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Social media apps on the Camino de Santiago

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Introduction: The Camino de Santiago continues to beat records in terms of number of pilgrims and increases their popularity internationally, since there are already more foreign than Spanish pilgrims. On the other hand, the use of social media (instant messaging apps and social networks) also continues to grow worldwide. It is assumed that pilgrims take a mobile phone with them on the Camino, but what apps do they use? Do these apps make them feel safer during the pilgrimage?

Methods: Through surveys of pilgrims and in-depth interviews, this research provides answers to these questions.

Results and discussion: The results show that pilgrims use more messaging apps than social networks and the use of both as protection mechanisms during the Camino de Santiago. It also warns of the possibility that pilgrims, especially foreigners, may be transmitting perceptions of insecurity while on the pilgrimage, which would damage the public image of the Camino.

KEYWORDS

Camino de Santiago, social media, apps, safety, gender

1 Introduction

The number of pilgrims on the Camino de Santiago is increasing every year. In 2024, records showed 499,239 compostelas, the highest figure ever reached ([Pilgrims' Welcome Office, 2024](#)). The compostela is the official certificate awarded to pilgrims who have completed the Camino de Santiago, recognizing their pilgrimage to the tomb of the Apostle Saint James. To obtain the document accrediting the pilgrimage, pilgrims must complete the last 100 km on foot or horseback, or the last 200 km by bicycle; the pilgrimage must be undertaken for religious or spiritual reasons; and the Pilgrim's Credential or passport must be stamped at least twice a day in the last 100 km (for walking/horseback) or 200 km (for cycling) from places visited along the route. This document is only issued in person and individually.

On the other hand, the efforts of the Spanish Government institutions, specifically the ([Secretary of State for Tourism, 2020](#)), are focused on raising awareness among citizens about the need to use digital information tools like social networks or mobile apps to promote safe and transparent tourism. The website of the [Secretary of State for Tourism \(2020\)](#) states that tourism needs transparent information tools to reassure tourists through digital channels such as apps.

All over the world, the use of mobile phones to access the Internet continues to increase every year and there is now 93.2% of Internet users using social media. The vast majority of users use mobile phones to access the Internet (96.5%), with smartphones being used in 94.6% of these cases, a higher percentage than connections made via public computers (61.8%) or personal computers (54.9%) ([We are Social, 2024](#)).

According to [We are Social \(2024\)](#), the use of mobile phones to access the Internet and, consequently, apps that need the Internet to function is widespread across all age groups and is slightly higher among women than men (see [Figure A1](#)). The figures are particularly significant when compared with those for computer usage, which shows that

people prefer mobile phones to access the Internet (see [Figure A2](#)). Finding information, keeping in touch with friends and family, and watching videos top the list of the main reasons for using the Internet. It is also important to note that 37.9% of the population uses the Internet to search for places, holidays or travel. Social networks like YouTube, Facebook, Instagram, X (formerly Twitter), TikTok or LinkedIn are among the top 20 most visited sites, while the web version of the messaging app WhatsApp is also ranked 10th on this list. Similarly, both social networks and WhatsApp are among the top 20 Google searches, which is also the reason for the continuing increase in the number of social media users every year. In addition, Europe is among the areas with the highest number of social media users compared to the other regions of the world (see [Figure A3](#)).

Keeping in touch with friends and family, occupying free time and reading new stories top the list of the main reasons for using social media. Users say that the main reasons for using these platforms are directly linked to safety, although this also includes following influencers (20.1%) and posting content about their personal lives (19.2%). These figures are significant because they help to represent the social image of the actions shared on social networks (trips, experiences, restaurants, etc.) both among the circle of contacts in the case of individual users and with millions of followers in the case of influencers ([We are Social, 2024](#)).

Two social networks (Facebook and YouTube) and an instant messaging app (WhatsApp) top the ranking of social platforms with the largest number of users in the world. However, there is no coincidence between the social media with the highest number of users and that preferred by users, which is the opposite with the social network Instagram in first place, followed by the instant messaging app WhatsApp and the social network Facebook ([We are Social, 2024](#)). In any case, the three preferred social platforms in the world belong to the same company, Meta (Meta Platforms, Inc.), an American technology and social networking conglomerate based in California and chaired by Mark Zuckerberg.

The RQ behind this research is: What mobile apps do pilgrims use during the Camino de Santiago? This primary RQ motivates two secondary RQs:

- SRQ1: Do these mobile apps influence the perception of a safer pilgrimage?
- SRQ2: Are there variations in use in terms of country and/or place of origin, age, and gender?

2 Literature review

There is no previous study investigating the use of all social applications on the Camino de Santiago. This study also advances our understanding of the use of tourism safety apps on the Camino de Santiago, although it takes into account influencer culture and digital wellbeing according to previous works.

Using mobile apps could be conceived as a way of being permanently online, implying that their use is not simply a result of satisfying needs, but also a way to overcome the fear of missing out or to maintain a certain feeling of acceleration ([Zhou, 2018](#)). The evolution of mobile technology has contributed to the fact that more and more companies and organizations have chosen to

offer their products or services through apps, which are aimed at meeting the needs of consumers and users ([Correia and Tam, 2024](#); [Lischka et al., 2022](#)). In the digital generation, the widespread use of such apps by the population has been linked to levels of wellbeing, although it remains unclear whether they are the antecedent or the consequence of wellbeing ([Schenkel et al., 2024](#)).

[Chib et al. \(2021\)](#) understood that the relevance of mobile phones lies in the individual empowerment they provide, as the development of mobile technology leads to an increase in ubiquity, resulting in a sort of hybrid space where digital information overlays the physical space ([Frizzera, 2015](#)). Along the same lines, research by [Pybus and Coté \(2021\)](#) suggests that this development of mobile technology is already facilitating a more consolidated phase of big data, while aesthetics, automation, distribution, engagement, identity and proximity emerge as characteristics that define the constant development of mobile technology ([Karlsson et al., 2023](#)).

