



# FIDIT

## **DIGITAL TRANSFORMATIONS IN CULTURE - DEVELOPMENT OF THE DOCUMENT REPOSITORY**

Božidar Kovačić  
Faculty of informatics and digital technologies  
University of Rijeka, Croatia

**UNIRI**

Sveučilište u Rijeci  
**Fakultet informatike  
i digitalnih tehnologija**

[www.inf.uniri.hr](http://www.inf.uniri.hr)

# DIGITAL TRANSFORMATIONS IN CULTURE

---



Sveučilište u Rijeci  
Fakultet informatike  
i digitalnih tehnologija  
[www.inf.uniri.hr](http://www.inf.uniri.hr)

- Topics
  - Introduction
  - MESOC project
  - MESOC document repository
  - Conclusion

# INTRODUCTION

---



- Digital transformations in culture:
  - Developing an authentic interest in employees and desire to use digital tools to produce better business outcomes.
  - Competency of digital dexterity requires significant guidance, empowerment, and support from leadership throughout the organization.
  - Organizational culture consists of the collective attitude, behaviors, goals, and practices performed by your frontline employees and management.

# MESOC PROJECT

---



- MESOC - Measuring the Social Dimension of Culture
  - Research and Innovation Action designed to propose, test and validate an innovative and original approach to measuring the societal value and impacts of culture and cultural policies and practices, related to three crossover themes of the new European Agenda for Culture:
    - Health and Wellbeing
    - Urban and Territorial Renovation
    - People's Engagement and Participation

# MESOC PROJECT



- To propose a (tentative) set of statistical data sources (possibly including new ones that are practically and economically feasible) which could complement existing measures of the societal value and impacts of culture by adding its effects on personal well-being and health, citizens involvement and participation, urban identity and social cohesion.
- Based on the construction of a 10x3 matrix having the 10 cultural domains identified by UNESCO Framework of Cultural Statistic by row and the 3 crossover themes of the European Agenda for Culture by column.
- Expected output of the project is a Free and Open Access, online service (named the MESOC Toolkit) that could be used by both researchers and practitioners (the latter including both policy makers and cultural operators from all over the EU) to measure the societal value and impacts of cultural policies and practices.

# MESOC

	Health and Well Being	Urban and Territorial Renovation	People's Engagement and Participation
<b>1.Heritage</b>	Inspiring contrasts (old and new)	Valorising the identity of place	Promoting a diffused sense of belonging
<b>2.Archives</b>		Symbolic and intellectual assets	Interlinking distant locations
<b>3.Libraries</b>	Globalisation of local ethos	Libraries taking up new role in city planning (open spaces for civic participation, inclusion of social services, youth association)	Multiculturalism, racial tolerance
<b>4.Book and Press</b>	Promoting solidarity and civic sense		New social models and practices
<b>5.Visual Arts</b>	Art therapies	Sense of place, artistic interventions in the urban fabric	
<b>6.Performing Arts</b>	Art therapies	Increasing the resilience of social structures	
<b>7.Audiovisual and Multimedia</b>	Opening up to new forms of creativity		Social media presence and interaction
<b>8.Architecture</b>	Surrounding landscape	Enhanced value of the public space	Emergence of community spheres
<b>9.Advertising</b>		Multicultural spread and contamination	
<b>10.Art crafts</b>	Art therapies	Building social/local transaction patterns	Practical and concrete grounding of creativity



Figure 1. MESOC 10x3 matrix

# MESOC TOOLKIT

---



Development of MESOC Toolkit web app including core functionalities:

- Data visualization - georeferenced visualization of collected (in repository) and uploaded documents (pilot or scientific studies);
- Trained multiclass and multi-label document classification model based on Random Forest Classifier and TF-IDF document representation model
- Statistical Machine Translation of uploaded content to English language
- Using Google SMT API

