A cluster analysis of tourist attractions in Spain

Natural and cultural traits and implications for global tourism

Dana-Nicoleta Lascu

Department of Marketing, University of Richmond, Richmond, Virginia, USA, and

Lalita A. Manrai, Ajay K. Manrai and Allison Gan

Department of Business Administration, University of Delaware, Newark, Delaware, USA

Abstract

Purpose – Natural and cultural tourism are important motivators for international tourism. Spain has impressive tourist attractions that are outstanding on the natural and cultural tourism dimensions. The purpose of this paper is to identify traits of the most attractive destinations in Spain and to understand the relative importance of natural, cultural, and dual (natural and cultural) attractions to target consumers.

Design/methodology/approach – The authors compare the level of tourism in the 17 major regions of Spain and identify the key natural, cultural, and dual attractions using a two-step cluster analysis to ascertain the relative importance of the three types of attractions.

Findings – The findings of the cluster analysis suggest that natural attractions had the highest importance, followed by dual attractions, with cultural attractions having the lowest importance in affecting the level of tourism in a region. The study identified four categories of regions resulting from "high vs low" total number of attractions by "high vs low" levels of tourism (operationalized via the number of tourist-nights). The regions with high levels of tourism were either located in the bodies of water (a group of islands) or on ocean/sea(s) surrounding Spain. The study suggests placing greater emphasis on promoting cultural attractions in Spain.

Practical implications – The findings suggest that there is a need to put more emphasis on promoting the cultural attractions in Spain. Spain is a diverse country with huge potential for tourism from people all over the world, due to its diverse geography and rich history.

Originality/value – To the best of the authors' knowledge, this is the first study that analyzes 17 regions of Spain in relation to their tourism characteristics, identifying attractions that are not sufficiently leveraged, and suggesting strategies for identifying opportunities for the tourism industry in Spain.

Keywords Cultural attractions, Dual attractions, Natural attractions, Tourist attractions

Paper type Research paper

1. Introduction

In 2016, the travel and tourism industry supported the global economy with 10.2 percent of global gross domestic product; this industry provided \$7.6 trillion to the global economy and generated 292 million jobs. In 2016, these tourism-related jobs accounted for 10 percent of the jobs in entire world (World Travel and Tourism, 2017). These figures are projected to grow even more over the next decade, and hold great potential for countries to generate economic growth, job creation, and develop nationally

and regionally. International tourist arrivals were at 68.5 million in 2017, and that number is only projected to see more and more growth.

In Spain, tourism accounts for 5 percent of GDP and is a key economic sector; the industry employs one in ten of the workforce (Euromonitor, 2017). Revenue from tourism has increased by 4.6 percent in 2017, and this trend is expected to continue (Euromonitor, 2017). The success of tourism in Spain is attributed to the fact that, as a destination, it provides both cultural resources (ranked 2nd worldwide) and natural resources (ranked 9th), according to the World Economic Forum (2017). Other important factors for Spain are the fact that it combines successful tourism service infrastructure with air transportation and policy support (World Economic Forum, 2017). The cultural and natural attractions are recognized as the two top considerations and motivations for tourism. The fastest growing segments of the tourism industry today are the cultural – and historical – sites (Timothy and Nyaupane, 2009) along with natural tourism (Kuenzi and McNeely, 2008).

In its 2017 annual Travel and Tourism Competitiveness Report, the World Economic Forum ranked Spain as first among the top ten countries on the Tourism Competitiveness Index. The rankings were as follows: (1) Spain, (2) France, (3) Germany, (4) Japan, (5) UK, (6) USA, (7) Australia, (8) Italy, (9) Canada, and (10) Switzerland (World Economic Forum, 2017).

Spain is geographically very diverse. It shares borders with Portugal in the West and France in the Northeast. Spain is surrounded by many bodies of water – Mediterranean Sea in the East, Atlantic Sea, Gulf of Gibraltar and Gulf of Cadiz in the South, Atlantic Ocean in the West, and Bay of Biscay in the North. This waterfront location of Spain creates ample opportunities for water sports and adventure for tourists. Two very popular tourist destinations, namely, Balearic Islands and Canary Islands, are a part of Spain and a big draw for tourists. Inland, Spain has several mountain ranges, such as the Cantabrian Mountains, Iberian Mountains, Sierra Morena Mountains, etc. The country of Spain is thus gifted with abundant natural attractions.

Spain has a very rich history as well. Dating back to the Iberians and Phoenicians, cave paintings from that era still exist. Many historical attractions go back to the times of Romans. Roman rule was followed by the rule of Germanic tribes. A significant event in Spanish history is the Moorish invasion in 711 AD, with the Moorish rule lasting for nearly seven centuries, particularly in cities such as Seville and Granada. In later years, many of the Islamic monuments and buildings were taken over by Christian rulers, who built churches and cathedrals within the walls of the mosques. A classic example of the building of Islamic and Christian architecture is the Palace of Alhambra, which is probably the top cultural/historical attraction in Spain.

