

# Cyclists and Cycle Tourists in Paraná Coast, Brazil: Profile, Behavior, Perceptions and Motivations

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## Abstract

Given the importance of the cycle tourism segment, which is in a stage of expressive growth and the potential that Paraná Coast has to welcome this public, the present study aimed to identify the profile, behavior, perceptions and motivations of these cyclists. and cycle tourists. The results showed that the Covid -19 Pandemic period did not influence the decision of starting cycling, but when analyzed separately the portion of those who started cycling after the pandemic period, it was possible to verify that the number of men and women showed an equal result, demonstrating the growing search of women for cycling. The main difficulties for the practice of cycle tourism, as well as the factors that are lacking on the coast, are related to the lack of public policies that provide safe conditions and the encouragement to the practitioners. In addition, cycle tourists demonstrated dissatisfaction with the infrastructure found in the coastal cities. It is concluded, therefore, that cycle tourism is a tourist segment of great importance, since it moves the economy of several sectors and promotes the appreciation of all elements of the visited place. In this sense, it is necessary to reassess actions by the public, private sectors and local communities, in order to achieve the satisfaction of this kind of public.

**Keywords:** cycling; cycle tourism; marketing; adventure tourism.

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## **1. Introduction**

The bicycle is a vehicle that emerged in the mid-19th century, in which the first prototype was created by the German Baron Karl von Drais in 1817 and over time the bicycle models were perfected to the model it is known nowadays. It became popular worldwide being used as a means of transport, leisure, practice of extreme and high performance sports in various modalities. In addition, there are several types of bicycles, among which are the Urban, Mountain Bike, Speed, among other models [1].

The practice of cycle tourism involves two types of routes: the cycle trip, which takes place on the road, and the urban circuit, where the displacement is made in the city [2]. In the case of cycle trip, the cycle tourists seek for adventure, contact with the nature and they value every detail of the route to the final destination. They also take the opportunity to interact with the local community and learn about the cultural arrangements of the place visited. The trip can take days and many kilometers traveled and can be done individually or in a group. This tourism modality can integrate five other tourism segments, namely: ecotourism, rural tourism, adventure tourism, cultural tourism and gastronomic tourism [3].

In Brazil, despite still being in an embryonic stage, cycle tourism is a tourist modality that has been mobilizing the creation of public policies for the development of circuits and routes, which are already well known and they aim especially at cycle tourists. These circuits are: the European Valley, in Santa Catarina, the Estrada Real which includes routes in the States of Minas Gerais, Rio de Janeiro and São Paulo and the Caminho da Fé, in São Paulo and Minas Gerais [4].

In the State of Paraná, on October 14<sup>th</sup>, 2020, the Law 20.354 was sanctioned, Law of Cycle Tourism and according to article 2 of the aforementioned Law, its objectives are: “to encourage the use of bicycles in ecological tourism, to encourage the practice of physical exercise in order to improve the health and well-being of the individual, to promote culture and local tourist attractions, to promote regional economic development, as well as allow accessibility to the practice of tourist activities” [5].

Paraná Coast is made up of seven municipalities – Antonina, Guaraqueçaba, Guaratuba, Matinhos, Morretes, Paranaguá and Pontal do Paraná – represents 3% of the total territory of Paraná State. In relation to the natural territory, 82% corresponds to Conservation Units, which represent an important area of the Atlantic Rain Forest preservation. This natural area is made up of mountains, beaches, bays, rivers and waterfalls that attracts many tourists. In addition, the municipalities of Antonina, Morretes and Paranaguá hold valuable historical heritage [6]. With the mentioned attractions, Paraná Coast has a huge rural area that can be easily explored by cyclists and cycle tourists.

Given the importance of the cycle tourism segment, which is in a stage of expressive growth and the potential that the Paraná Coast has to welcome this kind of public, this study has as main objective to identify the profile, behavior, perceptions and motivations of the cyclists and cycle tourists in Paraná Coast, with the following specific objectives:

- Identify the socioeconomic aspects, behavior, perceptions and motivations of cyclists and cycle tourists in

Paraná Coast;

- Find out if the Covid-19 pandemic had an influence on the decision of practicing cycling;
- Identify the main purposes of cycling, whether for leisure, sport, health, travel or through the relationship network;
- Discover the potential attractions and improvement points in Paraná Coast from the perspective of cyclists and cycle tourists for the practice of the sport.