# MESOC TOOLIKT

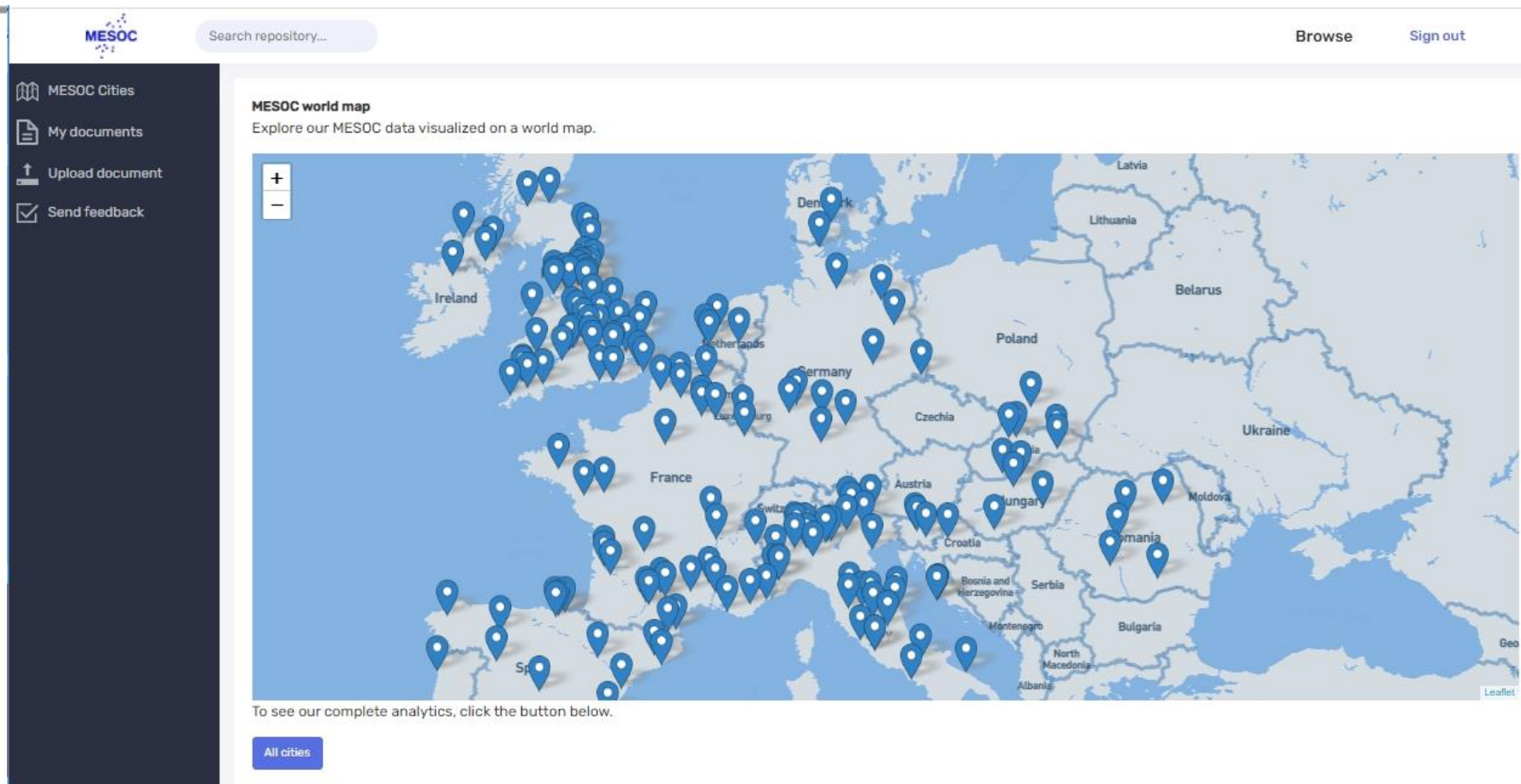


Figure 2. Automatic georeferencing of studies



# MESOC TOOLIKT



Search repository...



