

# THE CONTRIBUTION OF MACHINE TRANSLATION TO THE PRESERVATION OF REGIONAL LANGUAGES IN SPAIN

K. Papaioannou, N. Karanikolas, E. Papaioannou

*University of Patras (GREECE)*

## Abstract

This study aims to address the issue of the existence and preservation of different languages in regions of Spain that carry their own different cultural identity and to highlight the role of machine translation in the preservation of these languages. More specifically, this research will focus on three regions of Spain: Catalonia, Galicia, and the Basque region. These regions have strong cultural characteristics and have at times expressed strong separatist sentiments. They also have a second official language in addition to Spanish.

With the adoption of the Constitution in 1978, Spain created a unique system of regional autonomy. The second article of the Constitution proclaimed the "indivisible unity of the Spanish nation", while recognizing the right of "regions" and "nationalities" to have self-government and to retain their own particular cultural characteristics. One of the most important cultural elements of communities designated as historical nationalities with a unique historical identity is language. For this reason, they not only have Spanish as their official language, but also their local language. The aim of this study is to investigate the regions that have as co-official languages Catalan (a romance language spoken in the Mediterranean regions of Spain), Galician (also a romance language close to Portuguese and spoken in Galicia) and Basque (an ancient language spoken in the Basque Country).

The question we are called upon to answer is whether the development and use of machine translation can contribute to the preservation and dissemination of these languages. The goal is to seek whether existing machine translation is sufficient to facilitate communication between individuals who speak only the local language and official government agencies that use only Spanish. Also, the aim is to highlight the challenges of developing these tools and examine the frequency of the residents of these regions that use machine translation.

In this context, an analysis is presented based both on literature research on the particularity of Spain as a country that is called upon to include culturally heterogeneous nationalities under one nation, and on primary research on the use and contribution of machine translation to the preservation of local languages. For data collection and dissemination of the survey, we used the data collection platform Prolific.co. This research aims to capture the dynamic of local languages in Spain and the interest of citizens of these regions in using technology and machine translation as a means of assistance. It also explores the possibility of using technology to preserve languages as valuable cultural assets.

Keywords: Machine translation, Spain, Regional languages, Culture, Cultural diversity.

## 1 INTRODUCTION

The Iberian Peninsula has historically been a crossroads of cultures due both to its geographical location and the many different cultures that have historically coexisted on it. Since its existence as a nation-state, Spain has been called upon to accommodate all the different cultural elements brought by its population. The several regimes that dominated at different times tried to impose their own way of managing the cultural differences brought by the Spanish people. With the aim of creating a united and undivided Spain and excluding the periods of democratic government in Spain, great efforts were made to eliminate all diversity through the existence of prohibitions and strict censorship. At the beginning of the 20th century, the first nationalist movements began to emerge in Catalonia, Galicia and the Basque Country, claiming regional autonomy with the restoration of their linguistic and cultural rights. The search for a way of managing the demand for autonomy of these regions led to the creation of special regimes of self-government during the Second Republic (1931-1939) in favour of the so-called "historical nationalities", namely Catalonia, the Basque Country and Galicia, a system on which the 1978 Constitution was subsequently based. The 1978 Constitution established Spain's administrative organization, which is based on the existence of self-governing regions, recognizing a special self-

governing status for each region-community. According to the Constitution, the initial way for a region to acquire autonomy was through transitional provisions that would allow regions that were proven at the time of the enactment of the new Constitution to have former statutes of autonomy to automatically acquire autonomous status again. These provisions recognized the special status of the Basque Country, Catalonia and Galicia, the so-called and historic autonomous communities. The statutes of autonomy of the Basque Country and Catalonia came into force in 1979 and that of Galicia in 1981. Spain's system of Autonomous Communities has been described as "the most decentralized system of government". This was a way of venting the feelings of historical nationalities, where the preservation of their identity and culture was of paramount importance.