The variation in the behavior of individuals, groups or organizations is directly linked to the origin, age group, culture and economic income. Among the factors mentioned, the factor that causes the greatest influence is the cultural one. In this way, actions in the field of marketing are essential in order to identify the elements that drive the behavior of these actors in the selection, purchase, use and disposal of products, services, ideas or experiences to achieve the satisfaction of their needs and desires [7].

The study of behavior will guide the identification of the real needs of the target public, since when the public recognizes its needs, it seeks information about them in order to satisfy these needs. This stage is an opportunity for marketing professionals to influence the decision of the target public, showing the attributes of the products that can meet and satisfy the needs of actors involved [8]. There is a model of consumer behavior called Stimulus-Processing-Response, which basically explains the consumer's decision process which can be influenced by external factors, internal factors (inherent in the consumer's thinking) and the result of these influences (responses), which are the attitudes and behaviors themselves [9].

One of the sources that consumers use to seek information about a particular product, service, brand or company are the groups with which, in this case, cycle tourists, can consult people in their network of contacts. This can be the most influential source of information, in relation to the acquisition decision making, since it presents greater reliability and credibility [8].

From the in-depth analysis of the consumer's behavior it is possible to determine the marketing strategies concerning the elements that constitute the marketing mix, the 4 P's (product, price, place and promotion) which is the set of mechanisms developed by organizations in order to generate value for customers and achieve programmed goals. The establishment of these strategies will only be possible through customer research, segment classification and the selection of groups to be served in order to define target markets [8].

Following the premises found in the literature, this study will be able to contribute with information so that, together with, public and private organizations and the community in the municipalities of Paraná Coast plan and implement strategies with the objective of providing adequate conditions to welcome the cycle tourist public in order to promote the main tourist attractions (natural, historical and cultural heritage) that may result in regional development and valorization.

## **2. Literature review**

The adventure tourism did not arise from an isolated fact, it was embodied over time, as people sought to

practice adventure activities, while doing tourism in the most different ways and places. It can be said that it was born from a small group of people of different profiles and from different regions, but with a common interest in practicing activities close to nature and aiming for the possibility of transforming the activity as a way of life. In Brazil, in 1999, was held the first fair of Adventure Tourism sector called Adventure Sports Fair, which was important for the dissemination of the segment [10].

The constant changes in the behavior of the tourism market, increasingly demanding and globalized, made the Ministry of Tourism in Brazil establish adventure tourism as a segment, which was previously incorporated in the ecotourism modality, with specific structural and marketing attributes. The existence of this segmentation allows conducting research in order to identify the characteristics of the place that will receive tourists to determine the offer (attractions, infrastructure, services and products) and the demand – the profile of tourists who already know the destination, as well as the potentials that will still come to know [11].

The factors that influence the adventure tourist choice process that can be highlighted, among other motivational factors, are related to the practice of sports and the natural beauty of each location [12].

Given the importance of the segment for the socioeconomic sector, several legal frameworks (technical, legal and institutional) were created, the most relevant of which are: tourism legislation, Law No. 11.771 (September 17<sup>th</sup> 2008), called Tourism Law and the Specific Legislation divided into Standardization, Certification and Environmental Legislation [11].

The activities listed, with regard to Adventure Tourism, were classified according to the three elements of nature - land, water and air - and may involve more than one element and comprise the use of different equipment, technical skills and degrees of difficulty. which can be practiced both indoors and outdoors, whether natural or built [11].

The bicycle emerged in the 19<sup>th</sup> century as a two-wheeled vehicle and throughout its existence it underwent several modifications until reaching the current known configurations. The first model created, in 1817, was the draisiana, later, in 1861, the velocipede appeared, in 1874 the bicycle and in 1966, a design attributed to Leonardo Da Vinci was discovered by Italian monks, which was possibly elaborated in 1490, considered the first bicycle project in which the components of a bicycle were already found: two wheels, steering system, saddle and chain propulsion, which gave rise to the bicycle as it is known nowadays [1].

Cycling tourism, one of the components of the adventure tourism segment, according to the definition of the Brazilian Association of Technical Standards – (Associação Brasileira de Normas Técnicas – ABNT), is a tourism activity that consists of using the bicycle to travel. The standard, created specifically for the cycle tourism product, establishes criteria aiming at the safety of the participants in organized activities and adapted to be applicable in any size of organization, geographic, cultural and social conditions [13].

