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Immigrants and science museums in times of crisis. Preliminary study in two museums in Barcelona

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Abstracts

Introduction: Access to knowledge generates inequalities. The gap between those who are scientifically literate and those who are not can become a source of exclusion. In Spain, the relationship between science museums and vulnerable communities, in this case the immigrant population, has been little studied, and we are therefore seeking to build on research developed in other countries. **Methodology:** The study used surveys to gain an understanding of interviewees' socio-demographic profile, how immigrants relate to museums and the relationship between the museum and identity in two museums in Barcelona. **Results:** Visitors consulted stated that they felt comfortable in the museum and found the display formats in the museum to be similar to those in their own countries. It must be borne in mind that this is a preliminary study.

Keywords

[ES] inmigrantes; museos de ciencias; inclusión social; museos y público vulnerable

[EN] immigrants; science museums; social inclusion; museums and vulnerable communities

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1. Introduction

The results of the two preliminary studies [1] for this research project are set out below: “Science and social inclusion in museums and science centres. Immigrants and museums and science centres in Catalonia”. Studies were carried out in the Barcelona Maritime Museum and Cosmocaixa.

The main aim of the research is to gain an understanding of how immigrants relate to science museums. Specific aims included examining the socio-demographic profile of visitors to the museums and using open questions to identify which aspects of the museum users regarded as similar or different to those of their native countries.

The starting point for this study into the link between museums and social inclusion is the conviction that museums and science centres, having established their role as stewards of heritage, educational institutions and a bridge between the scientific world and society as a whole, should be strengthening the social role they play as cultural institutions.

This is not a new idea internationally, but it is one that has received little attention in this country. British museums were the first to propose this approach, carrying out research from the late 1980s onward, with renewed focus from the 1990s (Sandell: 2002), and the idea was then taken up in the US and Australia.

Although some museum managers believe that museums should concentrate on their more traditional functions, many museums do not ignore their surroundings or current social circumstances. We are currently experiencing a range of crises (economic, political and social, and with regard to our security and values). Today's society is facing an accumulation of circumstances which produce uncertainty (Beck 1992) and a sense of risk. In this context, institutions' efforts are vital, but so is governmental commitment to establishing policies that encourage museums to take on this role. Sandell (2003) suggests that for museums to become effective agents of social inclusion, fundamental changes are necessary in their social function and working practices.

In some parts of the world the task of promoting social inclusion has been approached in a voluntary manner rather than as a specific policy defined by the institutions, although they are aware of the need for it. Since the late 1990s, the debate has moved from the theoretical sphere to the practical (Sandell, 2002). In general, social inclusion in museums has been approached from the point of view of accessibility for people with physical and mental disabilities, and programmes aimed at such sections of society have been developed for over two decades in many parts of the world.

As we mentioned earlier, the social relationship between museums of science and technology and vulnerable communities, specifically immigrants, has been little studied. We are therefore aiming to build on research established in the countries mentioned above.

We are studying the immigrant population on the basis that:

- a. The number of foreign residents in Spain has grown over the last 20 years to 12% of the population (Moreno & Bruquetas, 2011:11).
- b. Museums in general, and in Catalonia in particular, have focused on other sections of society considered to be vulnerable, in particular people with physical or mental disabilities.

The first museums were private initiatives, and were elitist and entirely exclusive. However, social and political changes have led to the transformation of all types of institution, including museums. We are aware that there has been a fundamental shift in the relationship between museums and the general public since the 1960s. Along with other cultural facilities, such as libraries, they have come to play a major role in citizens' everyday life. The social and political changes affecting society have pushed museums from the private to the public sphere, opening them to all types of people.

Museums' value as stewards of heritage as well as their educational and communicative role is not in doubt today. They have become stronger and, as far as possible, have adapted to a more demanding and competitive world. The democratisation of culture, art and science through public museums and the spread of scientific knowledge are just two of the positive influences that have led museums to change how they relate to society and to be aware of the need for a commitment to vulnerable members of society.

1.1. Exclusion and inclusion

Exclusion was identified as a social problem in post-War France, linked to the slow economic growth of the country at that time (Silver, 1994). The term has been attributed to René Lenoir, who went on to be Secretary of State for Social Action in the Chirac government. Lenoir referred to people with no form of social protection, not even health cover, as “excluded”. In the 1970s, terms such as “integration” and “inclusion” began to be used in discourse about social policy in respect of this section of the population, with a theoretical basis in Rousseau's postulates concerning solidarity, the new social contract and cohesion (*op. cit.*).

It is therefore important that institutions offer not just intellectual inclusion, but also bear in mind that they can foster social and cultural inclusion (Fleming, 2013: 62-80; Sprünker, Munilla & Castellanos, 2014).

Exclusion is not only a recurring theme in the industrialised world. It is a particularly sensitive issue in so-called “third world” countries which have to deal with complex problems. These are countries where over 50% of the population live near the poverty line and where the arrival of the Knowledge

Society has simply served to exacerbate inequality, especially among groups which have always suffered, such as ethnic minorities, the elderly and children.

The concept of citizenship is key when considering how to foster inclusion. According to Marshall (1998), “through education in its relations with occupational structure, citizenship operates as an instrument of social stratification”. In this sense, museums have much to offer as institutions of non-formal education, one of their traditional roles.

The concept of exclusion reflects distinct ideas of social integration, solidarity and citizenship which are also used to determine policy. For Silver (2004), however, establishing categories of excluded people could have the opposite effect and even lead to the emergence of ghettos.