## **2 METHODOLOGY**

This study is based on the use of two methodological tools, a literature survey and a quantitative survey. The literature survey has been carried out in order to present the specificity of Spain as a country where many different cultural characteristics coexist and how the Constitution of 1978 provides for their preservation. Then the method of quantitative research has been used to present the dynamics of the co-official languages in the Galician, Basque Country and Catalonia regions and then to show the contribution of Language Technologies to the preservation of these languages.

## **3 THE ISSUE OF MULTILINGUALISM IN SPAIN**

One of the issues that has been of particular concern in Spain is the phenomenon of linguistic pluralism. Until the 19th century, the Iberian Peninsula was dominated by the naturally occurring peaceful coexistence between the different languages, which collapsed when the political authorities imposed the idea, derived from the French ideal, of a single, centralized language, fragmenting the peaceful coexistence of all the existing languages in the kingdoms of Spain and later in the Spanish monarchy. From this point onwards, the language issue emerged, thus turning languages into banners of various political doctrines and movements. Any attempt at repression that followed only exacerbated the discord. The importance of the linguistic issue acquires particular significance and reaches cultural and political nationalism in regions where the population affected is numerous, such as the Autonomous Communities of Catalonia, Galicia and the Basque Country.

The 1978 Constitution attempted to correct much of the imbalance that existed between the multilingual reality of the country and its legal representation, undoubtedly achieving the mitigation of linguistic conflicts. However, even today the divisive tendencies in the relations between languages still exist and the concerns about their coexistence and possible social complementarity are at a relatively low level. The centrifugal tendencies appear at different levels of language policy such as at the level of Catalan, Basque and Galician languages which are stipulated in the second paragraph of article three of the Spanish Constitution that they will also be official in the respective Autonomous Communities according to their statutes. Since 1978 to the present day there have been hierarchical redefinitions around the concept of co-officiality in favour of regional languages according to the evolution of the relevant legal status [1].

The language issue appears explicitly in the Spanish constitution at four different levels, regulating something different each time. Starting with the preamble to the constitutional text, the intention to protect all the peoples of Spain in the exercise of their language is clear. As mentioned in the preamble «The Spanish Nation, desiring to establish justice, liberty and security and to promote the good of all its members, in the exercise of its sovereignty, proclaims its willingness to: Protect all Spaniards and peoples of Spain in the exercise of human rights, their cultures and traditions, languages and institutions». Article 3 also establishes the relationship between Castilian-Spanish and the other languages in Spain. Paragraph 1 specifies that Castilian-Spanish is the official Spanish language of the State. All Spaniards have the duty to know it and the right to use it. Paragraph 2 states that the other Spanish languages shall also be official in the respective Autonomous Communities in accordance with their Statutes. The richness of the different linguistic modalities of Spain is a cultural heritage that will be the object of special respect and protection. Finally, paragraph 3 states that the richness of the different linguistic modalities of Spain is a cultural heritage that will be the object of special respect and protection. Next, article 20 of the Constitution regulates the existence of freedom of expression by specifying that the law shall regulate the organization and parliamentary control of the media dependent on the State or any public entity and shall guarantee access to these media for significant social and political groups, respecting the pluralism of society and the different languages of Spain. Moreover, in

article 148.1.17 of the Constitution is regulated that the Autonomous Communities may assume competences in the promotion of culture, research and, where appropriate, the teaching of the language of the Autonomous Community. To confirm the importance of the issue of languages in the new state structure, the final provision of the Spanish Constitution establishes that in addition to the official text appearing in the Official State Gazette, the new Constitution "shall also be published in the other languages of Spain". The expression itself represents the recognition of the linguistic diversity of the Spanish nation, but it also expresses the level of respect that is intended to be attributed to the treatment of the Spanish languages [2].