The term, which was widely used and which predates cycle tourism, is the mountain bike that emerged in the 1960's in California (USA) from a group of adventurers who liked to go down the mountains on bicycles. They developed mechanisms that provided more safety in the practice of the sport. In the 1980's, the market realizing

this new trend, started to develop and produce products for this growing public. In Brazil, the emergence of cycle tourism was marked by two important events for the segment: the foundation of the Night Biker's Club do Brasil, which was the first cycling club in Brazil founded by Renata Falzoni, with the aim of carrying out night tours in order to promote of mountain biking and the Clube Mamãe Montanha (Mountain Mother Club), which became very popular, created by Henrique Leite Souza, responsible for organizing tours and expeditions in regions of the State of Minas Gerais [10]. In 2001, the Clube do Cicloturismo do Brasil (Brazilian Cycle Tourism Club) was created, which disseminates and encourages the practice of the activity at a national level and allows the exchange of information among cyclists and cycle tourists [3].

Cycling tours can be planned by the practitioner or by specialized tour companies. Routes can be long journeys that involve staying in a single location or several rest stops along the route. In addition, they can be a short journey with a displacement of only a few kilometers in usual places where the practitioner already cycles. [10]. The authors Resende and Vieira Filho identified two different profiles of cycle tourists - those who, using the bicycle to get around, go through several routes and use accommodation in different places along the trip and the cycle tourists who already have a determined destination with accommodation. and make visits only around the place visited, usually riding bike trails [14].

In Germany, one of the countries where the largest number of people who use the bicycle as a means of transport and/or leisure are concentrated, there are around 21 million cycle tourists who move the equivalent of 5 billion euros per year, which corresponds to almost all of the tourist mobility in all segments in Brazil [3].

The first official circuit in Brazil, which took place in 2006, was the European Valley Circuit, located in Vale do Itajaí in Santa Catarina State, which became famous in the national tourist scene, registering in 2010 about 4.000 visitors [3].

The bicycle tourism should be considered a tourist segment and can be divided into two distinct concepts: the first one is the urban cycle tourism, in which the cyclist uses the bicycle to travel to a planned tourist destination or to get to know a city, in this case the bicycle is the main or support means of transport during the tour. The second concept is cycle trip, where the bicycle is the main means of transport for long-distance trips which can last for days [2].

The bicycle use depends on environmental and social factors that can either encourage or discourage use. Examples include countries such as Netherlands and Denmark, with an extensive road network specifically for the circulation of cyclists that is attached to the public transport system. The existence of cycle paths in strategic locations encourages the use of bicycles and makes the activity more enjoyable. The absence of public safety is a strong element that can make cycling difficult and may be related to the low adherence to physical activities by adults [15].

The use of bicycles for cycling and/or cycling tourism transcends physical activity and contact with the visited place and its population, it also moves websites, social media, networks of contacts formed by virtual groups (users can evaluate and share their experiences among them and on aspects of the routes and paths they have

traveled) which are important tools for managers in both the public and private spheres for the direction of marketing strategies [16].

Small towns play an important role in promoting the use of bicycles as a means of transport. The smaller the size of the city, the greater the use of bicycles. In small cities, the incidence of traffic violence and robbery are significantly lower than in large metropolises, thus, the population feels more encouraged to use the bicycle as a means of transport. In addition, commuting becomes more viable, as the routes are short, providing better health, reducing expenses, in addition to being a sustainable vehicle. Therefore, it is essential to create cycling policies that promote the appreciation of tourist attractions in small towns, as is the case of Antonina in Paraná Coast, one of the cities mentioned in the research by authors Soares and Guth, and local economic development, thus inhibiting the evasion of the population to the big cities [17].

Complementing the narrative of the aforementioned authors, Saldanha, Fraga and Balassiano found in their research that approximately 60% of the municipalities that make up the cycle tourism routes mapped in Brazil, even before the Covid-19 pandemic, have up to 20,000 inhabitants, of which more than half are classified as C and D. For the authors, an investment opportunity could stimulate cycle tourism both in municipalities with classification E, and in those that are not yet included in the Tourism Map. In order to classify Brazilian municipalities, from A to E, the authors considered as criteria, in addition to the aspects of the Tourism Map, five dimensions: (1) number of lodging establishments, (2) number of employees in lodging establishments, (3) estimation of domestic tourists, (4) estimation of international tourists and (5) amounts collected from federal taxes within the scope of accommodation [4].

