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Image destination engagement from a cultural perspective—A neuromarketing approach for a Spanish-German study

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ABSTRACT

The importance of the image of the tourist destination in the communication and marketing of a tourist destination is beyond doubt. For this reason, numerous studies address these issues. However, not so many do so from the perspective of the emotion the receiver feels, which is why this study deals with analyzing the emotion generated in the receiver through neuromarketing techniques and measuring the level of engagement felt. As a fundamental part of this study, we added the variable of cultural differences, both generically and specifically for gender and age. We are mainly guided by the theories of Life Cycle Theory and Generational Theory to analyze age differences. At the same time, gender differences are approached from the Gender Role Theory. The sample comprises one hundred individuals with apparent cultural differences, one sample of German origin and residence and the other of Spanish origin and residence, 50/50. We approached the study from the point of view of the emotion felt by the receiver of the message based on ten neuromarketing techniques (EGG) and ten images used by a famous tourist destination known in both countries. The results suggest that not only are there differences in the emotion felt after viewing images of a tourist destination, but that these differences are also explained by cultural background, gender, and age.

Keywords: image destination engagement; tourism neuromarketing; cultural differences; gender differences; age differences

1. Introduction

1.1. Importance of image destinations in tourism marketing

Nowadays, nobody doubts the importance of the destination image when choosing a destination. Therefore, it is recognized in the scientific literature as one of the key concepts[1].

We define destination image as the general perception or mental image that potential visitors have of a particular destination[2]. Several factors influence the destination image and can be positive, negative, or neutral[1]. Furthermore, it consists of two components: a cognitive component based on facts and an affective component based on feelings, values, and emotions associated with the tourism destination[3].

This is why images play a crucial role in promoting destinations and different types of travel, from attraction to engagement to purchase and repurchase intent.

Traditionally, the literature has focused on the cognitive component of the destination image (perceptions, beliefs, and knowledge about destination characteristics). The affective component is becoming increasingly important when choosing a destination or a type of travel[4].

1.2. Emotions in tourism marketing

Traditionally, researchers use various self-report measures, such as questionnaires, to determine respondents' emotional states[5]. Subjects are asked to rate (numerically) the emotions that certain stimuli, such as photos of a destination or a particular type of travel, evoke in them. Despite the advantages of this method, such as its low cost and ease of use, there is a risk of possible emotional bias, which can have various causes[6]. One way to avoid unbiased data when measuring emotions and to capture objective responses in real time is to use an appropriate neural instrument. The emotional responses of the brain elicited by the marketing stimulus are directly recorded by the chosen instrument, like the EGG sensor. An EEG-based neuromarketing experiment can be used as a tool to evaluate the effectiveness of tourist destination marketing in coupling a positive emotion to a destination[7].

Decisions on travel destinations have an unconscious component and a direct component that may drive or affect overt preference and actual choice, which can be measured with EGG sensors[8].

1.3. Cultural differences

To comprehensively grasp general cultural differences, particularly those associated with age and gender, a comprehensive theoretical framework must be developed by integrating cultural anthropology, sociology, and psychology concepts. This approach will enable us to better understand the factors that shape cultural variations across groups and individuals. To be able to see the primary constructs and variables:

Drawing from various disciplines such as cultural anthropology, sociology, and psychology, one can delve into the cultural dimensions surrounding age and gender[9]. This exploration thoroughly explores diverse theories related to these dimensions, including socialization's role and the impact of societal expectations. Understanding how age and gender are perceived and constructed in different cultures enhances our appreciation of other perspectives and facilitates cross-cultural understanding. This approach is integral to creating a comprehensive theoretical framework for aging experiences, requiring an examination of cultural disparities across societies. Interdisciplinary research from the mentioned fields can provide valuable insights into the varied perspectives surrounding aging[10], encompassing beliefs about the roles, expectations, and treatment of the elderly and intergenerational relationships.

Moreover, the influence of cultural differences in shaping gender roles and identities is significant[11]. A comprehensive understanding of these differences demands an interdisciplinary approach integrating cultural anthropology, sociology, and psychology principles. Using this method, it is possible to investigate in greater detail how various cultures interpret masculinity and femininity in light of their distinctive historical backgrounds, customs, and belief structures[12].

Societal generational gaps, often attributed to age-related disparities, vary in degree depending on sociocultural factors[13]. By combining insights from cultural anthropology, sociology, and psychology, it is possible to analyze how culture impacts these generational dynamics. This analysis includes an understanding of attitudes toward authority figures and family power distribution[14].

Finally, studying the dynamics of age, gender, and culture necessitates accounting for intersectionality[15]. Theoretical frameworks should consider how aspects like age intersect with gender within specific cultural contexts and vice versa. Integrating knowledge from cultural anthropology, sociology, and psychology enables researchers to uncover the complex interactions between culture-specific practices surrounding age and

gender. These interactions might have varying implications depending on other individual characteristics, such as race or class[16], providing a more nuanced and comprehensive understanding of these cultural dimensions.

1.3.1. Defining culture and cultural differences

Building on Goold's work, we define culture as an amalgamation of beliefs, customs, arts, and habits that characterize a particular society or group[17]. Similarly, cultural differences represent the variations in these elements across different societies or groups. Culture encompasses the unique beliefs, customs, arts, and habits that distinguish one society or group from another[18], including aspects such as language, religion, values, social norms, and behaviors[19]. For scholars studying intersectionality, a thorough understanding of culture and its differences is vital. It lays the groundwork for examining how age, gender, race, and class intersect within specific cultural contexts[20]. This understanding enables researchers to delve deeper into individuals' diverse implications and experiences across different social identities[21].

1.3.2. Theoretical foundations

From an anthropological perspective, social, economic, and environmental factors influence culture, highlighting its dynamic nature. This is crucial in examining intersectionality, where anthropologists explore how cultural norms and values affect individuals' societal experiences, including historical, economic, and environmental influences. This approach highlights culture's multi-dimensional nature and significant role in shaping societal experiences.

