pattern of results generated by the cluster analysis as well as to have a broader representation of the main clusters, specifically how this clusters impact the economy indirectly through their backward linkages.

Table 4.5: More Important CCI Clusters by Province and Metro/Local Municipality

Province	Metro/Local Municipality	Selected CCI Cluster
Eastern Cape	Buffalo City (East London)	A. Cultural and Natural Heritage
	Nelson Mandela Bay (Port Elizabeth)	E. Audio-visual and Interactive Media
Free State	Mangaung (Bloemfontein)	B. Performance and Celebration
Gauteng	City of Johannesburg	D. Books and Press
	City of Tshwane (Pretoria)	C. Visual Arts and Crafts
	Ekurhuleni (East Rand)	C. Visual Arts and Crafts
Kwa-Zulu Natal	eThekweni (Durban)	E. Audio-Visual and Interactive Media
Limpopo	Polokwane (Pietersburg)	B. Performance and Celebration
Mpumalanga	Mbombela (Nelspruit)	C. Visual Arts and Crafts
Northern Cape	Sol Plaatje (Kimberley)	A. Cultural and Natural Heritage
North-West	Tlokwe City Council (Potchefstroom)	B. Performance and Celebration
Western Cape	City of Cape Town	F. Design and Creative Services

4.6.2.2 Mapping of the CCI Clusters in terms of Relative Importance of Turnover

Figures 4.1 to 4.7 below depict the relative importance of the CCI Clusters, based on the values presented in table 4.4 above. The red circles reflect relatively more important metros and/or local municipalities, with larger circles reflecting the most important metros and/or local municipalities. The white circles reflect relatively less important metros and/or local municipalities, with the smallest white circles representing the least important metros and all local municipalities.

Figure 4.1: Mapping of the Cultural & Natural Heritage Cluster i.t.o Relative Importance of Turnover

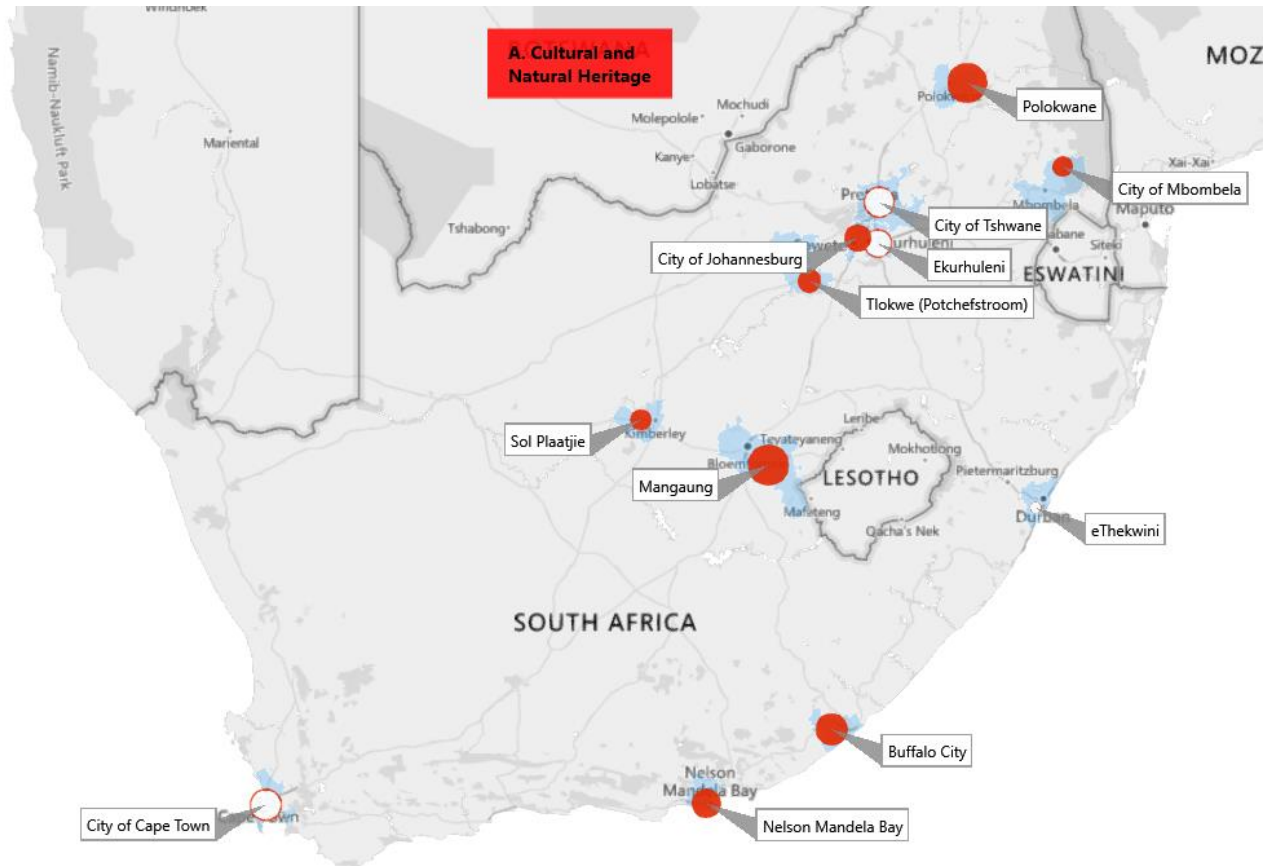


Figure 4.2: Mapping of the Performance & Celebration Cluster i.t.o Relative Importance of Turnover

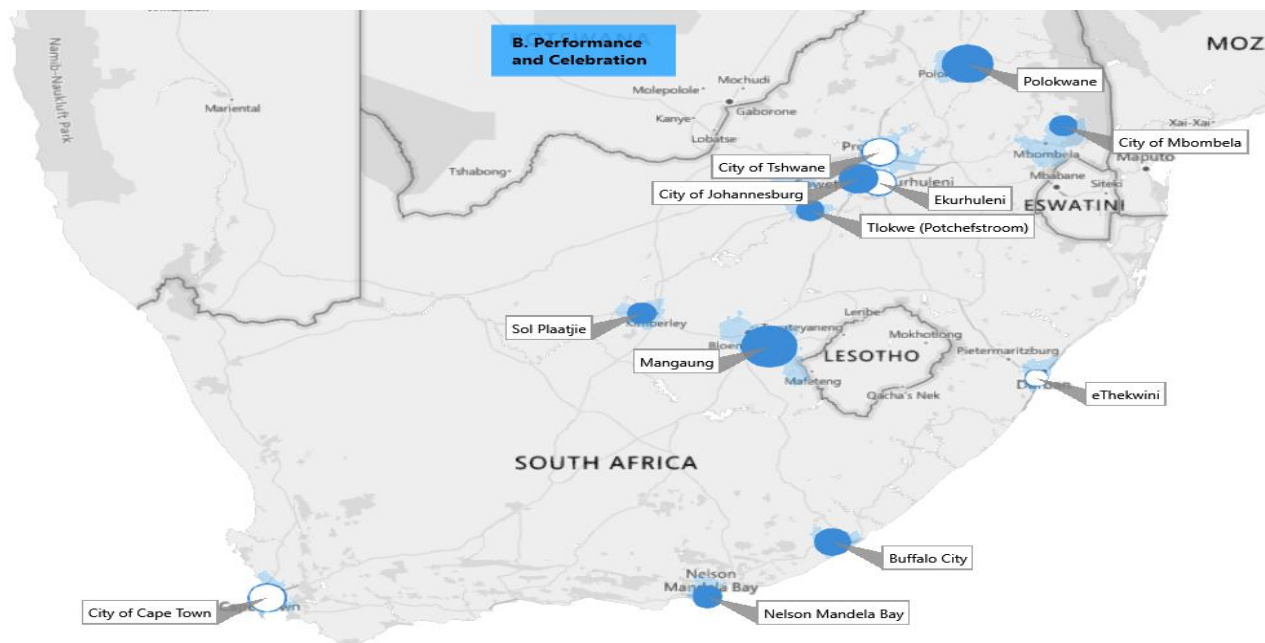


Figure 4.3: Mapping of the Visual Arts & Crafts Cluster i.t.o Relative Importance of Turnover

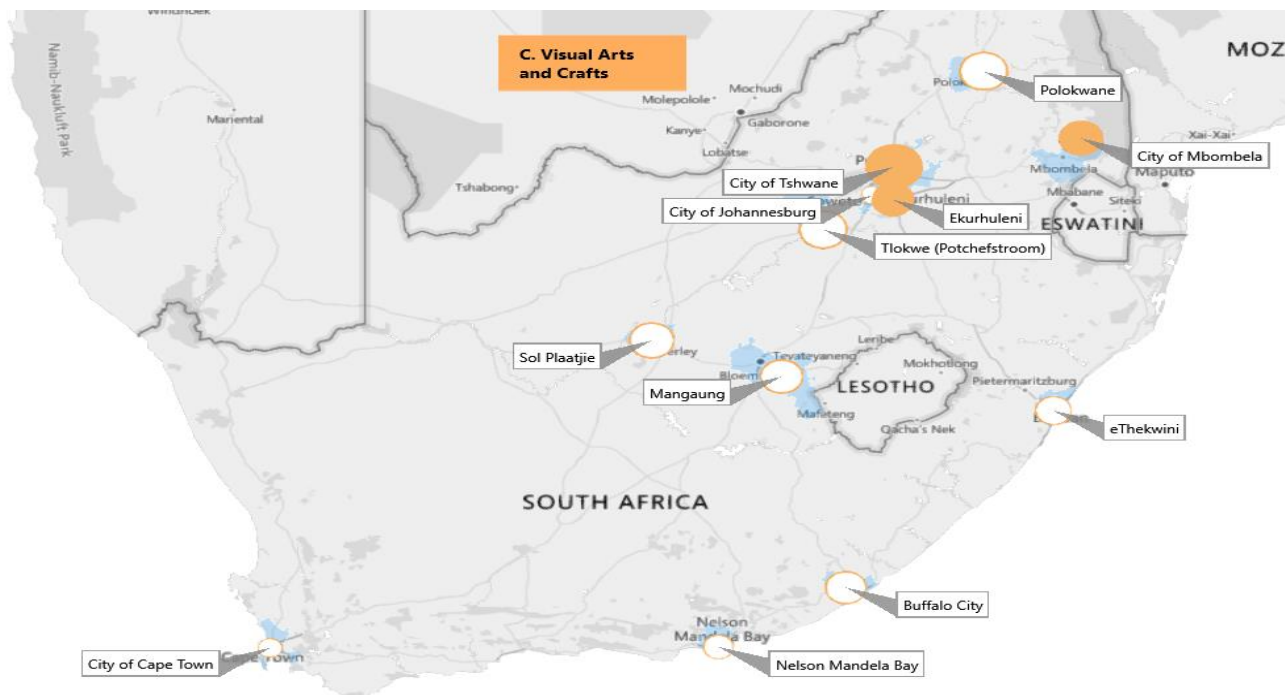


Figure 4.4: Mapping of the Books & Press Cluster i.t.o Relative Importance of Turnover

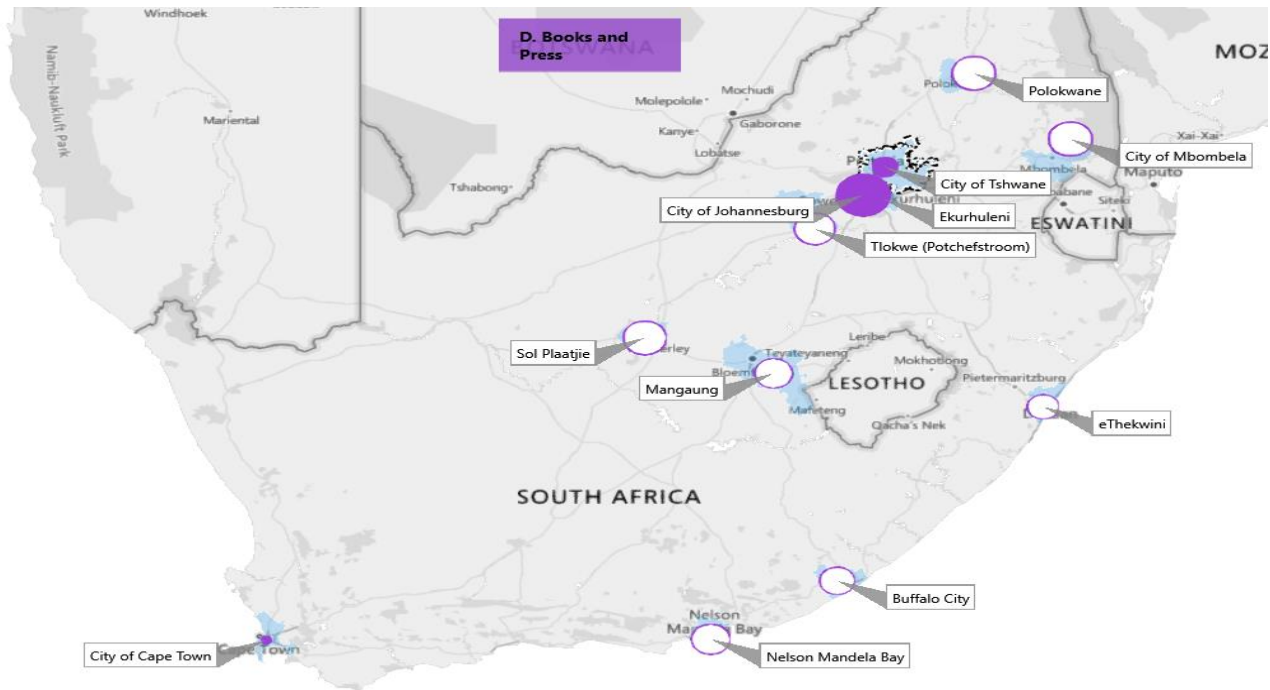


Figure 4.5: Mapping of the Audio-visual & Interactive Media Cluster i.t.o Relative Importance of Turnover

