

Evolution and research trends of inclusive museum studies: a bibliometric approach

Abstract

Inclusion is defined as the opportunity disabled people have to fully participate in different contexts: education, work, consumption, entertainment, and other daily social activities. For an understanding of that, this study aims at examine the evolution and research trends of the field of inclusive museums in order propose a line of research that includes growing and emerging concepts in this area of knowledge. For that purpose, technological mapping was carried out by means of a bibliometric analysis that examined 284 publications indexed in Scopus from 1987 to 2018. Results indicate that 47 countries have carried out studies on inclusive museums, within the framework of the research lines inclusive education and education in museums. Research that has been disseminated in greater measure through American journals. This bibliometric study on inclusive museums enabled to shed light on the productivity, impact, and networking of researchers in this field. Finally, this study constitutes a relevant starting point that not only presents trends in the field of inclusive museums but also encourages university communities and cultural institutions (such as Latin American museums) to consider the role they play in said area, as well as the visibility of their research efforts.

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Recibido: marzo 27 de 2019

Aprobado: junio 18 de 2020

Key words:
accessibility, social inclusion,
bibliometric indicators,
technological mapping, museum.



Revista KEPES Año 17 No. 22 julio-diciembre 2020, págs. 161-192 ISSN: 1794-7111(Impreso) ISSN: 2462-8115 (En línea)
DOI: 10.17151/kepes.2020.17.22.7



Evolución y tendencias de investigación de los estudios de museos inclusivos: un enfoque bibliométrico

Resumen

La inclusión se define como la oportunidad que tienen las personas con discapacidad de participar plenamente en diferentes contextos: educación, trabajo, consumo, entretenimiento y otras actividades sociales diarias. Para una comprensión de esto, este estudio tiene por objeto examinar la evolución y las tendencias de investigación en el ámbito de los museos inclusivos, a fin de proponer una línea de investigación que incluya los conceptos crecientes y emergentes en esta área del conocimiento. Para ello se ha realizado una cartografía tecnológica mediante un análisis bibliométrico que ha examinado 284 publicaciones indexadas en Scopus desde 1987 hasta 2018. Los resultados indican que 47 países han realizado estudios sobre museos inclusivos, en el marco de las líneas de investigación educación inclusiva, y la educación en los museos. Investigaciones que han sido divulgadas en mayor medida a través de revistas americanas. Este estudio bibliométrico sobre los museos inclusivos permitió arrojar luz sobre la productividad, el impacto y la creación de redes de investigadores en este campo. Finalmente, este estudio constituye un punto de partida pertinente que no sólo presenta las tendencias en el ámbito de los museos inclusivos, sino que también alienta a las comunidades universitarias y a las instituciones culturales (como los museos latinoamericanos) a considerar el papel que desempeñan en esa esfera, así como la visibilidad de sus esfuerzos de investigación.

Palabras clave:
accesibilidad, inclusión social, indicadores bibliométricos, mapeo tecnológico, museo.

Introduction

Today's globalized world, characterized by cultural diversity, encompasses the coexistence of different religions, ethnicities, and traditions, which interrelate to converge into a globally connected society (Maleuvre, 2012). As a result, the current context is marked by a dynamic and congested flow of information, mainly stimulated by technological progress that offers more possibilities to access and manipulate information according to the needs of different audiences; this evolution is especially relevant to specific institutions. In fact, cultural organizations are making efforts to create inclusive environments for different types of users who had been excluded throughout history (Deng, 2016).

In that regard, inclusion is defined as the opportunity disabled people have to fully participate in different contexts: education, work, consumption, entertainment, and other daily social activities (Florian, 1998 cited in Shepherd, 2009). Such concept has become more relevant in societies in welfare states.

Furthermore, inclusion is a human right and, consequently, new regulations on the topic have transcended as an important motivation for institutions to develop strategies aimed at reducing the barriers to access to different services. Laws have been passed to eliminate discriminatory regulations; for instance, in the United Kingdom it is illegal to deny the provision of services to people with some type of disability or to provide lower quality ones or with different characteristics compared to those offered to other participants or customers (Shepherd, 2009).

Therefore, inclusion initiatives have had a positive impact on the development of different spaces, especially educational institutions and museums. The latter have been used as learning structures and, therefore, they should be understood as inclusive environments. Nevertheless, the provision of inclusive

services to determined individuals or groups with learning disabilities at these organizations is limited and distant, with remarkable differences compared to the offer of traditional educational institutions, i.e., schools (Shepherd, 2009).

Thus, Galla (2012, p. 40) argues that an inclusive museum becomes an “ambitious space created and recreated based on the context and its importance to many of the stakeholders”, because it recovers the heritage of different communities, gives them a voice, shows people different cultural and linguistic spheres, and promotes a sense of belonging in a specific territory and among numerous identities.

Likewise, according to Maleuvre (2012), the experience of social inclusion at museums is understood as the opportunity of different social groups to learn about the character and content of the components of the museum. This democratic purpose is at the core of museums and has led educational institutions to be responsible and sensitive to the expectations and needs of their target audiences.

Additionally, Moore (2016) claims that inclusion emerges as a remarkable principle at museums, which should carry out their own systematic transformation by implementing more equalitarian, inclusive, and responsible practices at the cultural level. Hence, they have applied different inclusion criteria. Some of the most common are community structure, racial demographic characteristics, and interpretation and parity to enjoy the resources.