Meanwhile, the sociological perspective focuses on establishing, maintaining, and evolving community cultural norms. It is essential to recognize that these norms are not static but are continuously evolving under social, economic, and political influences[22]. This viewpoint emphasizes the power dynamics in shaping cultural norms and the unequal allocation of resources and opportunities across societies. By adopting this perspective, researchers can gain insights into how social structures and institutions perpetuate inequality and marginalization, highlighting the potential for individuals and social groups to challenge and transform cultural norms, thereby creating more inclusive and equitable societies[23].

The psychological perspective focuses on how individuals perceive, interpret, and engage with cultural norms[24]. This perspective acknowledges people's crucial role in shaping cultural norms, examining their perceptions, interpretations, and reactions. This understanding deepens the comprehension of how cultural norms are ingrained and can be challenged and altered, underscoring the importance of individual agency in advancing social progress and fostering inclusive communities[25].

1.3.3. Cultural differences by age

The study of cultural differences based on age, such as through life cycle theory, explores how cultural attitudes and actions evolve through various life stages, including childhood, adolescence, adulthood, and old age[26]. This approach recognizes that cultural standards and expectations differ throughout these phases, influencing people's beliefs, values, and interactions with their environment. By analyzing these differences, researchers can understand how cultural standards impact people's development and their adjustments and reactions to these transformations[27]. This approach highlights that cultural norms are fluid and underscores the importance of recognizing each life stage's distinct challenges and opportunities.

Generational theory further enhances this understanding by examining the impact of historical and technological changes on different generations[28]. This theory aids in understanding how changes have shaped each generation's beliefs, values, and interactions with their environment. By focusing on the unique challenges and opportunities faced by Baby Boomers, Gen X, Millennials, and Gen Z, researchers can understand the evolution of cultural norms and their influence on individual development[29]. This perspective

stresses the importance of acknowledging different generations' diverse experiences and perspectives to facilitate effective communication and collaboration across age groups[30].

The socialization process, a vital component in transmitting and modifying culture over time[31], encompasses how individuals learn and internalize social norms, values, and behaviors, including traditions and customs from parents and education from institutions. This process shapes each generation's beliefs and attitudes, offering a valuable lens to study cultural change and adaptability. Recognizing the impact of socialization fosters an inclusive environment that values the contributions and perspectives of all generations, enabling societal evolution and progress[32].

1.3.4. Cultural differences by gender

According to gender role theory[33], it is crucial to comprehend cultural definitions and values surrounding gender roles and behaviors. This theory focuses on assigning and perceiving specific roles and behaviors based on gender within various societies[34]. By studying this theory, researchers can gain insights into how cultural norms shape and reinforce gender stereotypes, which is critical in promoting gender equality and challenging limitations based on gender[35].

Intersectionality provides a comprehensive understanding of cultural experiences by examining the intersection of gender with other social categories, such as race, class, and ethnicity[36]. This concept recognizes that gender does not solely determine an individual's experiences[37]. Analyzing the interplay between gender and other social categories offers a comprehensive view of cultural norms and stereotypes, facilitating a nuanced approach to promoting gender equality. It acknowledges the various forms of discrimination and oppression individuals may face based on their intersecting identities. It makes intersectionality a crucial framework for comprehending the complexity of gendered experiences and designing effective gender equality policies[38].

Feminist and masculinity studies analyze cultural narratives around femininity and masculinity[34,39]. This field delves into societal expectations and stereotypes that shape our understanding of femininity and masculinity[40]. By analyzing these cultural narratives, researchers can challenge and deconstruct harmful gender norms, working towards a more inclusive and equitable society[41]. Additionally, this field allows for a deeper exploration of how power dynamics and inequalities are reinforced through gendered ideologies, paving the way for transformative change.

1.3.5. Cross-cultural comparisons

Comparative analysis, which involves comparing how age and gender roles vary between cultures, offers valuable insights into how these roles are constructed and perceived in different societies[42]. By examining different cultural narratives and practices, researchers can better understand how femininity and masculinity are shaped and reinforced in complex and nuanced ways[20]. This analysis helps challenge ethnocentric assumptions and promotes a more inclusive and diverse perspective on gender identities and expectations[43].

Cultural relativism, or understanding cultural practices within their context[44], means considering the historical, social, and cultural factors that shape them. Embracing cultural relativism fosters a more inclusive and respectful understanding of gender, challenging the notion of a single, dominant perspective[45].

1.3.6. Contemporary influences

The impact of technology and societal interconnectedness on cultural norms, particularly concerning age and gender, is significant[46]. The internet and social media have facilitated the exchange of ideas and information among individuals from diverse cultures, leading to challenges to traditional gender roles and a more nuanced understanding of masculinity and femininity[47].

1.4. Cultural differences in tourism behaviours

Cultural differences in tourism behaviours can also contribute to portraying age and gender roles[48]. Older individuals may be revered and respected in some cultures, while youth is highly valued and sought after in others[49]. Similarly, gender roles may vary greatly, with some cultures emphasizing equality and others adhering to traditional gender norms. Understanding and appreciating these cultural differences can lead to a more authentic and fulfilling travel experience and a greater appreciation for diversity and inclusivity[50].

By recognizing and respecting these cultural differences, tourists can avoid unintentionally offending or disrespecting local customs and traditions[51]. For example, in a culture where older individuals are highly respected, tourists may be expected to show deference and seek their wisdom and guidance. On the other hand, tourists may be encouraged to embrace a more adventurous and energetic approach to their travels in a culture that values youth. Similarly, understanding the varying gender roles can help tourists navigate social interactions and expectations more effectively. This awareness can lead to more meaningful connections with the locals and a deeper understanding of the local culture[52]. Ultimately, embracing and appreciating these cultural differences can enrich the travel experience and foster global understanding and acceptance. Additionally, embracing cultural differences can lead to a greater appreciation for the diversity and richness of human experiences worldwide. It allows travellers to broaden their perspectives and challenge preconceived notions, ultimately fostering global understanding and acceptance[53].