The purpose of the study is to identify traits of the most attractive tourism destinations in Spain using a two-step cluster analysis to ascertain the relative importance of natural, cultural, and dual attractions to target consumers. Once identified, promoting attractions that are not sufficiently leveraged will offer important opportunities to the tourism industry in Spain.

This paper is organized in seven sections. In Section 2, we provide an overview of the geographical diversity of Spain. In Section 3, we discuss the history of Spain highlighting the major events and places that make Spain a historically rich land. In Section 4, we describe the lengthy process of selection and identification of the major natural, cultural, and dual (both natural and cultural) tourist attractions in each of the 17 regions of Spain. In Section 5, we add data on tourism (number of tourist-nights) for each of the 17 regions of Spain. We use the data on the number of tourist attractions and number of tourist-nights to conduct two different types of data analyses. First, we divide the 17 regions into four categories using "high vs low" number of total attractions and "high vs low" number of tourist-nights. Next, we use a two-step cluster analysis to attribute relative importance of the natural, cultural, and dual attractions in affecting tourism. Section 6 discusses the findings

of our data analysis and directions for future research. Finally, Section 7 discusses the global marketing implications of this research.

A map of Spain is presented in Figure 1, and the 17 regions are marked 1-17.

2. Geographical diversity

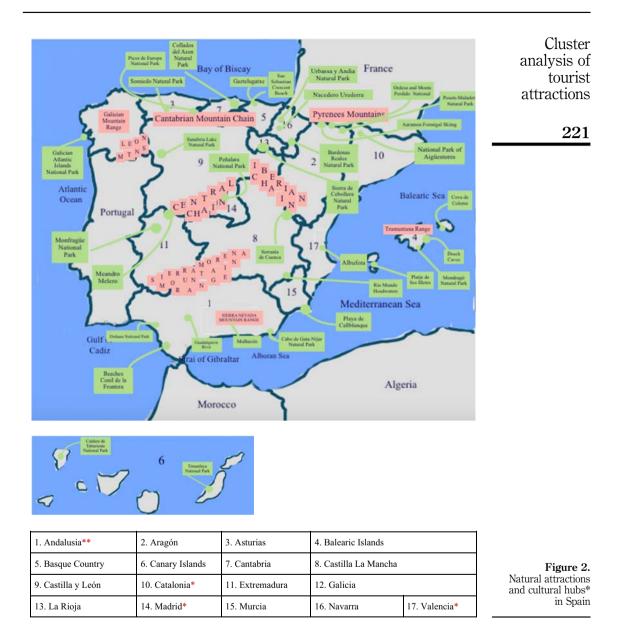Figure 2 presents a map of Spain with major natural attractions and topographical features outlined.

The Iberian Peninsula, comprising Spain and Portugal, is located in the Southwestern tip of Europe. Including the Canary Islands, in the Atlantic, West of Morocco, and the Balearic Islands, in the Western Mediterranean, Spain has a total area of 504,782 square kilometers (194,896 square miles). Relatively speaking, this is about two times the size of Oregon in the USA. The country is 1,085 kilometers from east to west, along with 950 kilometers from north to south (Kurian, 2017). Spain accounts for 85 percent of the Iberian Peninsula, occupying more area in the peninsula than Portugal. The Pyrenees Mountains act as a geographic border to separate it from the rest of Europe in the north. These mountains were formed when the Iberian microcontinent collided with continental Europe millions of years ago. The mountains create the Franco-Spanish border for 435 kilometers, stretching from the Bay of Biscay all the way to the Mediterranean Sea.

1. Andalusia	2. Aragón	3. Asturias	4. Balearic Islands	
5. Basque Country	6. Canary Islands	7. Cantabria	8. Castilla La Mancha	
9. Castilla y León	10. Catalonia	11. Extremadura	12. Galicia	
13. La Rioja	14. Madrid	15. Murcia	16. Navarra	17. Valencia

Figure 1.
Map of Spain and surrounding countries

1. Andalusia**	2. Aragón	3. Asturias	4. Balearic Islands	
5. Basque Country	6. Canary Islands	7. Cantabria	8. Castilla La Mancha	
9. Castilla y León	10. Catalonia*	11. Extremadura	12. Galicia	
13. La Rioja	14. Madrid*	15. Murcia	16. Navarra	17. Valencia*

Figure 2.
Natural attractions
and cultural hubs*
in Spain

The waters surrounding the country create a natural boundary accounting for 88 percent of Spain's border. The northwestern coast has excellent harbors, especially along the Galician coast (Spain: At-A-Glance, 2017). In the Northeast, Spain shares a border with France and Andorra. A diverse topography creates varied climates throughout the Peninsula, as addressed later in the paper. The Balearic Islands in the East, including Majorca and Ibiza, plunge into the Mediterranean Sea (Payne, 1973). The Mediterranean coast stretches for 1660 km on the East (Spain: At-A-Glance, 2017). To the South are the Canary Islands in the Atlantic off the Coast of Africa, along with Ceuta and Melilla in the North of Africa.