As a consequence of the situation described above, this study aims at answering one question: What have been the evolution and research trends of inclusive museum studies?

Method

This study aims at establishing the evolution and research trends of the field of inclusive museums in order to propose a line of research that includes growing and emerging concepts in this area of knowledge. For that purpose, technological mapping was carried out by means of a bibliometric analysis that examined 284 publications indexed in Scopus from 1987 to 2018.

The work was divided into three stages: (1) defining the strategies to obtain the information, (2) calculating bibliometric indicators, and (3) establishing future lines of research in the field.

First stage: Obtaining the information

Two key concepts that guide this work, *inclusion* and *museum*, were first identified to obtain the information that would constitute the raw data of the analysis. The selected source of information was the database Scopus, globally recognized for standards that guarantee quality in the available material; one of them is the impact of publications, which ensures the reliability and rigor of this study.

After the field was established and the database supporting the bibliometric analysis was selected, a search equation was created including the main terms (*inclusive AND museum*). Finally, the results were filtered to only those that included said topic in the abstract, title, or keywords. Accordingly, after continuous iterations of advanced searches on Scopus and observing a homogeneous distribution of documents around the topic, the authors entered the following search equation:

TITLE (inclusive AND museum*) OR TITLE (“museum* inclusive*” AND “museum* W/2 inclusion*” OR “museum* W/4 cultural* W/4 diversit*” OR “museum W/2 inclusivity” OR “inclusive design” OR “constructivist museum” OR “universal society” OR “cosmopolitanism” OR “Participatory Museum”) OR TITLE (“evolutionary museum*” AND “social W/3 inclusion”) OR KEY (“museum* inclusive*” AND “museum* W/2 inclusion*” OR “museum* W/4 cultural* W/4 diversit*” OR “museum W/2 inclusivity” OR “inclusive design” OR “constructivist museum” OR “universal society” OR “cosmopolitanism” OR “Participatory Museum”) OR KEY (inclusive AND museum*) OR ABS (“museum* inclusive*” AND “museum* W/2 inclusion*” OR “museum* W/4 cultural* W/4 diversit*” OR “museum W/2 inclusivity” OR “inclusive design” OR “constructivist museum” OR “universal society” OR “cosmopolitanism” OR “Participatory Museum”) OR ABS (inclusive AND museum*) OR ABS (“evolutionary museum*” AND “social W/3 inclusion”)

Regarding the exclusion criteria, the query discarded documents that did not include essential fields, such as year, author(s), or affiliation, because the detailed content of the article is critical for this analysis.

Second stage: Calculating bibliometric indicators

After the information was obtained, several bibliometric indicators were calculated. According to Peralta, Frías and Chaviano (2015) and Arias-Ciro (2020), such metrics enable to quantify the behavior of scientific production, as well as the process of dissemination. The most widely used indicators measure productivity, quality, and collaboration.

Productivity indicators quantify the number of published works. Quality indicators (also known as impact) reflect the number of citations achieved by a publication. Finally, collaboration indicators measure the degree of association

and networking among researchers and other stakeholders responsible for the generation of new knowledge (Peralta, Frías and Chaviano, 2015). The calculation of these three metrics enabled to analyze the scientific production in the field under study.

Third stage: Identifying growing and emerging concepts

Bibliometric indicators provided a clear outlook of the quantity, quality, and level of collaboration of the scientific production in the field of knowledge that motivated this study. Moreover, the retrieved information enabled to establish future lines of work and became the raw data used to identify trends related to inclusion at museums.

Results analysis

The next step was analyzing the results retrieved by the search equation designed with the most representative terms in the field of inclusive museums: *constructivist museum*, *universal society*, *cosmopolitanism*, *participatory museum*, and *inclusive design*. Finally, additional terms related to historical development and evolutionary keywords were included, and the result of this search was a list of 284 works published in Scopus from 1987 to 2018.

The database retrieved 233 articles published in journals, 32 books, 10 book chapters, and 9 conference proceedings. Most articles were published by five journals: International Journal of the Inclusive Museum (n = 80), Museum Management and Curatorship (n = 12), International Journal of Heritage Studies (n = 7), Journal of Systematic Palaeontology (n = 6), and Museum International (n = 6).

Likewise, the United States (n = 81), the United Kingdom (n = 43), Australia (n = 19), Canada (n = 18) and Spain (n = 10) published most articles in the field. Besides, English was the most common language (253 publications), followed by Spanish (4) and Portuguese (3).

Afterward, the 284 publications were analyzed using bibliometric indicators regarding number of publications, impact, and academic links that intertwine in the field. The details of the indicators that were employed to analyze the articles are described below:

Quantity indicators

The following sections describe the quantity indicators that were calculated in this study: year of publication, number of publications per institution, and number of publications per country.

Year of publication

The 284 publications exported from the database (resulting from the search equation to probe the field of inclusive museums) reveal that the first efforts on the topic were published in 1987 by Minchin. After that initial contribution, there was a period of five years that saw a total absence of works in the field. However, as a result of the appearance of the journal *Annals of Carnegie Museum* in 1990, studies reappeared with a wider scope, including evolutionary relationships, biogeography, ecology, geological history, ethnology, and archeology. Thus, research on inclusive museums can be said to have resumed later, in 1992.

Remarkably, the highest number of articles published in a year was 30 in 2017. The average number of citations per publication grew steadily every 5 years, while the frequency of publication and the impact on the academic community presented fluctuating trends, which can be observed in Figure 1.