The language issue is reinforced in several other paragraphs, in which, although there is no specific reference to the language issue, the general concept of culture, which includes language, is mentioned. For example, the linguistic issue could be included in what is contained in article 149.2 according to which the State considers "the service of culture as an essential duty and attribution and will facilitate cultural communication between the Autonomous Communities, in agreement with them". This constitutional precept can be understood on the assumption that the service of culture does not belong as an exclusive competence to the State nor to the Autonomous Communities. Cultural matters may be exercised by any of them and the issue of cultural communication between the Autonomous Communities is a mixed competence that must be exercised jointly [3].

#### **4 THE STATUTES OF AUTONOMY AND THE LANGUAGE ISSUE**

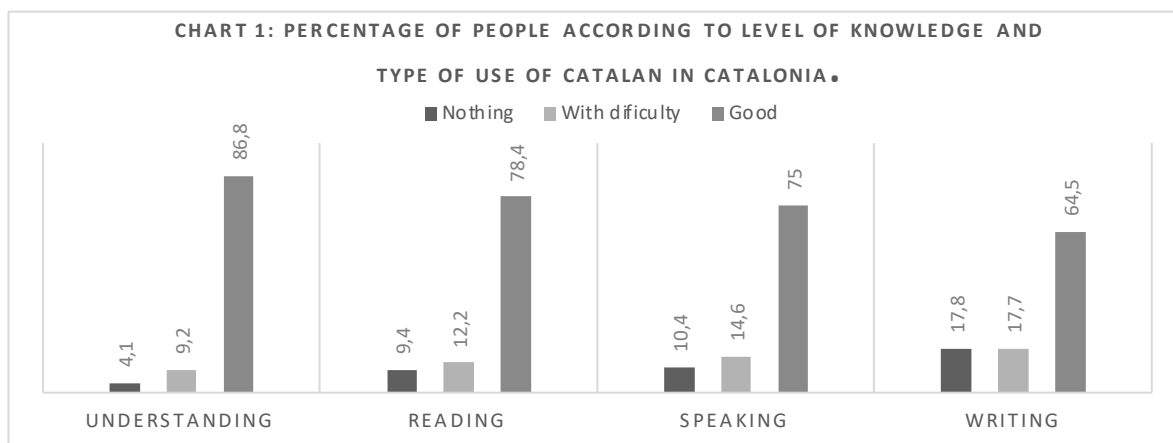
The 1978 Constitution was undeniably a huge transitional provision around the question of the level of autonomy that each Community in Spain would acquire. Article 147.2 sets out the minimum content of the Statutes of Autonomy and clearly articulates the question of the "competencies assumed within the framework established by the Constitution and the bases for the transfer of the services corresponding to them. Of interest is the way in which the language issue is included in each of the statutes.

In the case of Catalonia, the preamble considers the Catalan Statute to be "the expression of the collective identity of Catalonia", an identity which is directly related to the language of this Autonomous Community. Article 3 specifies that the language of Catalonia is Catalan. Catalan is provided as the official language of Catalonia, as is Spanish, which is also the official language of the entire Spain. The Generalidad, i.e., the body which organises the political government of Catalonia, guarantees the normal and official use of the two languages, takes the necessary measures to ensure their knowledge and creates the conditions for their full equality in terms of the rights and obligations of Catalan citizens. It also stipulates that the Aranese language shall be taught and given special respect and protection. The same function of the Generalidad is reiterated in Article 8 when paragraph 2 states that the Generalidad, as a public authority and within the scope of its powers, must promote the conditions for the real and effective freedom and equality of the individual and of the groups to which he belongs, remove the obstacles that prevent or impede their full realisation and facilitate the participation of all citizens in political, economic, cultural and social life. Also, according to Articles 9 and 15, the Generalidad of Catalonia has exclusive competence in matters of culture and full competence in the regulation and administration of education in all its extension, levels and grades, modalities and specialities. According to Article 16 within the framework of the basic regulations of the State, the Generalidad is responsible for the legislative development and implementation of the radio and television broadcasting system under the terms and in the cases established in the law regulating the Legal Statute of Radio and Television. Also, the Generalidad is responsible for the legislative development and implementation of the press regime and, in general, of all media of social communication. In the area of justice, knowledge of the Catalan language is not a privileged qualification, but in Article 23 there is a reference to specialisation in Catalan law, both in the posts of magistrates, judges, court clerks and other staff in the service of the administration of justice, as well as according to Article 24 in the appointment of notaries and land and commercial registrars. It should also be noted that Article 27 of the Catalan statute contains the provision that "As Catalan is the heritage of other territories and communities, in addition to the links and correspondence maintained by academic and cultural institutions, the Generalidad may request the government to enter into and submit, where appropriate, to the General Courts for authorisation, treaties or agreements that allow the establishment of cultural relations with the States where those territories and communities are integrated or reside" [4].