In rural areas, the practice of cycle tourism is very important, considering that it promotes rural tourism, broadens the perception of environmental preservation, due to the natural beauties with which cycle tourists have contact, provides the strengthening of the relationship between the local residents and visitors, boosts the appreciation of local heritage and cultural identity. Finally, it contributes to the socioeconomic development of the rural area through another aspect besides the agricultural economic base [18].

The cycle tourism is still in an incipient stage, both as a segment and in the studies on the subject, but it can be considered promising, since it promotes the incentive for the sustainability of rural areas. In addition, the knowledge about the characteristics of the trips of cycle tourism practitioners produces important information that enables the planning of tourist products for the segment [14].

### **3. Methodology**

The present study had an exploratory-descriptive research method of quantitative nature, which consisted of surveying the universe of a given object of study in order to, through the application of methods and criteria, seek information that provided researchers with knowledge and accurate description of the phenomena of the object through the application of a questionnaire to collect the data [19, 20]. This information allowed the analysis of the profile of cyclists and cycle tourists, as well as their ideas and perceptions, which could generate explanations or hypotheses, in relation to the experiences lived in cycle trips [8].

For data collection, the Google Forms digital platform was used, in which the questionnaire was developed, and the WhatsApp messaging application for the dissemination and availability of the questionnaire link to the respondents. The period for data collection was from May 4<sup>th</sup> to 31<sup>st</sup> 2022.

The questionnaire had 20 closed questions, of which a part of the questions had socioeconomic nature which surveyed the profile of cyclists and cycle tourists and the other part were specific questions in order to define the behavior, perceptions and motivations of the public of this research.

The “Free and Informed Consent Term” was presented to the respondents containing information about the research and researchers.

#### 4. Results and discussions

The survey obtained 125 answered questionnaires whose respondents were the largest concentration from the Metropolitan Region of Curitiba, mainly from São José dos Pinhais and from the capital Curitiba (64% of the total), cities where there is a considerable amount of groups and/or teams of cycling. The municipalities from Paraná Coast (27%) and those from Santa Catarina State (10% of the total), even not showing full representation in this research, are important agents that can impact the panorama of the cycling and cycle tourism in Paraná Coast, as shown in table 1.

**Table 1:** City and State of the respondents

City/State	Quantitative
São José dos Pinhais/PR	55
Curitiba/PR	25
Morretes/PR	15
Antonina/PR	6
Paranaguá/PR	6
Joinville/SC	5
Itapoá/SC	5
Others	8

**Source:** the authors

The other municipalities, with less representation, in relation to the percentage of respondents, with two or fewer questionnaires answered, corresponding to 6% of the total, are: Arapoti (PR), Assis Chateaubriand (PR), Guaratuba (PR), Jacarezinho (PR), Londrina (PR) and Pinhais (PR).

The influence on the geographical disposition of the respondents of this research is due, at first, to the fact that the questionnaires were sent to the researchers' contacts network and these contacts indicated them to their contacts and so on, later it was created a viral atmosphere that spread through several municipalities of Paraná, crossing the borders of the State to some municipalities of Santa Catarina.

Regarding gender (Table 2), of the total number of respondents, 69.6% are male and 30.4% are female. For comparative purposes, the Brazilian Cyclotourist General Report 2018 [21] presented a similar result in which

80% declared themselves to be men and 20% women. A possible explanation for the lower presence of women in cycling is the fact that they are more vulnerable to crime and violence [15]. In contrast, the research by Sartori [16] did not show significant differences between genders. According to the author, the emergence of cycling groups, mixed or only female, which has been growing notably, has a positive effect on the greater participation of women in the modality, since it makes them feel more secure in practicing the sport.

**Table 2:** Socioeconomic aspects

		Absolute frequency	Relative frequency (%)
Gender	Female	38	30,4%
	Male	87	69,6%
Age Group	up to 18 years old	2	1,6%
	19 to 30 years old	14	11,2%
	31 to 40 years old	46	36,8%
	41 to 50 years old	41	32,8%
	more than 50 years old	22	17,6%
School Education	Incomplete Elementary	1	0,8%
	Complete Elementary	3	2,4%
	Incomplete High School	1	0,8%
	Complete High School	31	24,8%
	Incomplete Higher	13	10,4%
	Graduation	37	29,6%
	Graduated	2	1,6%
	Incomplete Postgraduate	29	23,2%
	Complete Postgraduate	7	5,6%
	Master Degree	0	0%
	Doctorate Degree	1	0,8%
	Post Doctoral		
Family Income	up to 1 Minimum wage	6	4,8%
	1 to 3 Minimum wage	35	28%
	3 to 5 Minimum wage	42	33,6%
	5 to 10 Minimum wage	33	26,4%
	more than 10 Minimum wage	9	7,2%
Marital Status	Single	20	16,0%
	Married/ Stable Union	97	77,6%
	Divorced/Separated	8	6,4%