This technological development means that content creators, whether individuals or public or private organizations, are practically obliged to respond to a changing and unpredictable communicative environment, while the very nature of these digital technologies is transforming social and cultural practices ([Bazzara, 2021](#); [Duffy et al., 2021](#)). In addition, ubiquitous and instant access to information from mobile phones has led to the development of push notifications that alert users on their screens, resulting in increased consumption of digital information ([Ohme, 2019](#); [Stroud et al., 2019](#)).

From another point of view, one of the determining factors in the increase in Internet access via mobile phones are social media ([Borchers, 2019](#)), as many of these platforms are designed to be used preferentially from smartphones rather than computers. Social media or platforms include instant messaging apps like WhatsApp or social networks like Facebook, Instagram, X or YouTube. In fact, many of the functions of these social platforms are designed to be used from a mobile phone (sharing photos or videos, chatting, sending locations...).

Regarding social media apps and influencer culture, one of the most specific and successful options consists of sharing self-destructing content, i.e., content that disappears from profiles generally after 24 h and allows the user to check which followers have viewed it. The most significant and popular example is Instagram stories, designed to share experiences ([Yilmaz et al., 2020](#)). While other networks like Facebook or TikTok or other messaging apps like WhatsApp have created similar formats, they are much less successful among users ([Lee et al., 2021](#)).

The rise of social networks ([Angeloni and Rossi, 2021](#)) has led individuals with a large number of users to become so-called influencers due to their ability to influence their community of followers ([Santamaría and Meana, 2017](#)). Companies and organizations have been able to use this opportunity and are using these figures as brand prescribers ([Suárez, 2021](#)), since the link between influencer and follower is greater than that achieved by traditional advertising in the media (press, radio, or television) and even greater than that produced by ordinary advertising campaigns or regulated promotion on the social networks themselves.

Depending on the number of followers, influencers can be classified ([Rojas, 2024](#)) as follows: (a) nanoinfluencers: 2K–5K; (b) microinfluencers: 5K–100K; (c) macroinfluencers: 100K–500K;

(d) fame influencers: 500K–1 million; and (e) megainfluencers: more than 1 million. Paradoxically, however, engagement (Bentley et al., 2021), i.e., the engagement between the brand and the user, tends to be greater the lower the number of followers based on the criteria necessary to consider a social network user as an influencer.

Related to digital tools for the Camino de Santiago, technology enables users to stay connected and support pilgrim's self-reflection and experience sharing (Jenkins and Sun, 2019). Antunes and Amaro (2016) explored the need to create a pilgrimage app and found that the intentions of using an app during the Camino would depend on its performance and the options that app would provide to pilgrims to resolve their concerns.

Social media such as Twitter (now X) can contribute to improving real-time hotel demand along the Camino, as confirmed by Mendieta-Aragón et al. (2024). In the case of Facebook, when examining four groups created for the pilgrimage, “the evidence points to a certain distance regarding the Catholic institutional sphere and the linking of this experience to media consumption and entertainment through the expression of the most diverse motivations (self-help, tourism, spiritual, sports, etc.)” (de Sousa and da Rosa, 2017, p. 1). Antunes and Amaro (2016) also found that the intention to use the app would be higher if it offered a general content, while Amaro et al. (2019) studied the features most valued in a pilgrimage app and to determine which ones most influence intentions to use it, which is significant for the development of an app about pilgrimages.

For their part, Tourís López et al. (2022) explored technologies for public safety management and their relationship with the Camino de Santiago. Fernández (2019) analyzed the new version of the app on the Camino de Santiago of the National Center for Geographic Information, while in another work Martínez (2017) presented the app of the National Geographic Institute. Along similar lines, the doctoral thesis by Marques (2014) explores how new technologies can contribute to the promotion of tourism and proposes the creation of an interactive guide for the Portuguese Camino as it passes through Barcelos. For the municipality of Barcelos, an interactive guide based on augmented reality was also developed (Pereira et al., 2018).

3 Sample

The study sample consisted of 100 pilgrims, a significant number to extract results. No sampling biases are recorded because an equal distribution between the different genders, ages and Spanish and foreign pilgrims was sought (see Table 1). Non-binary gender and the option “I prefer not to say” were included in the data for cataloging the sample, but nobody chose either of these alternatives.

TABLE 1 Study sample by gender, age, country, and language.

Gender			Age				Country		Interview language	
Male (%)	Female (%)	Other (%)	18–29 (%)	30–44 (%)	45–59 (%)	60 or more (%)	Spain (%)	Rest (%)	Spanish (%)	English (%)
49	51	0	26	26	27	24	52	48	55	45

Source: own elaboration.

Thirty-six percentage of the pilgrims walked alone, 24% with another person, 17% with two people, 11% with three people, and 12% with four or more people. As a random selection of the sample was used, the validity of the data in terms of gender, age, and origin is certified (see Table 2) and this also allowed data to be extracted according to each of these variables.

4 Methodology

Firstly, a mainly quantitative approach was used and a survey of pilgrims who completed the Camino de Santiago was used as a research technique. To prove this fact, the surveys were carried out at the time of collecting the compostela in the vicinity of the Pilgrims' Welcome Office in the city of Santiago de Compostela.

The survey included questions about the use of mobile apps during the Camino de Santiago. The questions covered both instant messaging apps like WhatsApp or Telegram and social networks (Facebook, Instagram, TikTok, YouTube, Threads, X or Twitch). In the first case, people were asked what they used them for (talking to family or friends, sending photos, sending locations, participating in groups, etc.). In the case of those pilgrims who walked the Camino accompanied, we asked if they created a WhatsApp group specifically for the pilgrimage and, if so, for what purpose.