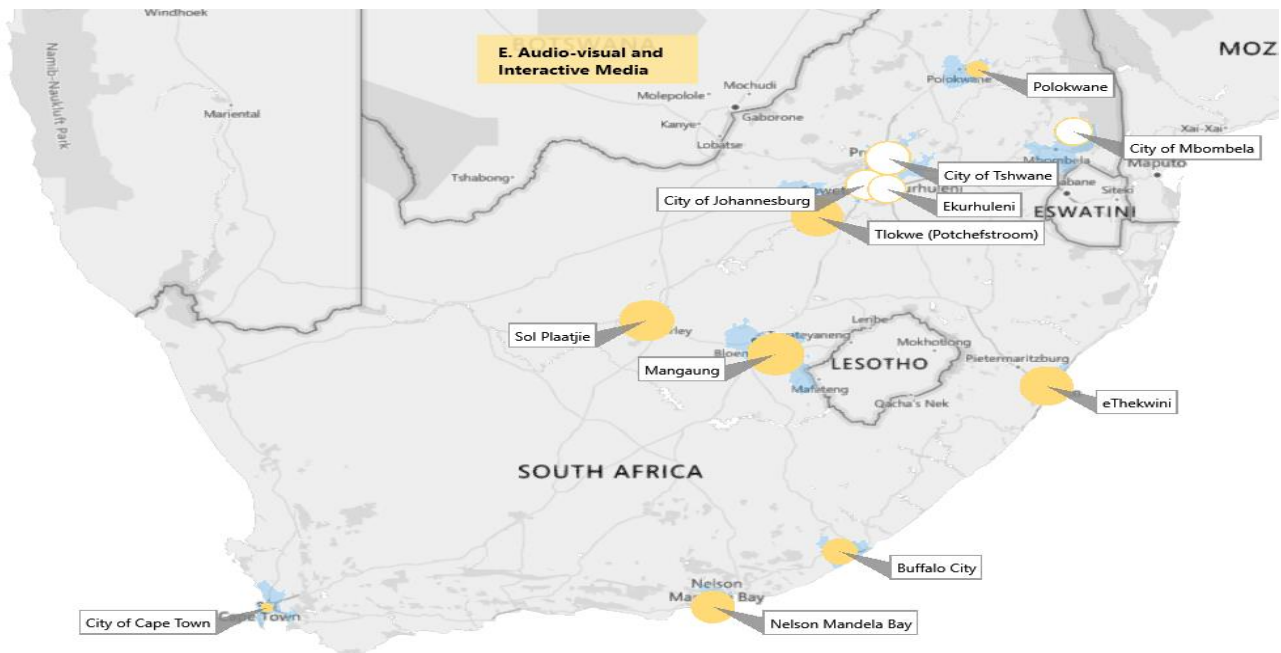


Figure 4.6: Mapping of the Design & Creative Services Cluster i.t.o Relative Importance of Turnover

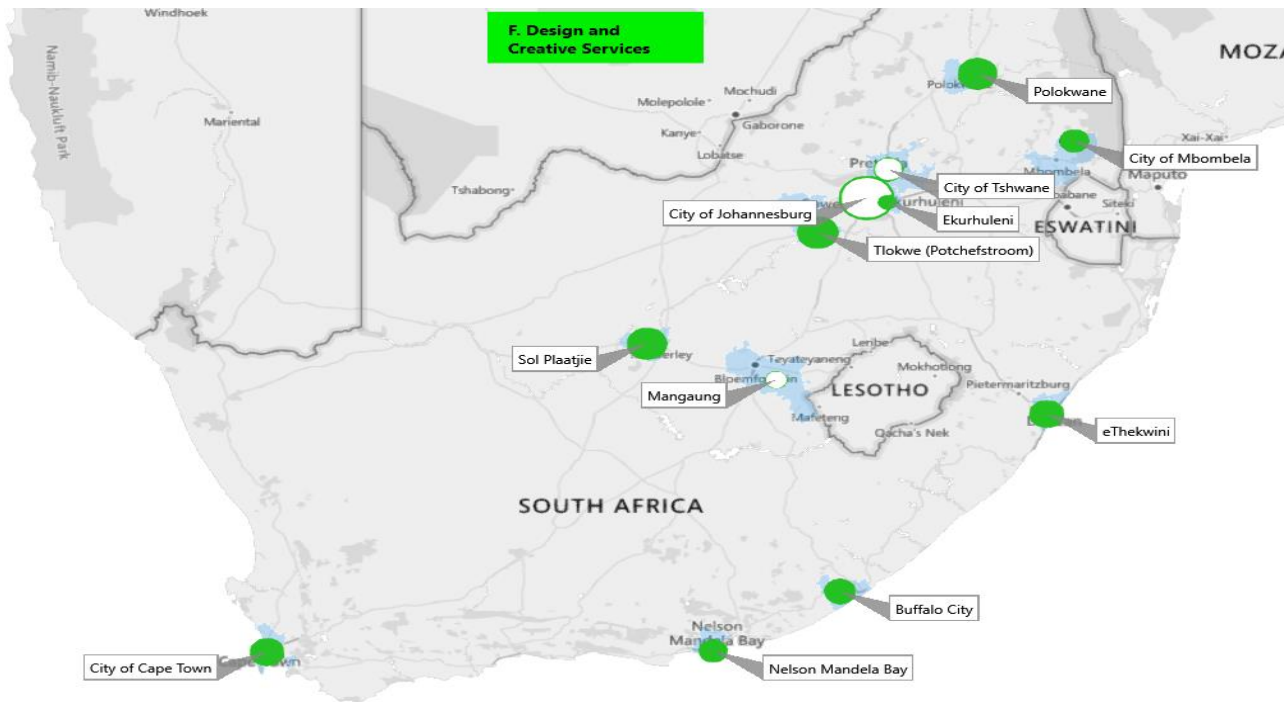
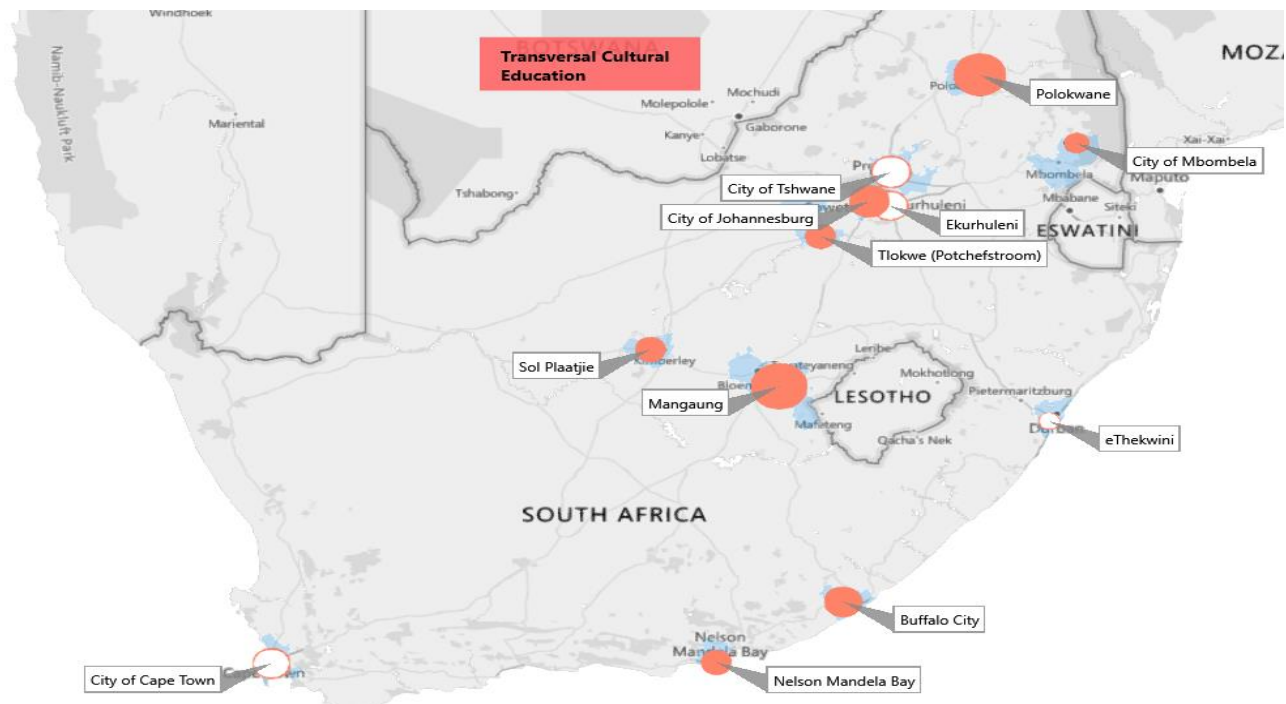


Figure 4.7: Mapping of the Transversal Cultural Education Cluster i.t.o Relative Importance of Turnover



4.3 The importance of CCI Activities for specific CCI Clusters in regard to a specific geographic location

Table 4.6 provides a summary of the CCI sectors for specific clusters in regard to a specific geographic location. A maximum of two CCI sectors will be discussed for a specific cluster.

Table 4.6: CCI Activities for specific CCI Clusters in regard to a specific geographic location

Metro/Local Municipality	Selected CCI Cluster	Identified CCI Cluster Activity Sector
Buffalo City (East London)	A. Cultural and Natural Heritage	i. Creative, arts and entertainment activities- Stamps and collectors' Items ii. Retail sale of second-hand goods
Nelson Mandela Bay (Port Elizabeth)	E. Audio-visual and Interactive Media	i. Software Publishing ii. Retail sale via mail order houses or via Internet
Mangaung (Bloemfontein)	B. Performance and Celebration	i. Creative, arts and entertainment activities-Performing arts and Cultural events
City of Johannesburg	D. Books and Press	i. Book publishing ii. Publishing of newspapers, journals and periodicals
City of Tshwane (Pretoria)	C. Visual Arts and Crafts	i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists ii. Manufacture of jewellery and related articles
Ekurhuleni (East Rand)	E. Audio-Visual and Interactive Media	i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists ii. Manufacture of jewellery and related articles
eThekweni (Durban)	B. Performance and Celebration	i. Television programming and broadcasting activities ii. Radio broadcasting
Polokwane (Pietersburg)	C. Visual Arts and Crafts	i. Creative, arts and entertainment activities-Performing arts and Cultural events
Mbombela (Nelspruit)	A. Cultural and Natural Heritage	i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists ii. Manufacture of jewellery and related articles
Sol Plaatje (Kimberley)	B. Performance and Celebration	i. Museums activities and operation of historical sites
Tlokwe City Council (Potchefstroom)	F. Design and Creative Services	i. Creative, arts and entertainment activities-Performing arts and Cultural events
City of Cape Town	A. Cultural and Natural Heritage	i. Specialised design activities