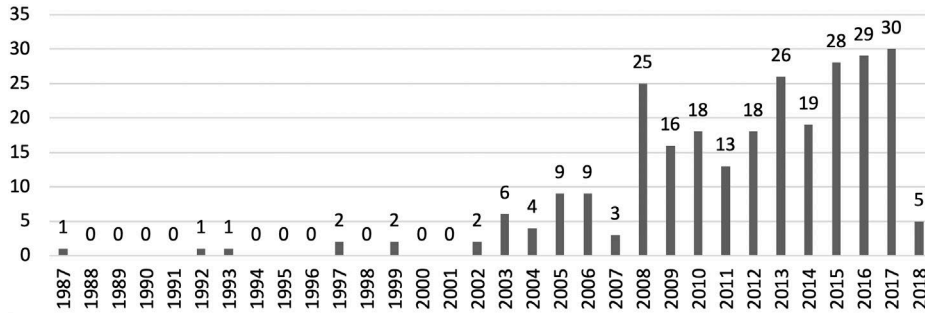


Figure 1. Number of publications per year.
Source: Authors' own work.

The top institutions and academies that most contributed to the dissemination of said 284 publications were the American Museum of Natural History (n = 6), Florida State University (n = 5), Victoria University of Wellington (n = 5), the University of Queensland (n=5), and the American University of Sharjah (n = 4). Figure 2 lists the number of publications per institution.

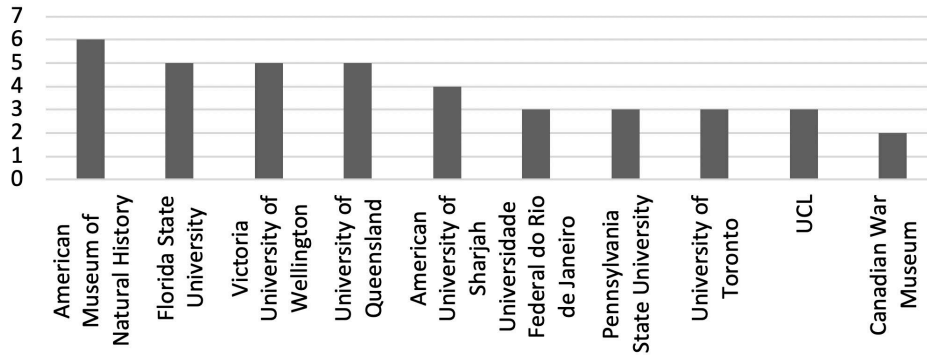


Figure 2. Number of publications per institution.
Source: Authors' own work.

In total, researchers from 47 different countries authored the 284 publications, and the top ten investigators are concentrated in 8 of those nations. The most cited articles were published in the United States, the United Kingdom, and Canada. Regarding the dispersion or concentration of knowledge, this field presented a homogeneous distribution of the contributions; in other words, the Pareto principle was not confirmed in this case: 26.53% of the authors published 80% of the works. The top ten countries were responsible for 75.4% of the publications and more than 50% of the countries contributed with at least 2 articles per year. Figure 3 shows the countries of origin of the top ten most productive authors in the field and Figure 4, the top ten countries in number of publications.

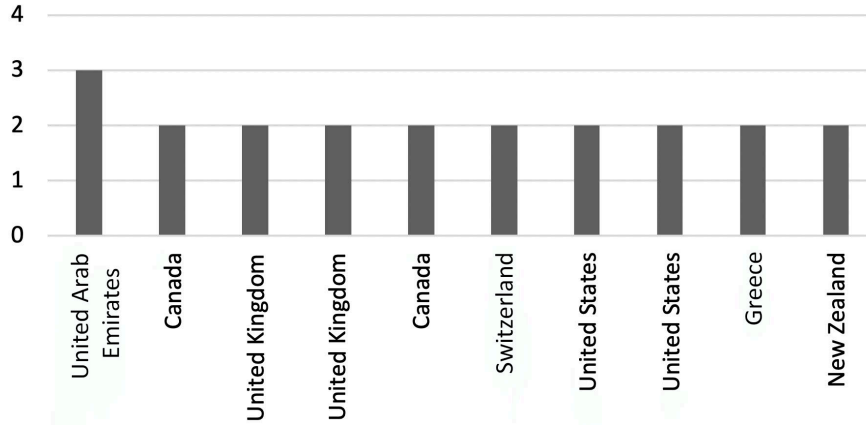


Figure 3. Countries of origin of the top ten most productive researchers.
Source: Authors' own work.

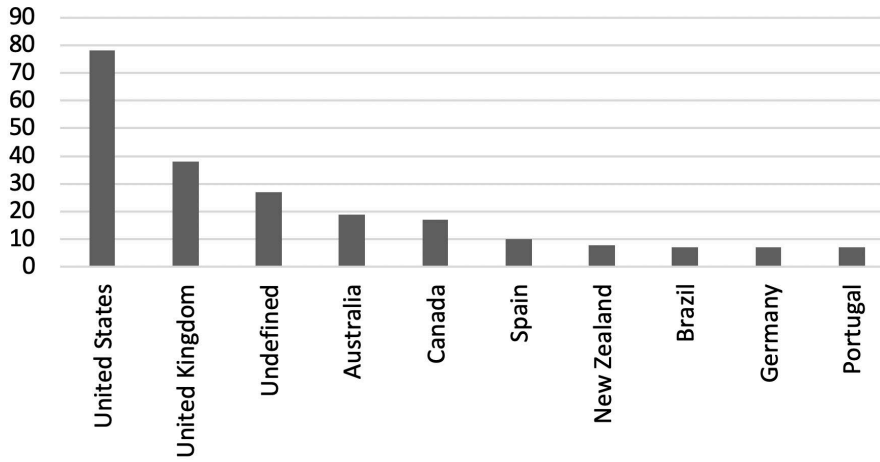


Figure 4. Number of publications per country.
Source: Authors' own work.