The Canary Islands – an archipelago of 13 islands in the Atlantic – are big attractions due to their volcanic black sand beaches. The largest island, Tenerife, comprises Mount Teide, the third tallest volcano in the world (Kurian, 2017). The Atlantic and the Mediterranean comprise the southern border, with the Atlantic Coast stretching for over 710 km. The coastal plains are narrow, broken up by mountains in the sea forming rocky points. These southern regions tend to be desert-like. Due to the vast variety in landscapes and diversity in geography, Spain has everything to offer its tourists (Payne, 1973).

Spain is topographically divided into five different parts – aside from the 17 regions defined based on other considerations. First is Meseta, the central plateau, physically enclosed in all cardinal directions by mountains. This is the most important physical feature in Spain's diverse topography, sloping downward from the north to the south, and from east to west. It is almost treeless, with elevations of 610 meters above sea level. The flat land extends from the Cordillera Cantábrica in the North, to the Sierra Morena in the South. From the east, it reaches from the Iberian Mountain Range to the Portuguese border in the West. Next, the northern mountains stretch from the Atlantic to the Mediterranean. The Guadalquivir Basin, in the Southwest, is the third region. The Ebro Basin, the fourth region covering one sixth of the country, is situated in the Northeast, in Aragón. Its Río Ebro is Spain's longest river, and flows into the Mediterranean. Finally, the Mediterranean Coastal Plains constitute the fifth topographical region (Kurian, 2017).

There are also the Places of Sovereignty, a three-island group near Africa, the Penon de Velez de Gomera, Penon de the Alhucemas, and Chafarinas Islands (Spain: At-A-Glance, 2017). There are about 1,800 rivers and streams cutting through Spain creating even more topographical diversity in the various regions; they flow from west to south into the Atlantic, winding through mountain valleys, along rocky courses – many are dry most of the year (Kurian, 2017). The Douro, Miño, Tagus, and Guadiana rivers begin in Spain and flow through Portugal, flowing into the Atlantic. The Guadalquivir River is Spain's deepest river and the only one navigable, an excellent tourist destination for sightseeing and cruising. As they are not used for travel, transport, or irrigation, the rivers serve as a source of power for the local communities (Spain: At-A-Glance, 2017). The lower Guadalquivir valley is marshy and salty. The flat fertile plain of the river is unique among Andalusia's otherwise mountainous regions (Kurian, 2017).

The highest mountain in Spain – and the peninsula – is Mulhacén, in the Baetic Range, in Sierra Nevada, at 3,482 meters. On a clear day, from its peak, one can see views of the Moroccan Rif Mountains, and half of Andalusia. This mountain attracts tourists, both experienced and inexperienced, with ice climbing, hiking, mountaineering, skiing, and snowboarding, with a geodesic vertex that draws experienced climbers from all over the world (Mulhacén, 2017). Some of the country's best agricultural areas are found around Seville (Kurian, 2017).

Spain's diverse topography and varied physical land features create different regional climates. Most of Spain has extreme temperatures and inadequate rainfall, as most of the country is on a high plateau with full seasons, but hot summers and cold winters. A colder climate characterizes the northern plateau and the Pyrenees Mountains bordering the north (National Geographic, 2017). The central plateau has arid, hot summers that dry up local streams and lead to droughts and lack of water – on average, Spain receives less than 610 mm (24 inches) of precipitation per year. The Biscayan and Atlantic coasts and the northern mountains are cooler and wetter than other areas. Madrid has cold winters that may freeze local streams, but the summers are hot, with temperatures at times above 40 degrees Celsius (104 Fahrenheit); however, winter temperatures can drop down to 4 degrees Celsius (40 Fahrenheit) (Spain: At-A-Glance, 2017). The southern Mediterranean coast has a subtropical climate – Malaga's winter temperatures average 14 degrees Celsius (57 Fahrenheit) (Spain: At-A-Glance, 2017).

3. Historical richness

Figure 2 also shows five key cultural hubs identified with "*****" in the regions of Andalusia (two cultural hubs, namely, *****Seville and *****Granada), Catalonia (*****Barcelona), Madrid (*****Madrid), and Valencia (*****Valencia).

A key attraction for world travelers to Spain is its historical richness, its major landmarks and tourist attractions that relate this history. Spain is a country with diverse culture that date back to the Iberians, the country's earliest inhabitants. These warlike tribes, the largest single ethnic group, traveled to the Iberian Peninsula during the second millennium BC (Payne, 1973). The Eastern Iberians were influenced by Greek and Phoenicians, and their alphabet was found in pre-Roman Hispania (Payne, 1973). In Cantabria, cave paintings still remain from the earliest inhabitants at Altamira, depicting prehistoric life (History of Spain, 2016). Multitudes of monuments, architecture, statues, art, and artifacts have been kept intact over the centuries and are key points of interest for those traveling to Spain. To fully understand its historical significance, we herein outline the history of Spain, beginning with the Roman period.