1.5. Cultural differences between Spain and Germany

Cultural differences between Germany and Spain include their attitudes towards punctuality and meal times. In Germany, being on time is highly valued and considered a sign of respect, whereas in Spain, being fashionably late is more acceptable and even expected[54]. Furthermore, meal times in Germany tend to be more structured, with lunch being the main meal of the day, while in Spain, dinner is typically enjoyed later in the evening. These cultural differences highlight the importance of understanding and adapting to local customs when travelling to different countries[55].

Recognizing and respecting these cultural differences allows travellers to avoid misunderstandings and foster positive interactions with locals. For example, a German traveller visiting Spain may need to adjust their expectations regarding punctuality and be prepared for a more relaxed approach to timekeeping. Similarly, a Spanish traveller in Germany may need to adapt to the structured meal times and prioritize lunch as the main meal of the day.

Understanding and adapting to local customs helps travellers avoid misunderstandings and shows respect for the host country's culture[56]. It allows travellers to immerse themselves more fully in the local experience and build meaningful connections with the people they encounter. Moreover, being aware of cultural differences can also enhance safety while traveling as specific actions or behaviours that may be acceptable in one culture could be considered offensive or inappropriate in another[57]. Therefore, travellers must research and familiarize themselves with the customs and norms of the country they are visiting before embarking on their journey. While researching and familiarizing oneself with the customs of a host country can be beneficial, it does not guarantee complete avoidance of misunderstandings or ensure respect for the culture, as cultural norms can be complex and dynamic, making it impossible to grasp them fully through research alone[48,58].

2. Materials and methods

Following the analysis of the existing literature and the theoretical framework constructed, we establish a single research objective that we will translate into three different hypotheses.

The research aims to analyse whether there are differences in the emotions aroused in different subjects by the visualisation of a tourist destination image. This research objective comes from the conjunction of the importance of image in tourism destination promotion[1,3,4], as well as its analysis from an emotional point of view[5,7].

To analyze the differences, we draw on existing literature on cultural differences in tourist behavior, by gender and by age[48,49] as well as studies addressing the specific cultural difference between Germans and Spaniards[54,59].

This research objective is addressed through three hypotheses:

- H1. There are differences in engagement from the point of view of the cultural differences of the sample (Spanish vs. German tourists).
- H2. These differences are maintained if we take into account the gender variable in the sample.
- H3. These differences are maintained if we consider the variable of the sample's age.

A conceptual table is attached for a better understanding of the research objective and the hypotheses. See **Figure 1**.
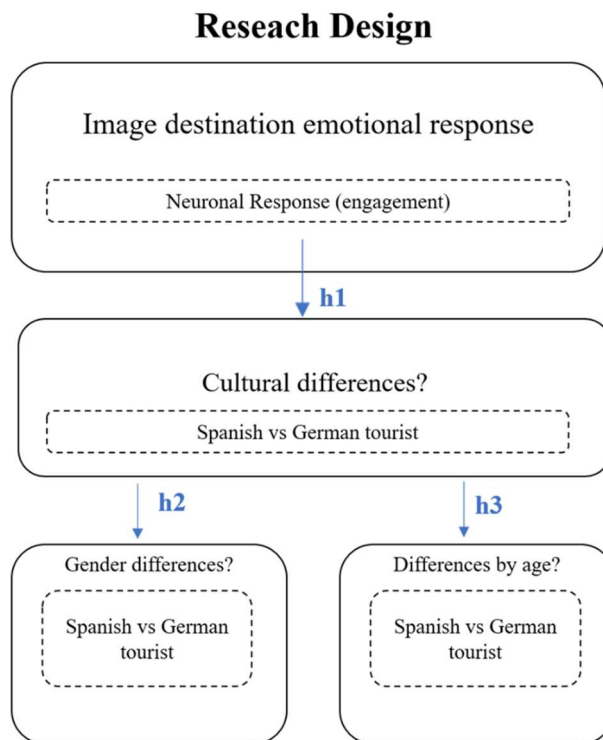
Reseach Design

Figure 1. Research design.

Source: Own elaboration.

A group of experts selected the visual stimuli illustrating the tourist destination under study. All the images came from the website of the Balearic Islands Tourism Strategy Agency (https://www.illesbalears.travel/). The classification of the travel types was taken from the Reiseanalyse[60], an annual survey of German travel behavior. The respondents were presented with one photo for each of the following categories: (T1) gastronomic tourism; (T2) active holidays; (T3) cultural holidays; (T4) adventure holidays; (T5) relaxing holidays; (T6) family holidays; (T7) party tourism; (T8) nature tourism; (T9) health holidays; (T10) beach holidays.

Stimuli are standardized. The size of the photographs is similar.

The study is carried out using neuromarketing techniques under strict ethical and confidentiality guarantees. All participants are informed in advance and sign a letter of acceptance of the ethical protocols. The university's ethics committee also approves the experiment.

The sample consists of 100 individuals: 50 Spanish nationals and residents of Spain and 50 German nationals and residents of Germany. The sample has gender parity. The individuals in the sample are between 20 and 65 years old, with an average of 38 years old. All individuals have a higher education, and we found both employed and unemployed students. During the sample qualification, the individuals were asked whether they had ever travelled to the Balearic Islands. Of the total sample, 48% had previously travelled to the destination under study.

Participation in the experiment is voluntary, and there is no financial reward.

This sample size is standard in neuromarketing studies[61–63].