A leading researcher in this field in Latin America is Manfred Max-Neef, who developed the theory of Human-scale Development, going beyond the developmentalist and monetarist models traditionally linked to economics-based perspectives of development. Max-Neef proposed a model based on satisfying basic human needs (Max-Neef, 2006), an idea which was followed up by other researchers including Antonio Elizalde.

In this model, individuals' involvement in different civil society entities helps communities to be more integrated, thus bypassing the traditional “paternalistic role of the Latin American state” (*op. cit.*). Max-Neef's approach shifts the focus onto the so-called “invisible actors”, sections of society who are traditionally excluded and who can play a part in establishing a more participative society through horizontal networks and micro-organisations. For the author, these strategies represent another form of support rather than a full solution to social inequalities.

Max-Neef, Silver, Elizalde and other authors particularly focus on socioeconomic exclusion. Elizalde (2002) drew attention to the specific issue of the failure of inter-generational social mobility. This referred to individuals from the poorest classes who have succeeded in completing their schooling. These people would belong to Galbraith's “New Class” (1973) of people with a high academic and intellectual level. The problem is that the system cannot absorb them and they end up falling back into poverty. Many members of the middle classes have found themselves in the same situation: having improved their lives through work, sacrifice and dedication, as a result of the economic crisis they are now unemployed and losing the homes and lifestyles they had achieved. This is particularly hard since it is the first time they have experienced such a major crisis (*op. cit.*). It is a situation currently affecting Europe, and especially countries such as Spain, where many of the best-educated young people have had to emigrate to find work. Many who belong to the working and middle classes have had no access to work despite their high level of education.

1.2. Museums and inclusion

With regard to scientific heritage, we must bear in mind that rapid scientific and technological development leads to a digital divide between those with scientific knowledge and those without. The communication media specialising in science, including science museums, form part of the “new cultural intermediaries”, described by Bourdieu (1988), as their raw material is science, one of the

so-called “new goods”. These “new media” are defined as belonging to the sphere of information and education (Bourdieu, 1988) and are consumed by the “new class”. Galbraith and Bourdieu pointed out that education has also become a mechanism for “distinction”. In this context, scientific information is a new consumer item, highlighting the inequalities between the educated and the uneducated.

In the scenario of cultural consumption based on the “new intermediaries” and the consumption of “new goods” as described by Bourdieu in *Distinction*, we can identify two factors related to the consumption of scientific and technological information (Castellanos, 2010):

1. The consumption of information is not necessarily linked to social or economic status. It is related to the perception that science and technology are only for the experts.
2. Access to information on science and technology could be a source of inequality between those with scientific knowledge, however minimal, and those without. The ability to afford the technology is another source of inequality.

In this context, we must bear in mind that the studies previously carried out into social perceptions of science in most countries do not include rural populations. They only take into account the views of city dwellers who, in general, have greater access to information, especially in developing countries. The Spanish Foundation for Science and Technology (FECyT) is responsible for these studies in Spain, and has carried out a biannual survey since 2002.

There is a risk that, just like a lack of economic resources, the gap between the scientifically literate and illiterate could lead to social exclusion or even self-exclusion. Some sectors of society are much more susceptible and are traditionally at risk of marginalisation as a result of their socioeconomic and, in some cases, geographic origins.

Although some museum managers believe that museums should concentrate on their more traditional functions, many museums do not ignore their surroundings or current social circumstances. We are currently experiencing a range of crises (economic, political and social, and with regard to our security and values). Today's society is facing an accumulation of circumstances which produce uncertainty (Beck, 1992) and a sense of risk. In this context, institutions' efforts are vital, but so is governmental commitment to establishing policies that encourage museums to take on this role. Sandell (2003) suggests that for museums to become effective agents of social inclusion (Dawson, E., 2014a, 2014b), fundamental changes are necessary in their social function and working practices.

In some parts of the world the task of promoting social inclusion has been approached in a voluntary manner rather than based on specific policies defined by the institutions, although they are aware of the need for it. Since the late 1990s, the debate has moved from the theoretical sphere to the practical (Sandell, 2002). In general, social inclusion in museums has been approached from the point of view of accessibility for people with physical and mental disabilities, and programmes aimed at such sections of society have been developed for over two decades in many parts of the world, including Spain.

Although other European and Latin American museums have paid attention to social sectors at risk of exclusion, there are few ongoing programmes in Spain, and few studies into the outcomes thereof. In many cases, social studies continue to be linked to studies of the educational and didactic role of the museum, blocking progress in this area. This could be because Spain has only recently begun to receive immigrants compared to other countries such as the United States and the United Kingdom.

The experience of the United Kingdom shows two clear lines of action, as described above:

1. Measures focusing on people with physical or mental disabilities.
2. Measures focusing on people affected by other forms of exclusion (social, economic, victims of racism, immigrants, etc.).

These measures have been developed and, up to a point, fostered, by governmental social and cultural policies resulting in, for example, the publication in 2000 of one of the most extensive studies into *Museums and Social Inclusion* prepared by the Group of Large Local Authority Museums (GLLAM) and involving 22 museums and galleries around the country (Castellanos, 2013).

In the United States, one of the most recent studies was carried out in 2011, entitled *Cultures Connect All. Rethinking Audiences in Times of Demographic Change*, in which museums exchanged experiences related to dealing with members of the most vulnerable communities. The key outcome of this exercise was the recognition of the need to contribute to improving the lives of two key groups: the over 65s and immigrants, taking into account the needs of each group in all aspects of their lives, from health, education and managing their finances, to the isolation suffered by many in these groups. It is particularly important to work with these two groups, as it is calculated that there will be over 70 million people over the age of 65 in the US in the next 20 years, while more than 10 million immigrants arrived between 2000 and 2007. Of these, 20% are aged 55 or over (Partners for Livable Communities, 2011: 13):

“...immigrants and older adults have unique assets to offer. The immigrant community often has extensive social networks and deep ties to cultural heritage, and many older adults have diverse experiences and flexible schedules to contribute to cultural activities. Both groups bring the added value of strong family and youth connections. If cultural organizations can tap into these networks and this experience, they will find audiences to sustain them far into the future” (Partners for Livable Communities, 2011: 9).