Quality indicators

This study considered the indicators detailed below to measure the impact of individual authors and journals.

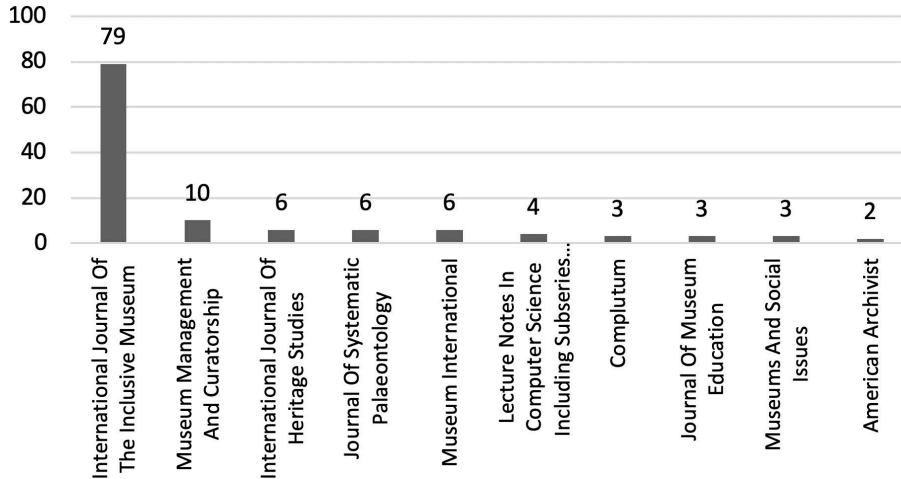


Figure 5. Distribution of the top ten most productive journals in the field of inclusive museums. Source: Authors' own work.

Figure 5 reveals that the number of articles published by the ten most important journals was evenly distributed in an interval between 0 and 100 records per journal. American journals led the list of productivity and impact because that country published most articles ($n=18$); among periodicals from that nation, the International Journal of the Inclusive Museum featured the highest number of articles between 1987 and 2018 ($n=79$).

In turn, the Personality and Social Psychology Bulletin was number one in terms of depth and influence, with an h-index of 162. Besides, the number of articles published by the top five institutions exhibited a fluctuating but growing trend. In that sense, to highlight the journals that had a greater impact on this field, Figure 6 presents the distribution of the top ten journals whose publications had the most significant impact.

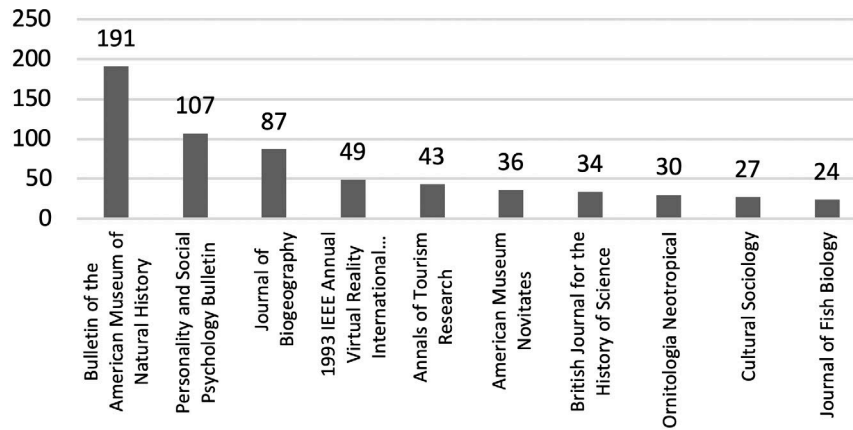


Figure 6. Distribution of the top ten journals whose publications had the greatest impact. Source: Authors' own work.

It can be seen in Figures 7 and 8 that there is no relationship between the most cited authors and the most productive ones (measured in number of publications) in this field. Actually, the most cited authors in the area have published a few studies. However, a holistic analysis of the indicators in this work enabled to infer that effective interchange and cooperation among different countries and regions can promote a faster and more comprehensive development of inclusive museums studies.

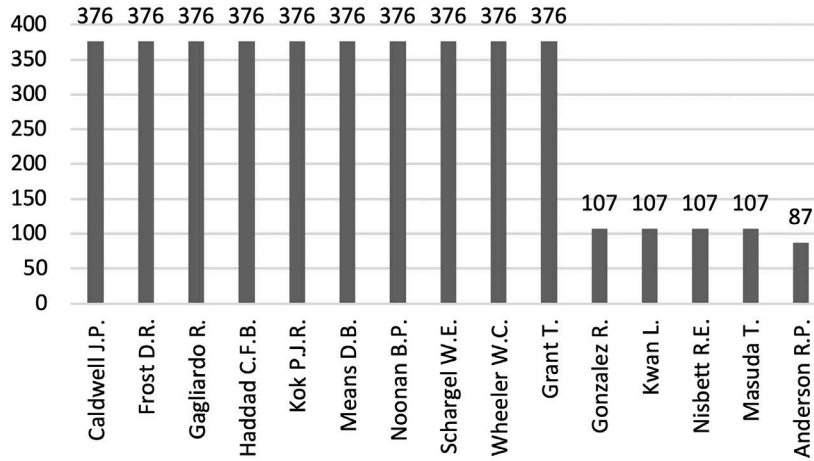


Figure 7. Most cited authors in the field of inclusive museums.
Source: Authors' own work.