The laboratory used consists of three sensors: 1) 12-channel EGG sensor (Fp1, Fp2, AF7, AF8, F3, F4, P3, P4, PO7, PO8, O1, O2), REF (A1) and DRL (Fpz) located in a pre-frontal, frontal, parietal, and occipital area that allows accurate measurement of frontal alpha asymmetry, alpha-ERD/occipital ERS, P300, N400, CVN, with trademark Dry Diadem of BitBrain; 2) electrodermal sensor (EDA) to measure galvanic skin response; 3) cardiovascular activity sensor (BVP) both trademarked BitBrain; and finally, as well as analysis software SennsLab and SennsMetric from BitBrain. The configuration of this laboratory is widely used in other scientific investigations[61,62,64,65].

The study includes an analysis of the variable engagement, or degree of connection.

This variable measures the degree of involvement or connection between the person and the stimulus or experience presented. It is a metric derived from the use of the EGG[66,67] and widely used in various fields of neuroscience[68,69].

There is a base of authors who have approached the measurement of so-called emotional engagement through neuromarketing techniques, specifically with EGG, both at a generic and a more general level[63,70] and specifically in the area of communication[71].

The results obtained by the laboratory are exploited with descriptive statistical techniques, more specifically, with an analysis of means.

3. Results

The results obtained from the neuromarketing laboratory are exploited through statistical techniques applied directly to the data and metrics obtained[73]. For this study, we carried out an analysis of means.

As can be seen in **Table 1** and **Figure 2**, there are notable differences in the engagement variable in the sample of individuals from the German group compared to the Spanish group.

Therefore, we can validate that there are differences in the emotion felt, thus validating hypothesis 1 (H1).

Table 1. Analysis of engagement variable means according to sample by cultural origin.

Engagement by country										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	38.440560	35.7947168	38.3274097	38.4244297	39.5724228	39.8123918	39.8123918	36.6781996	37.6166996	38.0711108
Spanish engagement	41.101475	36.5385479	38.5044034	37.8936726	43.7203461	40.847523	40.847523	37.6451682	38.5090875	36.4100569
German engagement	35.548261	34.9862047	38.1350252	39.0013395	35.0638105	38.6872492	38.6872492	35.6271467	36.6467127	39.8766043

Source: Own elaboration.
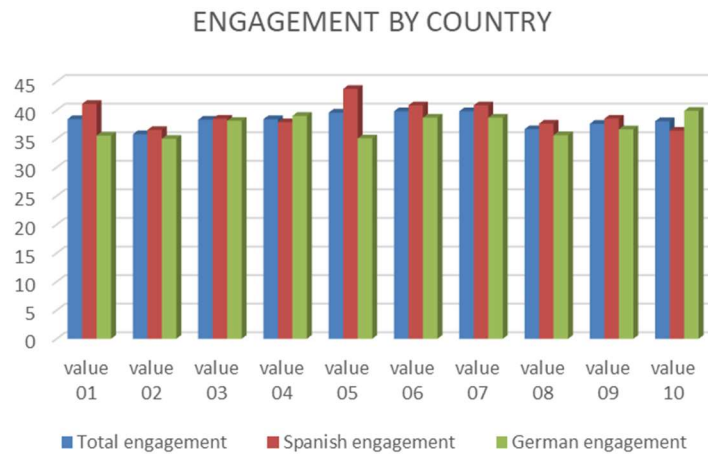
Figure 2. Analysis of engagement variable means according to sample by cultural origin.
Source: Own elaboration.

We can observe in **Table 2** and **Figure 3** that the engagement felt by the sample of Spanish individuals is higher for all the stimuli except for stimuli 4 and 10.

Suppose we add the gender variable to the analysis. In that case, we can see that these differences between the different cultural groups (Spanish vs. German) are not only maintained but, in most cases, increased, thus validating hypothesis 2 (H2).

Table 2. Analysis of engagement variable means according to sample by cultural origin and gender.

Engagement by gender										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	38.4405605	35.7947168	38.3274097	38.4244297	39.5724228	39.8123918	39.8123918	36.6781996	37.6166996	38.0711108
Female engagement	39.3349626	36.3660221	37.6677995	36.3347057	36.9145562	39.7421094	39.7421094	37.2058754	37.7461962	37.9872185
Male engagement	37.5461584	35.2234115	38.98702	40.5141536	42.2302894	39.8826742	39.8826742	36.1505237	37.4872029	38.1550032
Spanish engagement by gender										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	41.1014754	36.5385479	38.5044034	37.8936726	43.7203461	40.847523	40.847523	37.6451682	38.5090875	36.4100569
Female engagement	43.331956	38.6648427	39.7512881	38.1614477	36.4537377	42.5667358	42.5667358	37.8206992	38.9811451	34.5236185
Male engagement	35.4653572	33.501168	38.9346543	40.8757176	33.6151851	35.5095636	35.5095636	36.1605207	34.7064755	40.2557571

Table 2. (*Continued*).

German engagement by gender

|	Value 01	Value 02	Value 03	Value 04	Value 05	Value 06	Value 07	Value 08	Value 09	Value 10
Total engagement	35.5482617	34.9862047	38.1350252	39.0013395	35.0638105	38.6872492	38.6872492	35.6271467	36.6467127	39.8766043
Female engagement	34.195971	33.4103956	34.9890283	33.9860374	37.507037	36.110447	36.110447	36.4153878	36.1584048	42.4404184
Male engagement	36.6841859	36.3098843	40.7776627	43.2141932	33.0115003	40.8517631	40.8517631	34.9650242	37.0568913	37.7230004