At 30 June 2013, there were 5,503,977 foreigners registered as living in Spain or holding a residence card. Despite the economic crisis, this was 1.7% more than at the same date in 2012, according to figures from the Permanent Observatory on Immigration (2013: 1). There are 1,261,416 immigrants living in Catalonia, including EU residents, which represents 22.9% of the total for Europe (Ministry of Employment and Social Security: 2013). As noted by Moreno and Bruqueta (2011), the number of immigrants in Spain is high. Cultural institutions therefore need to take this community into account, following the example of the United States (Partners for Livable Communities, 2011).

1.3. Museums and identity

This preliminary research was not intended to look deeply into issues related to identity. Nevertheless, it does investigate the role of museums (with their common and distinctive cultural features) as part of the host country's cultural infrastructure.

Firstly, before looking at the visitor's identity within the museum, we must bear in mind that many theorists have written about and studied this issue in depth. Work is currently being done in Europe to develop a conceptual and contextual understanding of the subject (Galla, Amareswar, in Braendholt Lundgaard, Ida; and Thorek Jensen, Jacob, 213: 64).

For this first study, we focused on the concept of identity from the perspective of cultural studies. This is a central concept of current theory seen in most studies, from analyses of popular culture to gender studies. Identity is related to how people see themselves, (Barker, 2001). Cultural studies are concerned with how individuals come to be as they are, how they develop subjective awareness, and how they describe themselves (woman, man, black, white, native, Panamanian, etc.).

The view of identity as a product of common heredity, common ancestors and shared symbolic resources was defined by Stuart Hall as the “essentialist” position. From this perspective it is possible to talk of, for example, a “British identity” (Barker, 2001: 176). Nevertheless, Hall also defined an “anti-essentialist” position on identity, organised around points of difference. For Hall it is important to bear in mind that identity is not a natural state or one to be taken for granted, but rather a process of construction based on similarities and differences originating, above all, in the multi-cultural nature of modern societies. He therefore suggests using the concept of “articulation”, whereby two different features are combined, as the basis for studying identity. Similarly, García Canclini (1997) refers to intersections, the point where “narratives clash or cross over”. García Canclini (1997) used the term hybridisation to embrace “a range of intercultural mixes”, going beyond the concept of syncretism. In the late 1980s the term “glocal” was coined in the Anglo-Saxon world to reflect capitalist processes which localised the global and globalised the local (Escobar, 2001) in response to Latour's proposal to hybridise the two terms (Prazniak & Dirlik, 2001: 28).

These approaches developed in the 1990s are applicable to societies today where the processes of globalisation and migratory movements have displaced the concept of identity. It has literally been moved. Borders and territories are ever less clearly defined, and the development of ICTs, especially the growth of social networks, has contributed to this process.

In this context, Rounds' (2006) perspective on the construction of identity is pertinent. To construct an identity we must maintain and adapt it and persuade others to believe in it. This is an essential process in a globalised society where borders are becoming blurred. According to Jay Rounds (2006), identity is not just defined by one's place of birth, but is linked to the place and the ways in which one's life is constructed, in line with the ideas of cultural studies theorists in both the Anglo-Saxon world and in Latin America. This aspect is fundamental in societies characterised by

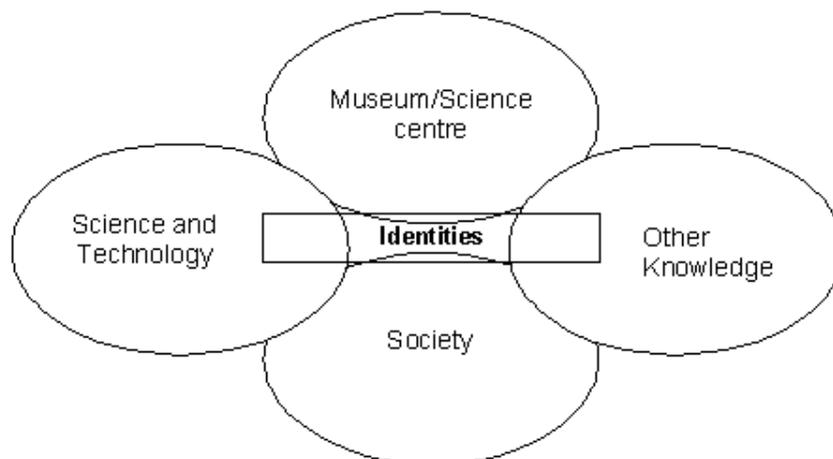
migratory processes. Talking about identity does not mean closing oneself off from the world, but inviting others to know and recognize you.

Returning to the concept of identity in museums, this is a theme which is inherent in the origins of these institutions. The great museums build collections of objects which symbolize Hall's essentialist position, which we referred to earlier (roots, tradition, common factors, heritage), while in multicultural societies they reflect the anti-essentialist position (differences) defined by the British researcher.

Museums of science and technology thus need to facilitate a dialogue between the different identities that coexist in each community. The only feasible model is one designed by each museum to reflect the context and society in which it operates.