**Source:** the authors

As can be seen in the table 2, the predominant age group is from 31 to 50 years old (69.6%). It is important to point out that comparing the two extremes of age (up to 30 years old and the age group above 50 years old), despite physical limitations, the latter showed a significant participation in the practice of cycle tourism on the Coast (17.6%). Sartori [16] points out that although they are different groups, in relation to physical capacity,



one way to encourage them to practice cycle tourism is to establish adequate conditions that meet their needs through the creation of routes or itineraries organized allowing the accessibility of all cyclist profiles, thus promoting the rupture of body patterns for the practice of the modality.

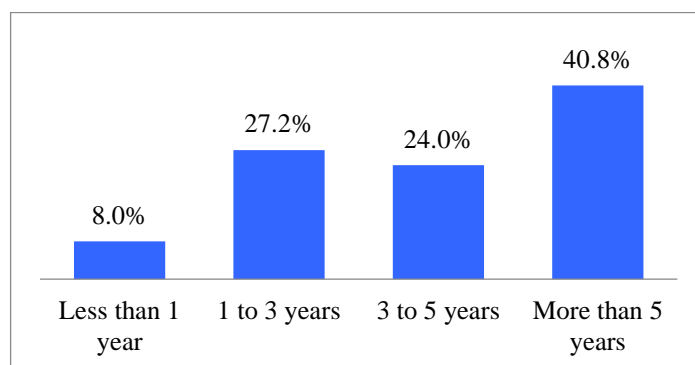
Also according to the table 2, it was possible to observe an analogy among the factors age group, education, income and marital status. Low-cost bicycles, for a long time served only as a means of transportation, however, with the advent of advanced technologies, they were transformed into high performance equipment. In addition, the ease of access, due to globalization, led to the emergence of bicycles and accessories with high added value. [16]. In this sense, the correlation of these four factors may lie in the fact that for the acquisition of these equipments, with greater added value, it is necessary for the consumer to be in a position of financial, personal and professional stability. Complementing this analysis, the authors Kienteka and his colleagues [15] state that adults aged from 30 to 40 years old (middle-aged), the age group most present in this study, make up the most economically active population, which may provide better financial conditions to acquire the equipments.

Although the emergence of the Coronavirus has caused profound changes in people's daily lives, including the performance of physical activities, it was found, in this research, that the pandemic did not influence the decision to start cycling, since 82.4% of the total of respondents started cycling before the pandemic. It is interesting to mention that, when analyzing separately the portion of those who started cycling after the pandemic (17.6%), with regard to gender, both had exactly the same number of respondents, eleven men and eleven women, that is, both, equally, sought cycling as an alternative to physical activity. That means, despite the fact that the number of women in cycling and cycle tourism is still lower, if compared to men, their increasing participation in the sport is notorious. The female empowerment in cycling, according to Cavalcanti and his colleagues [22], is marked by the contrast in the transition from cycling to training, this happens as the practitioners gradually increase their experience and performance in the sport.

Most respondents, 65.6% of the total, claim to participate in an organized group or cycling team, 18.4% prefer to cycle in pairs and only 16% cycle alone. According to Sartori [23], the act of cycling in a group can be considered an element of incentive, since it awakens motivation and also provides security for practitioners. In addition, the author emphasizes that it is important to develop strategies to meet the needs and desires of these groups, given that they can become promoters of tourist products in the places where they practice cycle tourism, with the encouragement of social media where they share and evaluate their experiences, thus conquering other groups and new adepts.