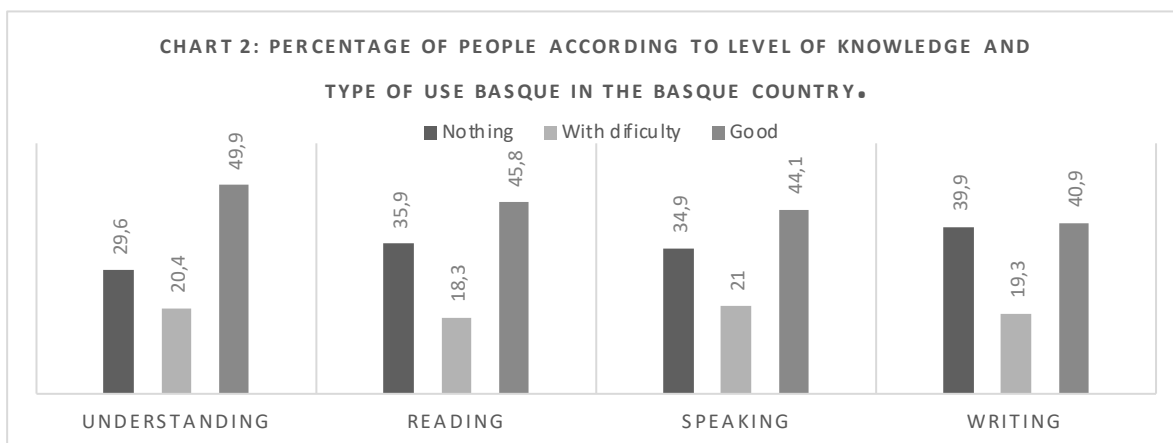
In the Statute of the Basque Country, Article 6 defines the linguistic issue. Basque is recognised as an official language and it is established that all the inhabitants of the Basque Country have the right to know and use it (6.1). In accordance with the statutory mandate, it is the common institutions of the Autonomous Community that will guarantee the use of Basque and Castilian and will arbitrate and regulate the measures and means necessary to ensure their knowledge (6.2). Discrimination based on the use of the language is prohibited (6.3) and the Royal Academy of the Basque Language, Euskaltzaindia, is recognised as an official advisory authority in the field of Basque (6.4). In accordance with the conception of Basque as “the heritage of other Basque territories and communities”, it is provided that the Autonomous Community of the Basque Country “may request the Spanish Government to conclude and submit, where appropriate, to the Spanish Parliament, for its authorisation, treaties or agreements that allow the establishment of cultural relations with the States where those territories and communities are integrated or reside, in order to safeguard and promote Basque”. Of particular importance is the content of Article 9, which lays down certain provisions for the Basque public authorities. Among these provisions is the adoption of measures “to ensure that the freedom and equality of the individual and of the groups in which the individual is included are effective and real” (9.2.d). Also, is to facilitate the participation of all citizens in the cultural and social life of the Basque Country (9.2.e). In addition, according to Article 19, the Basque Country is responsible for the legislative development of the basic State regulations in media matters, respecting the limits of Article 20.19.1 of the Spanish Constitution. According to Article 19, the Basque Country is also responsible for the regulation, creation and maintenance of its own television, radio and press and, in general, all means of social communication “for the fulfilment of its purposes”. In the field of justice, the language issue arises to the extent that knowledge of official Basque law and the Basque language is recognised by law as a privileged qualification for the appointment of judges, magistrates and secretaries (35.1). Education at all levels and grades is a responsibility of the Autonomous Community of the Basque Country (16), pursuant to the first additional provision of the Constitution concerning the historical rights of local territories. This competence is conferred ‘without prejudice to Article 27 of the Constitution and the organic laws that develop it, the powers conferred on the State in Article 149.1.30 of the Constitution and the high level of control necessary to ensure that they are respected and guaranteed [5].