Interaction or dialogue between different identities and the museum can be expressed pictorially as follows:

Chart 1. Identity and the museum



Source: Castellanos (2011)

The chart shows that the museum is not just a mediator, but can also be a place where an individual finds and develops their different identities, bearing in mind that “heritage houses and provides very specific knowledge that we can acquire and it can become part of our personal or collective identity” (Sprünker, 2011). This process can help strengthen the relationship between science and society.

In linking the scientific aspect to the immigrant, we are not interested in examining their academic baggage, or discovering what they learned from a visit to an exhibition. Rather we seek to explore

how they see their own identity when they enter the museum: Are there exhibits that help them to understand the natives of the city in which they live? Do any pieces or spaces remind them of their place of origin? We reiterate that this preliminary study treats identity as a theme to be explored.

2. Method

2.1. Participants

Two museums were involved in this initial research:

Cosmocaixa is a science museum owned Obra Social “laCaixa” and is located in Barcelona. It was opened in 2004 following the redevelopment of its predecessor, the Barcelona Science Museum, which was opened in 1981. It plays a major role in the scientific life of the city. It is the regular location for popular science events which go above and beyond its heritage and educational functions. The institution has inspired many other science museums and centres around the world, especially in Spain and Latin America. The “la Caixa” Foundation runs one of Spain's most important social programmes. In 2012 the bank allocated over 200 million euros to social programmes (Obra Social “la Caixa”: 2012).

The Barcelona Maritime Museum is a pioneer in Spain in working with people at risk of socioeconomic exclusion. It is located in the Raval, one of the city's oldest districts and one which has some of its worst poverty figures, as well as being one of the neighbourhoods with the greatest numbers of immigrants, most notably from Pakistan and Morocco. It is the first museum in Spain (and the second in Europe) to have a Social Responsibility department, and operates on the principle that access to culture is a basic right of the citizen. The museum's recently restored building is in an unbeatable location where architectural barriers have been removed. The museum is currently working with the Universitat Politècnica de Catalunya (UPC) to develop special software for the blind and visually impaired. In 2011, the museum set up the NORAI project in partnership with the cooperatives Norai Raval SCCL and Impulsem SCCL and the Surt Foundation. The aims of the project include helping to improve the quality of life of the neighbourhood's inhabitants. The project is designed to research and promote maritime cuisine while helping to train local people at risk of social exclusion, especially immigrants, and facilitate access to employment. The project is also supported by the association Diàlegs de Dona, which works with immigrant women from non-EU countries to help them integrate in Catalan society.

2.2. Methodological strategies

To achieve the aims set out in the preliminary study, we used one quantitative technique involving self-reporting (a questionnaire) and two qualitative techniques (non-participatory observation and documentary analysis). The data were compiled from questionnaires with open-ended and closed questions, including a non-verbal scale.

The questionnaires enabled us to obtain first-hand information from the respondents. It is one of the most common self-reporting techniques used in heritage institutions.

In the case of Cosmocaixa, the questionnaires were completed by the subjects themselves, while at the Maritime Museum they were carried out face-to-face, post-visit by Diàlegs de Dona. The questionnaire was structured to collect information in three sections:

- a) The respondent's relationship with the museum
- b) The relationship between the museum and identity
- c) The subject's socio-demographic profile

A non-verbal scale was added based on an icon (☺, ☹, :1), allowing the visitor to evaluate their perception of the place visited. This provided an emotional indication of whether the immigrant felt comfortable, uncomfortable or indifferent in the museum.

The questionnaire form was adjusted after reviewing the first results collected in Cosmocaixa, to change those questions which did not provide any information. Changes were also made in response to a request by the association that helped during the visit to the Maritime Museum, as most of the women taking part in the activities were illiterate or did not speak either of the two languages used (Spanish and Catalan).

2.3. Process

Image 1. Exhibition and visitors at Cosmocaixa



Source: Cosmocaixa. Escarlata Blanco

A test was carried out in each museum as follows:

A pilot test was carried out at Cosmocaixa in the first fortnight of July 2013 to check that the questions in the survey were appropriate. Nineteen questionnaires were collected from randomly selected immigrant visitors to the museum; of these 19, three were considered invalid due to the questions being answered in group, and thus excluded. No distinction was made between weekday and weekend visitors.

20 immigrant visitors were surveyed at the Maritime Museum on 14 February 2013. For the purposes of the study, the museum programmed a tailor-made visit for a group of women who participate in *Diàlegs de Dona*. The visit took place in the morning and lasted an hour and a half. The visit was structured as follows:

Image 2. Group of women participants in the visit to the Maritime Museum



Source: Fieldwork by Patricia Castellanos (2013)

- a. The Museum's Social Responsibility coordinator, Teresa Soldevila, gave an introductory presentation on the museum, describing the features of the historic building and the institution's activities. An explanation of cultural heritage was also given. The presentation had to be cut short due to the need for translation. It must be noted that the women were recently arrived immigrants or had not learned the language, and the museum employee's script therefore had to be previously translated into their languages. This was done by teachers working for *Diàlegs de Dona*.

- b. 43 women from Pakistan, India and Bangladesh attended the session, and 20 completed the post-visit questionnaire. For this purpose, the museum employee's script had previously been translated to Urdu, Hindi and Bengali. This work was carried out by the association's educational staff with some of the participants who understand Spanish or speak English. During the visit, Teresa Soldevila's presentation was alternated with translations by three women who spoke Spanish or English. During the activity, non-participatory observation of the women's reactions took place.

- c. A week later the survey was performed, involving the same language issues. The questionnaire had to be simplified to facilitate the collection of data.

The data and information collected were then analysed, categorising the adjectives used in the answers.