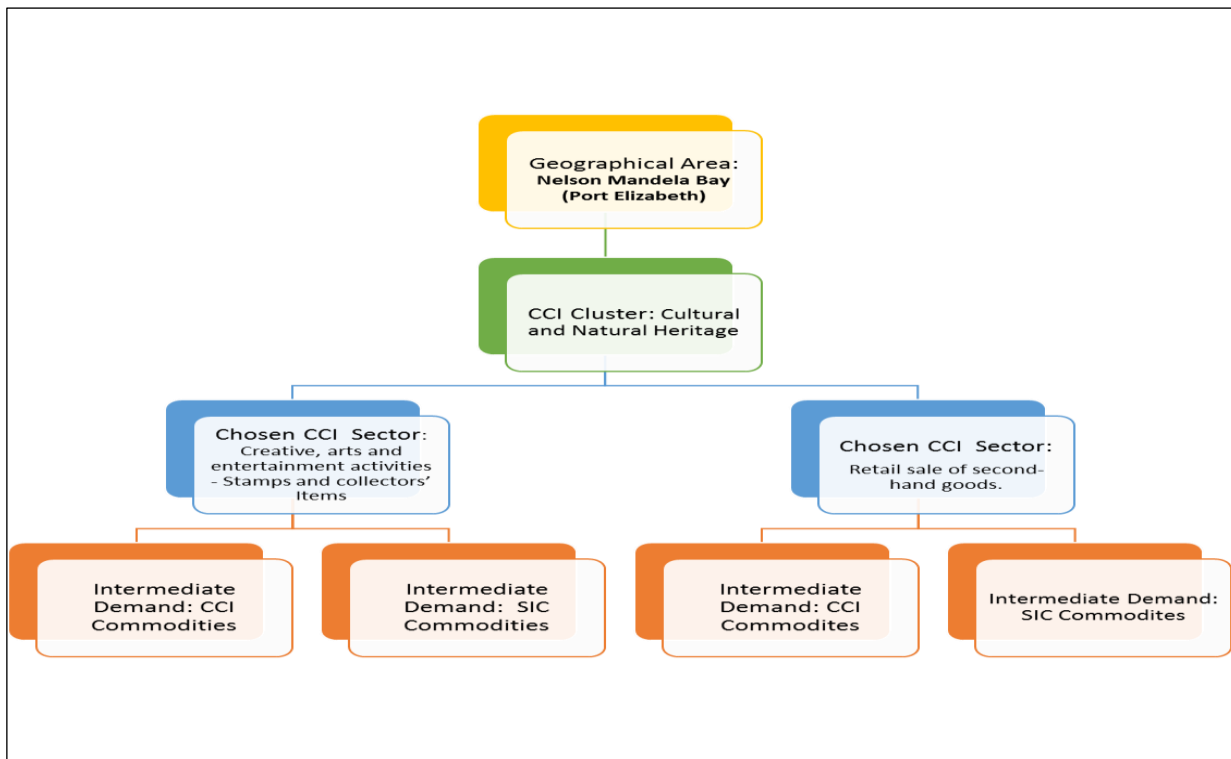
4.3.1 Summary of Key CCI Clusters by Metro/Local Municipality

This section provides an analysis and discussion of the key CCI Clusters by Metro and/or Local Municipality. Specific attention is given to the linkage effects of the key Clusters and their individual constituent CCI Activities. Although linkage effects exist between provincial and local government economies due to imports from other locations in South Africa, this analysis excludes such indirect linkage effects, which can be attributed to leakages. However, this analysis does provide an indication of probable leakage effects to other areas across the country through commodities that

are used as input materials in producing goods and services within the CCI Clusters. It is often policy in local/regional analysis to attempt to limit such leakages through various means by producing such imported goods and services and services locally.

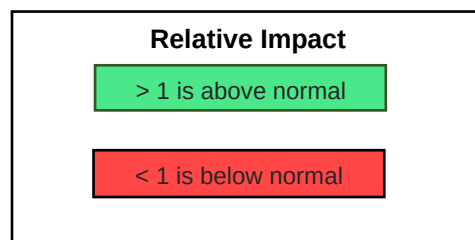
The flow chart in Figure 4.8 below demonstrates the mapping of a chosen cluster for the Nelson Mandela Bay Metro. All the figures provided in this section are in Rand Million, 2018 prices.

Figure 4.8: Example of mapping a chosen cluster for the Nelson Mandela Bay Metro



The methodology in the above figure will be applied in the next section to the 12 selected geographical areas. The colour keys used to represent the relative impact indicators in the following tables are as follows; green as positive, but also signifies an above average than neutral relativity.

Red represented as negative or can be defined as below the neutral range.



4.3.1.1 Buffalo City (East London)

Relative Importance of CCI Clusters

CCI Cluster	Buffalo City (East London)
A. Cultural and Natural Heritage	1.39
B. Performance and Celebration	1.30
C. Visual Arts and Crafts	0.37
D. Books and Press	0.47
E. Audio-visual and Interactive Media	1.14
F. Design and Creative Services	1.11
Transversal Cultural Education	1.34

With regard to Buffalo City (East London), the Cultural & Natural Heritage Cluster was selected for further analysis:

The turnover of cluster = R92.8 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

A. Cultural and Natural Heritage	Buffalo City
Creative, arts and entertainment activities- Stamps and collectors' Items	1.11
Museums activities and operation of historical sites	0.96
Botanical and Zoological Gardens and Nature Reserve Activities	0.96
Retail sale of second-hand goods	1.11

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities - Stamps and collectors' Items a sub sector of the cultural and natural heritage:

- Its geographic location quotient = 1.11
- Turnover = R4.1 Million
- Intermediate usage of CCI commodities
 - Total = R0.2 Million
 - Total for 10 most important commodities = R0.1 Million

ii. Retail sale of second-hand goods a sub sector of the cultural and natural heritage:

- Its geographic location quotient = 1.11

- Turnover = R21.1 Million
- Intermediate usage of CCI commodities
 - Total = R0.8 Million
 - Total for 10 most important commodities = R0.7 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities - Stamps and collectors' Items

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	A. Creative, arts and entertainment activities- Stamps and collectors' Items	0.0290	1	Business services	1.4634
2	Retail sale of second-hand goods	0.0215	2	Finance and insurance	0.3620
3	Web portals	0.0212	3	Transport and storage	0.2534
4	Publishing of newspapers, journals and periodicals	0.0121	4	Communication	0.2129
5	Retail sale of books, newspapers and stationery in specialised stores	0.0110	5	Wholesale and retail trade	0.1212
6	Advertising	0.0107	6	Publishing and Printing	0.1177
7	Museums activities and operation of historical sites	0.0101	7	Paper and Paper Products	0.1018
8	Radio broadcasting	0.0099	8	Petroleum	0.0828
9	Library and Archives activities	0.0078	9	Basic and Other chemicals (incl. Plastics products)	0.0805
10	Photographic activities	0.0070	10	Water	0.0414
	TOTAL FOR 10 SELECTED COMMODITIES	0.1		TOTAL FOR 10 SELECTED COMMODITIES	2.8
	TOTAL COMMODITIES	0.2		TOTAL COMMODITIES	3.0

CCI Sector - Retail sale of second-hand goods

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Retail sale of second-hand goods	0.1702	1	Business services	8.9581
2	Museums activities and operation of historical sites	0.1134	2	Finance and insurance	1.8163
3	C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.1134	3	Transport and storage	0.7330
4	A. Creative, arts and entertainment activities- Stamps and collectors' Items	0.0967	4	Water	0.6476
5	Publishing of newspapers, journals and periodicals	0.0765	5	Wholesale and retail trade	0.5712
6	Library and Archives activities	0.0283	6	Paper and Paper Products	0.4988
7	Other publishing activities	0.0283	7	Communication	0.4911
8	Web portals	0.0283	8	Publishing and Printing	0.4871
9	Advertising	0.0283	9	Basic and Other chemicals (incl. Plastics products)	0.4522
10	Botanical and Zoological Gardens and Nature Reserve Activities	0.0242	10	Electricity	0.4162
	TOTAL FOR 10 SELECTED COMMODITIES	0.7		TOTAL FOR 10 SELECTED COMMODITIES	15.1
	TOTAL COMMODITIES	0.8		TOTAL COMMODITIES	16.3

4.3.1.2 Nelson Mandela Bay (Port Elizabeth)

Relative Importance of CCI Clusters

CCI Cluster	Nelson Mandela Bay (Port Elizabeth)
A. Cultural and Natural Heritage	1.32
B. Performance and Celebration	1.20
C. Visual Arts and Crafts	0.65
D. Books and Press	0.36
E. Audio-visual and Interactive Media	1.22
F. Design and Creative Services	1.09
Transversal Cultural Education	1.22

With regard to Nelson Mandela Bay (Port Elizabeth), the Audio-visual and Interactive Media Cluster was selected for further analysis:

The turnover of cluster = R1.738.1 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

E. Audio-visual and Interactive Media	Nelson Mandela Bay
Software Publishing	1.14
Motion picture, video and television programme production activities	1.11
Motion picture, video and television programme post-production activities	1.06
Motion picture, video and television programme distribution activities	1.06
Sound recording and music publishing activities	1.14
Motion picture projection activities	1.14
Radio broadcasting	0.89
Television programming and broadcasting activities	0.89
Web portals	0.89
Renting of video tapes and disks	1.14
News agency activities	0.89
Retail sale of music and video recordings in specialised stores	1.32
Retail sale via mail order houses or via Internet	1.14

Key (CCI) sector/s for further exposition:

i. Software Publishing a sub sector of the Audio-visual and Interactive Media:

- Its geographic location quotient = 1.14
- Turnover = R41.4 Million
- Intermediate usage of CCI commodities
 - Total = R3.9 Million
 - Total for 10 most important commodities = R3.6 Million

Key (CCI) sector/s for further exposition:

ii. Retail sale via mail order houses or via Internet a sub sector of the Audio-visual and Interactive Media:

- Its geographic location quotient = 1.14
- Turnover = R5.1 Million
- Intermediate usage of CCI commodities
 - Total = R0.5 Million
 - Total for 10 most important commodities = R0.4 Million

Linkage Effect of key CCI sectors (CCI Commodities and SIC Commodities)

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Software Publishing

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	1.6354	1	Paper and Paper Products	6.3405
2	Software Publishing	0.3678	2	Business services	5.3283
3	Specialised design activities	0.2690	3	Wholesale and retail trade	2.8491
4	Motion picture projection activities	0.2182	4	Finance and insurance	2.1936
5	Other publishing activities	0.2110	5	Communication	1.6136
6	Motion picture, video and television programme distribution activities	0.2110	6	Community, social and personal services excl. Government	1.5177
7	Web portals	0.2110	7	Transport and storage	1.4338
8	Motion picture, video and television programme post-production activities	0.1841	8	Publishing and Printing	1.3569
9	Retail sale of music and video recordings in specialised stores	0.1427	9	Petroleum	1.2815
10	Retail sale of second-hand goods	0.1055	10	Basic and Other chemicals (incl. Plastics products)	0.9294
	TOTAL FOR 10 SELECTED COMMODITIES	3.6		TOTAL FOR 10 SELECTED COMMODITIES	24.8
	TOTAL COMMODITIES	3.9		TOTAL COMMODITIES	27.8

CCI Sector - Retail sale via mail order houses or via Internet

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Motion picture projection activities	0.1037	1	Business services	1.5132
2	Advertising	0.0924	2	Petroleum	0.4882
3	Retail sale of music and video recordings in specialised stores	0.0540	3	Transport and storage	0.3668
4	Sound recording and music publishing activities	0.0415	4	Finance and insurance	0.3414
5	Software Publishing	0.0345	5	Wholesale and retail trade	0.2844
6	Motion picture, video and television programme production activities	0.0324	6	Communication	0.2143
7	Retail sale via mail order houses or via Internet	0.0185	7	Manufacturing of Transport Equipment	0.1251
8	Other publishing activities	0.0154	8	Publishing and Printing	0.1015
9	Motion picture, video and television programme distribution activities	0.0154	9	Paper and Paper Products	0.0999
10	Sound recording and music publishing activities	0.0116	10	Basic and Other chemicals (incl. Plastics products)	0.0989
	TOTAL FOR 10 SELECTED COMMODITIES	0.4		TOTAL FOR 10 SELECTED COMMODITIES	3.6
	TOTAL COMMODITIES	0.5		TOTAL COMMODITIES	4.1

4.3.1.3 Mangaung (Bloemfontein)

Relative Importance of CCI Clusters

CCI Cluster	Mangaung (Bloemfontein)
A. Cultural and Natural Heritage	1.63
B. Performance and Celebration	1.70
C. Visual Arts and Crafts	0.32
D. Books and Press	0.38
E. Audio-visual and Interactive Media	1.36
F. Design and Creative Services	0.94
Transversal Cultural Education	1.75

With regard to Mangaung (Bloemfontein), the Performance and Celebration Cluster was selected for further analysis:

The turnover of cluster = R209.5 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

B. Performance and Celebration	Mangaung
Creative, arts and entertainment activities-Performing arts and Cultural events	1.03
Manufacture of musical instruments	0.14
Sound recording and music publishing activities	0.14
Retail sale of music and video recordings in specialized stores	0.14

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities-Performing arts and Cultural events a sub sector of the Performance and Celebration:

- Its geographic location quotient = 1.03
- Turnover = R208.4 Million
- Intermediate usage of CCI commodities
 - Total = R19.7 Million
 - Total for 10 most important commodities = R12.7 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities-Performing arts and Cultural events

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	2.6106	1	Business services	47.0322
2	Retail sale of second-hand goods	2.0944	2	Manufacturing of Transport Equipment	7.6534
3	Specialized design activities	1.6098	3	Electronic Equipment	6.9637
4	B. Creative, arts and entertainment activities-Performing arts and Cultural events	1.2212	4	Community, social and personal services excl. Government	6.4774
5	Research and experimental development on social sciences and humanities	1.0955	5	Wholesale and retail trade	5.8850
6	Manufacture of jewelry and related articles	1.0361	6	Basic and Other chemicals (incl. Plastics products)	5.0833
7	Motion picture, video and television programme distribution activities	0.9989	7	Finance and insurance	3.2791
8	Photographic activities	0.7094	8	Communication	3.2385
9	Motion picture, video and television programme production activities	0.6558	9	Publishing and Printing	2.6389
10	Museums activities and operation of historical sites	0.6443	10	Transport and storage	2.4082
	TOTAL FOR 10 SELECTED COMMODITIES	12.7		TOTAL FOR 10 SELECTED COMMODITIES	90.7
	TOTAL COMMODITIES	19.7		TOTAL COMMODITIES	106.3

4.3.1.4 City of Johannesburg

Relative Importance of CCI Clusters

CCI Cluster	City of Johannesburg
A. Cultural and Natural Heritage	1.28
B. Performance and Celebration	1.35
C. Visual Arts and Crafts	0.81
D. Books and Press	2.21
E. Audio-visual and Interactive Media	0.80
F. Design and Creative Services	0.65
Transversal Cultural Education	1.38

With regard to City of Johannesburg, the Books and Press Cluster was selected for further analysis:

The turnover of cluster = R11 247.1 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

D. Books and Press	City of Johannesburg
Library and Archives activities	0.63
Book publishing	1.10
Publishing of newspapers, journals and periodicals	1.10
Other publishing activities	1.10
Retail sale of books, newspapers and stationery in specialized stores	0.43
News agency activities	0.31
Other information service activities N.E.C.	0.31
Wholesale of other household goods*	0.43
D.Creative arts and entertainment activities-Services of authors, composers, sculptors and other artists, except performing artists	0.26

Note: The level of relativity compared to the other clusters, resulted in a low range although the production values are quite significant compared to other CCI clusters in City of Johannesburg.

