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Tourist and Viral Mobilities Intertwined: Clustering COVID-19-Driven Travel Behaviour of Rural Tourists in South Tyrol, Italy

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Abstract: Travel patterns have dramatically changed during the COVID-19 pandemic. Tourism has been both a vector and a victim of the disease. This paper explores the pandemic's impact on rural tourism, using the theoretical framework of the "mobilities turn" to investigate issues of corporeal and communicative travel found between the first and second waves of the COVID-19 pandemic. A sample of 874 guests visiting the Italian region of South Tyrol, where rural tourism is the norm, identified different patterns of physical travel and approaches to collecting on-site information on COVID-19. Results from a principal component analysis (PCA) and a cluster analysis highlighted at least two different approaches from visitors to the region: the first is more cautious, mostly practiced by domestic tourists, with limited mobility on-site, coupled with a need for information; the second is instead a more adventurous approach, with higher on-site mobility, more use of sustainable forms of transport and less interest in data evidence on COVID-19. Implications for rural tourism and its future are discussed. The hypothesis of an inverse relationship between corporeal and communicative travel needs further exploration in future research.

Keywords: mobilities; COVID-19; corporeal travel; communicative travel; rural tourism; travel behaviour



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1. Introduction

Tourism is both a vehicle for and a victim of the COVID-19 pandemic [1]. The spread of the virus by tourists [2] was among the reasons for recent travel restrictions and for raising geopolitical anxieties among local people in European countries, and particularly in Italy [3]. Travel restrictions on the tourism industry were applied to 75% of destinations in the world as of May 2020 [4]: a 72% decline was registered in worldwide international tourist arrivals between January and October 2020 [5]. After the first viral wave, tourist destinations sought to decouple viral and human mobilities by introducing safety and security measures for social distancing, health protocols, and new hospitality standards (see, e.g., [6]). Increased surveillance and monitoring capacity and the distribution (in other words: the mobility) of relevant information, including dedicated marketing, were introduced to encourage tourists' willingness to travel. Social distancing became a common practice in everyday life, as well as in tourism activities. The new mobilities paradigm [7], being one of the main theoretical contributions that connect physical with non-physical mobility, helps in deconstructing the ambivalence of tourism being a vector and a victim of the pandemic. Indeed, it addresses the multiple mobilities' layers and their mutual relationships to holistically understand the transfer of meanings and objects across space and time. Applying the mobilities paradigm to tourism enlightens the strict relationship

between viral, corporeal, and communicative travel, an issue that is particularly relevant during the pandemic [8].

This paper addresses these and other mobilities issues, focusing on a unique case study of a rural, tourism-intensive Alpine destination: Italy's South Tyrol region. Rural tourism emerged as a fast-growing form of alternative to conventional urban resort-based tourism in the 1970s and 1980s and was recognised internationally by the OECD in 1994 [9]. Its continued growth and evolution are detailed by Lane and Kastenholtz [10]. Key features include many small-scale enterprises, a decentralised destination structure, pluri-activity practices, with tourism often operating within farming or other businesses, typically with a lack of professional governance across and within the destination. All these factors have, anecdotally, been found to make rural tourism businesses especially susceptible to the uncertainties and stresses created by the pandemic. Research into the market/marketing issues in rural tourism during the pandemic is therefore important to help small businesses and to assist the often fragile rural economies within which they operate. Despite its fragility, rural tourism has also proved to be attractive during the COVID-19 pandemic period: interestingly, some studies have highlighted the positive effect of the pandemic on rural tourism destinations that are perceived by domestic tourists as being safer than conventional urban resort-based tourist areas [11,12]. However, at the time of writing, there is almost no evidence about the effects of COVID-19 on tourism behaviour on-site and on guests' needs for on-site information. Online information behaviour and pre-travel information collection are mostly explored (see, e.g., [13,14]). Further, the effects of COVID-19 on modal choices, including a possible shift towards private transport on holiday, are also still unknown. It should be noted here that a general need to rethink tourism transport relationships after the COVID-19 pandemic is acknowledged in general terms (see, e.g., [15]).

Having a high share of international arrivals (66.5%, as of 2019 according to ASTAT, 2020a), the region of South Tyrol experienced intense effects during the first COVID-19 wave while at the same time hosting millions of international travellers during summer 2020. These two specific framework conditions support the adoption of South Tyrol as a unique and exemplary case to study COVID-19-driven travel behaviour in rural areas. Based on a representative sample of 874 guests interviewed during summer 2020, evidence is provided on viral and human mobilities, modal split and mobility patterns during the pandemic, and the role of information and communication during holidays. Results explore differing individual traveler attitudes towards the pandemic and their potential effects in terms of sustainability.

2. Theoretical Framework: Tourism Mobilities in Times of Pandemic

The "new mobilities paradigm" bridges several disciplines within the social sciences: anthropology, cultural studies, geography, migration studies, science and technology studies, tourism and transport studies, and sociology. Its multi- and interdisciplinary nature holistically addresses spatial displacement as a culturally, socially, and politically imbued act and not simply as a transfer of objects or individuals in space. Hannam, Sheller, and Urry [16] maintain that objects, media, technologies, and information are interrelated and "on the move" and, therefore, require "a movement-driven social science" to be assessed [7] (p. 18). Drawing upon the ideas of the socio-spatial theory of space by Lefebvre [17], the "new mobilities paradigm" expands both on the concept of mobility and on the methods that could be used to analyse "issues of movement" [18] (p. 208). From a theoretical perspective, the "new mobilities paradigm" revalues geographical mobility [19] and identifies a compromise between traditional "sedentarist" approaches to social science and the post-modern approaches assuming relentless change [20]. From a methodological perspective, a wide range of methods has been developed under the common denomination of mobile methods [21,22]. Mobilities geography and its discourse have also entered the tourism transport field with two special issues of the *Journal of Sustainable Tourism* (Volume 21, (4), entitled "Mobilities and Sustainable Tourism" and

Volume 28, (2) entitled “Innovative Approaches to Sustainable Transport, Mobilities and Tourism”), creating two research collections addressing qualitative and non-utilitarian aspects of travel.