In the Statute of Autonomy of Galicia there is greater clarity around the autonomous competences of the Community and more specifically around the language issue. Article 5 clearly and explicitly states that Galicia's own language is Galician. It is then stated that Galician and Spanish are official languages in Galicia and everyone has the right to know and use them. It is also specified that the public authorities of Galicia shall guarantee the normal and official use of the two languages and shall promote the use of Galician in all areas of public, cultural and informative life, and shall provide the necessary means to facilitate their knowledge. Article 5 is completed by clarifying that no one can be discriminated because of language issues. Continuing along the same line, Article 27 states, inter alia, that. Within the framework of this Statute, the Galician Autonomous Community has exclusive competence for the promotion of culture and research in Galicia, without prejudice to the provisions of Article 149.2 of the Constitution. This mandate is reinforced through article 32 by the attribution to the Autonomous Community of “the defence and promotion of the cultural values of the Galician people”, through the constitution of a Galician Cultural Fund and the Council of Galician Culture. Likewise, article 7 provides that “the Galician Communities settled outside Galicia may request the recognition of their “Galicianness”, understood as the right to collaborate and share in the social and cultural life of the Galician people. It is also established that the Galician Autonomous Community may request the conclusion of treaties or agreements for the purpose of establishing ‘cultural relations with states that maintain cultural or linguistic links. Finally, in the jurisdictional area, Article 25 states that in the resolution of competitions to fill the posts of Magistrates, Judges, Court Clerks, Prosecutors and all civil servants in the service of the Administration of Justice, specialisation in Galician law and knowledge of the language of the country will be a preferential merit. Likewise, as referred to in Article 26, the same applies to competitions and examinations for the appointment of notaries and property and commercial registrars [6].

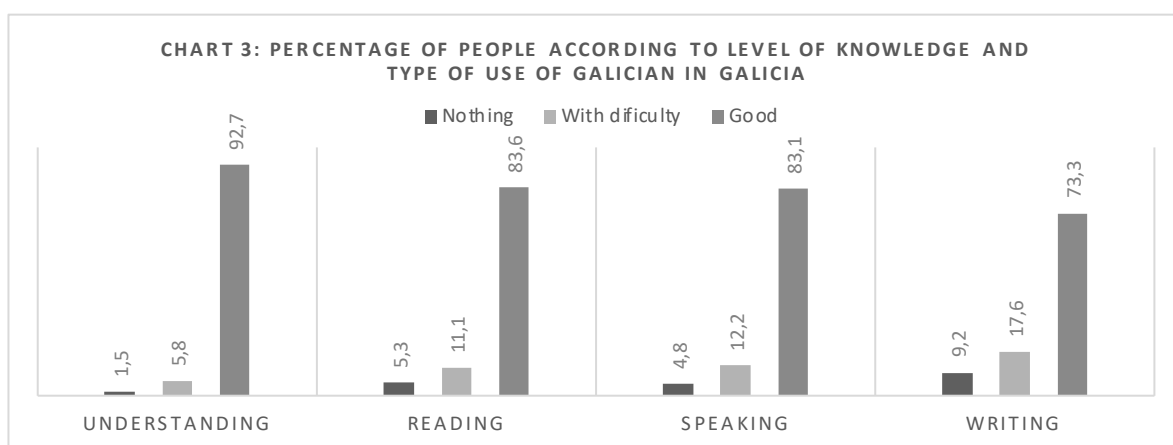
The level of knowledge and use of the co-official languages in the Autonomous Communities of Catalonia, Galicia and the Basque Country will also be presented. The collection of the data presented below was carried out by the National Statistics Institute (Instituto Nacional de Estadística-INE). Starting with the Catalan region, the percentage of people who understand Catalan well is 86.8%. In addition, 78.4% can read well, 75% speak the language well and a slightly smaller percentage of 64.5% can write it well. Only 4.1% do not understand Catalan at all and 10.4% have no language skills at all (Chart 1).