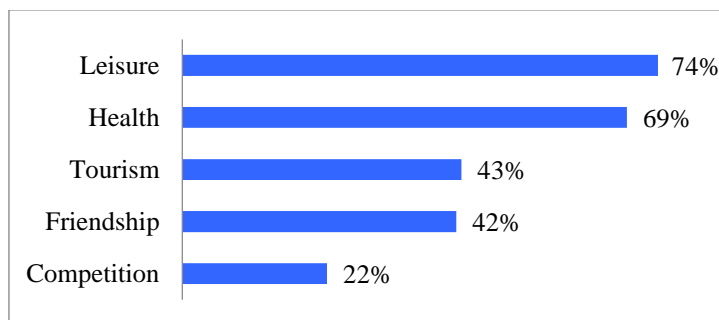
Regarding the type of bicycle, almost all (92%) responded that they use mountain bikes, 5.6% responded that they use speed and 2.4% reported using other types of bicycles. Regarding the type of track, what was predominant was the dirt road with 71.2%, followed by asphalt with 36%, mixed circuits with 24.8%, 18.4% indifferent and only 4% indicated they preferred the closed circuit. The results for the preference for mountain bike and dirt road are linked, since these bikes were manufactured with technology to withstand the most varied conditions [1]. Mountain bikes are the most used on tours, usually collective, as cyclists gather in groups for trail rides. These bikes stand out for their set of componentes, resistant to the impacts of uneven terrain and full of obstacles that make the user's adventure even more exciting [17].

Although most respondents started cycling before the pandemic and more than 5 years ago, it is important to consider that a significant portion started cycling and cycling tourism in the period of 1 to 5 years (Graph 1). It was not found in the literature the exact time when mountain biking became a trend in Brazil, however a probable explanation for the propagation of cycling, especially the use of mountain bikes in the country, was the first victory of the Brazilian professional cyclist Henrique Avancini in the MTB World Cup that occurred in 2018, coinciding with the period in which there was a significant increase in fans.



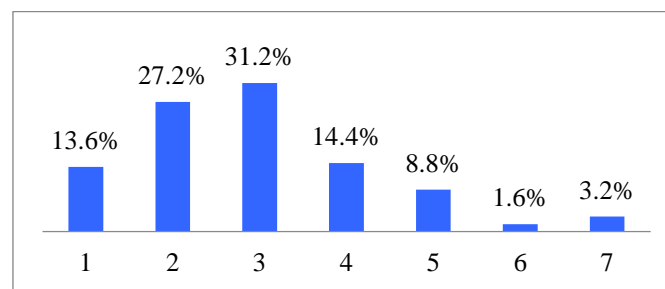
**Figure 1:** time that practice cycling

In terms of purpose (Graph 2), leisure was identified as the main activity for cycling tourism. It is worth mentioning that in this question the respondents were able to tick more than one option. The preference for leisure can be related to two different situations. The first one suggests that, unlike in Europe, professional cycling competitions in Brazil attract few athletes due to high costs and lack of sponsors, thus prevailing amateur cycling [23]. The second situation may be associated with the fact that cyclists seek in their trips, adventures on the roads of rural areas, contact with the nature and different cultures and customs of the local community, in addition to the typical gastronomy, enjoying good moments with friends and/or family members, also adding to physical activities [3]. These trips usually last one day and are called leisure cycling [18]. Right after leisure, the health factor was also pointed out as an important purpose. Studies by Carvalho and Freitas [24] explain that the regular use of the bicycle provides positive effects for health and longevity. The authors cite as an example conditions such as overweight and obesity that are treatable through the regular practice of cycling, in addition to preventing the development of cancer and providing an improvement in the cognitive performance of young people.



**Figure 2:** Purpose

Regarding the use of some equipment to measure performance, a significant number of respondents answered yes 83.2%, while 16.8% answered no. It was not possible to identify in this research the reasons that lead the majority to use these measuring devices. However, studies by the authors Piwek, Joinson and Movan [25] show that the factors that motivate cyclists to make use of these devices are, mainly, to monitor the time spent to travel, the cycling speed and the distance covered, as they are concerned with improve their performance. As an example, the Strava application, cited in the Sartori's research [23], which is currently widely used by practitioners, which allows viral socialization through the sharing of performance results, as well as the mapping of the paths traveled by them. The fact that the frequency of bicycle use during the week (Graph 3) is mainly concentrated on 2 and 3 days, it is assumed that cyclists do not cycle only on weekends. Considering business hours, it is assumed that activities during the week occur mainly at night. This is an important data to be considered with regard to the planning of structures that allow the cyclist to cycle at night [16].