Key (CCI) sector/s for further exposition:

i. Book publishing [defined as the activities of publishing books in print, electronic or audio form or on the Internet as well as publishing of atlases, maps and charts; audio books; encyclopaedias on CD-ROM.]:

- Its geographic location quotient = 1.10
- Turnover = R2 358.1 Million
- Intermediate usage of CCI commodities
 - Total = R107.9 Million
 - Total for 10 most important commodities = R94.4 Million

Key (CCI) sector/s for further exposition:

ii. Publishing of newspapers, journals and periodicals [defined as publishing of newspapers, including advertising newspapers; publishing of periodicals and other journals; Publishing can be done in print or electronic form.]:

- Its geographic location quotient = 1.10
- Turnover = R7 798.9 Million
- Intermediate usage of CCI commodities
 - Total = R786.5 Million
 - Total for 10 most important commodities = R672.4 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable

leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Book publishing

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	40.8576	1	Business services	261.5325
2	Web portals	12.8770	2	Publishing and Printing	203.0126
3	Specialized design activities	10.8971	3	Transport and storage	178.4637
4	Other publishing activities	9.0804	4	Paper and Paper Products	166.0168
5	Library and Archives activities	4.9822	5	Wholesale and retail trade	109.6263
6	Photographic activities	3.9170	6	Community, social and personal services excl. Government	73.4791
7	C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	3.2844	7	Basic and Other chemicals (incl. Plastics products)	66.1704
8	Other publishing activities	3.1336	8	Communication	60.7499
9	Retail sale via mail order houses or via Internet	2.7755	9	Finance and insurance	37.4911
10	Research and experimental development on social sciences and humanities	2.5699	10	Buildings and Other Construction	6.3662
	TOTAL FOR 10 SELECTED COMMODITIES	94.4		TOTAL FOR 10 SELECTED COMMODITIES	1162.9
	TOTAL COMMODITIES	107.9		TOTAL COMMODITIES	1178.4

CCI Sector - Publishing of newspapers, journals and periodicals

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	News agency activities	185.1246	1	Paper and Paper Products	909.6513
2	Advertising	163.2214	2	Business services	814.9967
3	News agency activities	56.5883	3	Publishing and Printing	574.0875
4	Publishing of newspapers, journals and periodicals	49.5850	4	Community, social and personal services excl. Government	459.1139
5	Specialised design activities	45.6183	5	Wholesale and retail trade	403.5377
6	Other information service activities n.e.c.	43.6538	6	Transport and storage	372.6620
7	Photographic activities	36.9643	7	Communication	168.4089
8	Library and Archives activities	31.4308	8	Basic and Other chemicals (incl. Plastics products)	144.2465
9	Other publishing activities	30.6444	9	Finance and insurance	86.1683
10	Other publishing activities	29.5714	10	Buildings and Other Construction	35.2224
	TOTAL FOR 10 SELECTED COMMODITIES	672.4		TOTAL FOR 10 SELECTED COMMODITIES	3968.1
	TOTAL COMMODITIES	786.5		TOTAL COMMODITIES	4068.8

4.3.1.5 City of Tshwane (Pretoria)

Relative Importance of CCI Clusters

CCI Cluster	City of Tshwane (Pretoria)
A. Cultural and Natural Heritage	0.63
B. Performance and Celebration	0.68
C. Visual Arts and Crafts	2.15
D. Books and Press	1.29
E. Audio-visual and Interactive Media	0.75
F. Design and Creative Services	0.90
Transversal Cultural Education	0.61

With regard to City of Tshwane (Pretoria), the Visual Arts and Crafts Cluster was selected for further analysis:

The turnover of cluster = R3 172 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

C. Visual Arts and Crafts	City of Tshwane
Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.14
Photographic activities	0.19
Other publishing activities	0.64
Manufacture of jewellery and related articles	1.14
Research and experimental development on social sciences and humanities	0.29

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.14
- Turnover = R85.5 Million
- Intermediate usage of CCI commodities
 - Total = R4.1 Million
 - Total for commodities (nine sectors) = R3.6 Million

ii. Manufacture of jewellery and related articles a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.14
- Turnover = R2 813.4 Million
- Intermediate usage of CCI commodities
 - Total = R136.2 Million
 - Total for commodities (nine sectors) = R136.2 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.1131	1	Business services	15.1060
2	B. Creative, arts and entertainment activities-Performing arts and Cultural events	0.8554	2	Wholesale and retail trade	5.4417
3	Advertising	0.4324	3	Agriculture Forestry and Fishing	3.8308
4	Research and experimental development on social sciences and humanities	0.2162	4	Community, social and personal services excl. Government	3.7176
5	Other publishing activities	0.2162	5	Processed Food	3.4109
6	Manufacture of musical instruments	0.2139	6	Transport and storage	2.7298
7	Specialised design activities	0.2069	7	Basic and Other chemicals (incl. Plastics products)	2.6462
8	Photographic activities	0.1276	8	Mining	2.6265
9	Museums activities and operation of historical sites	0.1081	9	Petroleum	2.3822
10	Web portals	0.1081	10	Publishing and Printing	2.3557
	TOTAL FOR 10 SELECTED COMMODITIES	3.6		TOTAL FOR 10 SELECTED COMMODITIES	44.2
	TOTAL COMMODITIES	4.1		TOTAL COMMODITIES	60.8

CCI Sector - Manufacture of jewellery and related articles

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	50.4901	1	Mining	1560.9755
2	B. Creative, arts and entertainment activities-Performing arts and Cultural events	23.6041	2	Other Manufacturing and Recycling	407.7709
3	Manufacture of jewellery and related articles	23.4015	3	Wholesale and retail trade	202.7257
4	Specialised design activities	13.7359	4	Basic Metal Products	100.8470
5	Web portals	8.4150	5	Finance and insurance	47.2249
6	Manufacture of musical instruments	5.9010	6	Transport and storage	43.7176
7	Photographic activities	4.9649	7	Business services	10.9334
8	Other publishing activities	3.9719	8	Community, social and personal services excl. Government	8.9097
9	Retail sale of books, newspapers and stationery in specialised stores	1.6830	9	Communication	2.8868
			10	Electricity	1.5606
	TOTAL FOR 10 SELECTED COMMODITIES	136.2		TOTAL FOR 10 SELECTED COMMODITIES	2387.6
	TOTAL COMMODITIES	136.2		TOTAL COMMODITIES	2390.9

4.3.1.6 Ekurhuleni (East Rand)

Relative Importance of CCI Clusters

CCI Cluster	Ekurhuleni (East Rand)
A. Cultural and Natural Heritage	0.69
B. Performance and Celebration	0.72
C. Visual Arts and Crafts	1.63
D. Books and Press	0.99
E. Audio-visual and Interactive Media	0.83
F. Design and Creative Services	1.04
Transversal Cultural Education	0.67

With regard to Ekurhuleni (East Rand), the Visual Arts and Crafts Cluster was selected for further analysis:

The turnover of cluster = R2 723.0 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

C. Visual Arts and Crafts	Ekurhuleni
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.13
Photographic activities	0.28
Other publishing activities	0.62
Manufacture of jewellery and related articles	1.13
Research and experimental development on social sciences and humanities	0.41

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.13
- Turnover = R72.8 Million
- Intermediate usage of CCI commodities
 - Total = R3.5 Million
 - Total for 10 most important commodities = R3.1 Million

ii. Manufacture of jewellery and related articles a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.13
- Turnover = R2 394.1 Million
- Intermediate usage of CCI commodities
 - Total = R115.9 Million
 - Total for commodities (nine sectors) = R115.9 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	C. Creative arts & entertainment activities – Fine arts and other visuals cartoons	0.9472	1	Business services	12.8547
2	B. Creative, arts and entertainment activities – Performing arts and Cultural events	0.7279	2	Wholesale and retail trade	4.6307
3	Advertising	0.3680	3	Agriculture Forestry and Fishing	3.2599
4	Research and experimental development on social sciences and humanities	0.1840	4	Community, social and personal services excl. Government	3.1635
5	Other publishing activities	0.1840	5	Processed Food	2.9026
6	Manufacture of musical instruments	0.1820	6	Transport and storage	2.3229
7	Specialized design activities	0.1761	7	Basic and Other chemicals (incl. Plastics products)	2.2519
8	Photographic Activities	0.1085	8	Mining	2.2350
9	Museums activities and operation of historical sites	0.0920	9	Petroleum	2.0272
10	Web portals	0.0920	10	Publishing and Printing	2.0046
	TOTAL FOR 10 SELECTED COMMODITIES	3.1		TOTAL FOR 10 SELECTED COMMODITIES	3737
	TOTAL COMMODITIES	3.5		TOTAL COMMODITIES	51.8

CCI Sector - Manufacture of jewellery and related articles

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	42.9653	1	Mining	1328.2222
2	B. Creative, arts and entertainment activities-Performing arts and Cultural events	20.2863	2	Other Manufacturing and Recycling	346.9981
3	Manufacture of jewellery and related articles	19.9138	3	Wholesale and retail trade	172.5121
4	Specialised design activities	11.6887	4	Basic Metal Products	85.8171
5	Web portals	7.1609	5	Finance and insurance	40.1866
6	Manufacture of musical instruments	5.0216	6	Transport and storage	37.2021
7	Photographic activities	4.2249	7	Business services	9.3039
8	Other publishing activities	3.3799	8	Community, social and personal services excl. Government	7.5816
9	Retail sale of books, newspapers and stationery in specialised stores	1.4322	9	Communication	2.4566
	A. Creative, arts and entertainment activities- Stamps and collectors' Items	0.0000	10	Electricity	1.3280
	TOTAL FOR 10 SELECTED COMMODITIES	115.9		TOTAL FOR 10 SELECTED COMMODITIES	2031.7
	TOTAL COMMODITIES	115.9		TOTAL COMMODITIES	2034.5

4.3.1.7 eThekwini (Durban)

Relative Importance of CCI Clusters

CCI Cluster	eThekwini (Durban)
A. Cultural and Natural Heritage	0.95
B. Performance and Celebration	0.87
C. Visual Arts and Crafts	0.51
D. Books and Press	0.57
E. Audio-visual and Interactive Media	1.32
F. Design and Creative Services	1.14
Transversal Cultural Education	0.89

With regard to eThekwini (Durban), the Audio-visual and Interactive Media Cluster was selected for further analysis:

The turnover of cluster = R3 683.2 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

E. Audio-visual and Interactive Media	eThekwini
Software Publishing	0.91
Motion picture, video and television programme production activities	0.93
Motion picture, video and television programme post-production activities	0.96
Motion picture, video and television programme distribution activities	0.96
Sound recording and music publishing activities	0.91
Motion picture projection activities	0.91
Radio broadcasting	1.07
Television programming and broadcasting activities	1.07
Web portals	1.07
Renting of video tapes and disks	0.91
News agency activities	1.07
Retail sale of music and video recordings in specialised stores	0.86
Retail sale via mail order houses or via Internet	0.91

Key (CCI) sector/s for further exposition:

i. Radio broadcasting a sub sector of the Audio-visual and Interactive Media:

- Its geographic location quotient = 1.07
- Turnover = R626.0 Million
- Intermediate usage of CCI commodities
 - Total = R91.1 Million
 - Total for 10 most important commodities = R79.7 Million

ii. Television programming and broadcasting activities a sub sector of the Audio-visual and Interactive Media:

- Its geographic location quotient = 1.07
- Turnover = R601.7 Million
- Intermediate usage of CCI commodities
 - Total = R90.3 Million
 - Total for 10 most important commodities = R82.9 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Television programming and broadcasting activities