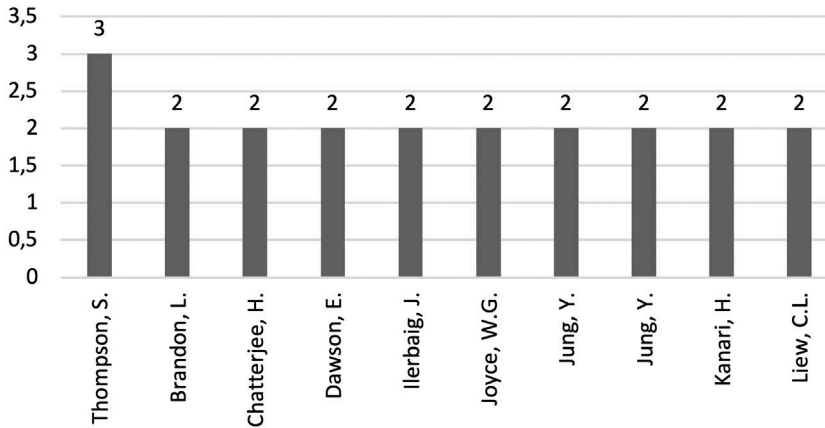


Figure 8. Most productive authors in the field of inclusive museums.
Source: Authors' own work.

Undoubtedly, interactive museums have been studied in the literature in recent years, and networks have already been developed, connecting publications, authors, and fields of knowledge. The following analysis brings to light the networks established by authors over the years since the birth of this field. Due to the drastic change in the number of articles published before and after 2003, the time window was divided into two periods with proportional values (based on their mean scientific production registered in Scopus): 1987-2003 and 1987-2018.

It can be observed that authors joined the field through already established networks. Subnetworks have been grown in size and become less dense, which is reflected in their degree of clustering and diameter. Nevertheless, a slight increase in the density of the network (Figure 9) shows that new authors interact with a few collaborators in their subnetwork and, consequently, the expected characteristic distance did not suffer variations.

Another relevant behavior is the existence of a single link of the shortest path connecting all the nodes in a network (1,381). Besides, the maximum distance between any pair of nodes in the network equals 1, which is a characteristic of internal knowledge management networks (Fiscella & Vásquez, 2008). Figures 9 and 10 below are the bibliometric maps of said periods (1987-2003 and 1987-2018); they support the remarks above.

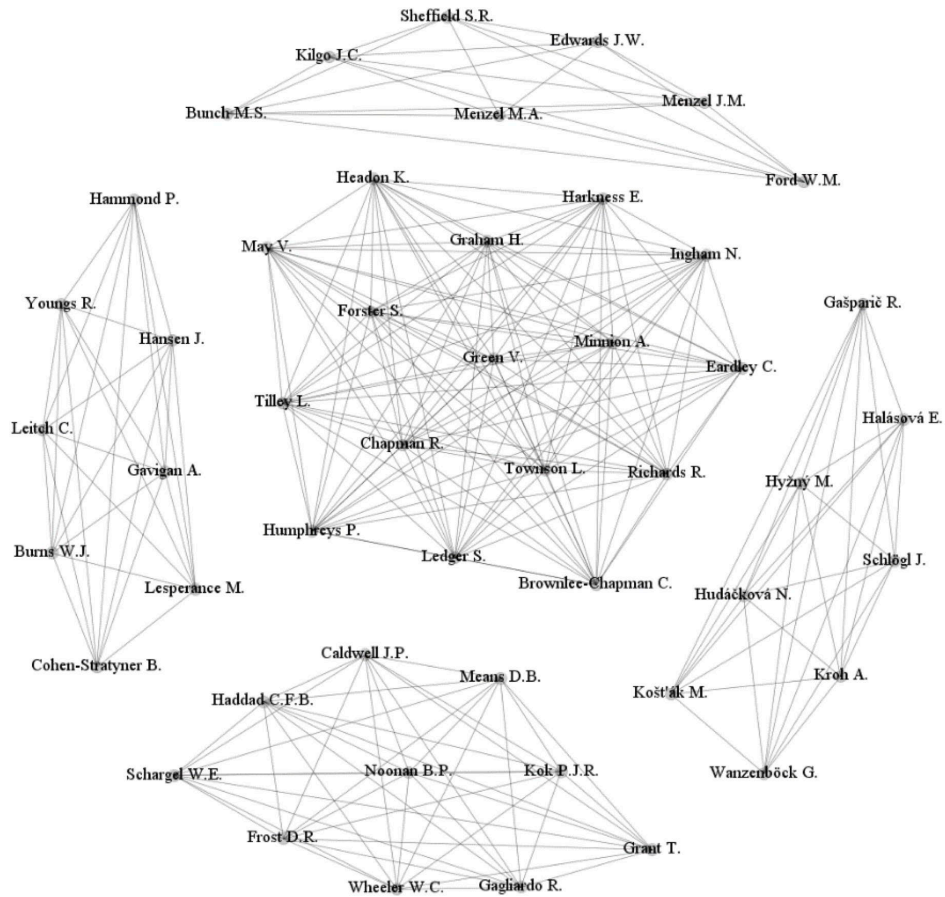


Figure 9. Bibliometric map of the author network in the field of inclusive museums between 1987 and 2003. Source: Authors' own work.