Evidence of prehistoric life abound in Spain – in the Sierra de Atapuerca, 780,000-year-old bone fragments were found. Phoenicians, Greeks, Iberians, Celts, and Carthaginians resided in Spain at some point. However, the true birth of the historical culture is commences with the strong Roman presence in Spain. Romans arrived to the Iberian Peninsula before 200 BC, and occupied the peninsula for upwards of 600 years. They brought with them knowledge to create a road system, aqueducts, theaters, baths, and language (Payne, 1973). The historic influence of Roman Catholicism is present is in the "fervent mystical element" within historical Spanish art and literature. It is also evident in the long list of saints and the many religious congregations and orders throughout history (Spain: At-A-Glance, 2017). Many of these Roman-influenced historic sites remain today and are a huge draw for tourists traveling to the area.

As Germanic tribes came through the area, Roman rule dwindled. Visigoth allies of the Romans helped restore order and established a capital. They did not leave much behind for tourists, other than the oldest church (661 AD), Baños de Cerrato, in Palencia (History of Spain, 2016). The Visigoths, numbering 300,000 out of a peninsula with 4,000,000 inhabitants, had powerful armed forces, but were weak economically, socially, and culturally than the Hispania majority (Payne, 1973). Barcelona was occupied by the Visigoths, who changed its name to Barcinona (History of Barcelona, 2017).

The Moors invaded Spain in 711 AD, from North Africa, with a lasting influence of more than 700 years. Most of the Moorish power was held in southern cities, such as Cordoba, Seville, and Granada, whose architecture reflects Moorish influence. The Mezquita of Cordoba, the world's third largest mosque, was created by Abd ar-Rahhman and is an excellent example of Islamic art in Spain. Ferdinand III took over Cordoba, and a Christian church built within the walls of the mosque now serves as a Christian cathedral (History of Spain, 2016). In the Picos de Europa Mountains of Northern Spain lies the tomb of Pelayo, one of the greatest heroes of the Christian Re-conquest. This is also a major historical tourist landmark.

The Spanish nation emerged from the marriage of Fernando and Isabella, which united the Aragón and Castile territories. After persecuting Muslims, they funded the voyage of Christopher Columbus. This led to the emergence of the Spanish Empire, after Columbus discovered the Americas, in 1492 AD. A major cultural attraction marking this period is the Granada's Alhambra Palace (originally built in 889), where Queen Isabella is buried. After the reign of Felipe II, the Spanish Empire peaked as he made Madrid the new capital of the country. An attraction related to this ruler is El Escorial, Felipe II's palace-monastery, near Madrid. Prior to the Spanish Inquisition, when Jews were expelled or forced to convert, the Jewish community in Spain was one of Europe's most lively – with the Sinagoga Del Tránsito in Toledo as an important historical attraction.

The Spanish Civil War, led by General Franco's Nationalist forces against the Republicans, inspired many art works on display in many museums, and Picasso's "Guernica," famous for portraying the terrors of the Spanish Civil War. The victory of the Nationalist forces of Franco in the Civil War place him at the helm of a fascist dictatorship until 1975 (History of Spain, 2016). His dictatorship impeded Catalonian independence, creating a difficult period for Barcelona; but, once Franco died, Barcelona became one of the most important areas of Spain (History of Barcelona, 2017). He was buried in Valle de los Caídos, near Madrid, an important tourist attraction, but a controversial one, as it fails to mention that it was built by more than 12,000 political prisoners, and that 40,000 bodies of Nationalists and Republicans are buried beneath its floor (History of Spain, 2016). The government transformed the monument into one for all Spaniards that remembers the horrors of war, and its victims (Rainsford, 2011).

After Franco's death, in 1975, Juan Carlos I was crowned King, moving the country to a constitutional monarchy (National Geographic, 2017). The Constitution, approved by the legislature and passed by referendum, became effective in 1978. It removed Catholicism as the official state religion even though 94 percent of the country practices Roman Catholicism (Spain: At-A-Glance, 2017), and legalized divorce and abortion, previously illegal; in 2005, same sex marriage became legal (Spain: At-A-Glance, 2017). Carlos I led Spain to become a stable democratic nation. Its center-left government led Spain to join the European Union in 1986, resulting in an economic boom. However, throughout the 1990s, pro-business policies created a strong divide between the rich and the poor, and high unemployment (National Geographic, 2017). Barcelona was the site of the 1992 Olympic Games, which brought publicity and tourism to the city. Barcelona is one of the key cultural hubs of Spain and its architecture is peppered with Gaudí artwork (History of Barcelona, 2017).