With regard to social networks, we also examined which ones were used during the Camino and for what purpose (talking to friends or family, uploading photos, posting stories or making live streaming). In addition, pilgrims were asked if they consider themselves influencers and how many followers they have on each social network, as well as if they thought that the content they

TABLE 2 Countries of origin of pilgrims.

Spain	52%	Argentina	1%
Germany	9%	Belarus	1%
France	4%	Bolivia	1%
Australia	3%	China	1%
Canada	3%	Czech Republic	1%
United Kingdom	3%	Denmark	1%
Ireland	3%	Hungary	1%
Poland	3%	Japan	1%
Brazil	2%	Mexico	1%
USA	2%	New Zealand	1%
Italy	2%	Norway	1%

Source: own elaboration.

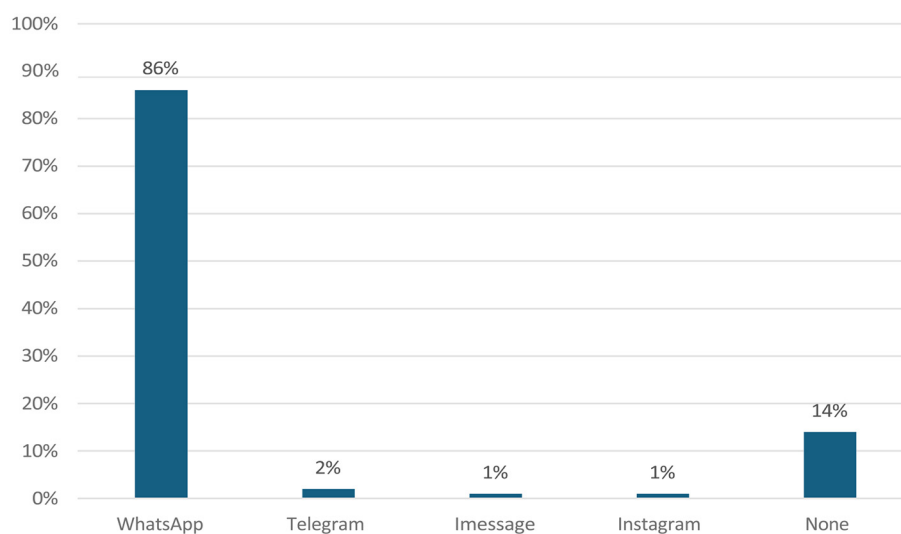


FIGURE 1

Use of instant messaging during the Camino de Santiago (multiple response). Source: own elaboration.

publish on networks influences the image of the Camino perceived by their followers.

In a second part, we checked whether pilgrims published any content related to safety on the Camino. If so, they were asked where (social networks, instant messaging apps, blogs, own websites, etc.) and in what format (post with photo, story, video, reel, live streaming, podcast, only written text, etc.). The use of specific apps that can contribute to a feeling of safety and security on the Camino was also explored.

The surveys were carried out in person using the HAPI methodology (tablet-assisted personal survey) by means of randomization techniques to guarantee the validity of the data in terms of gender, age, and origin. With regard to language, the interview was conducted in Spanish for those who spoke Spanish, and in English for others who didn't. The field work was carried out in the last four months of 2024, so seasonality of pilgrim flows was not taken into account. As this was a study with people, the validation of the data collection techniques and the instruments used were approved by the Bioethics Committee of the University of Santiago de Compostela.

All questions in the questionnaire were closed-ended. Apart from dichotomous questions, Likert scales were used (where 0 is none and 10 is very good) and in some cases multiple responses were included, as the different response alternatives were not mutually exclusive.

This study employed a sequential mixed-methods design, using a quantitative survey followed by expert interviews to contextualize and interpret key findings. The in-depth interview was chosen to learn about communication management systems on the Camino and the strategies used to inform pilgrims of their existence. The interviews were conducted after the results of the surveys had been extracted so that interviewers could assess them from an interpretive lens.

The sources consulted were Francisco Alonso Batuecas, head of AlertCops, a specific security app created by the Ministry of Home

Affairs of the Government of Spain, and the communication offices of the Civil Guard and the National Police. The communication office of the National Police rejected the interview on the grounds that the app is managed by the Secretary of State for Security, while the Civil Guard office referred the interview to Miguel Cañellas Vicens, Lieutenant General of the Civil Guard, in charge of managing security on the Camino de Santiago.

The interviews were conducted telematically and required informed consent and the signing of the clause on personal data protection, in accordance with EU Regulation 2016/679 and Organic Law 3/2018 on Data Protection and Guarantees of Digital Rights.

5 Results

5.1 Quantitative results

WhatsApp is the most used instant messaging app during the Camino de Santiago, since it is used by 86% of walkers (see Figure 1). However, it is also important to note that 14% of pilgrims say they do not use any app while on the pilgrimage. The Direct Message version of the social network Instagram is used by 1% of walkers.

Out of those who use instant messaging, the vast majority (93%) do so to talk to family, while using these apps to talk to friends is relegated to third place (61.6%). In second place comes sending photos (66.3%). It is also relevant that 20.9% use these apps (mainly WhatsApp) to send their location or participate in groups (16.3%).

There are no significant differences in the use of WhatsApp (see Table 3) between men (87.8%) and women (84.3%). It is important to note that no women use Telegram. In terms of age groups, the differences are not particularly relevant either, although two considerations should be highlighted:

TABLE 3 Percentage of use of instant messaging apps during the Camino de Santiago by gender, age, and origin (values in vertical percentages).