3. Findings

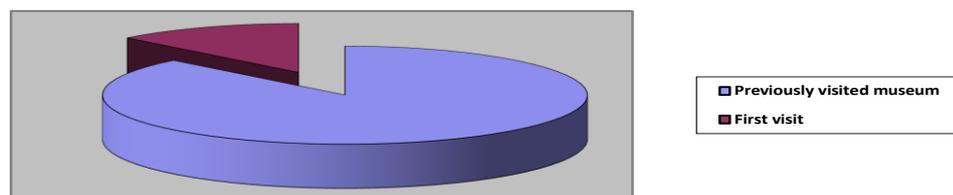
The results of the surveys must be interpreted bearing in mind that this was a preliminary study.

3.1. Cosmocaixa

Survey of randomly selected immigrants:

- a) Section 1. The subject's relationship with the museum
This was not the first experience of Cosmocaixa for most of the respondents: of the 16 surveyed, 14 had previously visited the museum. The reasons given for not having previously visited the museum were not knowing where it was and work reasons.

Chart 2. Have you visited the museum before?



Source: own data

Of those who were not visiting for the first time, six had been to the museum 1 to 3 times and nine had been on more than three occasions.

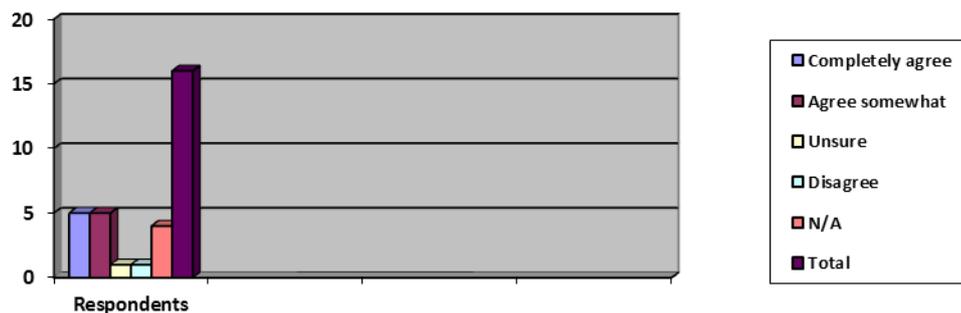
When asked to evaluate the museum using a non-verbal scale, all the participants chose the most positive icon ☺. This positive view of the museum is reflected in the fact that 14 of the respondents said they felt comfortable there, in respect of the space, the museum's contents, cleanliness, temperature and signage.

For those for whom this was not the first visit, time was not a decisive factor. Seven of the respondents strongly disagreed with the statement that lack of time affected their decision to visit.

Two respondents were unsure of how to respond to the statement “I would prefer another activity”, two disagreed a little and seven strongly disagreed. Eleven participants would return with another person. 9 participants strongly disagreed with the statement that the museum did not interest them, while two disagreed a little. Three disagreed slightly with the assertion that Cosmocaixa was not for them and eight strongly disagreed.

As we were interested in finding out if museums help immigrants to integrate, the participants were asked if the visit to Cosmocaixa had helped them feel at home in the country. Five people strongly agreed, five agreed somewhat, one was not sure, one disagreed and four did not answer.

Chart 3. Did the visit to Cosmocaixa help you feel at home in the host country?



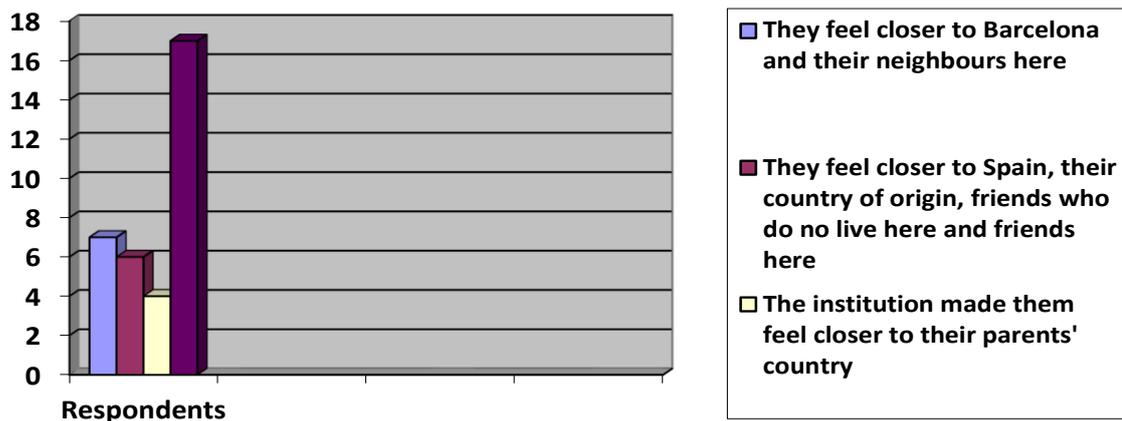
Source: own data

a) Section 2. The relationship between the museum and identity

In this section we tried to determine if visitors saw any link between the museum and their own identity.

This was based on the concept of identity described by Jay Rounds (2006), as being not just defined by one's place of birth, but linked to the place and the ways in which one's life is constructed. Bearing this in mind, we asked if the museum had helped the visitor feel closer to the host city and to their place of origin. Seven of the respondents said they felt closer to Barcelona and their neighbours here, six said they felt closer to Spain, to their country of origin, their family, their friends who do not live here and to their friends here. For four people, the museum made them feel closer to their parents' country.