Source: Own elaboration.
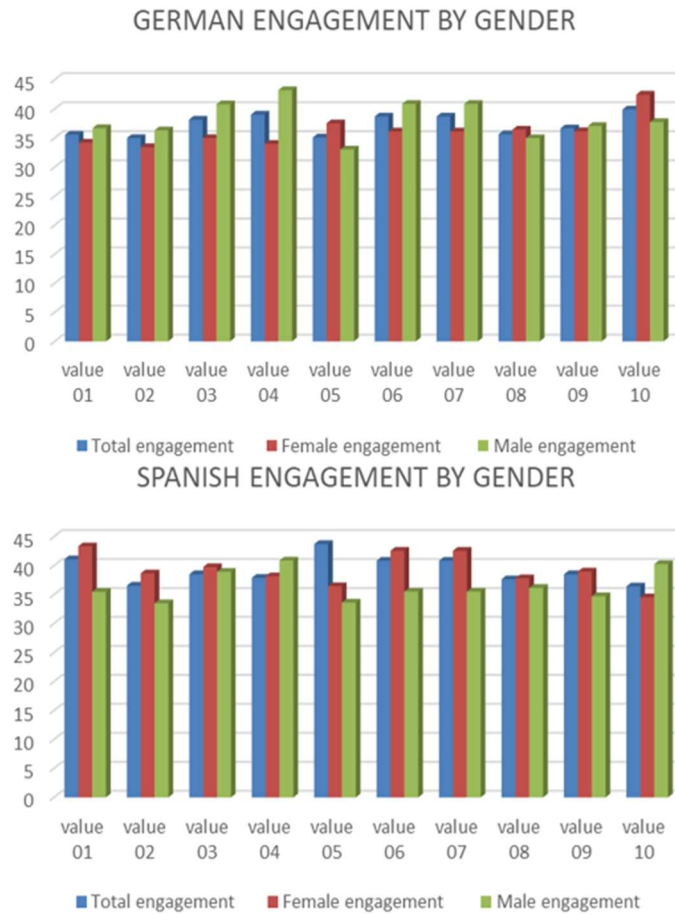
Figure 3. Analysis of engagement variable means according to sample by cultural origin.
Source: Own elaboration.

As can be seen in **Table 3** and **Figure 4**, engagement by gender is strongly affected by country, almost completely reversing the results.

Suppose we add the age variable to the analysis, generating two groups for each sample (individuals aged 25 or under and individuals over 26). In that case, we can observe that these differences between the different cultural groups (Spaniards vs. Germans) are maintained, although not as marked as the gender differences, thus validating hypothesis 3 (H3).

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Table 3. Analysis of engagement variable means according to sample by cultural origin and age.

Engagement by age										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	38.4405605	35.7947168	38.3274097	38.4244297	39.5724228	39.8123918	39.8123918	36.6781996	37.6166996	38.0711108
Engagement 25–	37.4821123	38.2269047	35.5343075	36.9999762	34.5453621	42.4841977	42.4841977	35.9496898	39.3446395	36.674222
Engagement 26+	38.8976665	34.6347502	39.6595046	39.1037844	41.9699441	38.5381459	38.5381459	37.0256427	36.7926051	38.7373193
Spanish engagement by age										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	41.1014754	36.5385479	38.5044034	37.8936726	43.7203461	40.847523	40.847523	37.6451682	38.5090875	36.4100569
Engagement 25–	39.9811881	39.5154872	33.6555918	38.26598	30.7073939	40.8972653	40.8972653	37.5450935	38.9012583	33.056791
Engagement 26+	35.4653572	33.501168	38.9346543	40.8757176	33.6151851	35.5095636	35.5095636	36.1605207	34.7064755	40.2557571
German engagement by age										
	Value 01	**Value 02**	**Value 03**	**Value 04**	**Value 05**	**Value 06**	**Value 07**	**Value 08**	**Value 09**	**Value 10**
Total engagement	35.5482617	34.9862047	38.1350252	39.0013395	35.0638105	38.6872492	38.6872492	35.6271467	36.6467127	39.8766043
Engagement 25–	35.6772243	37.2962618	36.8911578	36.0856401	37.317228	43.6303156	43.6303156	34.7974539	39.6648594	39.286811
Engagement 26+	35.4653572	33.501168	38.9346543	40.8757176	33.6151851	35.5095636	35.5095636	36.1605207	34.7064755	40.2557571

Source: Own elaboration.

Figure 4. Analysis of engagement variable means according to sample by cultural origin and age.
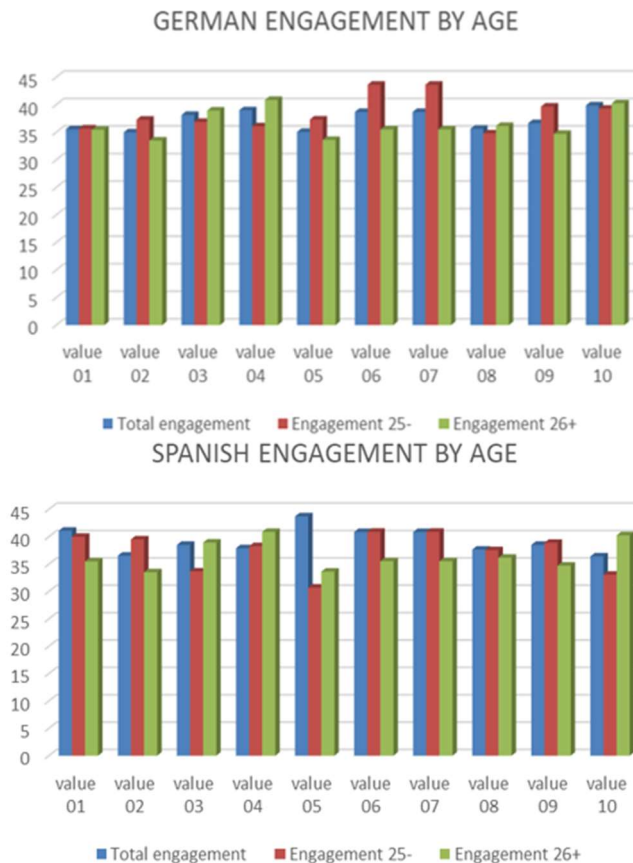Source: Own elaboration.