Use of instant messaging apps	Male (%)	Female (%)	18–29 (%)	30–44 (%)	45–59 (%)	60 or more (%)	Total (%)
WhatsApp	87.8	84.3	92.3	87.0	96.3	66.7	86.0
Telegram	4.1			4.3	3.7		2.0
Instagram	2.0			4.3			1.0
Imessage		2.0				4.2	1.0
None	12.2	15.7	7.7	13.0	3.7	33.3	14.0
Use of instant messaging apps	Spain		Rest		Total		
WhatsApp	94.2		77.1		86.0		
Telegram	1.9		2.1		2.0		
Instagram	1.9				1.0		
Imessage			2.1		1.0		
None	5.8		22.9		14.0		

Source: own elaboration.

1. The age group that feels most vulnerable when walking the Camino (between 30 and 44 years old) is surprisingly the one that uses instant messaging apps the least (87.0%).
2. The use of technology significantly decreases among the population aged 60 and over (66.7%). In fact, this age group includes the highest number of people who did not use any app during the Camino (33.3%). The technological and generational gap may influence these results. However, this translates into a reduction in communication between these individuals, which also affects security and geolocation.

With regard to the origin, the use of WhatsApp is significantly more popular among Spaniards (94.2%) than among foreigners (77.1%). It should also be noted that most of the people who did not use any app during the Camino were foreigners (22.9%), while this percentage is reduced to 5.8% in the case of Spaniards.

16.3% of pilgrims used instant messaging apps (WhatsApp) to participate in groups and almost half of the pilgrims who walked the Camino accompanied (45.6%) created a group to stay online. The main function of these groups was to send photos (73.1%), followed by talking to each other (42.3%) and staying geolocated (26.9%). Geolocation should be understood as a security guarantee system in the sense that it is shared with other people who are also on pilgrimage.

With regard to social networks (see Figure 2), Instagram (43%) was the most used, although the majority of pilgrims did not use any (47.0%). Nor is there any use of more innovative networks such as Twitch or Threads.

The following table (Table 4) presents the results of social network usage by gender, age, and origin. Among both women (45.1%) and men (40.8%) the most used network was Instagram. In the case of Spanish pilgrims, Instagram was also the most used network (53.8%), while Facebook was the most used among foreigners (18.8%). In terms of age groups, Instagram is the preferred network among the youngest pilgrims, while Facebook is gaining popularity among pilgrims aged 45 and over. These results are consistent with the majority audiences on each of the networks, so the pilgrimage does not imply a change in the selection

of social networks; rather, walkers use the same ones they do in their daily lives.

However, it should be noted that 47% of people who walk the Camino de Santiago say they have not used any social network while on the pilgrimage and that this absence of networks is much higher among foreigners (58.3%) than among Spaniards (36.5%). However, there is no significant difference between women (47.1%) and men (46.9%), although there is a significant difference according to age ranges, so that the number of users who did not use any network during the Camino is more than triple among users aged 45 or over (66.7%) than among those aged between 30 and 44 years (21.7%), which, once again, highlights the technological and digital divide.

The majority used social networks to upload photos (64.2%). This is followed by using social networks for instant messaging (50.9%) and posting self-destructing content (47.2%). As in the case of instant messaging apps, social networks are once again used to talk to friends (50.9%) more than to talk to family members (34.0%). On the other hand, the more innovative options offered by the networks, such as live streaming, are relegated to 3.8%. No direct relationships were found between social media use and security, since among the communication options chosen by pilgrims, security is not the most important but rather sharing photos or staying in touch with family or friends.

Four percentage of the people who walked the Camino consider themselves to be influencers. The highest average number of followers is registered on Instagram (992.3), although this average does not correspond to the consensus figures for being considered an influencer (Rojas, 2024). However, when analyzing case by case the number of followers on each social network of these pilgrims who were considered influencers to assess the impact of their messages about the Camino de Santiago among their community of followers, it was found that users A and B exceed 2,000 followers on Instagram (see Table 5), so they would be classified as nanoinfluencers (between 2K and 5K followers). Users C and D could not be considered influencers because their number of followers is below the

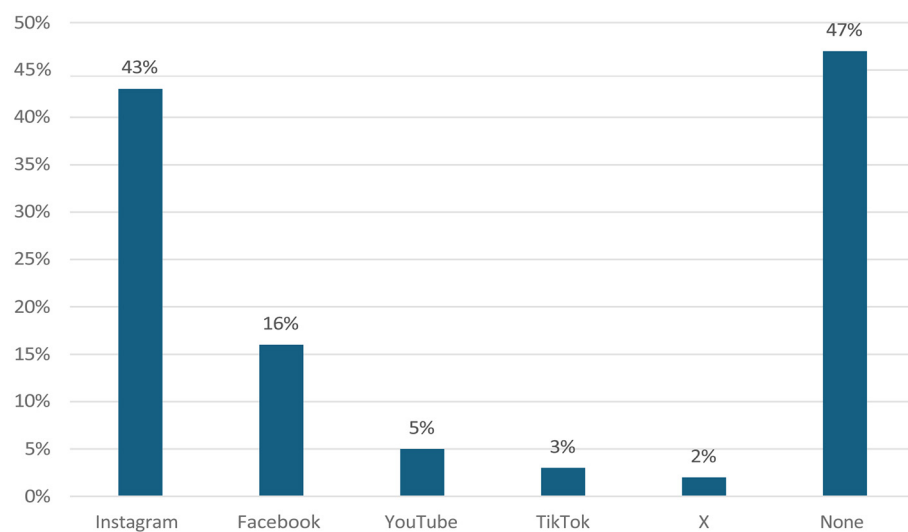


FIGURE 2

Use of social networks during the Camino de Santiago (multiple response). Source: own elaboration.