**Figure 3:** Number of days cycled during the week

Most of those surveyed, 81.6%, said that they do not stay overnight in places where they practice cycle tourism. This result reveals the need for future research in order to identify the reasons why cyclists prefer not to sleep on the coast. However, one hypothesis that may justify this result is the high costs of accommodation and food. Researches by Resende and Vieira Filho [14] indicated that almost 75% of the cyclists' expenses were allocated to the two factors mentioned above. Another likely hypothesis is that most respondents come from nearby regions, so they can easily make a quick visit without having to stay for more than a day in the place. The relevance of a more in-depth study is due to the fact that it can serve as a support for the development of strategies in order to attract and retain cyclists from all regions of the country. The main difficulties for the practice of cycling and cycle tourism (Table 3) refer, mainly, to the adequacy of the conditions for carrying out the activity. In this question, respondents could choose more than one answer option.

**Table 3:** Main difficulties for the practice of cycling

Alternatives	Absolute frequency	Relative frequency (%)
Imprudence in traffic	88	70,4
Lack of cycling infrastructure	82	65,6
Lack of security	81	64,8
Lack of time availability	37	29,6
Shortage/absence of locals for equipment repair	23	18,4
Technical difficulty of the route	12	9,6
Lack of companion	9	7,2

**Source:** the authors

The factors of imprudence in traffic, lack of cycling infrastructure and lack of security (Table 3), require rigorous attention from the State for the creation of public policies that provide safe conditions for practitioners. The authors Kienteka and his colleagues [15] reinforce that the implementation of bike lanes in squares, parks and streets can be an encouraging element for the practice of cycling, citing as an example countries such as the Netherlands and Denmark that have an extensive road network especially aimed at cyclists.

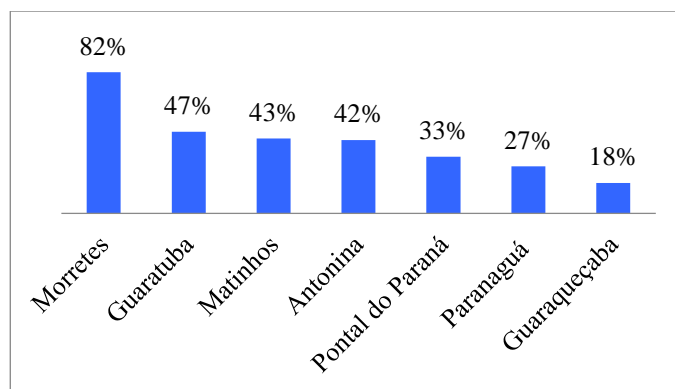
Among the motivations that lead to the practice of cycle tourism, the contact with nature stands out (Table 4), and there was the possibility for the respondent to select more than one alternative. The cities from Paraná Coast have a great cultural and natural diversity that are tourist attractions, mainly for the enjoyment of rest and leisure activities. The natural element comprises 82% of the territorial area that is characterized by Conservation Units where it encompasses an important preserved territory of the Brazilian Atlantic Rain Forest [6]. Similar to Sartori's research [16], respondents showed little interest in contacting the local community (Table 4). The author suggests that the scarcity or absence of organized services along the route can make it difficult for cyclists to interact with local residents. In addition, the author adds that the adequate logistics system and infrastructure, as well as the hospitality and receptivity of the local community can influence the level of satisfaction of cyclists.

**Table 4:** Motivation for the practice of cycle tourism

Alternatives	Percentage
Contact with nature	89,6
Practice of physical activity	68,0
Adventure	59,2
Contact with historical heritage	37,6
Local Gastronomy	32,8
Cycling Competitions	19,2
Contact with local community	18,4
Local products	10,4
Lower financial cost of travel	10,4

**Source:** the authors.

The municipality of Morretes, the most visited by cyclists, comprising 82% of the total respondents (Graph 4). It is located 73 kilometers from the capital, it is currently considered an important tourist local in Paraná, as it has a vast green area containing rivers surrounded by the flora and fauna of the largest preserved area of the Atlantic Rain Forest in the country. It has a great historical importance for the State of Paraná, in addition to standing out for its gastronomy due to the famous typical dish, called Barreado [26]. In addition, it is the municipality where Serra da Graciosa is located, as well as having an extensive rural area. All these elements present in Morretes can justify the great demand, since they are much appreciated by cyclists.



**Figure 4:** Coastal cities where you have cycled

The lack of safety on the roads and cycling conservation in the coastal cities (Table 5), were the factors most pointed out by the respondents, and in this question there was the possibility of opting for one or more answers. These factors are directly related to the creation of public policies that favor the practice of cycle tourism on the coast. Thus, it is important that there is effective support from local authorities and government agencies for the promotion and investment in infrastructure for cycle tourism, through, for example, the restoration of old infrastructures, roads and trails, as well as the adaptation of the road space that allows tranquility to the practitioners on the routes while performing the activity.