The compromise between sedentarism and hypermobility on the one hand and the possibility to investigate mobilities using a qualitative perspective are key assets to assess travel *during* the COVID-19 pandemic, as the physical displacement of objects and the digital circulation of information have both been profoundly affected by lockdowns and travel restrictions. Prior to the COVID-19 pandemic, the mobilities paradigm was already applied to investigate viral and disease mobility [23,24]. Viruses were understood as a tourist “travel companion” [23] (p. 299) or, alternatively, as a “passenger” [19] (p. 1) able to circulate only as part of mobile assemblages. Before addressing the relationship between viruses, mobilities, and tourism during the COVID-19 pandemic, a brief introduction to mobility modes is presented below.

2.1. Mobility Modes According to the “New Mobilities Turn”

According to the “new mobilities paradigm”, multiple forms of mobility work as a constructive framework for modern society [25]. The concept of mobilities incorporates “both the large-scale movements of people, objects, capital and information across the world, as well as the more local processes of daily transportation, movement through public space and the travel of material things within everyday life” [16] (p. 1). Urry [7] argues that multiple modes of mobility co-exist in contemporary society: (a) *corporeal travel*, both for business and for leisure; (b) *physical movement of objects*, for commercial or individual purposes; (c) *imaginative travel*, imaginative journeys inspired by print and visual media; (d) *communicative travel*, happening through traditional or digital media with the aim of exchanging information; and finally (e) *virtual travel*, enabling virtual reality (VR) trips without physical displacement. Mobilities represent a “complex assemblage” [7] (p. 48) of these real or virtual displacements, as well as their individual and social meanings and their links to the “spatial fix” [26] (p. 522). This paper focuses on two of the five dimensions of the mobilities turn, i.e., corporeal and communicative travel, although it is worth mentioning here that all mobility modes have been somehow affected by the COVID-19 crisis (see Table 1). The novel contribution of this work relies on the application of quantitative methods within the framework of mobilities theory to investigate the relationships between different types of mobility during COVID-19 and particularly to explore the mutual relationship between corporeal and communicative travel.

Table 1. Mobilities modes and their relationship with the COVID-19 pandemic.

| Mobility Modes According to Urry (2007) | Tourism-Related Issues during The COVID-19 Pandemic |
|---|---|
| Corporeal travel | Lockdowns, travel restrictions, border closures and travel bans, suspension of visa exemptions, new practices and (mobility) behaviour, increases in domestic tourism, etc. |
| Physical movement of objects | Re-localisation of commerce, shorter food delivery chains, regional products, etc. |
| Imaginative travel | Marketing campaigns to inspire travel during the pandemic, etc. |
| Communicative travel | Communication on disease cases, safety and security measures for social distancing, health protocols, and new hospitality standards, etc. |
| Virtual travel | Virtual tourist experiences as substitutes for physical experiences during the pandemic, etc. |

Source: own elaboration.

2.2. Valuing Mobilities during the COVID-19 Pandemic

To survive over time, viruses need to be mobile: “in addition to local scale mobilities between bodies, regional and global mobilities are also key to the success of a virus” [19] (p. 1). This connection between human and viral mobility is responsible for the pathological connotation of mobility during the pandemic and for episodes of “travel shaming” [19] during the COVID-19 crisis. The positive connotation of travel introduced by the “mobilities turn” after decades of interpretation of mobility as an opportunity cost [27] or a “necessary evil” [28] (p. 708), suddenly disappeared when immobility became an instrument to contain the advancement of the virus. Some mobilities scholars interpreted restrictions to mobility or travel bans not only as political tools to reduce contagion but also as policy instruments to change geopolitical orders [29]. Other scholars highlighted that, besides the pathological connotation of mobility during the COVID-19 pandemic, a new (and positive) value of more sustainable forms of travel, such as walking and cycling, were spreading [19]. Notwithstanding these small positive signs, “anti-mobility” narratives in response to COVID-19 were formulated both from conservative and liberal media and politicians, reinforcing forms of localism as a response to calls for immobility [19]. Moreover, communication strategies about COVID-related information adopted by traditional and social media have been proven to increase anxiety, fear, and depression among the population (see [30] for a review), with potential negative repercussions on travel intentions as well. Ultimately, the COVID-19 pandemic shows that mobilities are “inherently political” practices [29] (p. 11), defining relational ties among cultures, countries, and individuals, also through tourism. This paper investigates two modes, corporeal and communicative travel, in the Italian region of South Tyrol.

3. Case Study Description: South Tyrol (Italy)

The Autonomous Province of Bolzano/Bozen, South Tyrol, constitutes an ideal setting to study the effect of the pandemic on different travel modes. This region of around 530.000 inhabitants in the Northeastern Italian Alps was chosen as a case study because of its high tourism intensity, its high dependency on international tourist markets, and its special status in Italian law. Thanks to its considerable levels of self-government in terms of legislative and executive powers, granted for historical reasons, the region can thus adopt regulations that differ from those adopted at the national level. Before the onset of the pandemic, South Tyrol has been among the most competitive destinations in the Alps, with 7.7 million arrivals and 33.7 million overnight stays in 2019 [31]. In summer 2019, Germany accounted for nearly 50% of total tourist arrivals [32].