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Motion picture, video and television programme distribution activities	19.2783	1	Petroleum	81.3886
2	Advertising	13.3574	2	Business services	77.2526
3	Motion picture, video and television programme production activities	9.4611	3	Wholesale and retail trade	40.1581
4	Motion picture, video and television programme post-production activities	8.8148	4	Transport and storage	33.6637
5	B. Creative, arts and entertainment activities-Performing arts and Cultural events	8.0719	5	Finance and insurance	21.0662
6	Television programming and broadcasting activities	8.0277	6	Communication	18.8029
7	Research and experimental development on social sciences and humanities	3.3785	7	Manufacturing of Transport Equipment	17.9024
8	Retail sale of music and video recordings in specialised stores	3.2350	8	Community, social and personal services excl. Government	17.2285
9	Web portals	3.2253	9	Rubber Products	10.4279
10	Specialised design activities	2.8222	10	Catering and accommodation services	9.3414
	TOTAL FOR 10 SELECTED COMMODITIES	79.7		TOTAL FOR 10 SELECTED COMMODITIES	327.2
	TOTAL COMMODITIES	91.1		TOTAL COMMODITIES	393.2

CCI Sector - Radio broadcasting

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	19.4213	1	Petroleum	73.8657
2	Motion picture projection activities	17.6940	2	Business services	73.7387
3	B. Creative, arts and entertainment activities-Performing arts and Cultural events	14.3513	3	Wholesale and retail trade	37.4957
4	Radio broadcasting	8.5342	4	Transport and storage	31.2821
5	Sound recording and music publishing activities	7.0776	5	Finance and insurance	22.5738
6	Retail sale of music and video recordings in specialised stores	4.6592	6	Communication	19.6461
7	Publishing of newspapers, journals and periodicals	3.6285	7	Community, social and personal services excl. Government	17.1157
8	Manufacture of musical instruments	3.5878	8	Manufacturing of Transport Equipment	16.3509
9	News agency activities	2.3250	9	Rubber Products	9.3168
10	Sound recording and music publishing activities	1.6470	10	Catering and accommodation services	8.7009
	TOTAL FOR 10 SELECTED COMMODITIES	82.9		TOTAL FOR 10 SELECTED COMMODITIES	310.1
	TOTAL COMMODITIES	90.3		TOTAL COMMODITIES	375.1

4.3.1.8 Polokwane (Pietersburg)

Relative Importance of CCI Clusters

CCI Cluster	Polokwane (Pietersburg)
A. Cultural and Natural Heritage	1.59
B. Performance and Celebration	1.58
C. Visual Arts and Crafts	0.14
D. Books and Press	0.18
E. Audio-visual and Interactive Media	1.06
F. Design and Creative Services	1.18
Transversal Cultural Education	1.64

With regard to Buffalo City (East London), the Performance and Celebration Cluster was selected for further analysis:

The turnover of cluster = R149.6 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

B. Performance and Celebration	Polokwane
B. Creative, arts and entertainment activities-Performing arts and Cultural events	1.04
Manufacture of musical instruments	N/A
Sound recording and music publishing activities	N/A
Retail sale of music and video recordings in specialised stores	N/A

Note: According to the SIC sector in the SID the sectors not applicable (N/A) do not contain any production activities in those sectors

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities-Performing arts and Cultural events a sub sector of the Performance and Celebration:

- Its geographic location quotient = 1.04
- Turnover = R149.6 Million
- Intermediate usage of CCI commodities
- Total = R14.2 Million
- Total for 10 most important commodities = R9.1 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities - Performing arts and Cultural events

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	1.8733	1	Business services	33.7489
2	Retail sale of second-hand goods	1.5029	2	Manufacturing of Transport Equipment	5.4919
3	Specialised design activities	1.1551	3	Electronic Equipment	4.9969
4	B. Creative, arts and entertainment activities-Performing arts and Cultural events	0.8763	4	Community, social and personal services excl. Government	4.6480
5	Research and experimental development on social sciences and humanities	0.7861	5	Wholesale and retail trade	4.2229
6	Manufacture of jewellery and related articles	0.7434	6	Basic and Other chemicals (incl. Plastics products)	3.6476
7	Motion picture, video and television programme distribution activities	0.7168	7	Finance and insurance	2.3530
8	Photographic activities	0.5091	8	Communication	2.3238
9	Motion picture, video and television programme production activities	0.4706	9	Publishing and Printing	1.8936
10	Museums activities and operation of historical sites	0.4623	10	Transport and storage	1.7281
	TOTAL FOR 10 SELECTED COMMODITIES	9.1		TOTAL FOR 10 SELECTED COMMODITIES	65.1
	TOTAL COMMODITIES	14.2		TOTAL COMMODITIES	76.3

4.3.1.9 Mbombela (Nelspruit)

Relative Importance of CCI Clusters

CCI Cluster	Mbombela (Nelspruit)
A. Cultural and Natural Heritage	1.15
B. Performance and Celebration	1.18
C. Visual Arts and Crafts	1.70
D. Books and Press	0.17
E. Audio-visual and Interactive Media	0.83
F. Design and Creative Services	1.10
Transversal Cultural Education	1.15

With regard to Mbombela (Nelspruit), the Visual Arts and Crafts Cluster was selected for further analysis:

The turnover of cluster = R106.0 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

C. Visual Arts and Crafts	Mbombela
Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.18
Photographic activities	0.51
Other publishing activities	0.01
Manufacture of jewellery and related articles	1.18
Research and experimental development on social sciences and humanities	0.68

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.18
- Turnover = R3.0 Million
- Intermediate usage of CCI commodities
 - Total = R0.14 Million
 - Total for 10 most important commodities = R0.12 Million

ii. Manufacture of jewellery and related articles a sub sector of the Visual Arts and Crafts:

- Its geographic location quotient = 1.18
- Turnover = R97.2 Million
- Intermediate usage of CCI commodities
 - Total = R4.7 Million
 - Total for commodities (nine sectors) = R4.7 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	C. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.0385	1	Business services	0.5219
2	B. Creative, arts and entertainment activities-Performing arts and Cultural events	0.0296	2	Wholesale and retail trade	0.1880
3	Advertising	0.0149	3	Agriculture Forestry and Fishing	0.1324
4	Research and experimental development on social sciences and humanities	0.0075	4	Community, social and personal services excl. Government	0.1284
5	Other publishing activities	0.0075	5	Processed Food	0.1178
6	Manufacture of musical instruments	0.0074	6	Transport and storage	0.0943
7	Specialised design activities	0.0071	7	Basic and Other chemicals (incl. Plastics products)	0.0914
8	Photographic activities	0.0044	8	Mining	0.0907
9	Museums activities and operation of historical sites	0.0037348	9	Petroleum	0.0823
10	Web portals	0.0037348	10	Publishing and Printing	0.0814
	TOTAL FOR 10 SELECTED COMMODITIES	0.12		TOTAL FOR 10 SELECTED COMMODITIES	1.5
	TOTAL COMMODITIES	0.14		TOTAL COMMODITIES	2.1

CCI Sector - Manufacture of jewellery and related articles

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	1.7444	1	Mining	53.9314
2	B. Creative, arts and entertainment activities-Performing arts and Cultural events	0.8155	2	Other Manufacturing and Recycling	14.0884
3	Manufacture of jewellery and related articles	0.8085	3	Wholesale and retail trade	7.0041
4	Specialised design activities	0.4746	4	Basic Metal Products	3.4842
5	Web portals	0.2907	5	Finance and insurance	1.6316
6	Manufacture of musical instruments	0.2039	6	Transport and storage	1.5104
7	Photographic activities	0.1715	7	Business services	0.3777
8	Other publishing activities	0.1372	8	Community, social and personal services excl. Government	0.3078
9	Retail sale of books, newspapers and stationery in specialised stores	0.0581	9	Communication	0.0997
			10	Electricity	0.0539
	TOTAL FOR 10 SELECTED COMMODITIES	4.7		TOTAL FOR 10 SELECTED COMMODITIES	82.5
	TOTAL COMMODITIES	4.7		TOTAL COMMODITIES	82.6

4.3.1.10 Sol Plaatje (Kimberley)

Relative Importance of CCI Clusters

CCI Cluster	Sol Plaatje (Kimberley)
A. Cultural and Natural Heritage	1.17
B. Performance and Celebration	1.19
C. Visual Arts and Crafts	0.25
D. Books and Press	0.19
E. Audio-visual and Interactive Media	1.34
F. Design and Creative Services	1.19
Transversal Cultural Education	1.23

With regard to Sol Plaatje (Kimberley), the Cultural & Natural Heritage Cluster was selected for further analysis:

The turnover of cluster = R17.3 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

A. Cultural and Natural Heritage	Sol Plaatje
A. Creative, arts and entertainment activities- Stamps and collectors' Items	0.86
Museums activities and operation of historical sites	1.05
Botanical and Zoological Gardens and Nature Reserve Activities	1.05
Retail sale of second-hand goods	0.86

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities - Stamps and collectors' Items a sub sector of the Museums activities and operation of historical sites:

- Its geographic location quotient = 0.86
- Turnover = R4.2 Million
- Intermediate usage of CCI commodities
- Total = R0.2 Million
- Total for 10 most important commodities = R0.15 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and

SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Museums activities and operation of historical sites

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	A. Creative, arts and entertainment activities- Stamps and collectors' Items	0.0367	1	Business services	0.7028
2	Advertising	0.0240	2	Community, social and personal services excl. Government	0.1050
3	Web portals	0.0205	3	Manufacturing of Transport Equipment	0.0978
4	Specialised design activities	0.0182	4	Electronic Equipment	0.0889
5	C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.0161	5	Wholesale and retail trade	0.0763
6	Museums activities and operation of historical sites	0.0115	6	Basic and Other chemicals (incl. Plastics products)	0.0654
7	News agency activities	0.0080	7	Communication	0.0555
8	Motion picture projection activities	0.0072	8	Finance and insurance	0.0403
9	Library and Archives activities	0.0058	9	Publishing and Printing	0.0363
10	Retail sale of second-hand goods	0.0057	10	Transport and storage	0.0301
	TOTAL FOR 10 SELECTED COMMODITIES	0.15		TOTAL FOR 10 SELECTED COMMODITIES	1.3
	TOTAL COMMODITIES	0.20		TOTAL COMMODITIES	1.5

4.3.1.11 Tlokwe City Council (Potchefstroom)

Relative Importance of CCI Clusters

CCI Cluster	Tlokwe City Council (Potchefstroom)
A. Cultural and Natural Heritage	1.21
B. Performance and Celebration	1.18
C. Visual Arts and Crafts	0.15
D. Books and Press	0.28
E. Audio-visual and Interactive Media	1.31
F. Design and Creative Services	1.19
Transversal Cultural Education	1.22

With regard to Tlokwe City Council (Potchefstroom), the Performance and Celebration Cluster was selected for further analysis:

The turnover of cluster = R23.64 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

B. Performance and Celebration	Tlokwe City Council
Creative, arts and entertainment activities-Performing arts and Cultural events	1.04
Manufacture of musical instruments	0.02
Sound recording and music publishing activities	0.02
Retail sale of music and video recordings in specialised stores	0.02

Key (CCI) sector/s for further exposition:

i. Creative, arts and entertainment activities - Performing arts and Cultural events a sub sector of the Performance and Celebration:

- Its geographic location quotient = 1.04
- Turnover = R23.63 Million
- Intermediate usage of CCI commodities
- Total = R2.2 Million
- Total for 10 most important commodities = R1.4 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and

SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Creative, arts and entertainment activities - Performing arts and Cultural events

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	0.2959	1	Business services	5.3310
2	Retail sale of second-hand goods	0.2374	2	Manufacturing of Transport Equipment	0.8675
3	Specialised design activities	0.1825	3	Electronic Equipment	0.7893
4	B. Creative, arts and entertainment activities-Performing arts and Cultural events	0.1384	4	Community, social and personal services excl. Government	0.7342
5	Research and experimental development on social sciences and humanities	0.1242	5	Wholesale and retail trade	0.6671
6	Manufacture of jewellery and related articles	0.1174	6	Basic and Other chemicals (incl. Plastics products)	0.5762
7	Motion picture, video and television programme distribution activities	0.1132	7	Finance and insurance	0.3717
8	Photographic activities	0.0804	8	Communication	0.3671
9	Motion picture, video and television programme production activities	0.0743	9	Publishing and Printing	0.2991
10	Museums activities and operation of historical sites	0.0730	10	Transport and storage	0.2730
	TOTAL FOR 10 SELECTED COMMODITIES	1.4		TOTAL FOR 10 SELECTED COMMODITIES	10.3
	TOTAL COMMODITIES	2.2		TOTAL COMMODITIES	12.0

4.3.1.12 City of Cape Town

Relative Importance of CCI Clusters

CCI Cluster	City of Cape Town
A. Cultural and Natural Heritage	0.61
B. Performance and Celebration	0.66
C. Visual Arts and Crafts	0.78
D. Books and Press	1.06
E. Audio-visual and Interactive Media	1.02
F. Design and Creative Services	1.14
Transversal Cultural Education	0.66

With regard to City of Cape Town, the Design and Creative Services Cluster was selected for further analysis:

The turnover of cluster = R14 161.0 Million

Key CCI Sectors involved in the chosen CCI Cluster

The Relative Importance Index of the various CCI sectors relating to the cluster involved are as follows:

F. Design and Creative Services	City of Cape Town
Specialized design activities	1.16
Architectural and engineering activities and related technical consultancy	0.96
Advertising	0.96

Key (CCI) sector/s for further exposition:

i. Specialised design activities a sub sector of the Design and Creative Services:

- Its geographic location quotient = 1.16
- Turnover = R3 348.2 Million
- Intermediate usage of CCI commodities
- Total = R256.1 Million
- Total for 10 most important commodities = R237.2 Million

Linkage Effect of key SIC sectors

Specific attention is given to the linkage impacts of the key CCI sectors that are chosen. Most of the linkage impacts are currently not applicable to the specific geographical location since they impact on the rest of South Africa. However, the linkages reported here can assist in identifying probable leakages to other areas of the country through the use of goods and services from other CCI and

SIC sectors in the production process of a specific CCI sector. By employing intervention mechanisms such as encouraging localised production, these leakages can be minimised.