In the case of the Basque Country, half of the population (49.9%) of the Basque Country understands Basque well. Although there is a decreasing gradient from this figure through those who read (45.8%), speak (44.1%) and write correctly (40.9%), the percentages are all quite similar. The proportion of those who do not understand it at all stands at 29.6% of the population, with the indicator of those who say they have no knowledge of the language rising to 34.9% (Chart 2).



In the case of Galicia, 92.7% of the population living there understands Galician well. It has a high rate of reading (83.6%) and speaking (83.1%) of the language, while 73.3% of the population has a good knowledge of writing. Lack of comprehension has only a percentage of 1.5%, no speaking ability a percentage of 4.8% and no writing knowledge has a percentage of 9.2% (Chart 3).



## 5 MACHINE TRANSLATION SYSTEMS

As a subfield of artificial intelligence (AI) is often described the Language technology. Although language technology research dates back to the 1950s, the last two decades have seen significant progress in this area. In modern life, technologies such as speech recognition, machine translation and chatbots are used in everyday civic life. They are of added value in countries with more than one official language, as in the case of Spain. In this study, is analysed how language technologies can facilitate plurilingual interaction between the citizens of the regions which have as co-official languages Catalan, Basque and Galician and the public administration in Spain. In the case of Spain's central administration, these interactions mostly must be monolingual in Castilian, but may be bilingual or multilingual in autonomous communities that have their own official languages [7].

The various language technologies for the three main co-official languages in Spain, Galician, Basque and Catalan, are available with a varying level of development. Machine translation is used from both central government and autonomous communities to promote a more equal relationship for all languages and are generally a key factor in facilitating multilingual communication. First, it is worth mentioning the PLATA machine translation platform used by the Spanish central administration. This platform was designed to be implemented in the web portals of public administrations in order to translate both in the co-official languages (Catalan, Basque and Galician) and in English, French and Portuguese. It is based on the open-source translation engines Apertium and Moses which, depending on the language pair for translation, are rule and statistic based respectively, while for some language pairs the implementation of neural models has recently been included. Of note is that PLATA has a post-editing system for words that need to be excluded or translated in a special way. It also collects translation suggestions from users which are then fed back to the machine translation system in order to improve its quality and accuracy [8] [9].

More specifically, in the Autonomous Community of Galicia, which has Galician as its official language, various language technologies have been developed by Galician research groups, small and medium-sized companies such as Imaxin Software and large technology companies such as Google and Microsoft, which have been used by public administration services. An indicative reference is the Gaio machine translation service offered by the Xunta de Galicia. This translation system gives users the ability to translate between Galician, Spanish and Portuguese and is based on OpenTrad Apertium, an open-source machine translation engine. In addition to this system, other customised machine translation systems are used in provincial and municipal councils, giving citizens access to the content of the Official Gazette of the province (BOP-Boletín Oficial de Pontevedra) in Galician and Spanish. In the same context of language technology development, the production of Galician weather forecasts in Galician has been developed using the SimpleNLG system [10]. Another speech synthesis and recognition system worth mentioning is Cotovia, which facilitates the integration of speech synthesis and recognition systems in the Galician public administration [11]. Moreover, the website of the Galician government (Xunta de Galicia) uses a text-to-speech system that allows users to listen to its content. In addition, the Galician health sector (SERGAS) provides a speech recognition system in Galician to enable citizens to access the health services they require. Finally, the Galician public administration uses language technology software such as spell-checkers (Office and OpenOffice), spell-checkers (Galgo), grammar checkers (Golfinho) and language style checkers (Exeria).