TABLE 4 Percentage of use of social networks during the Camino de Santiago by gender, age, and origin.

Use of social networks	Male (%)	Female (%)	18–29 (%)	30–44 (%)	45–59 (%)	60 or more (%)	Total (%)
Instagram	40.8	45.1	69.2	73.9	14.8	16.7	43.0
Facebook	12.2	19.6	11.5	8.7	22.2	20.8	16.0
YouTube	6.1	3.9	7.7	8.7	3.7		5.0
TikTok	4.1	2.0	3.8	8.7			3.0
X	4.1			4.3		4.2	2.0
None	46.9	47.1	30.8	21.7	66.7	66.7	47.0
Use of social networks	Spain (%)		Rest (%)		Total (%)		
Instagram	53.8		31.3		43.0		
Facebook	13.5		18.8		16.0		
YouTube	1.9		8.3		5.0		
TikTok	3.8		2.1		3.0		
X	1.9		2.1		2.0		
None	36.5		58.3		47.0		

Source: own elaboration.

minimum threshold of 2K required for such purposes (Rojas, 2024).

When evaluating on a scale of 0–10 (0 is none and 10 is a lot) the extent to which they believe that their content on networks about the Camino de Santiago influences the image

of the Camino that their followers may have, the average is 5.83 points. Women (see Table 6) give a higher value to the influence of the image they transmit in their social networks (6.63 points), while the average score of foreigners (6.35) is higher than that given by Spaniards (see Table 6).

Only 5.7% of pilgrims who used social networks during their pilgrimage published some content related to safety on the Camino. When pilgrims were asked about whether instant messaging apps and networks contribute to feeling safer during the Camino, the

average score was 6.55 points. On a scale of 0–10 (where 0 is none and 10 is a lot), the highest concentration of responses is seven points (24.5%).

The rating is slightly higher for men (6.68) than for women (6.43). The scores are also similar between the different age groups (see Table 7). However, a higher rating was found in the case of Spanish pilgrims (7.04).

Fifteen percentage of pilgrims used an app that they considered safe on the Camino. The majority used Buen Camino (46.7%). The evaluation of the increase in safety when walking accompanied with this app reaches an average of 7.6 points, while the best rated app (10 points) is Garmin connect. The public app of the Government of Spain, AlertCops, a publicly owned app that allows citizens to immediately contact the police or the Civil Guard to report any

TABLE 5 Characteristics of pilgrims ($n = 4$) who consider themselves to be influencers.

Pilgrim	Gender	Age	Social networks they use	Followers
A	Male	30–44	Instagram	3.5K
			TikTok	2K
B	Male	30–44	Instagram	2K
C	Female	18–29	Facebook	1.1K
			Instagram	1K
D	Female	60 or more	Facebook	1K

Source: own elaboration.

TABLE 6 Average ratings of the image of the Camino transmitted in networks according to gender and age.

Male	Female	18–29	30–44	45–59	60 or more	Total
5.00	6.63	5.83	5.83	5.67	6.00	5.83
Spain		Rest		Total		
5.52		6.35		5.83		

Source: own elaboration.

TABLE 7 Average rating on whether social media increase safety on the Camino de Santiago by gender, age, and origin.

Male	Female	18–29	30–44	45–59	60 or more	Total
6.68	6.43	6.68	6.50	6.81	6.14	6.55
Spain		Rest		Total		
7.04		6.00		6.55		

Source: own elaboration.

criminal situation, and which has specific functionality for the Camino de Santiago, was not used by any pilgrim (Figure 3).

For those who do not know about AlertCops, knowing that there is this app that accompanies pilgrims increases their perception of safety on the Camino by an average of 7.54 points (see Figure 4). That is, among pilgrims who do not know about AlertCops the perception of security increases from 0 to 7.54 points simply by knowing that there is a publicly owned app that serves to report criminal situations of which people are victims or witnesses.

There are no significant differences between men and women or by place of origin (see Table 8). It is people between 30 and 44 years of age who give the highest average rating (8.16 points).

5.2 Expert interpretations

The in-depth interviews enabled both Francisco Alonso Batuecas, head of the Systems, Communications and Security Department at the CETSE (Security Technology Center) of the Spanish Security Forces and Corps, and Miguel Cañellas Vicens, lieutenant general of the Civil Guard, to make a

qualitative interpretation of the quantitative data obtained through the surveys.

The interviews focused on the qualitative analysis of the following items extracted from the quantitative survey:

- It is confirmed that most pilgrims use mobile apps for messaging, and only one in 10 people (14%) claimed not to have used any type of app during the Camino. In addition, these apps are very often used to send the location to other people.
- Six out of every 100 people (5.7%) could already be transmitting a negative image of the Camino because they are not aware of protection or security mechanisms while on the pilgrimage.
- The need for public institutions to implement concrete measures to promote the image of a safe Camino.