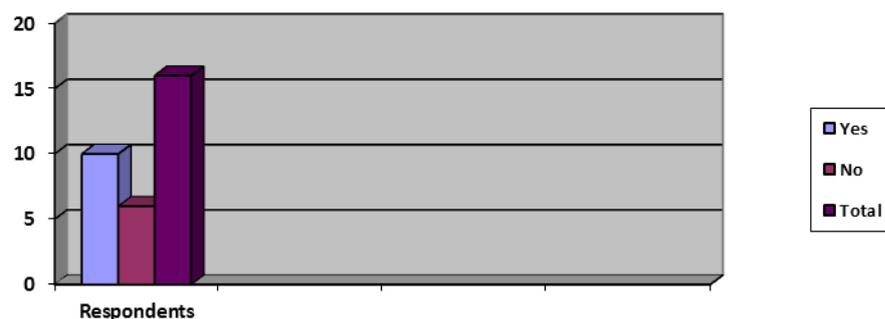
Chart 4. Has Cosmocaixa helped you feel closer to the host city and to your place of origin?



Source: own data

In order to investigate the link between the visitor's identity and Cosmocaixa, we asked the following question: Did anything in the museum remind you of your place of origin? (Think about the exhibits, the concepts explained, the surroundings, the architecture, and anything else you want to mention). Ten people said yes and indicated some aspect of the museum (seven mentioned the “Flooded forest” [1]). The other six said nothing reminded them of their home countries.

Chart 5. Did anything in the museum remind you of your place of origin?



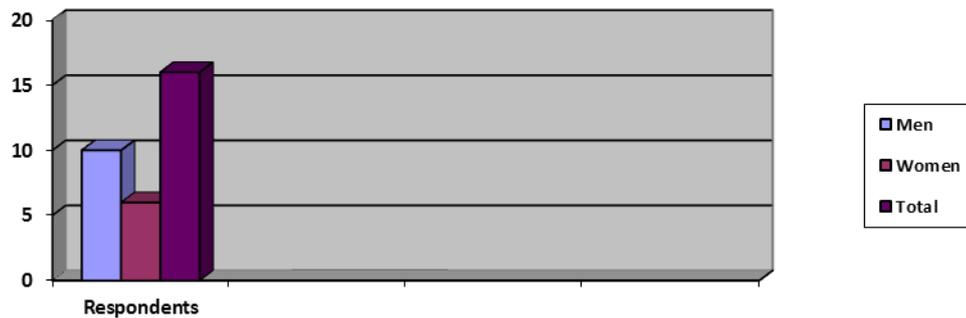
Source: own data

Half the respondents answered yes, and half no, to the opposite question, "Did you notice anything in the museum which was very different to your home country?", although none specified what aspects they found different.

b) Section 3. The subject's socio-demographic profile

The questionnaire was completed by ten women and six men (37.5%). Eleven of them were between 29 and 49 years old. Two were between 18 and 28 years old. One was between 50 and 60 years old and two were over 60.

Chart 6. The gender of visitors and respondents



Source: own data

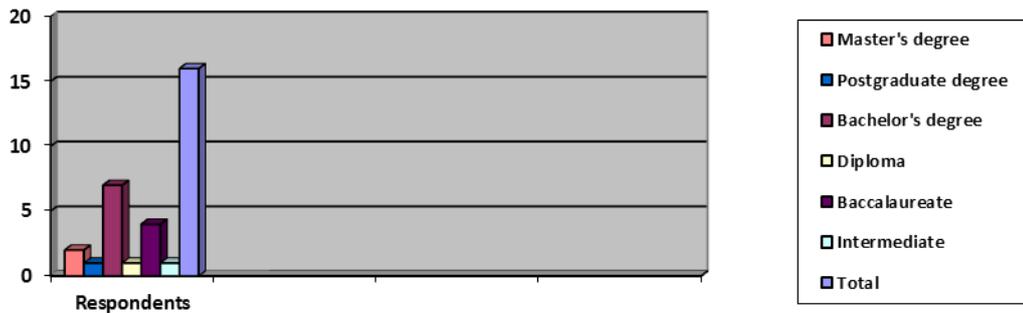
Three of the respondents to the pilot survey were from Italy and the rest were from Germany, Brazil, China, Colombia, Cuba, Morocco, Mexico, Peru, Poland, the Dominican Republic, Uruguay and Venezuela.

Two of the respondents had lived in Catalonia for 1 to 3 years, nine had lived here for 4 to 10 years and 6 had lived in Barcelona for over 10 years.

They were currently working in a wide range of jobs: housewife, researcher, mother, running a business from home, translator, shop assistant, cook, schoolteacher, office worker, geriatric care worker, two students and two retired people. They also reported a wide range of professional backgrounds: industrial designer, IT technician, biologist, student, cleaner, company director, dentist, housewife, fine arts, cook, teacher and healthcare worker.

Seven respondents had studied to university degree level, while four had studied to baccalaureate level, one to intermediate level and one held a diploma. One had a post-graduate qualification and two had master's degrees.

Chart 7. Educational level



Source: own data

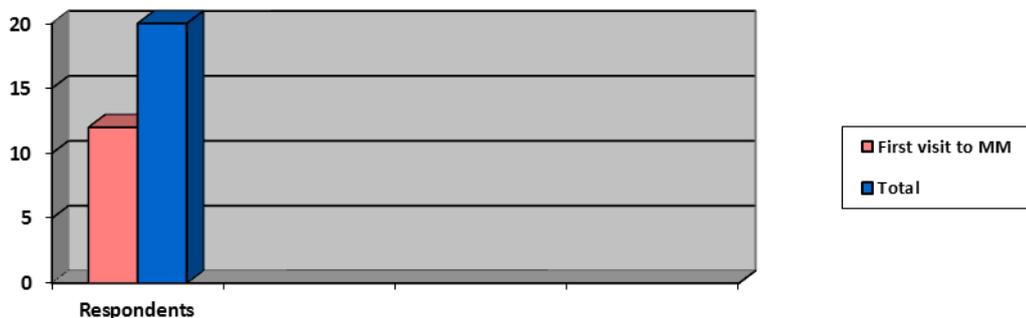
3.2. Maritime Museum

Results of the questionnaire designed for a group of immigrant women who visit the association Diàlegs de Dona, following the visit to the museum described above.