Finally, it is worth mentioning the Proxecto Nós project promoted by the Xunta de Galicia, which works on the development of language technologies using artificial intelligence techniques. This project has been awarded to the University of Santiago de Compostela through two leading research institutions in the field of artificial intelligence and language technologies, ILG (Instituto da Lingua Galega) and CiTIUS (Centro Singular de Investigación en Tecnoloxías Intelixentes, literally 'Singular Research Centre on Intelligent Technologies'). In the framework of Proxecto Nós a Spanish/English-Galician neural machine translation system is being developed. It is a free open-source system that can be adapted to the administrative sector. As regards speech technologies, two text-to-speech models using advanced deep learning architectures based on neural networks have been developed and will be freely available for public use and can be integrated into public administration services [12].

Basque is also included in the central administration's PLATA machine translation system but is used more in the Basque public administration. The language technology included offers different solutions, one of which is machine translation. One of the language systems included is the Itzuli system, which translates Basque into Spanish, French and English. This system allows the user to speak to the machine and then the translator can reproduce the translation using speech-to-text and text-to-speech systems. As for other language technologies related to the improvement of Basque texts, such as

spellcheckers, the Basque Public Administration also offers a language technology portal that provides access to all such tools.

Finally, as regards Catalan, which is a co-official language in several regions of Spain, various language technologies have been developed, such as machine translation systems, speech recognition software or natural language processing tools. The Catalan public administration is promoting a website from which all machine translation systems can be accessed. There is a web-based automatic translator for various language combinations. Regarding speech technologies, various speech-to-text and text-to-speech systems have been developed including speech recognition, speech synthesis and voice-enabled virtual assistants. In this way, users can interact with computers using spoken Catalan, which makes it more convenient for them to access information and perform tasks. In this context, Mozilla's Common Voice project has been developed, a campaign promoted by the association for the promotion of free software Softcatalà and Project Aina, which generates free spoken language resources for Catalan. Finally, it is worth mentioning the extensive Aina AI project, which focuses on language technologies led by the Department of Digital Policies and the Barcelona Supercomputing Centre. This project is producing high-value open-source language resources to accelerate the integration of the latest language technology for Catalan in all public administrations that speak the language.

In the following, the results of a survey carried out in the regions that have Galician, Basque and Catalan as co-official languages will be presented. The questions that were asked to be answered were:

- 1 Whether Language Technologies have helped to the preservation of the co-official language.
- 2 Whether existing machine translation is sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish.
- 3 How often they use Language Technology in their everyday life.
- 4 Whether Language Technologies that have been developed are easy to use.
- 5 Whether they are satisfied with the systems that have been developed so far.

*Table 1. Percentage that captures whether Language Technologies have helped to the preservation of the co-official language.*

<b><i>Autonomous Community</i></b>	<b><i>Language Technologies helped to the preservation of the co-official language</i></b>
Galicia	82%
Basque Country	75%
Catalonia	68%

In the first question, which concerned whether citizens consider that Language Technologies have helped to the preservation of the co-official language, in all three Autonomous Communities (Galicia, Basque Country, Catalonia) the answer was positive. The highest percentage of 82% was in Galicia, followed by Basque Country with 75% and Catalonia with 68%.

*Table 2. Percentage that captures whether machine translation is sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish.*

<b><i>Autonomous Community of Galicia</i></b>	<b><i>Is existing machine translation sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish?</i></b>
Yes	10%
Somehow	74%
No	16%

<i>Autonomous Community of Basque Country</i>	<i>Is existing machine translation sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish?</i>
Yes	11%
Somehow	63%
No	26%

<i>Autonomous Community of Catalonia</i>	<i>Is existing machine translation sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish?</i>
Yes	5%
Somehow	82%
No	13%

In the second question concerning whether existing machine translation is sufficient to facilitate communication between citizens who speak only the local language and official government agencies that use only Spanish in all three regions the majority answered "Somehow". Catalonia had the lowest percentage of 5% of those who answered positively, and the Basque Country had the highest percentage of 26% of those who answered negatively. These percentages show that there is room for a lot of development in the future.