Browse

Sign out

- MESOC Cities
- My documents
- Upload document
- Send feedback

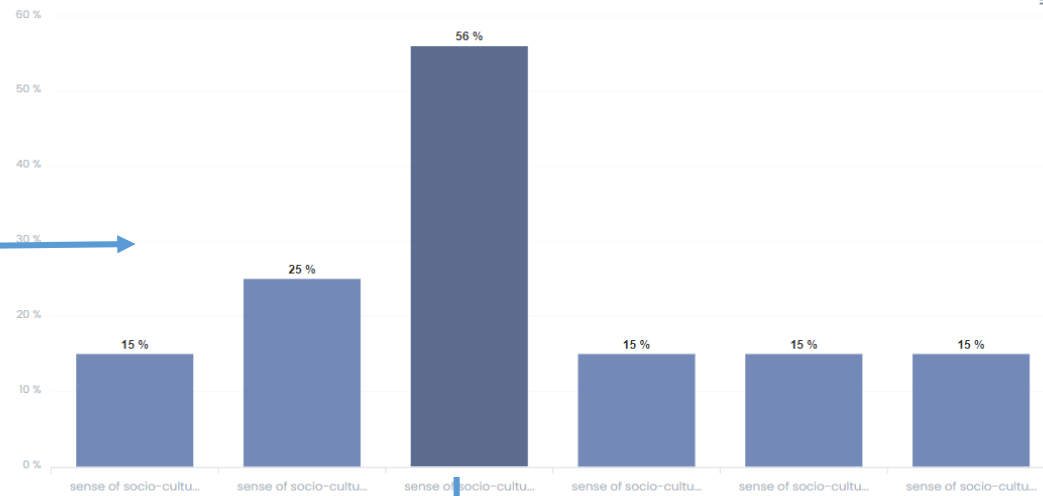
## MESOC matrix

Impact of variables per cell in a given location

	Health and Wellbeing	Urban and Territorial Renovation	People's Engagement and Participation
Heritage	3%	55%	4%
Archives	9%	2%	1%
Libraries	2%	6%	17%
Book and Press	4%	4%	55%
Visual Arts	7%	19%	16%
Performing Arts	5%	11%	8%
Audiovisual and Multimedia	0%	0%	4%
Architecture	21%	9%	4%
Advertising	6%	1%	8%
Art crafts	3%	8%	8%

## MESOC Graph

Distribution of variables impacting selected cell



See decomposition

## Similar documents

Document similarity by selected cell

title 76%	Rijeka European Capital of Culture detailed plan. 18%	title 76%	title 76%	title 76%
title 76%	title 76%			

## Similar documents

Document similarity by selected variable

title 76%	Rijeka European Capital of Culture detailed plan. 18%	title 76%	title 76%	title 76%
title 76%	title 76%			

# DOCUMENT REPOSITORY

---



- MESOC Repository of documents
  - A searchable collection of thematic publications.
  - Communication module for data exchange between the document repository and the MESOC Toolkit web application enables fast access and retrieval of data from the document repository and the Mesoc Toolkit app.
  - Available on the official project website, even after the project's end.
  - Their successful deployment will be associated to the academic profile of the research team coordinating the efforts purporting to their delivery.
  - Activity consists in collecting, selecting and analysing relevant documentation on the social impacts of cultural policies, covering all the three dimensions of Health and Well Being, Urban and Territorial Renovation, People's Engagement and Participation

# DOCUMENT REPOSITORY

---



- MESOC Repository of documents
  - MESOC's document repository and its functionalities closely follow the MESOC 10x3 Matrix
  - Document type:
    - Scientific paper
    - Cultural policy
  - Every document is defined by 24 characteristics
    - Data collected from scientific publication databases (e.g., Scopus)
    - Data defined by the domain expert

# DOCUMENT REPOSITORY



Table 1. List of document's characteristic

Data collected from scientific publication databases	Data defined by the domain expert
year of publication	research technique
document title	data provider
abstract	time period of data
keywords	methodology findings and outcomes
author	relevance
Institution	document category
document type	city
language	transition variable
number of pages	keyword transition variable
bibliographic reference	
search database	
open access	
DOI	
link to document	

# DOCUMENT REPOSITORY

---



- Repository offers features for organizing documents in different collections.
- After analysis of the required system, documentation and user requirements, the architecture of the system was designed.
- Relational database is implemented and web application was developed to implement the functionality of entering, searching and retrieving data from document repository.
- Technology for development of Online Document Repository:
  - Relational database MySQL
  - PHP programming language
  - Apache web server