The linkage effects are divided into two components, namely, CCI sectors and SIC sectors of the key SIC sector chosen. The linkages show the sector's most important input sectors. In the table below ten sectors for the chosen SIC sector are listed ranked in order of importance.

CCI Sector - Specialised design activities

Rank	Intermediate Demand: Culture and Creative Industry's (CCI) Commodities	R Million	Rank	Intermediate Demand: Standard Industrial Classification (SIC) Commodities	R Million
1	Advertising	101.2988	1	Business services	711.6273
2	Retail sale of books, newspapers and stationery in specialised stores	33.2942	2	Finance and insurance	196.8265
3	Specialised design activities	32.0228	3	Communication	138.4762
4	C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	13.7410	4	Manufacturing of Transport Equipment	125.0764
5	Photographic activities	12.3371	5	Wholesale and retail trade	124.8280
6	Architectural and engineering activities and related technical consultancy	10.9598	6	Community, social and personal services excl. Government	94.6636
7	Other publishing activities	9.8697	7	Electronic Equipment	88.2078
8	Motion picture, video and television programme production activities	8.5804	8	Basic and Other chemicals (incl. Plastics products)	76.5170
9	Other publishing activities	7.5669	9	Publishing and Printing	72.3419
10	Web portals	7.5669	10	Petroleum	56.9467
	TOTAL FOR 10 SELECTED COMMODITIES	237.2		TOTAL FOR 10 SELECTED COMMODITIES	1685.5
	TOTAL COMMODITIES	256.1		TOTAL COMMODITIES	2016.2

5. Summary and Recommendations

The main thrust of this report as specified in the project Terms of Reference is two-fold and is described as follows:

- Analyse the Provincial distribution of the CCIs per Domain in terms of key macroeconomic impact indicators;
- Conduct a cluster analysis within the CCIs which includes a mapping exercise of the main findings in terms of selected macroeconomic impact indicators.

5.1 Analyse the Provincial distribution of the CCIs per Domain in terms of key macroeconomic impact indicators Analysis

A primary objective of this report, Report 4, was to study the provincial size and distribution of the CCI Activities as captured by the various domains in South Africa in terms of relevant macroeconomic indicators. This component of the study calculates the size of provincial CCI activities in terms of macroeconomic variables such as:

- GDP, which is the main indicator for economic activity;
- Employment, which is a good indicator of income distribution; and
- Capital, which is an indicator of the utilisation of scarce resources.

The mapping of the CCI sectors on a geographical location basis was done for the 2018 base year. The research team calculated 2018 GDP, Employment as well as Capital values for the various CCI Domains on a provincial basis.

The contribution of the CCIs to GDP has been analysed from two perspectives. Firstly, the presentation of provincial GDP across CCI Domains; and, secondly, the distribution of CCI Domain GDPs across provinces.

The analysis of the provincial location of CCI activities undertaken in this 2020 study reveals that there are significant differences across the National and Provincial economies. For instance, the film industry is mostly concentrated in the Western Cape province; whilst museums, zoos and performing arts are mostly located in big cities. Similarly, Game Parks are mostly situated in rural areas such as the Kruger National Park in Mpumalanga.

5.2 Conduct a cluster analysis within the CCIs which includes a mapping exercise of the main findings in terms of selected macroeconomic impact indicators

The second objective of this report was to conduct a cluster analysis as well as undertake the mapping of the CCIs in order to reveal the existing patterns of spatial clustering in terms of provinces, metros and selected cities. The CCIs, like other industries, are not evenly distributed across geographical areas, but can be spatially concentrated. CCIs tend to concentrate in specific provinces,

cities and local areas, and are significant drivers of creative and cultural activities. In most instances, CCIs connect to more than one economic sector, especially those in large Metropolitan areas. This report also presents a comparative analysis across the various CCI clusters.

In undertaking the cluster analysis, the concept of Clusters in this study is considered and analysed within the context of CCI Domains. Due to the close correspondence between the Cluster and Domain concepts, these concepts have been used interchangeably in the second part of this report. For analytical purposes it is argued that for a cluster or a hub of activity, data at a local municipality level is more relevant than data at the provincial level. In general, CCI's tend to concentrate mainly around Metros, medium-sized cities and large towns located in various local municipalities, forming creative local production systems. Consequently, 12 metros and local municipalities were chosen based on their size (metros) and other smaller cities/large towns known for their arts and cultural activities.

Although not often used in this context, it can be argued that UNESCO Domains can be viewed as a type of clustering. This argument is based on the similarities between Domains and clusters, where both are constructed based on the philosophical view that sub-Domains and sub-sectors that logically belong together should be grouped together.

In principle, a cluster is thus defined in this document as being very similar to a domain. This is due to the fact that the backward and forward linkages of a domain/cluster in most cases do not occur in the same geographical area. If an analysis of a specific geographical area is conducted it may give a false indication of the importance of that area in terms of a specific cluster. This is due to the unavailability of detailed geographical information. This study attempts to overcome this shortcoming by identifying the linkages, specifically the backward linkages, of a sub-sector of a cluster for specific regional areas.

In general, CCIs tend to concentrate mainly in and around metros, small cities and medium-sized cities located in various local municipalities, forming local production systems. For purposes of the study, a fair representation of the creative and cultural industry clusters was identified to ensure that each province will be represented by at least one specific geographic location. Thus, metros and larger towns such as Sol Plaatje local municipality in the Northern Cape were included in this study.

In the 2017 study the platform was laid to conceptualise the cluster format for the South African cultural and creative industries (CCIs). For this 2020 study, the emphasis was more on identifying clusters on a geographical level in order to determine the importance of specific clusters in the context of a specific geographic location.

Technically, the importance of a cluster was measured by means of the extent to which it has a higher or lower contribution to the economy in terms of turnover, relative to the average contribution of the total CCIs to the national economy at large. The economic importance of the various clusters, as well as the importance of the CCIs generally to a local municipality, is measured by way of percentages that they have in terms of their impact on the specific local geographical location.

The next step was to estimate a relative importance index for the various clusters (domains) in the broader cultural and creative industry of a specific geographic location. This was done by dividing the percentage importance of a specific cluster to a specific geographic location by the percentage importance of the total RSA distribution of the cultural and creative industry to the economy. For example, if the Visual Arts and Crafts cluster in terms of total industry is 2.3% and that of Buffalo City

is 3.2%, the relative importance index (the geographic location quotient) of the cluster for Buffalo City equals $(3.2\% / 2.3\%) = 1.39$.

The choice of a specific cluster was made after an inspection of the results of Table 4.3 of this Technical report. The ultimate choice represent not always the cluster with the highest location quotient but at times based on the professional judgement of the researchers taking into account the pattern of results generated by the cluster analysis as well as to have a broader representation of the main clusters, specifically how this clusters impact the economy indirectly through their backward linkages.

In order to gain further insight into the CCI Clusters – and to align more closely with the traditional definition of a cluster – a backward linkage analysis was conducted. In the context of this study, emphasis was placed on the direct (on-site) linkages connected to entities outside of or away from the geographic location of the cluster. The reason for this is that such linkages reflect leakages outside of a local geographic area. By providing these linkages, local authorities will be in a better position to determine which non-local sectors and industries should be encouraged or enticed to relocate or for new enterprises to locate at a particular geographic region.

5.3 Recommendations and way-forward

Due to the fact that information is provided regarding the usage of production resources by CCI Activities within provinces, this can assist in the optimisation of scarce resources such as capital and labour at a regional level. For example, i South African provinces and local areas, struggling with the structural unemployment issue, CCI Domains and Activities with high labour/capital ratios should be given preference for investment and expansion.

Although this study suggests that UNESCO's CCI Domains represent, to a large extent, various clusters within the CCI Domains, we recommend that consideration be given to the idea of using techniques such as those employed by Cheruiyot and Vom Hofe to undertake more sophisticated cluster analysis that will identify and quantify the linkages that exist between CCI Activities within CCI Domains, and, more importantly, between CCI Activities and activities in other non-CCI sectors of the South African economy. This possibility has not been pursued in this study as a result of time and budget constraints.

The analysis in this report was based on turnover or production of the CCIs within provinces and clusters. This analysis can be extended by considering the employment and capital impact of the CCI Clusters.

The creation of clusters of CCI Activities can assist in identifying development opportunities. Micro business studies will be required to contribute to the identification of CCI Clusters with the objective of developing strategies that will enable the identified clusters to perform more effectively. It is important to note that the development of a specific CCI Cluster will not only create jobs in its own right, but will also have positive effects on broader economic growth and job creation through the backward and forward linkages that exist within the overall economy. Furthermore, micro studies can also identify CCI Clusters within specific provinces that are not operating efficiently so that strategies can be developed to optimise the operations of such inefficient clusters.

The cluster analysis conducted in the 2020 study differs from the 2017 study in that the mapping of the backward linkages are included and quantified. This provides an indication of the opportunities for locally producing more of the commodities that serve as inputs to the specific CCI Clusters. These inputs are currently imported from other locations in South Africa and abroad.

Further recommendations that stem from the research are that it may be sensible to separate CCI Activities and that each warrants a study on its own. It is also likely that drivers of these two groups may differ in important ways and that different indicators should be involved for different types of clusters.

Another recommendation is that more attention be given to the availability and quality of data at provincial and local levels.

Finally, reflection is required regarding the definition of clusters in the present context. It is clear that understandings of clusters are changing, and that old definitions may not capture reality. The current understanding of clusters is likely to benefit from insights from agglomeration of industries, a modern industrial complex definition, sectoral network models and other definitions of clusters.

6. Appendix A

Figure 6.1: SIC Input Structure of the Cultural Satellite Account for South Africa

Cultural Domains/Clusters	SIC 7/ ISIC 4.1	Cultural and Creative Industry Activities / CCI Sectors
A. Cultural & Natural Heritage	9000	A. Creative, arts and entertainment activities- Stamps and collectors' Items
	9102	Museums activities and operation of historical sites
	9103	Botanical and Zoological Gardens and Nature Reserve Activities
	4774	Retail sale of second-hand goods
B. Performance & Celebration	9000	B. Creative, arts and entertainment activities-Performing arts and Cultural events
	3220	Manufacture of musical instruments
	5920	Sound recording and music publishing activities
	4762	Retail sale of music and video recordings in specialised stores
C. Visual Arts & Crafts	9000	C. Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists
	7420	Photographic activities
	5819	C. Visual Arts & Crafts: Other publishing activities
	3211	Manufacture of jewellery and related articles
	7220	Research and experimental development on social sciences and humanities
D. Books & Press	9101	Library and Archives activities
	5811	Book publishing
	5813	Publishing of newspapers, journals and periodicals
	5819	D. Books & Press: Other publishing activities
	4761	Retail sale of books, newspapers and stationery in specialised stores
	6391	News agency activities
	6399	Other information service activities n.e.c.
	4649	Wholesale of other household goods*
	9000	D. Creative arts and entertainment activities-Services of authors, composers, sculptors and other artists, except performing artists
E. Audio-Visual & Interactive Media	5820	Software Publishing
	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
	5920	Sound recording and music publishing activities
	5914	Motion picture projection activities
	6010	Radio broadcasting
	6020	Television programming and broadcasting activities
	6312	Web portals
	7722	Renting of video tapes and disks
	6391	News agency activities
	4762	Retail sale of music and video recordings in specialised stores
	4791	Retail sale via mail order houses or via Internet
F. Design & Creative Services	7410	Specialised design activities
	7110	Architectural and engineering activities and related technical consultancy
	7310	Advertising
Transversal Cultural Education Domain	8522 & 8530	Education

Note: SIC 7/ ISIC 4.1 category of **9000** are divided into the relating SIC sectors of Domains/clusters A, B, C and D. SIC 7/ ISIC 4.1 category of **5819** are divided into the relating SIC sectors of Domains/clusters C and D.