Table 3. Percentage that captures how often they use Language Technology in their everyday life.

<i>Autonomous Community of Galicia</i>	<i>How often do you use Language Technology in your everyday life?</i>
Very often	31%
Sometimes	36%
Almost Never	33%

<i>Autonomous Community of Basque Country</i>	<i>How often do you use Language Technology in your everyday life?</i>
Very often	20%
Sometimes	47%
Almost Never	33%

<i>Autonomous Community of Catalonia</i>	<i>How often do you use Language Technology in your everyday life?</i>
Very often	31%
Sometimes	45%
Almost Never	24%

In the third question, which concerned how often people use Language Technology in their everyday life, in Galicia the percentages are almost equally distributed with a small lead in the percentage (36%) that answered that they sometimes use Language Technology in their everyday life. In Basque Country and in Catalonia almost half of the respondents answered that they sometimes use Language Technology in their everyday life while a difference in the trend of percentages is shown between those who use Language Technology very often and almost never. In Basque Country there is a higher percentage of those who never use it (33%) while in Catalonia there is a higher percentage of those who use it often (31%).



Table 4. Percentage that captures whether Language Technologies that have been developed are easy to use.

<b><i>Autonomous Community of Galicia</i></b>	<b><i>Language Technologies that have been developed are easy to use?</i></b>
Yes	85%
Somehow	10%
No	5%

<b><i>Autonomous Community of Basque Country</i></b>	<b><i>Language Technologies that have been developed are easy to use?</i></b>
Yes	80%
Somehow	13%
No	7%

<b><i>Autonomous Community of Catalonia</i></b>	<b><i>Language Technologies that have been developed are easy to use?</i></b>
Yes	83%
Somehow	12%
No	5%

In the fourth question which refers to whether Language Technologies that have been developed are easy to use the percentages in all three areas showed the same trend with the majority answering positively, which indicates that the Language Technologies that have been developed so far are easy to use by everyone.

Table 5. Percentage that captures whether they are satisfied with the systems that have been developed so far.

<b><i>Autonomous Community of Galicia</i></b>	<b><i>Are you satisfied with the systems that have been developed so far?</i></b>
Yes	10%
Somehow	72%
No	18%

<b><i>Autonomous Community of Basque Country</i></b>	<b><i>Are you satisfied with the systems that have been developed so far?</i></b>
Yes	11%
Somehow	63%
No	26%

<b><i>Autonomous Community of Catalonia</i></b>	<b><i>Are you satisfied with the systems that have been developed so far?</i></b>
Yes	16%
Somehow	71%
No	13%

Finally, with the last question we wanted to explore whether people are satisfied with the systems that have been developed so far. In all three areas most respondents answered that they are somehow satisfied, which shows that there is space for improvement in Language Technologies.

## 6 CONCLUSIONS

An important challenge that modern intercultural societies must address is the preservation of the cultural characteristics of all population groups. The issue of preserving all languages is central and is approached in many different ways. One of them is the development of Language Technology which can decisively contribute to their preservation. Especially in countries such as Spain, where many different cultures coexist, the role of Language Technologies can be even more important since it can be a useful tool for the citizens of Autonomous Communities that maintain their own language to interact with government services where only Spanish is used.

As it became clear, the development of AI and its use in Language Technologies has led to rapid progress. However, there is certainly still a lot of space for development, in order to be able to talk about the existence of a sufficient support in the language field by AI. The difficulties faced by the scientific community in developing language tools for languages that are not widely spoken are many. However, it seems that the services provided are constantly improving and will continue to improve in the future.

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