The current capital and largest city in Spain is Madrid. The second largest city, Barcelona, is its key port and important commercial center. Valencia is its manufacturing and railroad hub, with significant importance to the economy. Seville is not only the capital of the Andalusia region, but also a strong cultural center for tourists. In addition, along with being the capital of Aragón, Saragossa is also a key industrial center of Spain. In Basque country, Bilbao is a busy international port (Spain: At-A-Glance, 2017) and cultural center.

Modern Spain has many cultural hubs that draw people all over the world. The four major cities most popular with tourists are Barcelona, Madrid, Seville/Granada, and Valencia, offering unique draws that attract not only tourism, but also immigration. Barcelona is known for its cosmopolitan vibe, with medieval quarters and Roman artifacts, evidencing its rich historical ties. It also features stunning artwork and architecture created by Antoni Gaudí and Lluís Doménech. This historic and artistic background makes Barcelona a unique city to visit, especially for those interested in art history. Barcelona is also one of the world's largest business centers due to the ease of transportation, its Mediterranean climate, and variety of attractions. This hub not only features a city, but also urban beaches for tourists to relax and enjoy themselves.

Another major city of interest is Madrid, the capital, which combines a rich history with its current status as the economic, financial, and service center in Spain. The Plaza Mayor features an area called the "aristocratic center", with the Royal Palace that dates back to the seventeenth century. There are over 60 museums drawing in tourists, and a rich nightlife culture. It is also home to the San Isidro bullfighting festival, noted as the most important in the world. Seville and Grenada are known as important cities in Spanish tradition. Seville historically was a major port for distribution of goods, as it is located on the Guadalquivir River. The Moorish culture is prominent there, making it a unique destination. Granada, at the tip of the Sierra Nevada Mountains, between the Darro and Genil rivers, features Renaissance architectural sites along with beautiful gardens. The Alhambra and Generalife are two major points of interest for travelers in this area. Finally, Valencia, Spain's Mediterranean Port, and an important cultural

hub dating back to 138 BC, harmoniously mixes innovative and experimental buildings from the new millennium with its rich historical architecture. The sea along the coast draws people in looking to relax and enjoy its natural beauty (Tourism in Spain, 2017).

Celebrations abound in Spain, and are important cultural attractions in numerous cities and regions. Fiestas, for example, are important ancient traditions that begin with a mass, followed by a procession with images carried on the shoulders of the participants. They involve music, dancing, singing, and poetry readings. Two of the important fiestas that draw many tourists are the fiesta at Valencia, and San Fermin, in Pamplona. There are also solemn fiestas including the Feast of Corpus Christi in Toledo and Granada, along with Holy Week in Valladolid, Zamora, and Cuenca. A famous bullfight is the Fiesta Brava, another staple fiesta that draws people from all over the world (Spain: At-A-Glance, 2017).

4. Tourist attractions in Spain: identification and selection

Spain is gifted with abundant natural, cultural, and dual (both natural and cultural) attractions. The source used for selection of the attractions for the analysis in this paper was Tourism in Spain (2017). The source was selected after considering numerous other sources, including commercial tourism websites that we eliminated because they advocated for certain tourism destinations, subscription international tourism guidebooks – e.g., *Fodor's, Lonely Planet* – and travel websites – e.g., TripAdvisor, Expedia, and Orbitz – which focused primarily on the most popular tourist attractions.

The analysis revealed that the Tourism Office of Spain (Spain.info), of the Spanish government, provided the most comprehensive and vetted impartial list of attractions, and facilitated their organization based on the criteria designated – natural, cultural, and dual (natural and cultural) tourist attractions.

5. Attraction-tourism data analysis

In this section, we add data on the number of nights spent by tourists in each of the 17 regions of Spain (Eurostat, 2017).

Table I shows a region-wise number of attractions (natural, cultural, and dual attractions) and the number of tourist-nights for each of the 17 regions. These data were used to perform two different types of analyses. First, we classified 17 regions into four categories. These categories were developed on the basis of "High-Low" (above average-below average) number of total tourist attractions by "High-Low" (above average-below average) number of tourist-nights. Next, we used the two-step cluster analysis procedure in SPSS with type of tourist attractions, namely, natural, cultural, and dual as well as a categorical variable based on "High-Low" (above average-below average) number of tourist-nights. In the two-step cluster analysis procedure, the number of clusters was selected using the Akaike's information criterion (AIC). This approach suggests that, for a given statistical model, if k is the number of estimated parameters in the model, and L is the maximum value of the likelihood function for the model, then the AIC value of the model is the following (Akaike, 1974; Burnham and Anderson, 2002):

$$\text{AIC} = 2k - 2\ln(L)$$

Given a set of candidate models for the data, the preferred model is the one with the minimum AIC value. Thus, AIC rewards goodness of fit (as assessed by the likelihood function), but it also includes a penalty that is an increasing function of the number of estimated parameters. The penalty discourages overfitting, because increasing the number of parameters in the model almost always improves the goodness of the fit. For our analysis, we proceeded as follows:

Number of total attractions – Number of tourist‐nights‐based categorization

Region	Natural attractions	Cultural attractions	Dual attractions	Total	Number of nights spent by tourists in 2016
Andalusia	5	9	9	23	35,947,059
Aragón	5	10	5	20	1,532,540
Asturias	4	8	6	18	769,881
Balearic Islands	5	3	2	10	64,165,819
Basque Country	2	4	2	8	2,774,644
Canary Islands	4	1	3	6	91,274,362
Cantabria	1	1	2	4	865,486
Castilla La Mancha	2	9	2	13	674,482
Castilla y Léon	1	8	3	12	1,001,693
Catalonia	1	8	4	13	52,209,012
Extremadura	2	5	2	9	410,833
Galicia	1	9	2	12	2,280,578
La Rioja	1	4	4	9	239,267
Madrid	1	7	3	11	12,789,369
Murcia	1	8	2	11	1,904,167
Navarra	3	2	1	6	618,088
Valencia	1	8	1	10	24,015,497

Source: Eurostat (2017)

Table I.
Number of attractions (natural, cultural, dual, and total attractions) and number of tourist-nights

The average number of total tourist attractions in a region was computed at 11.47. Therefore, regions with 11 or less attractions are classified as "Low Attractions" regions while the regions with 12 or more attractions were classified as "High Attraction" regions. Next, we computed average number of tourist-nights across 17 regions. The average was 17.26 million tourist-nights. Thus, the regions with more than 17.26 million tourist-nights were classified as "High Tourism" regions, while the regions with less than 17.26 million tourist-nights were classified as "Low Tourism" regions. This two-way (high-low) classification of regions based on number of total attractions and number of tourist-nights resulted in four categories. Table II shows the regions falling under each of the four categories.

Low no. of tourist-nights (< 17.26 million) Low no. of total attractions (⩽11)	High no. of tourist-nights (> 17.26 million) Low no. of total attractions (⩽11)
Basque Country	Balearic Islands
Cantabria	Canary Islands
Extremadura	Valencia
La Rioja	
Madrid	
Murcia	
Navarra	
Low no. of tourist-nights (< 17.26 million) High no. of total attractions (> 11)	**High no. of tourist-nights (> 17.26 million) High no. of total attractions (> 11)**
Aragón	Andalusia
Asturias	Catalonia
Castilla La Mancha	
Castilla y León	
Galicia	

Table II.
Number of attractions/ number of tourist categories for 17 regions of Spain

5.1 Two-step cluster analysis
Next, a two-step cluster analysis procedure was performed and the number of clusters was selected using AIC. The variables used in this procedure were number of natural, cultural, and dual attractions, and a categorical variable "High-Low" (above average-below average' number of tourist-nights). This procedure computed AIC for possibility of a single cluster to 17 clusters, and resulted in a final two cluster solution corresponding the lowest value of AIC $= 62.592$. The final two clusters solution corresponded to a "fair" cluster quality on the "Silhouette measure of cohesion and separation" $= 0.4$. The membership of the two clusters is given in Table III. Also reported in Table III are the profiles of the two cluster-centroids (means and standard deviations) on the three variables, namely, number of natural, cultural, and dual attractions.

6. Discussion of results and directions for future research
An examination of Table III identifying regions with high tourism indicates that all five regions with high tourism, namely, Andalusia, Balearic Islands, Canary Islands, Catalonia, and Valencia are located either on or in a sea that surrounds Spain (see Figure 1, map of Spain and surroundings). This suggests that Spain attracts many tourists with its beaches and opportunities for water sports. Spain has opportunities in its mountainous regions as well (see Figure 2, map of natural attractions in Spain), but, clearly, water attractions are the biggest draw.

Similarly, an analysis of the results of the two-step cluster analysis procedure summarized in Table III indicates that the same five regions, namely, Andalusia, Balearic Islands, Canary Islands, Catalonia, and Valencia are grouped together in Cluster 1 (with "High" above average tourist-nights). Additionally, two other regions Aragón (located not too far from the Mediterranean ocean) and Asturias (located on the Bay of Biscay) are also placed in Cluster 1. Thus, the two-step cluster analysis procedure supports the finding that water-related sports and activities constitute a big draw for tourism in Spain.

In order to obtain further insights into the relative importance of the three types of attractions (natural, cultural, and dual attractions) on tourism, we examined the input (predictor)

Cluster 1 (7 regions)	Cluster 2 (10 regions)	
Andalusia	Basque Country	
Aragón	Cantabria	
Asturias	Castilla La Mancha	
Balearic Islands	Castilla y León	
Canary Islands	Extremadura	
Catalonia	Galicia	
Valencia	La Rioja	
	Madrid	
	Murcia	
	Navarra	
Cluster 1 (7 regions)	Cluster 2 (10 regions)	*t*-stat (df) and *p*-value
Centroid mean and SD	Centroid mean and SD	For mean differences
Natural attractions	Natural attractions	*t*-stat $= 2.57$ (df $= 15$)
$\mu = 3.29$	$\mu = 1.50$	*p*-value < 0.05
$\sigma = 1.890$	$\sigma = 0.707$	
Dual attractions	Dual attractions	*t*-stat $= 2.0555$ (df $= 15$)
$\mu = 4.29$	$\mu = 2.30$	*p*-value < 0.10
$\sigma = 2.690$	$\sigma = 0.823$	
Cultural attractions	Cultural attractions	*t*-stat $= 0.6545$ (df $= 15$)
$\mu = 6.71$	$\mu = 5.70$	*p*-value < 0.50
$\sigma = 3.352$	$\sigma = 2.908$	