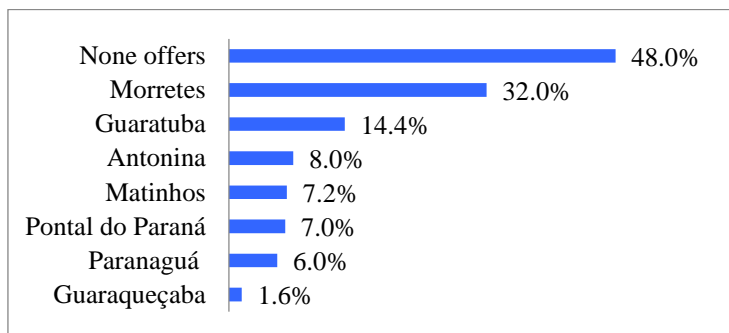
**Table 5:** Missing factors on the coast

Alternatives	Absolute Frequency	Relative Frequency (%)
Road safety	85	68,0
Cycle conservation/infrastructure	84	67,2
Information about routes/trails	75	60,0
Signaling on the roads	57	45,6
Bicycle parking	37	29,6
Public security	32	25,6
Bike repair locations	32	25,6
Places to sleep	24	19,2
Bicycle transport vehicles	19	15,2

**Source:** the authors.

The factor information about routes and trails (Table 5), the third item most mentioned by cyclists, was also considered unsatisfactory in the research carried out by Resende and Vieira Filho [14], in which respondents complained about the lack of specific maps for cycle tourists/travelers, in addition to the lack of information on various services such as accommodation, food, banks and post office. In addition, the authors complemented that the tourism websites of the cities provided insufficient information and that the most used tool was the social networks in order to share the experiences of people who had already visited the destination. This data serves as an indicator, both for the public and private sectors, for the development of tools that facilitate access to information for cycle tourists.

In relation to infrastructure (Graph 5), the respondents showed dissatisfaction with the coastal municipalities. According to Resende and Vieira Filho [14] cycle tourists, in their trips, use services from different branches such as: accommodation, food, bicycle shops, which include repair services and the sale of accessories, banks, post offices, gas stations to inflate tires and the convenience stores, as well as the tourist information centre. In this way, the infrastructure used by cycle tourists transcends the use of cycle paths and roads, thus involving various branches of activities to serve this public.



**Figure 5:** Municipality that offers more infrastructure

An alternative that can consolidate cycle tourism in Paraná Coast is the organized mapping of existing routes and frequented by cyclists, including establishments present along the routes. Another proposition, however, which requires investments and medium and long-term planning on the part of public agencies, is the elaboration of cycle tourism circuits in which itineraries are developed with support infrastructures, where bicycle travelers can count on a map with guidelines on the routes, containing information on distances and conditions, as well as indications of tourist attractions and support points for cyclists [3]. Thus, these cycle tourism circuits could attract more cyclists, in addition to promoting the natural wealth and historical and cultural heritage that Paraná Coast has to offer.

## 5. Conclusion

The present study revealed that there may be a correlation among socioeconomic factors: age group, schooling, income and marital status, since, due to the advent of technology, bicycles, which before served only as a means of economic transport, became equipment with high added value that requires better financial, personal and professional stability of those who acquire them.

It was found that the Covid-19 pandemic did not influence the decision of starting cycling, but when analyzing separately the portion of those who started cycling after the pandemic, it was possible to verify that the number of men and women presented an equal result, demonstrating the growing search of women for cycling.

The mountain bike is the type of bicycle most used for the practice of cycle tourism, as they are manufactured with technology to resist and adapt to any type of path. They may have gained popularity in Brazil, mainly due to the first victory of Brazilian professional cyclist Henrique Avancini in the MTB World Cup in 2018.

The main factors that make the practice difficult are the imprudence in traffic, lack of cycling infrastructure and lack of security that need attention from the State for the construction of public policies in order to inhibit these difficulties. In addition, according to cycle tourists, the lack of information on routes and trails in the places visited also makes trips difficult.

One way that can establish cycle tourism, as well as promote coastal municipalities is the development of cycle tourism circuits. Thus, it is concluded that cycle tourism is a tourist segment of great importance, since it moves the economy of several sectors and promotes the appreciation of all elements of the visited place. Thus, it is necessary to reassess actions by the public and private sectors and local community, in order to achieve the satisfaction of the cyclist public.

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