The region attracts tourists especially because of its natural resources; hiking, sports, particularly winter sports, and outdoor activities are among the main motivations for holidays [33]. Apart from offering tourism products strictly connected to rurality, the region was also officially classified as a predominantly rural area according to the Eurostat classification (see [34]). Moreover, the destination places sustainable development and sustainable mobility at the very core of its vision and mission [35,36] and monitors progress in sustainable tourism development through the UNWTO’s affiliated Sustainable Tourism Observatory (<http://insto.unwto.org/observatories/south-tyrol-italy/>, accessed on 26 September 2021). This entity, supported and co-financed by the local government of South Tyrol, monitors the progress of sustainable tourism and, during the pandemic, has investigated the economic, social, and environmental impacts of COVID-19 on the tourism economy. A brief summary of COVID-19 trends both at the Italian and South Tyrolean levels is reported below.

3.1. COVID-19 in Italy: Governmental Response and Effects on Tourism

Italy was the first European country to impose limits on individual mobility to slow down the COVID-19 contagion, as infection rates were skyrocketing compared to other European countries and the rest of the world. Using a series of decrees issued in March 2020, the Italian government banned non-essential travel between regions and eventually pre-

vented individuals from moving from their own municipality. European external borders closed to third-country nationals from March 17th, with exceptions for specific workers (e.g., health personnel); European citizens were allowed to travel between countries only to return to their place of residence [37]. The Italian government closed restaurants, cafés, and shops, along with all economic activities deemed non-essential, meaning unnecessary to either the survival of the local population or to the full operation of the healthcare sector. The employees of non-essential economic activities, both in the private and public sectors, could work only remotely. Schools and universities closed as well. The lockdown phase in Italy was characterized by an (over)exposure to information about contagion trends, as newspapers and newscasts reported data on a daily basis, with negative effects on risk perceptions [38].

These restrictions remained in force until May 4th. The government reopened Italian borders to foreign travellers and allowed movements across Italian regions only on June 3rd. On the 15th of June, the ban on most economic activities and on social gatherings was lifted, but face masks and social distancing were still mandatory in public spaces. European countries gradually restored free movement within the Schengen area from June 15th [39], but every EU member state imposed its own travel conditions to enter the country (e.g., in terms of tests and self-isolation) and updated them according to contagion trends. No particular conditions were imposed on German and Austrian tourists during the summer. As a result, travelling to Italy was possible for European Union (EU) citizens from June 15th, while non-essential travelling from third countries was not possible, except for selected countries where the epidemiological situation was considered to be under control. Notably, tourists travelling from the U.K., the U.S., and China could not enter the EU during summer 2020.

3.2. COVID-19 in South Tyrol: Trends and Responses

On March 6th, the Robert Koch Institute (the German government's central scientific institution informing decisions on public health) included South Tyrol among the regions at high risk of contagion, together with the Chinese region of Wuhan, Iran, South Korea, and Lombardy, thereby banning travel from Germany to South Tyrol [40]. At the time, infection rates were considered very high compared with Germany.

In the following months, South Tyrol complied with the national regulations described above, and the contagion slowed down (see Figure 1). The regional government relaxed some restrictions for cafés and restaurants before Italy as a whole thanks to its special legislative powers: these commercial activities reopened in May 2020, with the aim of encouraging the start of the summer season.

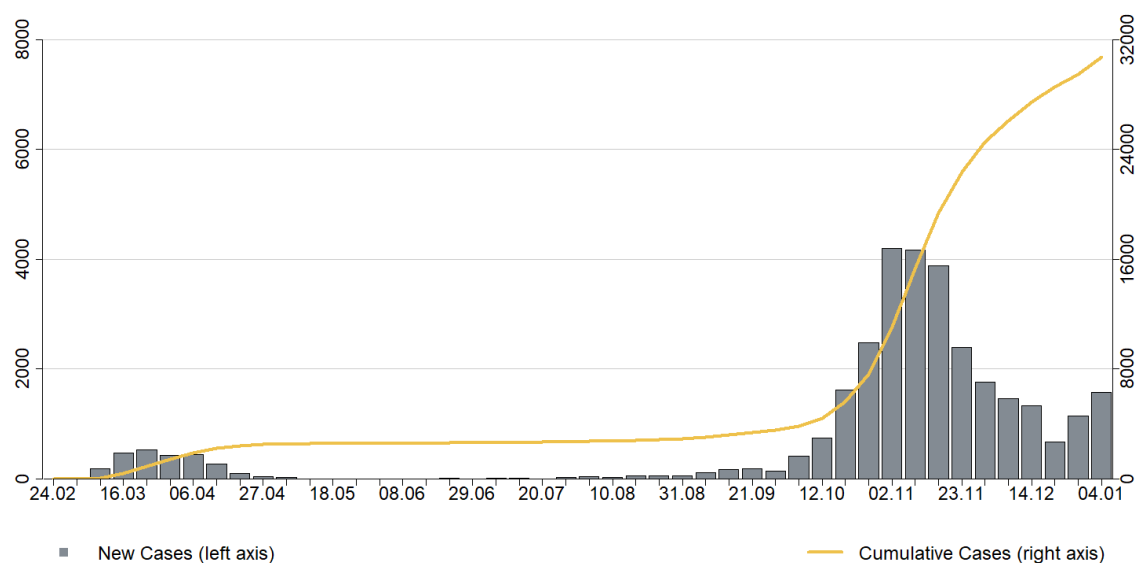


Figure 1. Spread of COVID-19 in South Tyrol, February 2020–January 2021. Source: own elaboration.