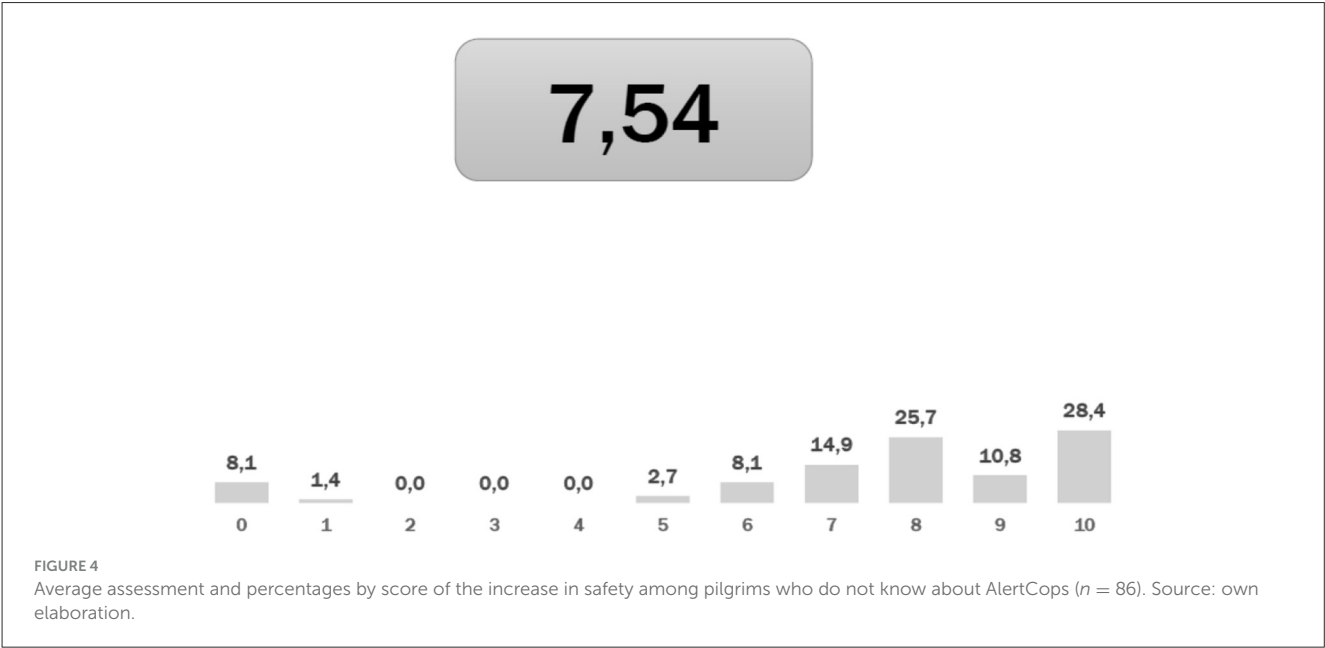
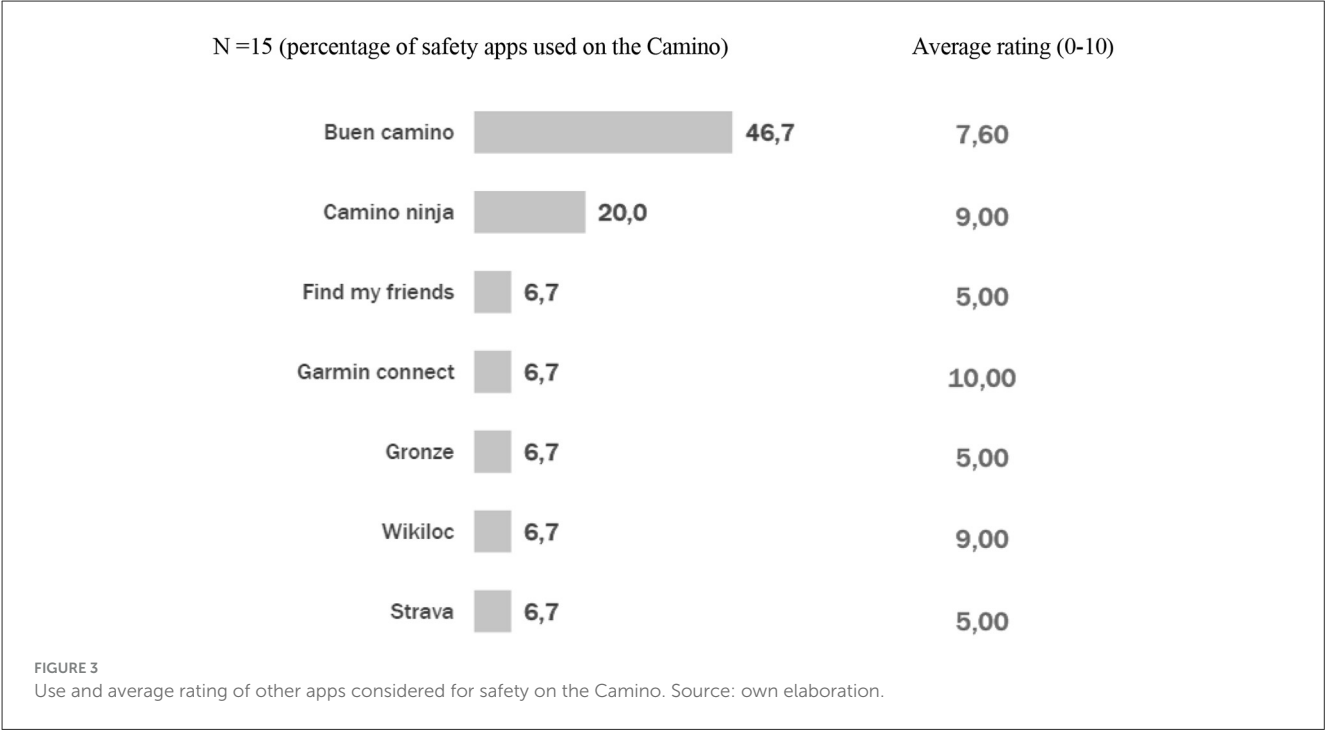
According to Alonso, the aim of the whole system that the Spanish Ministry of Home Affairs has deployed for the Camino is to provide a perception of security. In fact, the vehicles, the staff patrolling the Camino or the uniforms they wear contribute to the image of proximity policing that is intended to accompany pilgrims without alarming them.