In addition, Table 1 presents the results of the indicators of the network in this field. It includes 446 authors (nodes), and each one of them has published with approximately 2 other collaborators on average. Furthermore, the density of the network is close to zero (0.005), which indicates low-intensity connections between authors over the entire structure. This feature may indicate that the dispersion of the production is significant, as observed in the quantity and impact indicators presented above. Conversely, the degree of clustering in the subnetworks increases to 0.440.

Moreover, the growth rate of interconnected nodes and components is significantly higher than that of their isolated counterparts. As a result, the dispersion of isolated subnetworks and independent publications decreases.

Table 1. Structure indicators

<i>Indicator</i>	<i>1987-2018</i>
Number of nodes	466
Network density	0.005
Network diameter	1
Expected characteristic distance	1.0
Number of connected components	250
Average number of neighbors	2.296
Degree of clustering of the network	0.440
Network centralization	0.027
Network heterogeneity	1.381
Number of isolated nodes	147
Connected components per node	53.64%
Isolated components per node	31.54%

Source: Authors' own work.

Growing and emerging concepts: trend analysis of the evolution of inclusive museums

This stage of the work provided insight into the evolution and perspectives of studies on the implementation of social initiatives and inclusion in the field of museums. Additionally, it enabled to find, by identifying increases in the number of co-occurrences between words, the research fronts that mark the evolution of the culture of inclusion at museums. Furthermore, it aimed at analyzing the regional and international context, prioritizing the objectives authors may have had when they connected inclusive museums with other fields of knowledge. As a result, 25 keywords were identified; they summarize the meaning of each finding in the literature.

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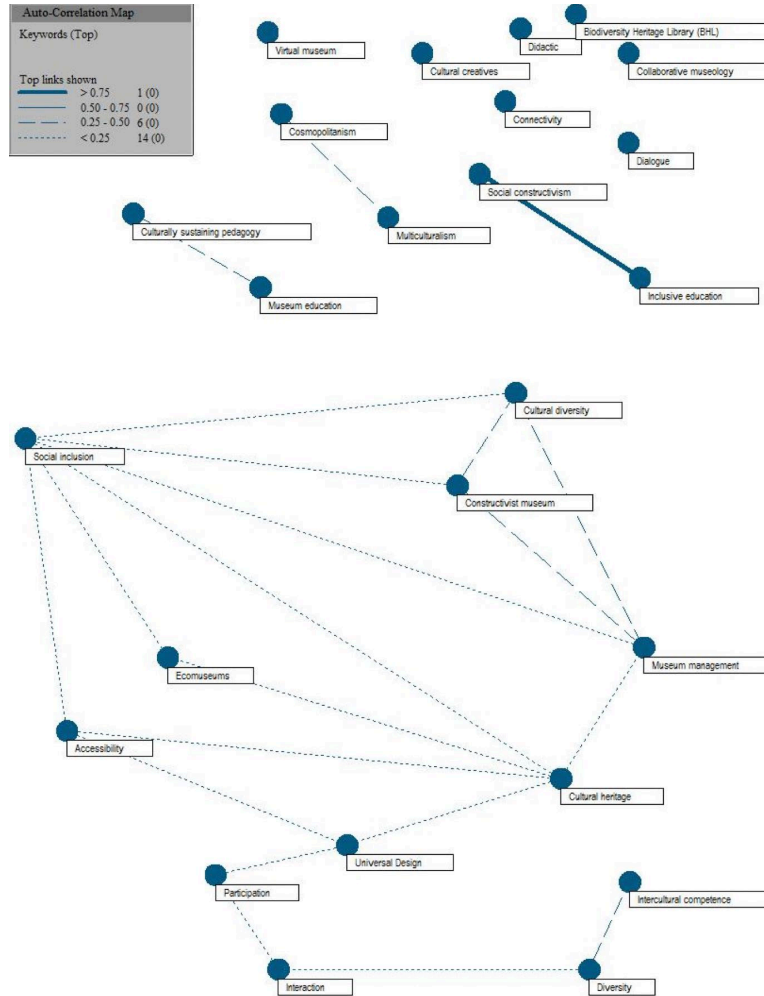


Figure 10. Relationships between growing and emerging concepts. Source: Authors' own work.

Figure 10 highlights a close relationship between the terms *social constructivism* and *inclusive education* (with a correlation above 0.75), followed by *cosmopolitan* and *multiculturalism* (0.50) and *culturally sustaining pedagogy* and *museum education* (0.50). In general terms, these links are an invitation to acknowledge the signs of individuality and singularity of each individual and their meaning in society.

Another group of words draws connections between the terms *social inclusion*, *cultural diversity*, *accessibility*, *participation*, and *universal design*, which are linked to at least two items each. This family of terms reveals a trend toward plurality, integrality, and social, economic, cultural, environmental, digital, and spiritual transformations. Therefore, all the worldviews should agree on one point: scientific knowledge should be expanded to contribute with a global perspective that is not reduced to disciplines or their fields and that aims at considering the world in its diverse unity (Gusdorf, 1983). Figure 10 enables to understand the foundations of the knowledge network that articulates each finding in the literature.