Table III.
Results based on the
two-step cluster
analysis procedure

importance weights computed by the two-step cluster analysis procedure for the three types of tourist attractions for making assignment of regions to the two clusters. The means, standard deviations, and *t*-stats (testing the differences between the means of centroids for the two clusters) of three types of attractions are reported in Table III. As can be seen from Table IV, natural attractions are the most important, dual attractions are next in importance, and cultural attractions are the least important. This finding is consistent with our earlier interpretation that regions located on or in major bodies of water attract a larger number of tourists compared to the land-locked regions.

Having said that we must acknowledge the cultural tourism potential of Spain, which attracts tourists all over the country. Cultural gems and historical hubs like Barcelona, Granada, Madrid, Seville, and Valencia, as identified in the "History" section of this paper, offer numerous monuments, museums, and historical sites to visitors. Thus, tourism can be broadly classified into two categories of "activity tourism" and "visitation tourism" (Manrai *et al.*, 2017). The current discussion mainly draws upon activity tourism in the above-mentioned areas. It would be important to identify why regions such as Aragón, Asturias, Castella La Mancha, Castilla y León and Galicia have less tourist traffic as evidenced by the lower number of tourist-nights, even though they have a high number of attractions.

A limitation of this study is that it did not address the current marketing efforts of national and regional tourism boards to increase tourism traffic, especially in the above-mentioned areas. Future research might investigate existing marketing efforts that national and regional tourism boards are currently undertaking to increase tourist-nights/visitors in these areas and offer suggestions for appropriate targeting world visitors to the Aragón, Asturias, Castella La Mancha, Castilla y León and Galicia regions. It is well possible that regional efforts are not adequately funded, and that national tourism funds might be successfully redirected to promote tourism in these regions and increase traffic to their respective attractions, many of them UNESCO World Heritage destinations.

In future research, there is much scope for further differentiating tourists on the basis of their motivation for tourism (natural vs historical/cultural), and for tracking the different types of tourists who are attracted to different destinations in Spain.

7. Implications for global marketing

Currently, Spain ranks number one in Travel and Tourism Competitiveness Index (TTCI) in the 2017 annual Travel and Tourism Competitiveness Report of World Economic Forum. The TTCI index is based on four category of variables, namely: enabling environment (business environment, safety and security, health and hygiene, human resources and labor market, and international communication technology, ICT, readiness), travel and tourism enabling conditions (prioritization of travel and tourism, international openness, price competitiveness, environmental sustainability), infrastructure (air transportation

Input (predictor): I(P) ↓	Cluster 1	Cluster 2
No. of tourist-nights (Low-High) (Below average-above average)	High (above average) No. of tourist-nights 71.4% I(P) Importance = 1.0	Low (below average) No. of tourist-nights 100.0% Importance = 1.0
No. of natural attractions	I(P) Importance = 0.8 $\mu = 3.29$	Input importance = 0.8 $\mu = 1.50$
No. of dual attractions	I(P) Importance = 0.6 $\mu = 4.29$	Input importance = 0.6 $\mu = 2.30$
No. of cultural attractions	I(P) Importance = 0.4 $\mu = 6.71$	Input importance = 0.4 $\mu = 5.70$

Table IV.
Relative importance of input (predictor)

infrastructure, ground and port infrastructure, tourist services infrastructure), and natural and cultural resources (natural resources, cultural resources, business travel).

Spain had received several other top performance rankings in the world. For example, Spain was ranked No. 2 in the world on Tourist Service Infrastructure and Cultural resources and Business Travel; No. 5 in the World on Prioritization of Travel and Tourism; and No. 9 in the World on Natural Resources and Air Transport Infrastructure. However, it had also received several lower performance rankings. For example, it was ranked No. 98 in the world on Price Competitiveness; No. 75 in the world on Business Environment; No. 43 in the world on International Openness; and No. 31 in the world on Environment Sustainability. In order to maintain its leadership position in the Global Tourism business, Spain must keep reinforcing its strengths and address the issues that will consistently propel it to tops of international rankings.