# MESOC REPOSITORY OF DOCUMENT

---



- Overview of general statistics about the documents in the repository have been implemented (follow the MESOC 10x3 Matrix ):
  - document statistics by cells
  - document statistics by cultural domain
  - document statistics by cross-over theme
  - documents statistics by year and cultural domain
  - documents statistics by year and cross-over theme
  - filtering by categories: all, scientific document, gray literature, undefined

# MESOC REPOSITORY OF DOCUMENTS



No.	CULTURAL SECTOR	HEALTH AND WELLBEING	URBAN AND TERRITORIAL RENOVATION	PEOPLE ENGAGEMENT AND PARTICIPATION	GENERAL	DOCUMENT INCLUDED IN TWO OR MORE CELLS	TOTAL
1	Heritage	26	23	18	1	128	196
2	Archives	0	0	7	1	35	43
3	Libraries	5	8	13	0	51	77
4	Book and Press	21	0	15	2	58	96
5	Visual Arts	32	8	6	2	138	186
6	Performing Arts	94	3	56	4	135	292
7	Audiovisual and Multimedia	27	6	7	0	91	131
8	Architecture	12	7	24	1	51	95
9	Advertising	8	4	2	0	8	22
10	Art crafts	17	2	4	1	46	70
11	General cultural dimension	43	52	29	65	103	292
	<b>TOTAL</b>	<b>285</b>	<b>113</b>	<b>181</b>	<b>77</b>	<b>844</b>	

Figure 3. General statistics of documents

# MESOC REPOSITORY OF DOCUMENTS



Sveučilište u Rijeci  
Fakultet informatike  
i digitalnih tehnologija  
[www.inf.uniri.hr](http://www.inf.uniri.hr)

[HOME](#) [About application](#) [Contact](#)

[Sign in](#)

Document repository application

## Welcome

Document repository application

### Document storage

Storing documents and metadata. Review of complete entries, review of documents by multiple criteria.

### Reporting

Statistical overview of documents by cells of the MESIC matrix.

### Free access

[Free access](#)

Figure 4. Home page of Online Repository of Document



# MESOC REPOSITORY OF DOCUMENTS



Documents view Documents search [Statistical analysis](#)

[View](#)

DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUBLICATION	DOCUMENT TYPE	
69	Heritage, Health and Wellbeing: Assessing the impact of a heritage focused intervention on health and wellbeing.	heritage; museum; health; wellbeing; object handling; arts in hospital	2013	Journal_article	<a href="#">Detail</a>
70	Enhancing positive affect and divergent thinking abilities: Play some music and dance.	music; dancing; emotional wellbeing; fatigue	2014	Journal_article	<a href="#">Detail</a>
72	Healing built-environment effects on health outcomes: environment-occupant-health framework.	buildings; built environment; healing; health; healthcare facilities; occupants; outcomes; wellbeing	2019	Journal_article	<a href="#">Detail</a>
73	Audiovisual video eyeglass distraction during dental treatment in children	audiovisual distraction; behavior management; pediatric dentistry; video eyeglasses	2010	Journal_article	<a href="#">Detail</a>
74	The cognitive functioning of older adult instrumental musicians and non-musicians.	cognitive aging; music cognition; executive function; neuropsychology; cognitive reserve	2019	Journal_article	<a href="#">Detail</a>
75	The Diabeates Project: Perceptual, Affective and Psychophysiological Effects of Music and Music-Video in a Clinical Exercise Setting.	affect attention; dissociation; exercise; enjoyment; type 2 diabetes; music; video	2017	Journal_article	<a href="#">Detail</a>
76	A videogame intervention for tobacco product use prevention in adolescents.	videogame; tobacco; prevention; risk perception; adolescents	2019	Journal_article	<a href="#">Detail</a>
77	"If I Were Nick": Men's Responses to an Interactive Video Drama Series to Support Smoking Cessation.	smoking cessation; tobacco use; technology; interactive video drama; self-efficacy	2015	Journal_article	<a href="#">Detail</a>