Cañellas stresses, firstly, that the international and global character of the Camino is strengthened and that this is a matter of concern to them. According to the records, 66% of pilgrims who walk the Camino are not Spanish and, therefore, the Civil Guard is focused on both Spanish and, especially, foreign pilgrims, as the latter are aware of the need to have more tools to ensure their safety and to request a police response to any specific incident.

Every 28 km of the Camino there is a Civil Guard barracks, so that virtually every stage of the Camino de Santiago has a security post. All this makes the Civil Guard the Spanish police force with the greatest power, allowing them to carry out a wide range of services, from the most basic to those specific to the Camino, in particular the protection of its cultural and natural heritage, and the guaranteed protection of pilgrims.

For more than a decade the Civil Guard has focused on strengthening public safety on the Camino. It therefore designed a Civil Guard's Jacobean Security Plan that is updated every year. The Mobile Pilgrim Support Offices, along with the Civil Guard helicopters, are usually the resources that are initially assigned to resolve pilgrim-related incidents.

"The experience of the Camino is, above all, personal and depends on each pilgrim's objectives. I believe that, today, the safety factor could be the least important when deciding whether to walk alone, accompanied or in a group," says Miguel Cañellas. "Based on our experience and internal information after years of dedication to the Civil Guard's Jacobean Security Plan, we are aware that, as in any other geographical scenario where large numbers of people are concentrated and which, therefore, entails an increase in objective criminality, the vulnerability of women may be greater. Therefore, one of the purposes of the incorporation of the Civil Guard's Mobile Pilgrim Support Offices was to be close to the pilgrims at points of the Camino in which a pilgrim support service was not carried out for various factors, generally due to



the distances to be covered. The provision of these mobile offices, in which there must be female staff from the Corps, is aimed at strengthening the preventive work for victims of violent crimes (addressed according to its priority over the rest), and in particular when the victim is a woman—gender violence, robbery with violence, sexual assault—or where they require special protection, which implies in this case as extra guarantee of their privacy,” he concludes.

Both interviewees agree on the importance of mobile phones as an additional means of safety to that offered by

the State Security Forces and Corps in person. In addition, as Alonso points out, they have profiles on Instagram, YouTube, TikTok, or X and try to launch messages for all to see.

With this same purpose the Government created the AlertCops app, but very few pilgrims use it to date (14%), so greater promotion of this app is required as a complement to security on the Camino de Santiago. This app allows pilgrims to share their location with the Security Forces and Corps, but they only used WhatsApp to do this during their pilgrimage.

TABLE 8 Average ratings of increased safety knowing that AlertCops exists, by gender, age, and origin.

Male	Female	18–29	30–44	45–59	60 or more	Total
7.60	7.49	7.67	8.16	7.26	7.06	7.54
Spain		Rest		Total		
7.93		7.06		7.54		

Source: own elaboration.

6 Discussion

Although the motivations for completing the Camino de Santiago are diverse (de Sousa and da Rosa, 2017), evidence shows that pilgrims take a mobile phone with them with various social apps installed, so it is demonstrated that they use technology during the Camino. As a result of the mobile technological evolution analyzed by Correia and Tam (2024) or Lischka et al. (2022), this research finds that most pilgrims use smartphones on the Camino de Santiago, although there is a significant generation gap among people aged 60 and over.

Regarding the RQ, the use of instant messaging apps is extremely popular among pilgrims. WhatsApp is the most popular and was used by 86% of pilgrims. It is also confirmed that most pilgrims use mobile apps for messaging, and only one in 10 people (14%) claimed not to have used any type of app during the Camino. Almost all of them use this type of apps to talk to family (93%) and two out of 10 people (20.9%) use them to send their location to other people.

Trust-building through technology materializes in actions such as pilgrims' need to be connected with others. In fact, 45.6% who walked the Camino accompanied decided to create a WhatsApp group to stay in touch with their companions. 26.9% of those who created groups for the Camino used them to send their location, which implies a relationship between technology and security as demonstrated by the work of Tourís López et al. (2022) and, on the other hand, the obligation of public authorities to give greater visibility to publicly owned security apps such as AlertCops.

As regards social networks, the use decreases significantly compared to messaging apps. In fact, 47% of pilgrims did not use any social network during the Camino and among those who did, the use of Instagram prevails over the others (47%). More video-oriented networks like YouTube (5%) or TikTok (3%) are barely represented, as is the case with X (2%), a network characterized by its microblogging.

Although one of the main factors that justify the increase in Internet access through smartphones are social media (Borchers, 2019), the results indicate that social networks have a lower correlation with security than instant messaging apps like WhatsApp, especially regarding group participation and geolocation. While instant messaging apps are mainly used to talk to family, social networks are mainly used to upload photos (64.2%), which justifies Instagram's success compared to other networks. Indeed, posting stories, i.e., self-destructing content, a particular option on Instagram, in which the network is the leader, justifies its use in 47.2% of cases. In addition, it is also on Instagram

where pilgrims have more followers (average of 992.3), so it is logical that they publish content where there are more chances that it can be viewed and used.

Seven out of 10 pilgrims (69.8%) consider (more than five points attributed on a scale of 0–10) that the publications they make on social networks influence the image of the Camino de Santiago. The majority of responses (17%) give 10 points to this item, so if pilgrims perceive that the Camino is not safe, this perception could damage the image of the Camino in a virtual context in which the opinions of users are increasingly important and credible.

More specifically, with regard to SRQ1, although most of the publications made during the pilgrimage were not related to safety, 5.7% were found to be linked to this issue. In other words, six out of every 100 people could already be transmitting a negative image of the Camino because they are not aware of protection or safety mechanisms along the way. This is corroborated when pilgrims are asked to what extent instant messaging apps and social networks contribute to feeling safer during the Camino de Santiago, since the average is 6.55 points (on a scale of 0–10).