4. Discussion

As we can see in the results, there are notable differences in the engagement variable in the sample of individuals belonging to the German group compared to the Spanish group. We confirm the theory of[48,49],

who assert that cultural differences in tourism behaviours may also contribute to the representation of age and gender roles, as we have seen when accepting hypotheses 1 to 3.

The results of this study reinforce Kågesten's[73] ideas that there is a need to understand how cultural differences can change the perception of a journey, which will help us to develop better communication with the audience by taking into account aspects such as their country of origin[55], age[26], or gender[33].

Understanding and appreciating these cultural differences can lead to a more authentic and fulfilling travel experience and a greater appreciation for diversity and inclusiveness[50].

As we can see after analyzing the results, there are cultural, are analyzing the results, there are cultural, age, and gender differences. Verifying the existence of these differences will help us not to generate messages that may create distortions or even offensive messages, thus reconciling the destination image and the culture of the receiver[51]. Moreover, it generates greater engagement with the local culture communicated in our messages[52].

Author contributions

Conceptualization, JMM and KJ; methodology, JMM; software, JMM and FGM; validation, JMM and FGM; formal analysis, KJ and AG; investigation, JMM and KJ; resources, KJ and AG; data curation, FGM; writing—original draft preparation, JMM; writing—review and editing, JMM and AG; visualization, JMM; supervision, JMM; project administration, JMM. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

References

1. Josiassen A, Assaf AG, Woo L, et al. The imagery–image duality model. *Journal of Travel Research* 2015; 55(6): 789–803. doi: 10.1177/0047287515583358
2. Crompton JL. An assessment of the image of mexico as a vacation destination and the influence of geographical location upon that image. *Journal of Travel Research* 1979; 17(4): 18–23. doi: 10.1177/004728757901700404
3. Beerli A, Martín JD. Factors influencing destination image. *Annals of Tourism Research* 2004; 31(3): 657–681. doi: 10.1016/j.annals.2004.01.010
4. Bastiaansen M, Straatman S, Mitas O, et al. Emotion measurement in tourism destination marketing: A comparative electroencephalographic and behavioral study. *Journal of Travel Research* 2020; 61(2): 252–264. doi: 10.1177/0047287520981149
5. Hosany S, Martin D, Woodside AG. Emotions in Tourism: Theoretical designs, measurements, analytics, and interpretations. *Journal of Travel Research* 2020; 60(7): 1391–1407. doi: 10.1177/0047287520937079
6. Volo S. Emotions in tourism: From exploration to design. In: Fesenmaier, DR, Xiang Z (editors). *Design Science in Tourism: Foundations of Destination Management*. Springer; 2017. pp. 31–40. doi: 10.1007/978-3-319-42773-7_3
7. Bastiaansen M, Straatman S, Driessen E, et al. My destination in your brain: A novel neuromarketing approach for evaluating the effectiveness of destination marketing. *Journal of Destination Marketing & Management* 2018, 7: 76–88. doi: 10.1016/j.jdmm.2016.09.003
8. Michael I, Ramsoy T, Stephens M, et al. A study of unconscious emotional and cognitive responses to tourism images using a neuroscience method. *Journal of Islamic Marketing* 2019; 10(2): 543–564. doi: 10.1108/jima-09-2017-0098
9. Costa PT, Terracciano A, McCrae RR. Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology* 2001; 81(2): 322–331. doi: 10.1037/0022-3514.81.2.322
10. Hill, PhD, MPH CV, et al. The national intitute on aging health disparities research framework. *Ethnicity & Disease* 2015; 25(3): 245. doi: 10.18865/ed.25.3.245

11. Brumfiel EM, Robin C. 1 gender, households, and society: An introduction. *Archaeological Papers of the American Anthropological Association* 2008; 18(1): 1–16. doi: 10.1111/j.1551-8248.2008.00001.x

12. Malakhova N. Gender as a subject of interdisciplinary research. In: Proceedings of the 3rd International Conference on Contemporary Education, Social Sciences and Humanities (ICCESSH 2018); 25–27 April 2018; Moscow, Russia. doi: 10.2991/iccessh-18.2018.332

13. Zehetner A, Zehetner D, Lepeyko T, et al. Generation Z's expectations of their leaders: A cross-cultural, multi-dimensional investigation of leadership styles. *European Conference on Management Leadership and Governance* 2022; 18(1): 447–455. doi: 10.34190/ecmlg.18.1.891

14. Chiappori PA, Molina JA. The intra-spousal balance of power within the family: Cross-cultural evidence. In: Halford WK, van de Vijver F (editors). *Cross-Cultural Family Research and Practice*. Academic Press; 2020. pp. 185–209. doi: 10.1016/b978-0-12-815493-9.00006-5

15. Cole ER. Intersectionality and research in psychology. *American Psychologist* 2009; 64(3): 170–180. doi: 10.1037/a0014564

16. Rice C, Harrison E, Friedman M. Doing justice to intersectionality in research. *Cultural Studies ↔ Critical Methodologies* 2019; 19(6): 409–420. doi: 10.1177/1532708619829779

17. Goold A, Craig A, Coldwell J. Accommodating culture and cultural diversity in online teaching. *Australasian Journal of Educational Technology* 2007; 23(4). doi: 10.14742/ajet.1248

18. Roos P, Gelfand M, Nau D, et al. Societal threat and cultural variation in the strength of social norms: An evolutionary basis. *Organizational Behavior and Human Decision Processes* 2015; 129: 14–23. doi: 10.1016/j.obhdp.2015.01.003

19. Scholtens B, Dam L. Cultural values and international differences in business ethics. *Journal of Business Ethics* 2007; 75(3): 273–284. doi: 10.1007/s10551-006-9252-9

20. Manuti A, Scardigno R, Mininni G. Me, myself, and God: Religion as a psychocultural resource of meaning in later life. *Culture & Psychology* 2016; 22(1): 3–34. doi: 10.1177/1354067x14551294