Figure 5. List of documents in Online Repository of Document

# MESOC REPOSITORY OF DOCUMENTS



Documents Statistical analysis Template

Language Database Document Type Technique Author Country City Institution Territorial context Data providers Cultural sector  
Cross-over theme Keywords Thesaurus Keywords trans. var. Transition variable Document category

[← Back](#)

## DOCUMENT DATA

DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUB.	LINK TO DOCUMENT
641	Participatory arts for older adults: A review of benefits and challenges	Arts; Cognition; Health benefits; Quality of life	2014	<a href="https://www.scopus.com/inward/record.uri?eid=2-s2.0-84928326026&amp;doi=10.1093%2fgeront%2fgnt138&amp;partnerID=40&amp;md5=2a98c30a7a5a36ff9d573b981c85673e">https://www.scopus.com/inward/record.uri?eid=2-s2.0-84928326026&amp;doi=10.1093%2fgeront%2fgnt138&amp;partnerID=40&amp;md5=2a98c30a7a5a36ff9d573b981c85673e</a>

### SUMMARY

This article reviews the scientific literature on the enhancement of healthy aging in older adults through active participation in the arts. Methodologies and conclusions are described for studies of dance, expressive writing, music (singing and instrumental), theatre arts, and visual arts including documentation of mental/physical improvements in memory, creativity, problem solving, everyday competence, reaction time, balance/gait, and quality of life. In addition to these gains in measures of successful aging, the article also provides (in a Supplementary Appendix) some selected examples of arts engagement for remedial purposes. Finally, it offers suggestions for expanding inquiry into this underinvestigated corner of aging research. © 2013 The Author. Published by Oxford University Press on behalf of The Gerontological Society of America. All rights reserved.

BIBLIOGRAPHIC REFERENCE	NUMBER OF PAGES	TIME PERIOD OF DATA
Noice T., Noice H., Kramer A.F.; Participatory arts for older adults: A review of benefits and challenges ;Gerontologist vol:54 issue: 5.0 page:741.0	0	

METHODOLOGY

FINDINGS AND OUTCOMES

Figure 6. Review of document's data

# MESOC REPOSITORY OF DOCUMENTS



General statistic Cultural sector Cross-over theme Year & Cultural sector Year & Cross-over theme

ALL DOCUMENTS SCIENTIFIC DOCUMENTS GREY LITERATURE UNDEFINED

SELECTED: ALL DOCUMENTS

No.	CULTURAL SECTOR	HEALTH AND WELLBEING	URBAN AND TERRITORIAL RENOVATION	PEOPLE ENGAGEMENT AND PARTICIPATION	GENERAL	DOCUMENT INCLUDED IN TWO OR MORE CELLS	TOTAL
1	Heritage	26	23	18	1	128	196
2	Archives	0	0	7	1	35	43
3	Libraries	5	8	13	0	51	77
4	Book and Press	21	0	15	2	58	96
5	Visual Arts	32	8	6	2	138	186
6	Performing Arts	94	3	56	4	135	292
7	Audiovisual and Multimedia	27	6	7	0	91	131
8	Architecture	12	7	24	1	51	95
9	Advertising	8	4	2	0	8	22
10	Art crafts	17	2	4	1	46	70
11	General cultural dimension	43	52	29	65	103	292
	<b>TOTAL</b>	<b>285</b>	<b>113</b>	<b>181</b>	<b>77</b>	<b>844</b>	