The restrictions imposed on national and international travel had strong negative repercussions for tourism in Italy as a whole as well as for South Tyrol's tourism industry. Despite the fact that Italian and German tourists, traditionally providing a large proportion of overall overnight stays in South Tyrol [41], were allowed in, ASTAT [42] reports that between May and October 2020, tourist arrivals dropped by 3.2 million, a loss of 33.6% compared to the same period of 2019. This major decrease is attributable to a significant drop in stays from neighbouring countries: arrivals by German, Austrian and Swiss tourists fell by 44.5%, 55.4%, and 36.7%, respectively [43]. Conversely, domestic tourists' arrivals increased slightly (+4.4%).

South Tyrol was declared as a region with a high risk of contagion by the Robert Koch Institute for the second time on October 22nd [44]. Consequently, travels to Italy were banned again from October 25th. At the time of writing (January 2021), freedom of movement has not been completely restored, neither at the Italian nor at the European level.

4. Survey Materials and Methods

The sampling design, the main variables used for data analysis, and the details about principal component analysis (PCA) and clustering are provided in this section.

4.1. Sampling Design

Summer 2020 was an exceptional one (see above) but represented a time window to observe how tourists reacted to the pandemic along various dimensions. The research group gathered information about activities carried out during holidays, mobility patterns, host-guest relationships, marketing campaigns, and tourists' satisfaction. A sample of tourists visiting South Tyrol between August 8th and September 30th was carried out. The second restriction imposed in October fell outside the data collection period.

The survey population comprised visitors who spent at least one night in hotels in South Tyrol during August and September 2020. Visitors staying in other types of accommodation facilities were excluded. Interviews were conducted face-to-face by trained and multilingual interviewers inside the accommodation facilities. The accommodation facilities were distributed among 25 municipalities according to a sampling plan that took into account the distribution of guests (arrivals) by geographical dispersion and by accommodation category, reproducing the sample design of the tourist barometer developed by the local institute for statistics [43]. During the two-month period, 30% of the interviews were conducted in the mid-August week (South Tyrol's high tourism season), 33% in the remaining days of August, and 37% in September (a shoulder season for South Tyrolean tourism). In total, 874 guests participated in the survey. Considering a confidence level of 95%, the sample indicates a margin of error of about 3.3%.

The data set was weighted iteratively on the basis of the arrivals in the months of August and September of 2019 according to the following characteristics: functional small region, tourism intensity, and the star classification of the hotel businesses. The resulting weights lay between 0.21 and 2.65. The sample can, therefore, be considered representative of the tourists present in hotels during the months of August and September 2020.

4.2. Variables

The survey included a large number of variables related to mobilities and to the impact of the COVID-19 pandemic on tourists' behaviours and perceptions. Selected questions addressed, in particular, the corporeal and communicative dimensions of travel.

Tourists were asked about their modal split to reach the destination and to travel while on holiday. Possible answers were: car, motorbike, coach, public bus, train and other. The question "who are you travelling with?", (referred to as "travel companion" from here onwards), has four answer options: alone, with a partner, with family, or as a group. The "length of stay" variable describes how many days guests spent in the destination and was retrieved from questions in the survey asking for the arrival and departure day as separate variables. The variable was then recoded into an ordinal variable with four categories:

1 day, 2–4 days, 5–7, and more than 7 days. These questions allow us to compare this sample with the sample of the previous tourist barometers conducted in the summer and winter seasons of 2004/5 and 2012/3 [43].

One question (Q20) asked whether the planning of holiday activities changed due to the pandemic in terms of contacts with other people, preference for outdoor vs. indoor activities, and attitudes towards public transports. The possible answers followed a 4-point Likert scale and ranged from 1 (strongly agree) to 4 (strongly disagree). Two questions (on the same 1–4 scale) about the host-guest relationship (Q30) and about the requirements for the accommodation facilities (Q31) were also used to distinguish between different groups of tourists. The first one was related to guests' attitudes towards their hosts in terms of friendliness, attention, and trust. The second question focused on hygiene, separation from other guests, health certificates for the host and tests for tourists, information about COVID-19, and sustainability.

The survey included a number of controls for sociodemographic variables such as sex, year of birth, and country of origin.

4.3. Methods

For the data analysis, the statistical software SPSS® version 26.0 [45] was used. After an initial elaboration of descriptive statistics for all items, we conducted a principal component analysis (PCA) and a cluster analysis to further explore variables and guest subgroups.

Firstly, frequency distributions were calculated to explore categorical and ordinal variables. In the presence of the latter, median values (Me) were calculated additionally. The independent chi-square test and z-test were used to assess the presence of associations between categorical variables and to compare column proportions, respectively. The analysis of the sociodemographic profile of respondents focused on the aspects related to the specific objective of the paper. For all the tests, the significance level was set at 0.05.

Subsequently, a principal component analysis (PCA) with varimax rotation method was conducted to detect latent dimensions existing among the items related to the aspect of corporeal and communicative dimensions of travel, mentioned above in Section 3.2 (Q20 impact of the pandemic on holiday activity planning, Q30 on host-guest relationships, and Q31 on accommodation requirements). The criterion of eigenvalue higher than 1 was chosen as a principal threshold for factors selection. The major loadings of each item were considered to obtain the final solutions. The median values of the respective items were computed to operationalize the created components.

To identify different types of tourists according to how they reacted to the pandemic in terms of mobility behaviours, we performed a cluster analysis using the SPSS® two-step clustering method (SPSS Inc., Chicago, IL, USA, 2007). This procedure makes it possible to handle large data sets and permits dealing with both continuous and categorical variables. To reveal natural clusters within the respondents, we focussed on sociodemographic patterns (sex, age group, country of origin) and on PCA factors relative to the impact of the pandemic on holiday activity planning, host-guest relationships, and accommodation requirements. After running various models with different combinations of variables, the final solution was chosen considering the predictors' importance, the number of clusters, and its interpretative strength, respectively, to mobility behaviours.

5. Results

This section highlights the results of the statistical analysis of the survey data.