7. Appendix B

This appendix provides a set of tables that provide relative importance indices for the various CCI activities within the various CCI Clusters for each of the metros and local municipalities analyzed in this study. The metros and local municipalities are presented in the following order:

- Buffalo City (East London)
- Nelson Mandela Bay (Port Elizabeth)
- Mangaung (Bloemfontein)
- City of Johannesburg
- City of Tshwane (Pretoria)
- Ekurhuleni (East Rand)
- eThekweni (Durban)
- Polokwane (Pietersburg)
- Mbombela (Nelspruit)
- Sol Plaatje (Kimberley)
- Tlokwe City Council (Potchefstroom)
- City of Cape Town

Relative Importance Index on CCI sectors per cluster of Buffalo City (East London)

A. Cultural and Natural Heritage	Buffalo City
A.Creative, arts and entertainment activities- Stamps and collectors Items	1.11
Museums activities and operation of historical sites	0.96
Botanical and Zoological Gardens and Nature Reserve Activities	0.96
Retail sale of second-hand goods	1.11

B. Performance and Celebration	Buffalo City
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.03
Manufacture of musical instruments	0.20
Sound recording and music publishing activities	0.20
Retail sale of music and video recordings in specialised stores	0.20

C. Visual Arts and Crafts	Buffalo City
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.72
Photographic activities	3.38
Other publishing activities	0.86
Manufacture of jewellery and related articles	0.72
Research and experimental development on social sciences and humanities	3.65

D. Books and Press	Buffalo City
Library and Archives activities	2.86
Book publishing	0.67
Publishing of newspapers, journals and periodicals	0.67
Other publishing activities	0.67
Retail sale of books, newspapers and stationary in specialised stores	3.30
News agency activities	2.24
Other information service activities n.e.c.	2.24
Wholesale of other household goods*	3.30
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.56

E. Audio-visual and Interactive Media	Buffalo City
Software Publishing	1.09
Motion picture, video and television programme production activities	1.07
Motion picture, video and television programme post-production activities	1.04
Motion picture, video and television programme distribution activities	1.04
Sound recording and music publishing activities	1.09
Motion picture projection activities	1.09
Radio broadcasting	0.92
Television programming and broadcasting activities	0.92
Web portals	0.92
Renting of video tapes and disks	1.09
News agency activities	0.92
Retail sale of music and video recordings in specialised stores	1.36
Retail sale via mail order houses or via Internet	1.09

F. Design and Creative Services	Buffalo City
Specialised design activities	1.09
Architectural and engineering activities and related technical consultancy	0.98
Advertising	0.98

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Nelson Mandela Bay (Port Elizabeth)

A. Cultural and Natural Heritage	Nelson Mandela Bay
A.Creative, arts and entertainment activities-Stamps and collectors Items	1.22
Museums activities and operation of historical sites	0.93
Botanical and Zoological Gardens and Nature Reserve Activities	0.93
Retail sale of second-hand goods	1.22

B. Performance and Celebration	Nelson Mandela Bay
B. Creative, arts and entertainment activities-Performing arts and Cultural events	1.02
Manufacture of musical instruments	0.53
Sound recording and music publishing activities	0.53
Retail sale of music and video recordings in specialised stores	0.53

C. Visual Arts and Crafts	Nelson Mandela Bay
C.Creative, arts and entertainment activities-Fine Art and other visual art ex. Cartoonists	0.97
Photographic activities	2.12
Other publishing activities	0.27
Manufacture of jewellery and related articles	0.97
Research and experimental development on social sciences and humanities	1.87

D. Books and Press	Nelson Mandela Bay
Library and Archives activities	3.42
Book publishing	0.50
Publishing of newspapers, journals and periodicals	0.50
Other publishing activities	0.50
Retail sale of books, newspapers and stationary in specialised stores	4.48
News agency activities	3.02
Other information service activities n.e.c.	3.02
Wholesale of other household goods*	4.48
Services of authors, composers, sculptors and other artists, except performing artists	1.77

E. Audio-visual and Interactive Media	Nelson Mandela Bay
Software Publishing	1.14
Motion picture, video and television programme production activities	1.11
Motion picture, video and television programme post-production activities	1.06
Motion picture, video and television programme distribution activities	1.06
Sound recording and music publishing activities	1.14
Motion picture projection activities	1.14
Radio broadcasting	0.89
Television programming and broadcasting activities	0.89
Web portals	0.89
Renting of video tapes and disks	1.14
News agency activities	0.89
Retail sale of music and video recordings in specialised stores	1.32
Retail sale via mail order houses or via Internet	1.14

F. Design and Creative Services	Nelson Mandela Bay
Specialised design activities	1.21
Architectural and engineering activities and related technical consultancy	0.95
Advertising	0.95

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Mangaung (Bloemfontein)

A. Cultural and Natural Heritage	Mangaung
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.77
Museums activities and operation of historical sites	1.07
Botanical and Zoological Gardens and Nature Reserve Activities	1.07
Retail sale of second-hand goods	0.77

B. Performance and Celebration	Mangaung
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.03
Manufacture of musical instruments	0.14
Sound recording and music publishing activities	0.14
Retail sale of music and video recordings in specialised stores	0.14

C. Visual Arts and Crafts	Mangaung
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.72
Photographic activities	2.72
Other publishing activities	0.67
Manufacture of jewellery and related articles	0.72
Research and experimental development on social sciences and humanities	5.48

D. Books and Press	Mangaung
Library and Archives activities	4.56
Book publishing	0.56
Publishing of newspapers, journals and periodicals	0.56
Other publishing activities	0.56
Retail sale of books, newspapers and stationary in specialised stores	3.27
News agency activities	4.51
Other information service activities n.e.c.	4.51
Wholesale of other household goods*	3.27
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.60

E. Audio-visual and Interactive Media	Mangaung
Software Publishing	0.64
Motion picture, video and television programme production activities	0.70
Motion picture, video and television programme post-production activities	0.84
Motion picture, video and television programme distribution activities	0.84
Sound recording and music publishing activities	0.64
Motion picture projection activities	0.64
Radio broadcasting	1.27
Television programming and broadcasting activities	1.27
Web portals	1.27
Renting of video tapes and disks	0.64
News agency activities	1.27
Retail sale of music and video recordings in specialised stores	0.92
Retail sale via mail order houses or via Internet	0.64

F. Design and Creative Services	Mangaung
Specialised design activities	0.98
Architectural and engineering activities and related technical consultancy	1.01
Advertising	1.01

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of City of Johannesburg

A. Cultural and Natural Heritage	City of Johannesburg
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.74
Museums activities and operation of historical sites	1.08
Botanical and Zoological Gardens and Nature Reserve Activities	1.08
Retail sale of second-hand goods	0.74

B. Performance and Celebration	City of Johannesburg
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.02
Manufacture of musical instruments	0.42
Sound recording and music publishing activities	0.42
Retail sale of music and video recordings in specialised stores	0.42

C. Visual Arts and Crafts	City of Johannesburg
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.70
Photographic activities	1.18
Other publishing activities	2.99
Manufacture of jewellery and related articles	0.70
Research and experimental development on social sciences and humanities	1.70

D. Books and Press	City of Johannesburg
Library and Archives activities	0.63
Book publishing	1.10
Publishing of newspapers, journals and periodicals	1.10
Other publishing activities	1.10
Retail sale of books, newspapers and stationary in specialised stores	0.43
News agency activities	0.31
Other information service activities n.e.c.	0.31
Wholesale of other household goods*	0.43
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.26

E. Audio-visual and Interactive Media	City of Johannesburg
Software Publishing	1.20
Motion picture, video and television programme production activities	1.16
Motion picture, video and television programme post-production activities	1.09
Motion picture, video and television programme distribution activities	1.09
Sound recording and music publishing activities	1.20
Motion picture projection activities	1.20
Radio broadcasting	0.85
Television programming and broadcasting activities	0.85
Web portals	0.85
Renting of video tapes and disks	1.20
News agency activities	0.85
Retail sale of music and video recordings in specialised stores	1.18
Retail sale via mail order houses or via Internet	1.20

F. Design and Creative Services	City of Johannesburg
Specialised design activities	1.47
Architectural and engineering activities and related technical consultancy	0.88
Advertising	0.88

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of City of Tshwane (Pretoria)

A. Cultural and Natural Heritage	City of Tshwane
A.Creative, arts and entertainment activities- Stamps and collectors Items	1.07
Museums activities and operation of historical sites	0.98
Botanical and Zoological Gardens and Nature Reserve Activities	0.98
Retail sale of second-hand goods	1.07

B. Performance and Celebration	City of Tshwane
B. Creative, arts and entertainment activities- Performing arts and Cultural events	0.90
Manufacture of musical instruments	3.59
Sound recording and music publishing activities	3.59
Retail sale of music and video recordings in specialised stores	3.59

C. Visual Arts and Crafts	City of Tshwane
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.14
Photographic activities	0.19
Other publishing activities	0.64
Manufacture of jewellery and related articles	1.14
Research and experimental development on social sciences and humanities	0.29

D. Books and Press	City of Tshwane
Library and Archives activities	0.48
Book publishing	1.06
Publishing of newspapers, journals and periodicals	1.06
Other publishing activities	1.06
Retail sale of books, newspapers and stationary in specialised stores	0.52
News agency activities	0.79
Other information service activities n.e.c.	0.79
Wholesale of other household goods*	0.52
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	1.90

E. Audio-visual and Interactive Media	City of Tshwane
Software Publishing	0.54
Motion picture, video and television programme production activities	0.62
Motion picture, video and television programme post-production activities	0.79
Motion picture, video and television programme distribution activities	0.79
Sound recording and music publishing activities	0.54
Motion picture projection activities	0.54
Radio broadcasting	1.35
Television programming and broadcasting activities	1.35
Web portals	1.35
Renting of video tapes and disks	0.54
News agency activities	1.35
Retail sale of music and video recordings in specialised stores	0.90
Retail sale via mail order houses or via Internet	0.54

F. Design and Creative Services	City of Tshwane
Specialised design activities	0.54
Architectural and engineering activities and related technical consultancy	1.12
Advertising	1.12

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Ekurhuleni (East Rand)

A. Cultural and Natural Heritage	Ekurhuleni
A.Creative, arts and entertainment activities- Stamps and collectors Items	1.09
Museums activities and operation of historical sites	0.97
Botanical and Zoological Gardens and Nature Reserve Activities	0.97
Retail sale of second-hand goods	1.09

B. Performance and Celebration	Ekurhuleni
B. Creative, arts and entertainment activities- Performing arts and Cultural events	0.94
Manufacture of musical instruments	2.57
Sound recording and music publishing activities	2.57
Retail sale of music and video recordings in specialised stores	2.57

C. Visual Arts and Crafts	Ekurhuleni
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.13
Photographic activities	0.28
Other publishing activities	0.62
Manufacture of jewellery and related articles	1.13
Research and experimental development on social sciences and humanities	0.41

D. Books and Press	Ekurhuleni
Library and Archives activities	0.68
Book publishing	1.02
Publishing of newspapers, journals and periodicals	1.02
Other publishing activities	1.02
Retail sale of books, newspapers and stationary in specialised stores	0.77
News agency activities	1.12
Other information service activities n.e.c.	1.12
Wholesale of other household goods*	0.77
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	1.86

E. Audio-visual and Interactive Media	Ekurhuleni
Software Publishing	0.54
Motion picture, video and television programme production activities	0.63
Motion picture, video and television programme post-production activities	0.79
Motion picture, video and television programme distribution activities	0.79
Sound recording and music publishing activities	0.54
Motion picture projection activities	0.54
Radio broadcasting	1.34
Television programming and broadcasting activities	1.34
Web portals	1.34
Renting of video tapes and disks	0.54
News agency activities	1.34
Retail sale of music and video recordings in specialised stores	0.92
Retail sale via mail order houses or via Internet	0.54

F. Design and Creative Services	Ekurhuleni
Specialised design activities	0.51
Architectural and engineering activities and related technical consultancy	1.13
Advertising	1.13

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of eThekwini (Durban)

A. Cultural and Natural Heritage	eThekwini
A.Creative, arts and entertainment activities- Stamps and collectors Items	1.20
Museums activities and operation of historical sites	0.94
Botanical and Zoological Gardens and Nature Reserve Activities	0.94
Retail sale of second-hand goods	1.20

B. Performance and Celebration	eThekwini
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.02
Manufacture of musical instruments	0.51
Sound recording and music publishing activities	0.51
Retail sale of music and video recordings in specialised stores	0.51

C. Visual Arts and Crafts	eThekwini
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.87
Photographic activities	2.35
Other publishing activities	0.92
Manufacture of jewellery and related articles	0.87
Research and experimental development on social sciences and humanities	1.74

D. Books and Press	eThekwini
Library and Archives activities	1.55
Book publishing	0.82
Publishing of newspapers, journals and periodicals	0.82
Other publishing activities	0.82
Retail sale of books, newspapers and stationary in specialised stores	1.98
News agency activities	2.45
Other information service activities n.e.c.	2.45
Wholesale of other household goods*	1.98
Services of authors, composers, sculptors and other artists, except performing artists	0.78