The current study analyzed tourism by regions and by three types of tourist attractions (natural, cultural, and dual attractions). Our findings suggest that five regions in particular, namely, Andalusia, Balearic Islands, Canary Islands, Catalonia, and Valencia, attract significantly higher number of tourists than the other 12 regions. Furthermore, natural attractions were found to be most important determinants of tourism with the dual attractions being next most important, and cultural attractions being the least important tourism determinants. This is problematic, considering that Spain has gems like the Alhambra, which tell the stories of struggles between multiple civilizations, and the City of Toledo, which transports the visitors to medieval times in a time capsule.

The natural attractions of Spain were discussed earlier mainly from the point of beaches and bodies of water that offer access to water sports. Spain has several mountain ranges offering opportunities year round for mountain tourism. In the north are the Cantabrian Mountains, spanning across the region of Castilla y León and the Galicia region, boarding Portugal, has Leon Mountains. In the center of the country, in the southern part of Castilla y León region, is the Central Mountain chain, and Aragón region houses the Iberian Mountain chain. The southern part of Spain has Sierra Morena mountain range in the regions of Castilla La Mancha and Extremadura. Thus, many of the regions in Spain, which are not located "in" or "on" water, are remarkable for other natural elements that are attractive to tourists – for example, mountains. There is a need to promote tourism in these regions. Overall, thus, there are ample opportunities for global tourism in Spain.

References

Akaike, H. (1974), "A new look at the statistical model identification", *IEEE Transactions on Automatic Control*, Vol. 19 No. 6, pp. 716-723.

Burnham, K.P. and Anderson, D.R. (2002), *Model Selection and Multimodel Inference: A Practical Information-Theoretic Approach*, 2nd ed., Springer-Verlag, Berlin.

Euromonitor (2017), "Spain: country profile", Euromonitor Passport database, November 22, 2018.

Eurostat (2017), "Nights spent at tourist accommodation establishments by degree of urbanization and by NUTS 2 regions (from 2012 onwards)", February, available at: http://ec.europa.eu/eurostat/web/products-datasets/-/tour_occ_nin2d (accessed July 31, 2017).

History of Barcelona (2017), "Tour Spain travel guides", available at: www.tourspain.org/barcelona/history.asp (accessed July 22, 2017).

History of Spain (2016), "Key periods in the history of Spain", available at: www.spanish-fiestas.com/history/ (accessed December 23, 2016).

Kuenzi, C. and McNeely, J. (2008), "Nature-based tourism", in Renn, O. and Walker, K. (Eds), *Global Risk Governance: Concepts and Practice Using the IRGC Framework*, Chapter 8, Springer, New York, NY, pp. 155-178.

Kurian, G.T. (2017), "Spain: geographical features", available at: www.fofweb.com/activelink2.asp? ItemID=WE39&Geography.aspx&iPin= M0019860&SingleRecord=True (accessed July 31, 2017).

Manrai, L.A., Manrai, A.K. and DeLuca, J. (2017), "Twenty shades of Italy: an analysis of its cultural, natural, and dual tourist attractions with implications for global tourism marketing", *Journal of Global Marketing*, Vol. 30 No. 5, pp. 297-308.

Mulhacén (2017), "Overview", available at: www.summitpost.org/mulhac-n/617430 (accessed July 11, 2017).

National Geographic (2017), "Spain travel guide", available at: http://travel.nationalgeographic.com/ travel/countries/spain-facts/ (accessed July 22, 2017).

Payne, S.G. (1973), *A History of Spain and Portugal,* Vol. 2, University of Wisconsin Press, Madison, WI.

Rainsford, S. (2011), "Fate of Franco's valley of fallen reopens Spain wounds", available at: www.bbc. com/news/world-europe-14189534 (accessed July 31, 2017).

Spain (2016), *Funk & Wagnall's New World Encyclopedia*, World Book, Inc., p. 1.

Spain: At-A-Glance (2017), Facts on File, Inc., available at: www.fofweb.com/activelink2.asp?ItemID= WE39&Country.aspx&iPin= M0019860&SingleRecord=True (accessed December 27, 2017).

Timothy, D.J. and Nyaupane, G.P. (2009), *Cultural Heritage and Tourism in the Developing World: A Regional Perspective*, Routledge, New York, NY.

Tourism in Spain (2017), available at: www.spain.info/en_US

World Economic Forum (2017), "The travel and tourism competitiveness report", World Economic Forum, Geneva, available at: www.weforum.org/agenda/2017/04/which-are-the-most-tourist-friendly-countries (accessed July 31, 2017).

World Travel and Tourism (2017), "Travel and tourism economic impact", available at: www.wttc.org/-/media/files/reports/economic-impact-research/regions-2017/world2017.pdf (accessed July 31, 2017).

Further reading

Spain Travel Guide (2017), "Tour Spain travel guides", available at: www.tourspain.org (accessed July 22, 2017).

World Tourism Organization (2017), "UNWTO tourism highlights", United Nations World Tourism Organization, Madrid, available at: www.e-unwto.org/doi/pdf/10.18111/9789284419029 (accessed December 8, 2017).

Corresponding author
Ajay K. Manrai can be contacted at: manraia@udel.edu