21. Hanel PHP, Maio GR, Soares AKS, et al. Cross-cultural differences and similarities in human value instantiation. *Frontiers in Psychology* 2018; 9. doi: 10.3389/fpsyg.2018.00849

22. Welz G. The cultural swirl: Anthropological perspectives on innovation. *Global Networks* 2003; 3(3): 255–270. doi: 10.1111/1471-0374.00061

23. Shaw LA, Wainryb C. The outsider's perspective: Young adults' judgments of social practices of other cultures. *British Journal of Developmental Psychology* 1999; 17(3): 451–471. doi: 10.1348/026151099165393

24. Tomasello M, Carpenter M, Call J, et al. Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences* 2005; 28(5): 675–691. doi: 10.1017/s0140525x05000129

25. Lehman DR, Chiu C-Y, Schaller M. Psychology and culture. *Annual Review of Psychology* 2004; 55(1): 689–714. doi: 10.1146/annurev.psych.55.090902.141927

26. Park SO, Choi SU, Kim ST, et al. The relationship between corporate culture and value at different life cycle stages. *Sustainability* 2021; 13(4): 2334. doi: 10.3390/su13042334

27. Yang Y, Heijungs R. On the use of different models for consequential life cycle assessment. *The International Journal of Life Cycle Assessment* 2017; 23(4): 751–758. doi: 10.1007/s11367-017-1337-4

28. Taji W, Scrivner C, Maestripieri D. Toward a general theory of human individual differences: Can evolutionary psychology meet the challenge? *Evolutionary Behavioral Sciences* 2020; 14(4): 384–389. doi: 10.1037/ebs0000216

29. Woodruff DS, Birren JE. Age changes and cohort difference in personality. *Developmental Psychology* 1972; 6(2): 252–259. doi: 10.1037/h0032086

30. Ledimo O. Generational Differences In Organizational Justice Perceptions: An exploratory investigation across three generational cohorts. *Foundations of Management* 2015; 7(1): 129–142. doi: 10.1515/fman-2015-0031

31. Bisin A, Verdier T. The Economics of Cultural Transmission and Socialization. Available online: https://www.nber.org/system/files/working_papers/w16512/w16512.pdf (accessed on 21 September 2023).

32. Jacobs RC, Campbell DT. The perpetuation of an arbitrary tradition through several generations of a laboratory microculture. *The Journal of Abnormal and Social Psychology* 1961; 62(3): 649–658. doi: 10.1037/h0044182

33. Endendijk JJ, Groeneveld MG, van der Pol LD, et al. Gender differences in child aggression: Relations with gender-differentiated parenting and parents' gender-role stereotypes. *Child Development* 2016; 88(1): 299–316. doi: 10.1111/cdev.12589

34. Fallon MA, Jome LM. An exploration of gender-role expectations and conflict among women rugby players. *Psychology of Women Quarterly* 2007; 31(3): 311–321. doi: 10.1111/j.1471-6402.2007.00374.x

35. Cobb RA, Walsh CE, Priest JB. The cognitive-active gender role identification continuum. *Journal of Feminist Family Therapy* 2009; 21(2): 77–97. doi: 10.1080/08952830902911339

36. Bowleg L. The problem with the phrase women and minorities: Intersectionality—An important theoretical framework for public health. *American Journal of Public Health* 2012; 102(7): 1267–1273. doi: 10.2105/ajph.2012.300750

37. Aspinall C, Jacobs S, Frey R. Intersectionality and nursing leadership: An integrative review. *Journal of Clinical Nursing* 2022; 32(11-12): 2466–2480. doi: 10.1111/jocn.16347

38. Ray R. An Intersectional analysis to explaining a lack of physical activity among middle class black women. *Sociology Compass* 2014; 8(6): 780–791. doi: 10.1111/soc4.12172

39. Hofstede G. Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture* 2011; 2(1). doi: 10.9707/2307-0919.1014

40. Connell RW, Messerschmidt JW. Hegemonic masculinity. *Gender & Society* 2005; 19(6): 829–859. doi: 10.1177/0891243205278639

41. Reeser TW. Concepts of masculinity and masculinity studies. In: Horlacher S (editor). *Configuring Masculinity in Theory and Literary Practice*. Brill; 2020.

42. Karandashev V. *Cultural Models of Emotions*. Springer International Publishing; 2021. doi: 10.1007/978-3-030-58438-2

43. Lucassen G, Lubbers M. Who fears what? Explaining far-right-wing preference in Europe by distinguishing perceived cultural and economic ethnic threats. *Comparative Political Studies* 2011; 45(5): 547–574. doi: 10.1177/0010414011427851

44. Brinkmann S. Culture as practices: A pragmatist conception. *Journal of Theoretical and Philosophical Psychology* 2007; 27-28(2-1): 192–212. doi: 10.1037/h0091293

45. Giorgi S, Lockwood C, Glynn MA. The many faces of culture: Making sense of 30 years of research on culture in organization studies. *Academy of Management Annals* 2015; 9(1): 1–54. doi: 10.5465/19416520.2015.1007645

46. Cheung ML, Pires G, Rosenberger PJ. The influence of perceived social media marketing elements on consumer–brand engagement and brand knowledge. *Asia Pacific Journal of Marketing and Logistics* 2020; 32(3): 695–720. doi: 10.1108/apjml-04-2019-0262

47. Ergün N, Özkan Z, Griffiths MD. Social media addiction and poor mental health: Examining the mediating roles of internet addiction and phubbing. *Psychological Reports* 2023. doi: 10.1177/00332941231166609

48. Shi Y, Gao Y, Cao R. Research on the construction of analytic hierarchy process of cultural tourism competitiveness. In: Proceedings of the 4th International Conference on Economy, Judicature, Administration and Humanitarian Projects (JAHP 2019); 12–14 September 2019; Kaifeng, China. doi: 10.2991/jahp-19.2019.173