5.1. Sample Description

Our sample is evenly balanced regarding sex, with 46.9% female respondents and 52.7% males (see Table 2). Most respondents are between 41 and 59 years old (48.2%), 24.1% are older than 59 years, and 24.2% are 40 years old or younger. Germany was the source of the majority of respondents in our sample with 47.8%, which reflects the true arrivals distribution by country of origin for summer 2020 [42]. A total of 42.9% of respondents

come from Italy. Together, the two countries account for over 90% of the tourists sampled (85.7% in summer 2020). Length of stay is evenly distributed between 2 and 4 days (30.3%), 5–7 days (31.1%), and more than a week (33%). Few respondents are day visitors (5.6%). Almost half travelled with their partners to the destination (48.8%), a third travelled with their families (29.7%), 13% in groups, and 8.3% were alone. The car is the primary means of transport (88.8%) to the destination. Consequently, 69.9% of respondents used the car as well to travel around the destination. Other means of transport to the destination are the train (3.7%), coach (2.8%) and motorcycles (1.7%). The public bus scored well for travel within the destination at 10.7%. The modal split to reach the destination and to travel on-site is very similar to the pre-COVID period. Indeed, a sample survey using the same research design revealed that, in summer 2013, the private car was the dominant means of transport to reach South Tyrol, with 86.5% of arrivals [43].

Table 2. Survey sample description.

| | | % |
|---------------------------------------|-------------------------------|------|
| Demographics | | |
| Sex | Female | 46.9 |
| | Male | 52.7 |
| | Other | 0.4 |
| Year of birth | Unknown | 3.5 |
| | 1900–1959 (61 or older) | 24.1 |
| | 1960–1969 (between 51 and 60) | 24.9 |
| | 1970–1979 (between 41 and 50) | 23.3 |
| | 1980 and late (40 or younger) | 24.2 |
| Country of origin | Italy | 42.9 |
| | Germany | 47.8 |
| | Austria | 2.7 |
| | Switzerland | 3.0 |
| | Other | 3.6 |
| Reason for stay | Holidays | 98.4 |
| | Work/Studies | 1.0 |
| | Other | 0.6 |
| Length of stay | 1 day | 5.6 |
| | 2–4 days | 30.3 |
| | 5–7 days | 31.1 |
| | More than 7 days | 33 |
| Travel companion | Alone | 8.3 |
| | With my partner | 48.8 |
| | With my family | 29.7 |
| | In a group | 13 |
| | Other | 0.2 |
| Transport | | |
| Means of transport to the destination | Car | 88.8 |
| | Motorcycle | 1.7 |
| | Coach | 2.8 |
| | Train | 3.7 |
| | Plane | 0.9 |
| | Other | 2.1 |
| Means of transport in the destination | Car | 69.9 |
| | Motorcycle | 1.5 |
| | Coach | 2.8 |
| | Public bus | 10.7 |
| | Train | 4.3 |
| | Others | 10.9 |

Source: own elaboration.

5.2. Identification of Latent Dimensions in Tourists' Responses to the Pandemic

A principal component analysis (PCA) was conducted on the six items of the question related to the impact of the pandemic on holiday activity planning (Q20) to identify potential underlying dimensions. Following the eigenvalue criteria, two dimensions were individuated, accounting for 61.46% of the total variability (see Table 3). Considering major loadings for each item (expressed next to the statements in the table below), the first component is expressed as follows: "I try to avoid contact with locals", "I try to avoid contact with other guests", "I try to spend more time in my hotel". It identifies the dimension of "isolation", typical of the guests who try to avoid contact with other people by limiting individual mobility in the destination. The second dimension, called "cautious exploration", consists of the following items: "I try to remain outdoor/in open spaces/in the fresh air", "I try to avoid large gatherings of people", "I try to avoid public transportation". It characterizes guests who try as much as possible to preserve their health by staying outdoors and avoid public transports to move around. Considering this result, the two latent dimensions were summarized by the median of the relative items.

Table 3. PCA results.

| Question | Dimension | Item (Factor Loading) |
|--|---|--|
| Q20: How did COVID-19 change your holiday activities planning? | Factor 1: Isolation | Q20.5: I try to avoid contact with locals (0.832) Q20.6: I try to avoid contact with other guests (0.796) Q20.4: I try to spend more time in my hotel (0.747) |
| | Factor 2: Cautious exploration | Q20.2: I try to remain outdoor/in open spaces/in the fresh air (0.805) Q20.1: I try to avoid large gatherings of people (0.748) Q20.3: I try to avoid public transportation (0.558) |
| Q30: Did COVID-19 affect the relationship between you and your host? | Factor 1: Relationship reinforcement | Q30.1: The bond/relationship between me and my host has strengthened (0.824) Q30.3: I value the friendliness/warm-heartedness of my host more than before (0.895) Q30.4: I value my host's individual attention for me more than before (0.897) |
| | Factor 2: Relationship strain | Q30.2: I am keeping a greater distance to my host (0.986) |
| | Factor 3: Relationship stability | Q30.5: The relationship with my host did not change (0.993) |
| Q31: Did COVID-19 change your requirements for the accommodation? | Factor 1: Information and communication | Q31.7: I would like to receive information on safe leisure activities (0.793) Q31.6: I would like to have the opportunity to undergo a COVID-19 rapid test (at the destination) (0.791) Q31.5: I would like to receive information about the latest COVID-19 developments in South Tyrol (from the host) (0.721) |
| | Factor 2: Hygiene | Q31.1: I put more emphasis on hygiene (0.858) Q31.2: I put more emphasis on innovative hygiene systems (automated doors, card payment) (0.825) |
| | Factor 3: Scepticism | Q31.3: I prefer more separation from other guests (0.750) Q31.4: I would like my host to have a health certificate (0.819) |

Source: own elaboration.