Figure 7. Repository of document statistics

# MESOC REPOSITORY OF DOCUMENTS



CULTURAL DOMAIN: Heritage		CROSS-OVER THEME: People's Engagement and Participation			
DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUBLICATION		
146	Social inclusion, the museum and the dynamics of sectoral change.	Social inclusion; Museums; Organizational change	2003	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
443	A day at the museum: The impact of field trips on middle school science achievement	achievement; field trips/excursions; informal science; museum education; urban education	2016	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
445	Assessing scientific citizenship through science centre visitor studies	Museology; Museums; Visitors;	2014	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
448	Multiple Modes of Meaning-Making in a Science Center	Science Museum; Diorama; Visitors;	2004	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
549	Involving social participation in the preservation of heritage: The experience of Greater Poland and Kujavia	Preservation strategies; Social and economic aspects in heritage; Social participation	2009	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
576	The social and cultural impact of tourism development on world heritage sites: A case of the old town of Lijiang, China, 2000–2004	China; Indigenous society; Lijiang; Migration of population; Social impact of tourism; World Heritage Site	2006	<a href="#">Detail</a>	<a href="#">Open in new tab</a>
681	The sociocultural impact of adaptive reuse of immovable cultural heritage from the perspective of direct users and the local community	Adaptive reuse; Cultural heritage; Heritage management; Impact assessment; Sustainable development;	2020	<a href="#">Detail</a>	<a href="#">Open in new tab</a>

Figure 8. List of documents in selected cell

# MESOC REPOSITORY OF DOCUMENTS



[← List](#) [← Statistic](#)

## DOCUMENT DATA

DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUB.	LINK TO DOCUMENT
146	Social inclusion, the museum and the dynamics of sectoral change.	Social inclusion; Museums; Organizational change	2003	<a href="https://journals.le.ac.uk/ojs1/index.php/mas/article/view/13/53">https://journals.le.ac.uk/ojs1/index.php/mas/article/view/13/53</a>

### SUMMARY

In the last two years, the term social inclusion has been widely adopted, though frequently misapplied, within UK museum sector policy and rhetoric. Originally understood by many to be simply a synonym for access or audience development, (concepts that most within the sector are at least familiar, if not entirely comfortable, with), there is now growing recognition that the challenges presented by the inclusion agenda are, in fact, much more significant and the implications more fundamental and far-reaching. A growing body of research into the social role and impact of museums suggests that engagement with the concepts of social inclusion and exclusion will require museums - and the profession and sector as a whole - to radically rethink their purposes and goals and to renegotiate their relationship to, and role within, society. In short, if museums are to become effective agents for social inclusion, a paradigmatic shift in the purpose and role of museums in society, and concomitant changes in working practices, will be required. Though the focus of this paper, the instigation of change, draws upon government policy development and research within the UK context, a consideration of the relevance of the concept of social inclusion to the museum highlights the broader, international relevance of this discussion.

BIBLIOGRAPHIC REFERENCE	NUMBER OF PAGES	TIME PERIOD OF DATA
Sandell, R. (2003). Social inclusion, the museum and the dynamics of sectoral change. <i>Museum &amp; Society</i> , 1(1): 45-62.	18	

METHODOLOGY	FINDINGS AND OUTCOMES
This paper builds on research undertaken for the Heritage Lottery Fund as part of their strategic assessment of the needs of the museum sector <sup>7</sup> . Interviews were conducted with Jocelyn Dodd,	The author identifies a set of intertwined strategies to enhance a change in museums towards social inclusion: to enable a shift in the values and attitudes

Figure 9. Review of document's data

# MESOC REPOSITORY OF DOCUMENTS



← Statistic

CULTURAL DOMAIN: Heritage		CROSS-OVER THEME: People's Engagement and Participation		
DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUBLICATION	
146	Social inclusion, the museum and the dynamics of sectoral change.	Social inclusion; Museums; Organizational change	2003	<a href="#">Detail</a> <a href="#">Open in new tab</a>
443	A day at the museum: The impact of field trips on middle school science achievement	achievement; field trips/excursions; informal science; museum education; urban education	2016	<a href="#">Detail</a> <a href="#">Open in new tab</a>
445	Assessing scientific citizenship through science centre visitor studies	Museology; Museums; Visitors;	2014	<a href="#">Detail</a> <a href="#">Open in new tab</a>
448	Multiple Modes of Meaning-Making in a Science Center	Science Museum; Diorama; Visitors;	2004	<a href="#">Detail</a> <a href="#">Open in new tab</a>
549	Involving social participation in the preservation of heritage: The experience of Greater Poland and Kujavia	Preservation strategies; Social and economic aspects in heritage; Social participation	2009	<a href="#">Detail</a> <a href="#">Open in new tab</a>
576	The social and cultural impact of tourism development on world heritage sites: A case of the old town of Lijiang, China, 2000–2004	China; Indigenous society; Lijiang; Migration of population; Social impact of tourism; World Heritage Site	2006	<a href="#">Detail</a> <a href="#">Open in new tab</a>
681	The sociocultural impact of adaptive reuse of immovable cultural heritage from the perspective of direct users and the local community	Adaptive reuse; Cultural heritage; Heritage management; Impact assessment; Sustainable development;	2020	<a href="#">Detail</a> <a href="#">Open in new tab</a>