a) Section 1. The subject's relationship with the museum

Of a total of 43 women who participated in the visit, 20 answered the survey. Twelve of these were visiting the museum for the first time. Of those who had never been to the museum, half said they had not heard of it. Five respondents stated that they had been to the museum more than three times and three said they had heard their husbands talk about it. Thirteen of the respondents said they liked the museum and that it was easy to find. Eleven of them said it helped them connect with the host country.

Chart 8. For most of those surveyed, it was their first visit to the Maritime Museum

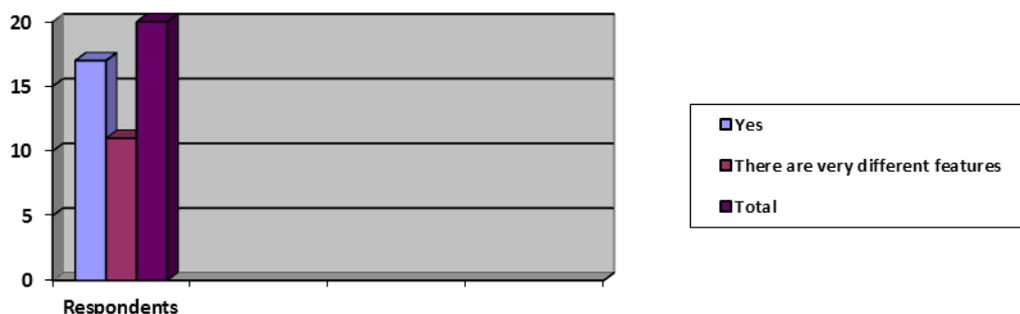


Source: own data

b) Section 2. The relationship between the museum and identity

Seventeen of the respondents said they had found aspects in the museum which reminded them of their home countries, but 11 considered that there were aspects which were very different, although they did not specify which they were. Some mentioned that the boats on display were bigger or smaller than those they saw at home.

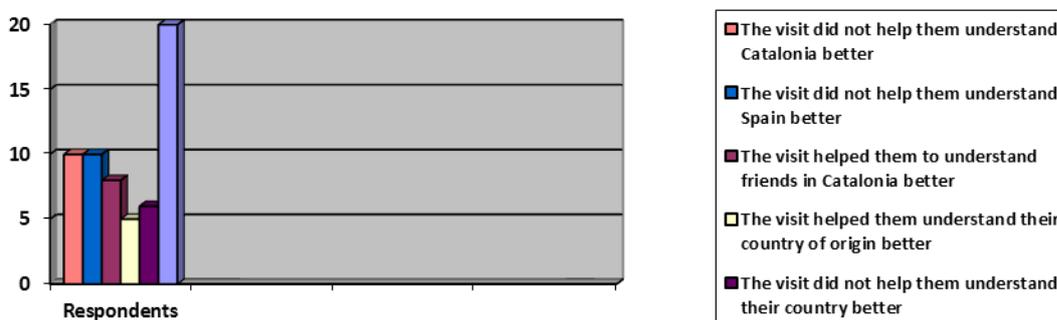
Chart 9. Did anything in the museum remind you of your place of origin?



Source: own data

Ten of the respondents said the visit to the museum did not help them to understand Catalonia better, and the same number said that it did not help them to understand Spain either. But 8 women said it had helped them to understand their friends in Barcelona better and 5 that it had helped them understand their country, the opposite view to that expressed by 6 respondents.

Chart 10. Has the Maritime Museum helped you to understand the host country better?

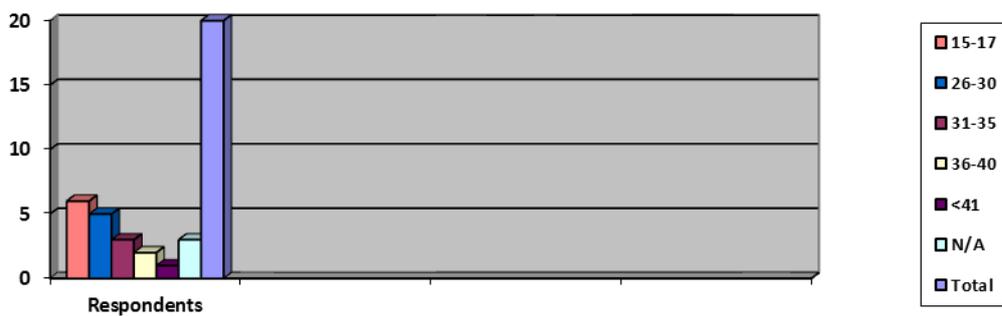


Source: own data

c) Section 3. The subject's socio-demographic profile

The women surveyed were young: 6 of them were aged 15 to 17 years, 5 were aged 26 to 30, 3 aged 31 to 35, 2 aged 36 to 40 and only one was over 41 years old. Three did not answer. With regard to their countries of origin, 10 were from Bangladesh, 2 from India, 2 from Pakistan, 1 from Indonesia and one from Nepal. The remaining 4 respondents did not answer this question. 12 of the respondents had lived in Barcelona for less than 5 years, 1 for between 5 and 10 years, 3 for over 10 years and 4 did not respond.