The same kind of analysis was performed first on the answers to questions related to the host-guest relationship (Q30) and subsequently on those related to the requirements for the accommodation facilities (Q31), thus identifying potential latent dimensions in these two aspects. Following the eigenvalue criteria, two dimensions were individuated, but the analysis of the loading importance revealed the existence of a third dimension, and the final solution was based on three factors. This occurred in both aspects. The first factor represents the "relationship reinforcement" dimension and consists of items: "I value my host's individual attention for me more than before", "I value the friendliness/warm-heartedness of my host more than before", and "The bond/relationship between me and my host has strengthened". The item "I am keeping a greater distance from my host" summarizes the second dimension, called "relationship strain", in the same way as the item "The relationship with my host did not change" does, respectively, to the third factor, "relationship stability". Considering the question related to the host-guest relationship, the first three dimensions explain about 87% of the total variance.

For questions on the accommodation requirements, the first three components explain about 72% of the total variance. The first factor, which can be labelled as the “information and communication” dimension, consists of items “I would like to receive information on safe leisure activities”, “I would like to have the opportunity to undergo a COVID-19 rapid test (at the destination)” and “I would like to receive information about the latest COVID-19 developments in South Tyrol (from the host)”. The first, “I put more emphasis on hygiene” and second item, “I put more emphasis on innovative hygiene systems (automated doors, card payment . . .)” summarize the second dimension, called “hygiene”. The “I would like my host to have a health certificate” and “I prefer more separation from other guests” describe the third factor, which can be labelled as “skepticism”.

Results are summarized in the Table 3 below.

5.3. Clustering Country of Origin and Latent Dimensions

The two-step procedure extracted two separate groups, cluster 1 and cluster 2. The final solution was based on the input predictors with the value of importance higher than 0.39, such as “information and communication”, “skepticism”, “relationship reinforcement”, “hygiene”, “isolation”, and “country of origin”. The first group had 508 individuals, and the second group had 313 respondents. A total of 53 individuals could not be included in the clusters. Table 4 illustrates the distribution of variables discriminating the clusters. The predictors are ordered according to their importance in the clustering procedure.

Table 4. Clusters’ description.

| | Predictor Importance | Values | Cluster 1: Conscious Guests (%) | Cluster 2: Carefully Adventurous Guests (%) |
|---|----------------------|--------------------------|------------------------------------|---|
| Q31 Factor 1: Information and communication | 1.00 | (Strongly agree) 1.00 | 10.7 | 1.0 |
| | | 2.00 | 37.6 | 7.9 |
| | | 3.00 | 39.2 | 12.6 |
| | | (Strongly disagree) 4.00 | 12.5 | 78.5 |
| Q31 Factor 3: Scepticism | 0.96 | (Strongly agree) 1.00 | 6.5 | 0.5 |
| | | 2.00 | 31.7 | 1.4 |
| | | 3.00 | 55.6 | 34.2 |
| | | (Strongly disagree) 4.00 | 6.2 | 63.9 |
| Q30 Factor 1: Relationship reinforcement | 0.89 | (Strongly agree) 1.00 | 29.6 | 13.8 |
| | | 2.00 | 44.7 | 10.1 |
| | | 3.00 | 23.8 | 32.3 |
| | | (Strongly disagree) 4.00 | 1.9 | 43.8 |
| Q31 Factor 2: Hygiene | 0.57 | (Strongly agree) 1.00 | 68.2 | 23.4 |
| | | 2.00 | 29.7 | 44.0 |
| | | 3.00 | 2.1 | 23.2 |
| | | (Strongly disagree) 4.00 | 0.0 | 9.4 |
| Q20 Factor 1: Isolation | 0.45 | (Strongly agree) 1.00 | 4.8 | 1.5 |
| | | 2.00 | 19.6 | 2.0 |
| | | 3.00 | 41.7 | 21.0 |
| | | (Strongly disagree) 4.00 | 33.9 | 75.6 |
| Country of origin | 0.39 | Italy | 58.7 | 13.9 |
| | | German | 34.7 | 73.5 |
| | | Others | 6.6 | 12.6 |

Source: own elaboration.

The most important predictors of cluster membership are “information and communication” and “skepticism”, two of the latent dimensions of the question related to accommodation requirements, and the “relationship reinforcement” dimension, underlying the question related to the host-guest relationship.

The first cluster is characterized by guests with low median values in the “information and communication” dimension, meaning that they rather agree with the statements underlying it, even if they are quite homogeneously distributed among the possible answers. These guests are willing to receive more information from their hosts about the latest

COVID-19 developments and about safe leisure activities. They would like to receive a COVID-19 test in South Tyrol. Similarly, they are more skeptical than the second cluster about other guests' as well as the host's health conditions. However, they register low median values (29.6% of them fully agree with the statements related to this dimension) in the "relationship reinforcement" dimension: they consider their relationship with the host to be stronger than before due to the ongoing pandemic. This result can be interpreted as an increased need for trust in the hosts, who are now required to take more responsibility for their guests' experience (and state of health) in the destination. This new task is highly valued by this kind of guest. These guests are trying to safeguard their health conditions by reducing the time spent outside the accommodation facility or with other guests, albeit the distribution of their answers is slightly right-skewed (representing a degree of disagreement to the statements). Following these characteristics, we label these guests as "conscious guests". Two-thirds (58.7%) of the conscious guests are Italian tourists; German tourists represent 34.7% of this group, and only 6.6% come from other countries.