15% of pilgrims used an app that they believe to be safe on the Camino. Examples are Buen Camino, a free app developed by journalist Carlos Mencos, which has been used for 10 years and has almost a million downloads, making it the most used app by pilgrims (Buen Camino, 2024); Camino Ninja, another free app; Find My Friends, another app to save, share and track locations; Garmin Connect, an app specializing in exercise and health; Gronze, which offers participatory information on the main Caminos de Santiago; Wikiloc, another app that allows users to record walking or cycling routes; and Strava, an app for running, cycling and walking.

Safety is a matter of concern for pilgrims, since the assessment of increased safety when walking accompanied by a specific protection app registers an average of 7.60 points (on a scale of 0–10 points). This implies that public institutions should continue to implement concrete measures (such as the development of AlertCops) to promote safety on the Camino, according to the in-depth interviews. While it is true that geolocation encroaches on user privacy, when a pilgrim chooses to be geolocated, it is understood that security takes precedence over privacy. Another study could examine the tension between surveillance and freedom.

With regard to SRQ2, it is confirmed that pilgrims, especially women, who say they have more influence on social networks and those who feel less safe on the pilgrimage, believe that their publications on social networks influence the image transmitted to their followers of the Camino de Santiago. Men (6.68) feel safer than women (6.43) when walking with a mobile phone with social apps installed. As for the image that is transmitted of the Camino through social networks, women (6.63) consider to a greater extent than men (5) that their publications influence the perception that their followers have about the pilgrimage to Santiago. The transmission of a sense of insecurity or vulnerability of the pilgrimage would damage the image of the Camino.

Regarding the use of WhatsApp, figures are similar between women (84.3%) and men (87.8%). In terms of age groups, the majority of those who do not use any app are aged 60 and over. Finally, in relation to the origin, Spaniards (94.2%) use WhatsApp more than foreigners

(77.1%) and, in terms of the image of the Camino that is transmitted through social networks, more foreigners (6.35) than Spaniards (5.52) believe that their publications influence the perception that their followers have about the pilgrimage to Santiago.

7 Conclusions

In line with the previous work of Schenkel et al. (2024), this work allowed us to diagnose that pilgrims use mobile phones because it helps to increase their sense of wellbeing by allowing them to be in direct contact with friends and family, and to increase their perception of safety when walking by sharing the location with others, being able to message with other pilgrims in WhatsApp groups and using apps that make them feel safe or that are specific to the routes and hiking. This finding coincides with what Jenkins and Sun (2019) discovered about technology being conceived as a way to be connected. This possibility of being permanently connected also coincides with the research of Zhou (2018) and Chib et al. (2021), since the proximity described by Karlsson et al. (2023) is ratified as an integral part of the use of mobile phones on the Camino de Santiago.

Regarding the safety culture and the digital surveillance (perceived security vs. actual security), there is a direct connection between the need for permanent and close contact described by pilgrims and security, according to other previous studies such as that of Tourís López et al. (2022). This means that, as the use of social apps increases, the perception of security among pilgrims increases. Therefore, according to the in-depth interviews, Spanish public institutions remain firmly committed to further developing mechanisms that promote the feeling of protection on the Camino, both through the physical presence of proximity agents and through apps like AlertCops.

Attending influencers as image-makers of cultural heritage, during this research only two nanoinfluencer (Rojas, 2024) pilgrims have been located, although this is sufficient to warn others that the dissemination of possible messages about feelings of fear or perception of insecurity or vulnerability during the Camino de Santiago could damage its image irreparably. If pilgrims consider that the Camino does not seem safe they could use social networks to transmit messages that could irreparably damage this World Heritage Site. It is true that in this research no influencer of particular relevance has been found, according to the number of followers cataloged by Rojas (2024), but it should also be noted that engagement is higher the lower the number of followers, especially when the posts refer to travel or tourism.

This work contributes to an advance in knowledge about the use of social media apps on the Camino de Santiago and, specifically, the relationship between these media and safety. It also focuses on influencers and the image conveyed through social media, highlighting the importance this has for tourism and brand image. However, attending to the study's limitations, three should be noted. First, the sample is geographically limited to Santiago de Compostela, excluding pilgrims who completed their journey elsewhere or did not collect a Compostela. Furthermore, second, the sample is small, so it may not offer representative results. Finally, the reliance on closed-ended survey questions may

constrain the depth of insight into participants' motivations and experiences, despite the inclusion of a qualitative phase.

In future research it would be appropriate to analyze how the generation gap detected among pilgrims aged 60 and over is being corrected, since technology shows that they use social networks less than the rest of the age groups. Public institutions have the task of remedying this situation and ensuring that all pilgrims feel safe regardless of their gender, age or nationality. It also remains to be analyzed which policies governments are going to implement to correct the greater sense of vulnerability detected among women and older people, since private social platforms are not achieving this objective, especially among older people, and it is therefore up to the State to ensure equal security for everyone. This same study should also be repeated in the near or medium future to assess the evolution of the usefulness of mobile apps on the Camino de Santiago.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found below: <https://doi.org/10.5281/zenodo.14196306>.

Ethics statement

The studies involving humans were approved by Comité de Bioética da Universidade de Santiago de Compostela. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin because anonymous surveys were conducted.

Author contributions

JS-G: Conceptualization, Investigation, Writing – review & editing, Validation, Funding acquisition, Software, Formal analysis, Supervision, Methodology, Writing – original draft, Resources, Project administration, Data curation, Visualization.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The author(s) declare that no Gen AI was used in the creation of this manuscript.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fcomm.2025.1623999/full#supplementary-material>

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