49. Li M, Zhang H, Xiao H, et al. A grid-group analysis of tourism motivation. *International Journal of Tourism Research* 2013; 17(1): 35–44. doi: 10.1002/jtr.1963

50. Tiberghien G, Bremner H, Milne S. Performance and visitors' perception of authenticity in eco-cultural tourism. *Tourism Geographies* 2017; 19(2): 287–300. doi: 10.1080/14616688.2017.1285958

51. Wang C, Liu J, Zhang T. 'What if my experience was not what I expected?': Examining expectation-experience (dis)confirmation effects in China's rural destinations. *Journal of Vacation Marketing* 2021; 27(4): 365–384. doi: 10.1177/13567667211006763

52. Malone T, Wilder H. Chasing ubuntu: Using ICTs to promote reflective practice. *Multicultural Education & Technology Journal* 2008; 2(2): 118–125. doi: 10.1108/17504970810883388

53. Betsy N, Gloria H. An integrated cognitive perspective of travel motivation and repeated travel behaviour. *Annals of Cognitive Science* 2018; 2(1). doi: 10.36959/447/341

54. Gimenez-Nadal JI, Molina JA, Ortega R. Like my parents at home? Gender differences in children's housework in Germany and Spain. *Empirical Economics* 2016; 52(4): 1143–1179. doi: 10.1007/s00181-016-1100-x

55. Baluku MM, Groh J, Dalbert C, et al. Cultural differences in geographic mobility readiness among business management students in Germany and Spain ahead of graduation. *SN Social Sciences* 2021; 1(7). doi: 10.1007/s43545-021-00171-0

56. Wilde A, Diekman AB. Cross-cultural similarities and differences in dynamic stereotypes: A comparison between Germany and the United States. *Psychology of Women Quarterly* 2005; 29(2): 188–196. doi: 10.1111/j.1471-6402.2005.00181.x

57. Scollon CN, Diener E, Oishi S, et al. Emotions across cultures and methods. *Journal of Cross-Cultural Psychology* 2004; 35(3): 304–326. doi: 10.1177/0022022104264124

58. Kumar V, Kaushal V, Kaushik AK. Building relationship orientation among travellers through destination brand authenticity. *Journal of Vacation Marketing* 2022; 29(3): 331–347. doi: 10.1177/13567667221095589

59. Garcia-Retamero R, Galesic M, Gigerenzer G. Enhancing understanding and recall of quantitative information about medical risks: A cross-cultural comparison between Germany and Spain. *The Spanish Journal of Psychology* 2011; 14(1): 218–226. doi: 10.5209/rev_SJOP.2011.v14.n1.19

60. FUR—Forschungsgemeinschaft Urlaub und Reisen. First selected results:53. Travel analysis (German). Available online: https://tano.travel/wp-content/uploads/2023/03/RA2023_Erste_Ergebnisse_Broschuere_DE.pdf (accessed on 2 October 2023).

61. Mas JM, Gómez A, Carrero O. Emotions in fear communication: A cross-cultural neuromarketing approach. *Psychology & Marketing* 2023. doi: 10.1002/mar.21947

62. García-Madariaga J, Blasco López MF, Burgos IM, et al. Do isolated packaging variables influence consumers' attention and preferences? *Physiology & Behavior* 2019; 200: 96–103. doi: 10.1016/j.physbeh.2018.04.030

63. Biercewicz K, Borawski M, Duda J. Method for selecting an engagement index for a specific type of game using cognitive neuroscience. *International Journal of Computer Games Technology* 2020; 2020: 1–19. doi: 10.1155/2020/2450651

64. Moya I, García-Madariaga J, Blasco MF. What can neuromarketing tell us about food packaging? *Foods* 2020; 9(12): 1856. doi: 10.3390/foods9121856

65. Mora M, Elzo-Aizarna J, Rozas-Fuertes S, et al. Implicit reaction vs explicit emotional response: Protected designation of origin in apple cider. *Food Quality and Preference* 2020; 79: 103773. doi: 10.1016/j.foodqual.2019.103773

66. Çakar T, Gez K. Neuroscience applications on the assessments of TV Ads. In: Santos MAD (editor). *Applying Neuroscience to Business Practice*. IGI Global; 2017. pp. 231–256. doi: 10.4018/978-1-5225-1028-4.ch010

67. Millan YA, Liliana Chaves M, Barrero JC. A review on biometric devices to be applied in ASD interventions. In: Proceedings of the 2020 Congreso Internacional de Innovación y Tendencias en Ingeniería (CONIITI); 30 September 2020–2 October 2020; Bogota, Colombia. doi: 10.1109/coniiti51147.2020.9240291

68. Dmochowski JP, Sajda P, Dias J, et al. Correlated components of ongoing eeg point to emotionally laden attention—A possible marker of engagement? *Frontiers in Human Neuroscience* 2012; 6. doi: 10.3389/fnhum.2012.00112

69. Fernandez-Lores S, Crespo-Tejero N, Fernández-Hernández R, et al. Framing, risk perception and social health campaigns: A neuroscientific analysis. *Journal of Consumer Behaviour* 2023; 23(1): 76–89. doi: 10.1002/cb.2151

70. Hsu M. Neuromarketing: Inside the mind of the consumer. *California Management Review* 2017; 59(4): 5–22. doi: 10.1177/0008125617720208

71. Steele A, Jacobs D, Siefert C, et al. Leveraging synergy and emotion in a multi-platform world. *Journal of Advertising Research* 2013; 53(4): 417–430. doi: 10.2501/jar-53-4-417-430

72. Casado-Aranda L, Sánchez-Fernández J, Bigne E, et al. The application of neuromarketing tools in communication research: A comprehensive review of trends. *Psychology & Marketing* 2023; 40(9): 1737–1756. doi: 10.1002/mar.21832

73. Kågesten A, Gibbs S, Blum RW, et al. Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review. *PLoS ONE* 2016; 11(6): e0157805. doi: 10.1371/journal.pone.0157805