Figure 10. Repository of document statistics

# MESOC REPOSITORY OF DOCUMENTS



Documents view Documents search Statistical analysis

← List ← Statistic

## DOCUMENT DATA

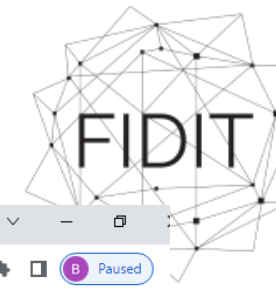
DOCUMENT ID	TITLE	KEYWORDS	YEAR OF PUB.	LINK TO DOCUMENT
146	Social inclusion, the museum and the dynamics of sectoral change.	Social inclusion; Museums; Organizational change	2003	<a href="https://journals.le.ac.uk/ojs1/index.php/mas/article/view/13/53">https://journals.le.ac.uk/ojs1/index.php/mas/article/view/13/53</a>

**SUMMARY**

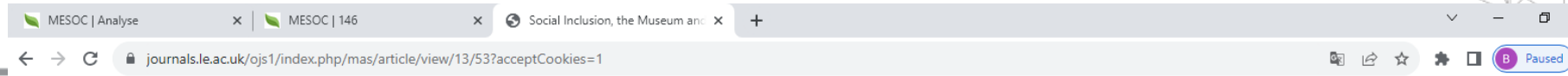
In the last two years, the term social inclusion has been widely adopted, though frequently misapplied, within UK museum sector policy and rhetoric. Originally understood by many to be simply a synonym for access or audience development, (concepts that most within the sector are at least familiar, if not entirely comfortable, with), there is now growing recognition that the challenges presented by the inclusion agenda are, in fact, much more significant and the implications more fundamental and far-reaching. A growing body of research into the social role and impact of museums suggests that engagement with the concepts of social inclusion and exclusion will require museums - and the profession and sector as a whole - to radically rethink their purposes and goals and to renegotiate their relationship to, and role within, society. In short, if museums are to become effective agents for social inclusion, a paradigmatic shift in the purpose and role of museums in society, and concomitant changes in working practices, will be required. Though the focus of this paper, the instigation of change, draws upon government policy development and research within the UK context, a consideration of the relevance of the concept of social inclusion to the museum highlights the broader, international relevance of this discussion.

Figure 11. Review of document data in new tab

# MESOC REPOSITORY OF DOCUMENTS



Sveučilište u Rijeci  
Fakultet informatike  
i digitalnih tehnologija  
[www.inf.uniri.hr](http://www.inf.uniri.hr)



## Museum and Society

- Home
- About
- Login
- Search
- Current
- Archives
- Announcements
- MUSEUM STUDIES

Home > Vol 1, No 1 (2003) > Sandell

Download this PDF file

**USER**

Username

Password

Remember me

Login

**ARTICLE TOOLS**

- Abstract
- Print this article
- How to cite item
- Finding References
- Email this article (Login required)
- Email the author (Login required)

**JOURNAL CONTENT**

Figure 12. Review of web page of document



# CONCLUSION

---



Online document repository improvements:

- Defining a databases of cultural indicators for decision making and the design of public policies.
- Researchers in the field of social sciences have access to complete and reliable information for their scientific research.
- Overview of general statistics about the documents in the repository follow the MESOC 10x3 Matrix.
- The potential for future research in the field of cultural economy.



---

Thank you for your attention!

Q/A?