Figure 11 shows the time a term was used, as well as its oscillation over that period. For example, *accessibility* was first used in 2008 and is still mentioned. This is in agreement with current dynamics in which accessibility has become a must to promote inclusive societies, creating new research possibilities in the knowledge field explored in this paper.

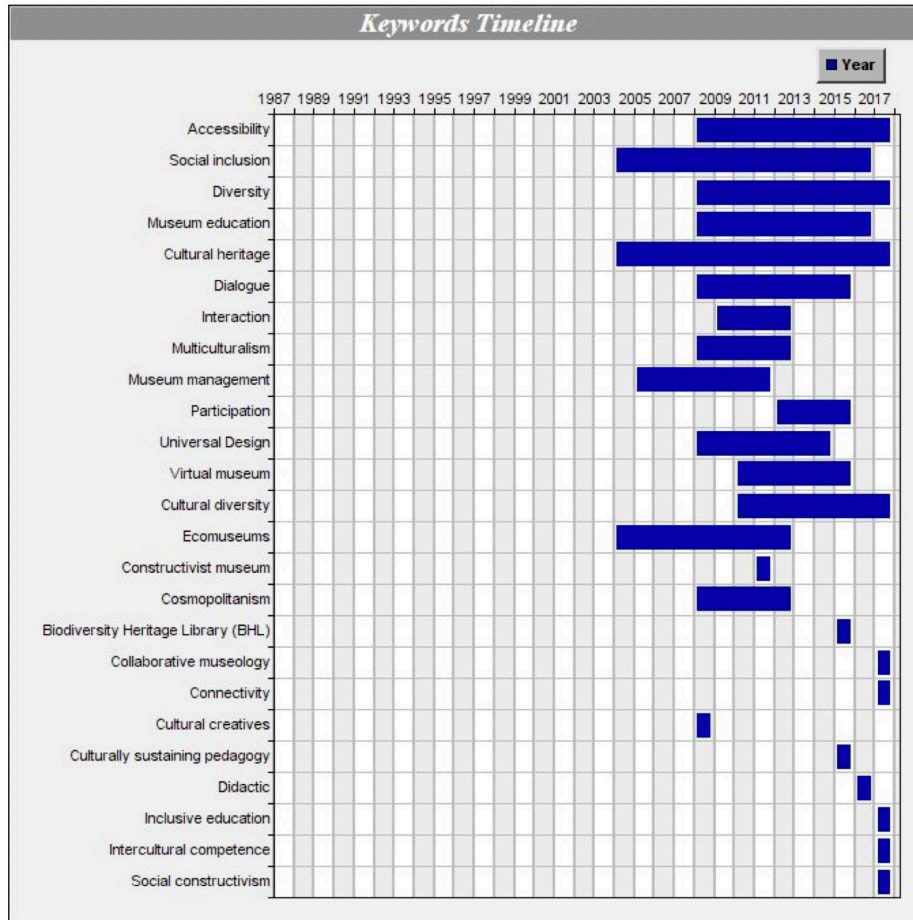


Figure 11. Timeline of growing and emerging concepts in inclusive museums.
Source: Authors' own work.

Discussion

Riviére (1989) was one of the most important and influential minds in the theory of new museology, and his ideas about the mission of the museum institution became more popular since the 1980's. New emerging conceptions of the dialectic position Riviére defended can be found in the scientific production reviewed in this article. Furthermore, the notion of an accessible and inclusive museum, where education through the participation of others is the foundation to acquire knowledge, was decisive to evaluate the importance of these centers (Vergo, 1989) in the 20th and 21st centuries.

As a complement to this idea, the social constructivism proposed by Vigotsky (Coffee, 2007) contributed with significant elements to the educational work of museums. According to his theory, social interaction enables the development of individuals; therefore, creating learning spaces is essential to the process of teaching or transferring information. This argument supports the most representative research trend in this review, which refers to four cornerstones established by the International Conference on the Inclusive Museum: internationalism, interdisciplinarity, inclusiveness, and interaction.

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Based on these definitions and the trends found in this work, institutions should support all the intellectual efforts that enrich the mission of museums as spaces that acknowledge the multiplicity of social stakeholders they draw and contribute to the discussion of communication frameworks to interact with others and include them. As a result, two lines of research were identified:

Inclusive education

The theory of inclusive education aims at reorienting regular education, suggesting an attitude shift toward integrating everybody so that they can access knowledge. Parra (2011) also defined this concept “(...) transformations of general education and educational institutions so that they are able to formulate an equalitarian and quality response to diversity (...)”. This reflection is directed not only at formal education centers but also at all those spaces that promote learning, such as museums. The works by Monteiro (2008), Astudillo (2008), Smith (2010), Dias and César (2014), and De La Iglesia and Rosselló (2014) are examples of the role formal and informal organizations can play.

In turn, according to Maleuvre (2012), inclusive museums should be multicultural places, adapting science to the sensitivity of their visitors. However, Randolph and Rowson (2012) maintain that this goal should go beyond a multicultural framework and consider the philosophical ideas of cosmopolitanism to guide museum practices because they “encompass the local cultural identity, the identity created at the place, and the identities and values shared crossing limits.”