The second cluster, "carefully adventurous guests", is composed of tourists who are less worried than the conscious guests about the impact of COVID-19 on their holiday but try nonetheless to observe all the anti-infection measures. A total of 78.4% of them declare not to need additional information on COVID-19, nor are they interested in taking a swab in the destination. This percentage is significantly higher than that registered among the conscious guests (12.5%). The carefully adventurous tourists are not skeptical about the host's and the guests' health conditions: 63.9% trust the people around them in the destination. Following the reasoning outlined above, they do not declare the relationship with their hosts to be strengthened by COVID-19, probably because they do not need their additional support. The need for more hygiene is also less marked among adventurous guests. Lastly, these guests report high levels of disagreement with the "isolation" dimension, which does not represent their strategy to cope with the virus in South Tyrol. In line with expectations, German tourists represent the majority of this second cluster (73.5%), followed by Italians (13.9%) and other countries (12.6%).

Pearson chi-square tests were used to statistically test the existence of associations between the two clusters and specific sociodemographic characteristics and mobility patterns. Statistically significant associations have been found for all the variables, except for the length of stay. Results are presented in the mosaic plots below (Figures 2 and 3).

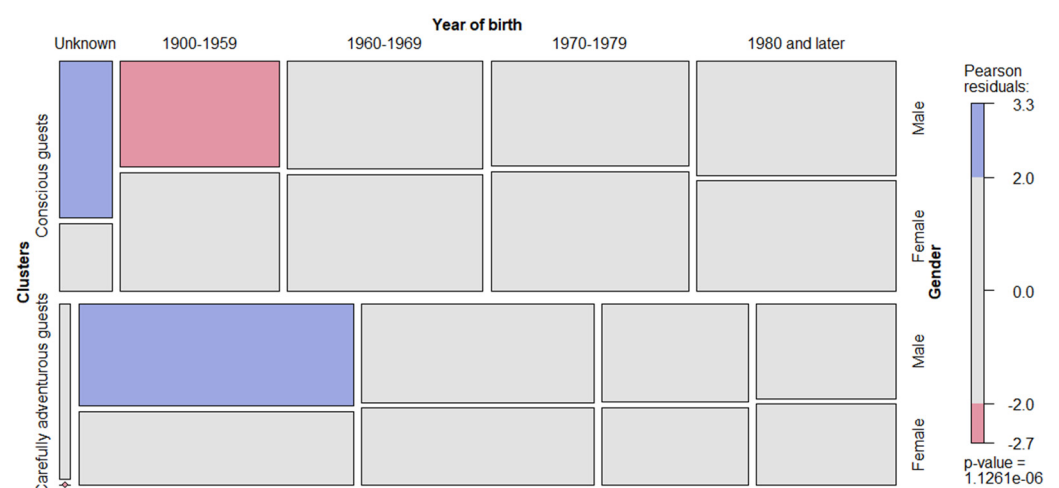


Figure 2. Results of chi-square tests; mosaic plot with demographic data.

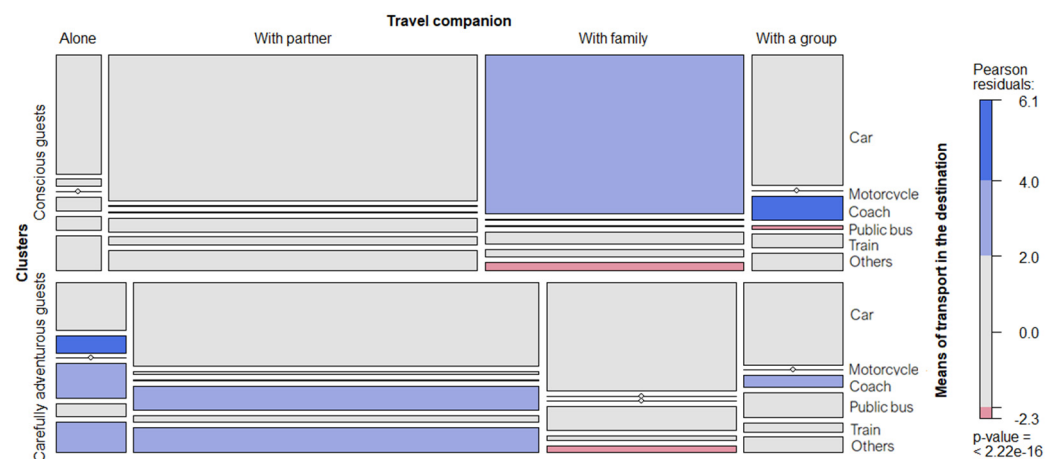


Figure 3. Results of chi-square tests; mosaic plot with behavioural data.

Mosaic plots make it possible to discover the association between two or more nominal variables. Each tile is colored to show the deviation from the expected frequency from a Pearson chi-square, and the color represents the magnitude of the residual. Red tiles show significant negative residuals, where the frequency is less than expected. Blue tiles indicate significant positive residuals, where the frequency is greater than expected.

For sociodemographic variables, the results show that “conscious guests” are equally distributed among males and females, while among “carefully adventurous guests”, males are over-represented (57.4% vs. 42.6%). The distribution of guests in the first cluster in terms of age classes is more homogeneous than in the second cluster, characterized by a slightly larger percentage of older people (born between 1900 and 1959) compared to the other age classes. This contradicts our expectation that “carefully adventurous guests” are younger than “conscious ones”: the propensity to (careful) exploration does not depend on age but on other variables analysed below. Compared to the first cluster of guests, the second cluster is characterized by a larger proportion of people travelling alone (12.5% vs. 6.2%) and by a smaller proportion of people travelling with their families (23.8% vs. 33.3%).

“Carefully adventurous guests” tend to use more public transport within the destination than “cautious guests”, with a specific preference for the train (17.6% vs. 6.9%), reducing the use of cars (56.9% vs. 76.8%), which is also explained by a preference in cluster two for other means of transport. Interestingly enough, no statistically significant association was found between the clusters and the means of transport used to travel to South Tyrol ($\chi^2(1) = 0.324$, p -value = 0.569): the car was the most used means across the two clusters (89.6% for “conscious guests” and 88.5% for “carefully adventurous guests”). The two clusters do not differ in terms of length of stay: longer stays (5–7 days and more than 7) are more common in both clusters.