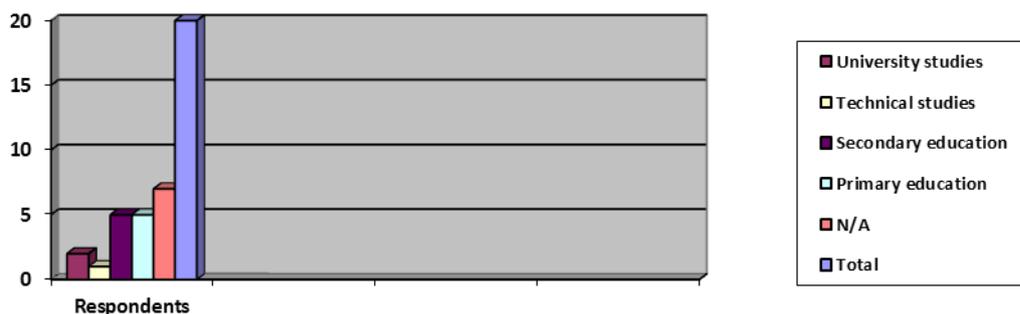
Chart 11. Ages



Source: own data

None of the 20 participants were in work. With regard to educational level, 2 stated that they had university degrees, one had completed technical studies, 5 had completed secondary education and a further 5 had completed primary education. 7 women did not answer this question.

Chart 12. Educational level



Source: own data

With regard to the non-participatory observation, the reactions of the participants during the visit were observed and noted.

- a. Talk before visiting the exhibition hall: At the beginning, the women appeared serious and quiet when they entered the auditorium. Their attitude changed when everyone was in the room. They appeared happy and applauded when they heard the museum employee's speech translated into their own languages. They were particularly pleased to hear that entry to the museum is free on Sundays.
- b. Visit to the exhibition hall: The attendees appeared impressed when they entered the hall. They admired its size and the high ceilings, and pointed to the boats. They took photographs of themselves, of the teachers and of the boats that they liked. Some of them commented that the boats on display looked like some of those seen in their countries, expressing surprise about this. They saw some groups of schoolchildren during the visit and commented that they would bring their families and children on Sunday. At the end they took a group photograph and appeared pleased with the visit. One commented that her child had been to the museum on a school trip.

4. Discussion and conclusions

In the case of Spain, work on identifying the relationship between immigrants and museums of science and technology has only begun recently. The growth of the immigrant population in the last decade has changed the country's population profile, making it necessary to take foreigners into account as part of the new audience cultural institutions hope to attract.

When we discuss social inclusion and how exclusive access to scientific information can be, we need to bear in mind that at present we can only see the tip of the iceberg and that this is the beginning of an analysis that currently only includes the urban population. We need to approach the establishment of strategies to give all levels of society access to scientific information in the same way as making ICT universally available. Beyond creating travelling exhibition centres, for example, it needs to be borne in mind that accessibility is not only physical but also involves equality of opportunity and access to knowledge. The tailor-made visit to the Maritime Museum and the interactive projects at Cosmocaixa are a way of making knowledge accessible to an immigrant audience.

Although the experiences we describe only constitute a tiny sample of what needs to be examined in future studies, they do give some indication of the relationship between museums of science and technology and the immigrant community. For example, there are signs that they are a place that contributes to their integration in the host society, helping them to understand the country they have come to and its inhabitants. Another aspect to bear in mind is that, in the case of Cosmocaixa, the respondents' profile was generally highly educated, in line with that of typical visitors to museums of science and technology, especially those who visit them repeatedly.

The experience at the Maritime Museum was completely different, as it was a planned group visit, but equally valid as a survey of a particular immigrant audience. The typical profile of the women who answered the questionnaire after visiting the Maritime Museum is that of a young woman who has not been living in Europe for long, who has received some education, and who speaks neither of the official languages of Catalonia (Spanish and Catalan). This was one of the main problems of the

study, when collecting information and analysing the results. Consequently, although it was a gratifying experience, the results do not allow us to draw any clear conclusions about their relationship with the museum.

In the case of Cosmocaixa, the visitors confirmed that knowing the museum had helped them to get to know the inhabitants of Barcelona, their neighbours, to better understand their friends here and the country as a whole. In the case of Cosmocaixa, the predominant visitor profile is that of a person from Latin America with university studies. This is very unlike that of the women who visited the Maritime Museum. Nevertheless, a minority of these women said that the experience had helped them to understand their Catalan friends.

It must be borne in mind that the questionnaire for the Maritime Museum had to be simplified so that the respondents could understand the questions. The results of the two surveys do not therefore correspond exactly. As the information collected was different, we have not tried to compare or cross-reference the data. Nevertheless, we note that most of the respondents in both institutions found features that reminded them of their countries of origin. In Cosmocaixa the “Flooded forest” was much commented on, while the fishing boats attracted comments in the Maritime Museum.

As noted above, the results provide an indication of how we can study the immigrant community in our country with regard to science museums and museums with scientific content. The results also show how diverse immigrants' profiles are, suggesting that understanding them, and thus developing measures to attract this section of society, will be a significant challenge. There are many areas concerning this community that require research. We would particularly like to study whether common or distinct features (Stuart Hall in Barker, 2001: 176; García Canclini, 1997) could be used as starting points for developing the knowledge or skills which form part of our identity and the identities which we construct on a daily basis.

5. Notes

1. The preliminary study was carried out with the support of the two museums and the Universitat Oberta de Catalunya (UOC).
2. The “Flooded forest” is a recreation of a flooded Amazonian rain forest in Brazil, the only one of its kind in Europe. The 1,000 m² area is one of the most visited parts of the museum.

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