Although the mission of these non-formal education centers is to make education inclusive, studies based on theory and practice are needed to shed light on the work they have conducted, as suggested by Dawson (2014).

Museum education

Latchen (2006) conducted a study to analyze and identify inclusive teaching and learning models at museums. Said author carried out a significant exploration of actions related to some museum education projects to establish if they are performed subjectively or to comply with curricular requirements,

if such broad-scope actions can successfully promote social justice in education and empower individuals or they serve to polarize essentialism and multiculturalism.

According to Vemi and Kanari (2008), museums are not only collections of objects designed for adults, they are also places where children familiarize themselves with culture. This leads schools to consider their relationship with these centers as learning media, and teachers are an important element in that interaction. In this regard, Fontal (2008) argues that museums can perform communication, education, socialization, and integration functions.

In turn, Johnston (2008) referred to the new challenges faced by museum education due to the introduction of social networks, as these educational centers suffer from political, ethical, and social tensions regarding what is appropriate, especially for children. Besides, web-based educational developments or extensions for this type of audience is an important debate regarding inclusive museums.

A remarkable study by Wylder and Meale (2009) highlighted the work of the program “The Story Project”, carried out by the Fine Arts Museum in Florida with the Leon County School System in Tallahassee. Adopting constructivism and social education theories, this project developed a model with methods and processes to achieve inclusion based on the interconnection between college students, local, national and international artists, and teachers. The result was an art exhibition and, accordingly, their most valuable contribution was the systematic networking.

In the second decade of the 21st century, Bračun (2010) carried out a “survey into educational programs and teaching methods for visitors with physical, sensorial, speaking, language, and learning disabilities, or suffering from

mental, emotional, and behavioral disorders, long-term medical conditions, or multiple disabilities.”

She highlighted the importance of visitor-centered educational programs as well as the need to develop the museum profession in the field of learning and education. The same author (Bračun and Kemperl, 2016) later resumed her research, but, this time, she focused on “art” museums. She analyzed the communicative materials galleries used to transfer information about the works to visitors because, the author comments, there may be a differentiated approach to knowledge transfer.

Thompson (2012) recurrently suggested the need to know the audience before adopting museum education initiatives, especially when web developments are implemented. His work was focused on the Sharjah Museum of Islamic Civilization, located in the United Arab Emirates, and it aimed at identifying what the public liked about the “Virtual Museum” of this institution.

Finally, studies by Weiland (2014), García (2015), Hamidi (2016), and Louderback (2017), among others, participated in the discussion on the implementation of teaching-learning strategies. They suggested that museums should strive to create programs that integrate the space and its exhibitions with the audience, highlighting the need to establish the accessibility conditions of these centers, the contents they offer, and their visitors. The objective of this approach is to create programs that benefit visitors, especially those less favored, and involve trained staff to meet the demand.

Based on the above, the development of these lines of research will continue, oriented to museum centers that understand their role (as activators of learning) and attach maximum importance to the literacy of the general public.

Conclusions

Social inclusion has become a priority in recent years due to the interconnection of societies, strengthened by the globalizing phenomenon and the new advances of Information and Communications Technologies (ICTs). This situation has clearly revealed the existing weaknesses of social inclusion in several spheres, such as education, culture, and the labor market.

Therefore, inclusion has been prioritized in political agendas. This is confirmed by the Sustainable Development Goals (SDGs) that further the Millennium Development Goals (MDGs) from an inclusive standpoint. In that regard, the education sector has shown signs of progress in the field. However, other spaces conceived as cultural landmarks with an educational connotation have also started to incorporate social inclusion into their spaces, e.g., museums, which motivated this work.

As a result, this bibliometric study on inclusive museums enabled to shed light on the productivity, impact, and networking of researchers in this field. Between 1987 and 2008, the number of publications indexed in Scopus in the field increased significantly, from 1 to 25.

Moreover, the most productive countries were economic powers such as the United States, the United Kingdom, and Canada, the place of origin of the authors and the locations of the institutions with the highest levels of citation (impact). Regarding the relationships between the authors that publish in the field of inclusive museums, the diameter of their networks is close to zero (as detailed in the results), which indicates a low degree of collaboration in the area.

Therefore, the results in this study enable to conclude that this topic is relevant in the current globalized context, which is confirmed by an increase in the number of publications in the field since 2008. However, it also reveals a worrisome outlook for Latin American countries: the only top ten nation among them in worldwide scientific production is Brazil, which confirms the role of this country in the ecosystem of science, technology, and innovation in the region.

This situation is unsettling because the region experiences some of the strongest social inequities and exclusion. Therefore, advances in inclusive environments such as museums are essential to tackle these problems from different fronts, such as culture, which enables appropriation by the communities and, therefore, to improve their education.

This study constitutes a relevant starting point that not only presents trends in the field of inclusive museums but also encourages university communities and cultural institutions (such as Latin American museums) to consider the role they play in said area, as well as the visibility of their research efforts. It is widely acknowledged that, as a result of current scientific trends, the generated production can achieve a significant impact; this makes institutions more visible, a characteristic undoubtedly associated with economic growth and human development.

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How to cite: Valencia Arias, J., Valencia-Arias, A and Zurc, D. (2020). Evolution and research trends of inclusive museum studies: a bibliometric approach. *Revista KEPES 17(22)*, 161-192. <https://doi.org/10.17151/kepes.2020.17.22.7>