6. Discussion, Conclusions, and Implications for Rural Tourism

Corporeal and communicative travel were studied in the destination South Tyrol (Italy) using official statistics and a representative sample survey administered during summer 2020. Official statistics revealed that during the summer season of 2020, domestic tourism increased in South Tyrol, and international tourism decreased. German guests’ arrivals dropped by 44.5%, while those of Italian guests increased by 4.4% [42]. This picture is coherent with the expectations of UNWTO about an earlier recovery in domestic travel and a later upturn in international tourism [46].

Travel risk perceptions and health policies of some foreign countries (e.g., the inclusion of South Tyrol in the red list of international risk areas by the German Robert Koch Institute, Berlin, Germany) have probably discouraged international travel to Italy, whereas the lack of risk warnings from the Italian national government and some policies to incentivize domestic travel might have supported domestic travel. Indeed, risk communication policies

at the pre-travel stage are found to influence travel behaviour (see, e.g., [8]), as the results of this paper claim. Therefore, as Villacé-Molinero et al. [8] state, inner-country coordination of risk communication and travel and coordinated communications about safety and security measures are crucial to foster a restart phase. Indeed, the negative value of physical mobility, reinforced by the uncontrolled and uncoordinated spread of official communication on risk, might affect international guests differently, constructing *different* narratives about travel. Notwithstanding these framework conditions, evidence from the representative sample survey indicated that those German tourists that decided to visit South Tyrol were less anxious and worried than domestic Italian travellers. Indeed, German tourists, belonging mostly to the cluster of “carefully adventurous guests”, tended to use more public transport in the destination than the (mostly) domestic “conscious guests”, reported less need for information on COVID-19 and less need to reinforce a relationship with their hosts. One possible interpretation of these results might relate to the different background experiences of the COVID-19 pandemic by Italian and German guests: while the former had overcome a hard lockdown phase in spring 2020, the latter was experiencing fewer restrictions in their home countries, at least until autumn 2020. The exposure to COVID-19 in the regions of origin might, therefore, have had an influence on information need, on the perception of risk, and on holiday behaviours. Figures on the modal split and on attitudes towards hosts are, however, not available for each cluster or tourist market in pre-COVID conditions, making isolation of the “COVID-19 effect” on each travel market impossible. In addition, it should be noted that the analysis uses a sample of tourists who decided to travel to South Tyrol, notwithstanding the pandemic. Therefore, the relationship between COVID-19 exposure and travel behaviour should be further investigated in future research, if possible assessing travel avoidance and travel intentions, in order to reduce selection bias.

The analysis of corporeal and communicative travel during the COVID-19 pandemic reinforces the interpretation of spatial displacement as a form of culturally, socially, and politically imbued act. Corporeal travel during the COVID-19 outbreak became socially unacceptable, or at least inexcusable for a period during the first COVID-19 wave in Italy. After the diffusion of such a negative connotation of travel (“travel shame”, see [19]), resulting in travel bans and restrictions, as well as a dramatic drop in travel demand, a temporary recovery phase was registered in summer 2020. With the (limited) recovery of travel demand between the first and the second wave, the circulation of evidence about the “health conditions” of a destination, i.e., communicative travel, and a strengthened relationship with key local stakeholders as sources of that information became critical, particularly for more cautious guests.

Several theoretical and managerial contributions stand out from this first study on Alpine destinations. From a theoretical perspective, this paper suggests that communicative travel might work as a powerful mediating factor for corporeal travel during the pandemic, although this relationship is not fully described and should be further tested. Information management, i.e., the availability of destination-specific information on COVID-19 and the diffusion of information, data, and knowledge among key stakeholders might play a crucial role to include (or exclude) a destination from the choice set of consumers (see, e.g., [8]). Once again, and similarly to what was noted previously in other fields [36], accommodation providers play a key role in communicative travel, besides official marketing agencies and local DMOs. Besides that, communicative travel during the pandemic might also work as an opportunity for market diversification, e.g., to attract “adventurous” international travellers or to address targets with low infection risk. The central implication of this paper for rural tourism is, therefore, that it needs to raise its game, especially in product innovation, communication, and marketing, in order to appeal to both the cautious and the adventurous parts of the rural tourism market in an economically, environmentally, and socio-culturally sustainable way. Much is now known about private and public-private sector partnerships to assist that process [46–48]. This current paper provides information on how to appeal to both the cautious and the adventurous parts of the rural tourism

market. It shows useful possibilities to develop climate change-friendly local transport. It offers guidelines for local rural accommodation suppliers. Further research should also investigate the role that imaginative travel (i.e., marketing campaigns, direct mailing to regular guests) in sustaining or recovering travel demand in the future.

Finally, several implications stand out in terms of sustainability: while the drop in international travel demand and the rise of domestic tourism has undoubtedly determined a reduction in GHG emissions globally [49], the effects of COVID-19 on local mobility remains unclear. On the one hand, corporeal travel on-site might have become less sustainable for the more cautious guests, since they tend to avoid using public transport to reduce infection risk and prefer to use private cars for local mobility; on the other hand, the rise of some outdoor practices and the need to stay outdoors to reduce infection risk might have favoured some more sustainable forms of travel (e.g., cycling, walking, running) and rural tourism more in general (see [49,50]). It is hard to say whether tourism mobility became more or less sustainable during the pandemic at the destination level, but what is known is that existing balances and routines were suddenly broken. How they will develop in the future still needs to be discovered.

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