E. Audio-visual and Interactive Media	eThekwini
Software Publishing	0.91
Motion picture, video and television programme production activities	0.93
Motion picture, video and television programme post-production activities	0.96
Motion picture, video and television programme distribution activities	0.96
Sound recording and music publishing activities	0.91
Motion picture projection activities	0.91
Radio broadcasting	1.07
Television programming and broadcasting activities	1.07
Web portals	1.07
Renting of video tapes and disks	0.91
News agency activities	1.07
Retail sale of music and video recordings in specialised stores	0.86
Retail sale via mail order houses or via Internet	0.91

F. Design and Creative Services	eThekwini
Specialised design activities	1.05
Architectural and engineering activities and related technical consultancy	0.99
Advertising	0.99

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Polokwane (Pietersburg)

A. Cultural and Natural Heritage	Polokwane
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.90
Museums activities and operation of historical sites	1.03
Botanical and Zoological Gardens and Nature Reserve Activities	1.03
Retail sale of second-hand goods	0.90

B. Performance and Celebration	Polokwane
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.04
Manufacture of musical instruments	N/A
Sound recording and music publishing activities	N/A
Retail sale of music and video recordings in specialised stores	N/A

C. Visual Arts and Crafts	Polokwane
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	-
Photographic activities	9.59
Other publishing activities	0.00
Manufacture of jewellery and related articles	-
Research and experimental development on social sciences and humanities	11.96

D. Books and Press	Polokwane
Library and Archives activities	8.96
Book publishing	0.00
Publishing of newspapers, journals and periodicals	0.00
Other publishing activities	0.00
Retail sale of books, newspapers and stationary in specialised stores	7.86
News agency activities	4.63
Other information service activities n.e.c.	4.63
Wholesale of other household goods*	7.86
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	-

E. Audio-visual and Interactive Media	Polokwane
Software Publishing	1.25
Motion picture, video and television programme production activities	1.20
Motion picture, video and television programme post-production activities	1.11
Motion picture, video and television programme distribution activities	1.11
Sound recording and music publishing activities	1.25
Motion picture projection activities	1.25
Radio broadcasting	0.80
Television programming and broadcasting activities	0.80
Web portals	0.80
Renting of video tapes and disks	1.25
News agency activities	0.80
Retail sale of music and video recordings in specialised stores	1.36
Retail sale via mail order houses or via Internet	1.25

F. Design and Creative Services	Polokwane
Specialised design activities	1.08
Architectural and engineering activities and related technical consultancy	0.98
Advertising	0.98

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Mbombela (Nelspruit)

A. Cultural and Natural Heritage	Mbombela
A.Creative, arts and entertainment activities- Stamps and collectors Items	1.01
Museums activities and operation of historical sites	1.00
Botanical and Zoological Gardens and Nature Reserve Activities	1.00
Retail sale of second-hand goods	1.01

B. Performance and Celebration	Mbombela
B. Creative, arts and entertainment activities- Performing arts and Cultural events	0.97
Manufacture of musical instruments	1.70
Sound recording and music publishing activities	1.70
Retail sale of music and video recordings in specialised stores	1.70

C. Visual Arts and Crafts	Mbombela
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	1.18
Photographic activities	0.51
Other publishing activities	0.01
Manufacture of jewellery and related articles	1.18
Research and experimental development on social sciences and humanities	0.68

D. Books and Press	Mbombela
Library and Archives activities	6.65
Book publishing	0.09
Publishing of newspapers, journals and periodicals	0.09
Other publishing activities	0.09
Retail sale of books, newspapers and stationary in specialised stores	6.76
News agency activities	4.65
Other information service activities n.e.c.	4.65
Wholesale of other household goods*	6.76
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	11.58

E. Audio-visual and Interactive Media	Mbombela
Software Publishing	1.03
Motion picture, video and television programme production activities	1.02
Motion picture, video and television programme post-production activities	1.01
Motion picture, video and television programme distribution activities	1.01
Sound recording and music publishing activities	1.03
Motion picture projection activities	1.03
Radio broadcasting	0.96
Television programming and broadcasting activities	0.96
Web portals	0.96
Renting of video tapes and disks	1.03
News agency activities	0.96
Retail sale of music and video recordings in specialised stores	1.40
Retail sale via mail order houses or via Internet	1.03

F. Design and Creative Services	Mbombela
Specialised design activities	0.79
Architectural and engineering activities and related technical consultancy	1.06
Advertising	1.06

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Sol Plaatje (Kimberley)

A. Cultural and Natural Heritage	Sol Plaatje
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.86
Museums activities and operation of historical sites	1.05
Botanical and Zoological Gardens and Nature Reserve Activities	1.05
Retail sale of second-hand goods	0.86

B. Performance and Celebration	Sol Plaatje
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.03
Manufacture of musical instruments	0.13
Sound recording and music publishing activities	0.13
Retail sale of music and video recordings in specialised stores	0.13

C. Visual Arts and Crafts	Sol Plaatje
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.65
Photographic activities	4.79
Other publishing activities	0.15
Manufacture of jewellery and related articles	0.65
Research and experimental development on social sciences and humanities	4.97

D. Books and Press	Sol Plaatje
Library and Archives activities	6.33
Book publishing	0.19
Publishing of newspapers, journals and periodicals	0.19
Other publishing activities	0.19
Retail sale of books, newspapers and stationary in specialised stores	5.18
News agency activities	7.57
Other information service activities n.e.c.	7.57
Wholesale of other household goods*	5.18
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.82

E. Audio-visual and Interactive Media	Sol Plaatje
Software Publishing	0.88
Motion picture, video and television programme production activities	0.90
Motion picture, video and television programme post-production activities	0.95
Motion picture, video and television programme distribution activities	0.95
Sound recording and music publishing activities	0.88
Motion picture projection activities	0.88
Radio broadcasting	1.10
Television programming and broadcasting activities	1.10
Web portals	1.10
Renting of video tapes and disks	0.88
News agency activities	1.10
Retail sale of music and video recordings in specialised stores	0.75
Retail sale via mail order houses or via Internet	0.88

F. Design and Creative Services	Sol Plaatje
Specialised design activities	0.99
Architectural and engineering activities and related technical consultancy	1.00
Advertising	1.00

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of Tlokwe City Council (Potchefstroom)

A. Cultural and Natural Heritage	Tlokwe City Council
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.97
Museums activities and operation of historical sites	1.01
Botanical and Zoological Gardens and Nature Reserve Activities	1.01
Retail sale of second-hand goods	0.97

B. Performance and Celebration	Tlokwe City Council
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.04
Manufacture of musical instruments	0.02
Sound recording and music publishing activities	0.02
Retail sale of music and video recordings in specialised stores	0.02

C. Visual Arts and Crafts	Tlokwe City Council
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.15
Photographic activities	8.21
Other publishing activities	0.85
Manufacture of jewellery and related articles	0.15
Research and experimental development on social sciences and humanities	8.42

D. Books and Press	Tlokwe City Council
Library and Archives activities	4.36
Book publishing	0.44
Publishing of newspapers, journals and periodicals	0.44
Other publishing activities	0.44
Retail sale of books, newspapers and stationary in specialised stores	4.19
News agency activities	4.98
Other information service activities n.e.c.	4.98
Wholesale of other household goods*	4.19
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.08

E. Audio-visual and Interactive Media	Tlokwe City Council
Software Publishing	0.91
Motion picture, video and television programme production activities	0.93
Motion picture, video and television programme post-production activities	0.96
Motion picture, video and television programme distribution activities	0.96
Sound recording and music publishing activities	0.91
Motion picture projection activities	0.91
Radio broadcasting	1.07
Television programming and broadcasting activities	1.07
Web portals	1.07
Renting of video tapes and disks	0.91
News agency activities	1.07
Retail sale of music and video recordings in specialised stores	0.90
Retail sale via mail order houses or via Internet	0.91

F. Design and Creative Services	Tlokwe City Council
Specialised design activities	0.99
Architectural and engineering activities and related technical consultancy	1.00
Advertising	1.00

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

Relative Importance Index on CCI sectors per cluster of City of Cape Town

A. Cultural and Natural Heritage	City of Cape Town
A.Creative, arts and entertainment activities- Stamps and collectors Items	0.75
Museums activities and operation of historical sites	1.08
Botanical and Zoological Gardens and Nature Reserve Activities	1.08
Retail sale of second-hand goods	0.75

B. Performance and Celebration	City of Cape Town
B. Creative, arts and entertainment activities- Performing arts and Cultural events	1.00
Manufacture of musical instruments	1.06
Sound recording and music publishing activities	1.06
Retail sale of music and video recordings in specialised stores	1.06

C. Visual Arts and Crafts	City of Cape Town
C.Creative, arts and entertainment activities- Fine Art and other visual art ex. Cartoonists	0.89
Photographic activities	1.74
Other publishing activities	1.46
Manufacture of jewellery and related articles	0.89
Research and experimental development on social sciences and humanities	0.84

D. Books and Press	City of Cape Town
Library and Archives activities	0.62
Book publishing	1.08
Publishing of newspapers, journals and periodicals	1.08
Other publishing activities	1.08
Retail sale of books, newspapers and stationary in specialised stores	0.43
News agency activities	0.74
Other information service activities n.e.c.	0.74
Wholesale of other household goods*	0.43
D.Creative arts and entertainment activities- Services of authors, composers, sculptors and other artists, except performing artists	0.66

E. Audio-visual and Interactive Media	City of Cape Town
Software Publishing	1.34
Motion picture, video and television programme production activities	1.28
Motion picture, video and television programme post-production activities	1.16
Motion picture, video and television programme distribution activities	1.16
Sound recording and music publishing activities	1.34
Motion picture projection activities	1.34
Radio broadcasting	0.76
Television programming and broadcasting activities	0.76
Web portals	0.76
Renting of video tapes and disks	1.34
News agency activities	0.76
Retail sale of music and video recordings in specialised stores	0.45
Retail sale via mail order houses or via Internet	1.34

F. Design and Creative Services	City of Cape Town
Specialised design activities	1.16
Architectural and engineering activities and related technical consultancy	0.96
Advertising	0.96

Colour Keys:
Selected CCI Cluster
Chosen CCI sector/s analysed
Relative Impact
> 1 is above normal
< 1 is below normal

8. References

- Koschatzky, K.; Lo, V. (2007): Methodological framework for cluster analyses. Fraunhofer Institute for Systems and Innovation Research: Working Papers Firms and Region, No. R1/2007, Karlsruhe, Germany.
- Andersen, T.; Bjerre, M.; Hansson, E. W. (2006): The Cluster Benchmarking Project: Pilot Project Report - Benchmarking clusters in the knowledge-based economy. Norden - Nordic Innovation Centre, Oslo, Norway. Andersson et al.
- Andersson, T.; Schwaag Serger, S.; Sörvik, J.; Wise Hansson, E. (2004): The Cluster Policies Whitebook. IKED - International Organisation for Knowledge Economy and Enterprise Development, Malmö, Sweden.
- Asheim, B.; Cooke, P.; Martin, R. (2006). The rise of the cluster concept in regional analysis and policy: a critical assessment. In: Asheim, B.; Cooke, P.; Martin, R. (ed.): Clusters and regional development: Critical reflections and explorations. London / New York: Routledge, 1-29.
- Bergman, E.M.; Feser, E.J. (1999): Industrial and Regional Clusters: Concepts and Comparative Applications. The Web Book of Regional Science. Regional Research Institute, West Virginia Institute. <http://www.rri.wvu.edu/WebBook/Bergman-Feser/contents.htm>.
- Boesso, I.; D'Orazio, M. S. (2006): Public policy to stimulate networks: a strategic model for clusters evolution, http://www.ispim.org/members/proceedings/ISPIM2006/Boesso_Ivan_Paper_1.pdf
- Bührer, S. (2002): Network Analysis. In: G. Fahrenkrog, W. Polt, J. Rojo, A. Tübke, K. Zinöcker (ed.): RTD Evaluation Toolbox. Seville: European Commission, pp. 201-209.
- Cluster Navigators Ltd. (2001): Cluster Building: A toolkit - a manual for starting and developing local clusters in New Zealand.
- DeBresson, Chris; Hu, Xiaoping (1999): Identifying clusters of innovative activity: A new approach and a toolbox. In: Boosting Innovation: The Cluster Approach. Paris: Organisation for Economic Co-operation and Development, Paris, pp. 27- 59.
- Drejer, I.; Kristensen, F.S.; Laurensen, K. (1999): Cluster studies as a basis for industrial policy: The case of Denmark. In: Industry & Innovation, Volume 6(2), pp. 171 – 190.
- dti (2004): A Practical Guide to Cluster Development. London: Department of Trade and Industry; A Report to the Department of Trade and Industry.
- European Cluster Observatory European Cluster Observatory - <http://www.clusterobservatory.eu/>
- Hoen, A. R. (no date): Identifying linkages with Cluster-based Methodology. Den Haag; Netherlands Bureau for Economic Policy Analysis.
- Häder, Michael and Häder, Sabine (1995): Delphi und Kognitionspsychologie: Ein Zugang zur theoretischen Fundierung der Delphi-Methode, in: ZUMA-Nachrichten, vol. 37, 19. November 1995, p. 12.
- Von Hofe, R.; Cheruiyot, K. (2017): Importance of Industrial clusters and Inter-industry Linkages for Regional Policy in the Gauteng City-Region. Photocopy.

