

## Article

# Travel Experience and Reasons for the Use and Nonuse of Local Public Transport: A Case Study within the Community Interregional Project SaMBA (Sustainable Mobility Behaviors in the Alpine Region)

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**Abstract:** Knowing the reasons for mobility choices, how users evaluate the characteristics of public transport and how satisfied they are with their travel experience is essential to promote the use of LPT (local public transport), especially in rural or suburban areas where the use of private cars is often prevalent. The present study aimed to investigate the mobility experience and the reasons for use and nonuse of the LPT in a suburban area by the people traveling to a large hospital center in a province of the north-east of Italy. An anonymous questionnaire was completed by people from different categories traveling to the hospital (students, employees, clients), who were user and nonusers of the LPT. The results showed that insufficient hourly coverage and accessibility of the service are the primary reasons for opting not to use LPT and, together with reliability and comfort, these factors contribute to user satisfaction with their travel experience. The perceived sustainability of LPT contributes to overall travel satisfaction. However, perceived sustainability alone does not appear to influence the choice of LPT if the service lacks adequate accessibility and does not meet the needs of travelers in terms of hourly coverage.

**Keywords:** public transport; sustainable mobility; satisfaction with travel; service experience; travel mode reasons



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## 1. Introduction

In the latter half of the twentieth century, individual and/or private means of transport have gained ever-growing popularity within high-income countries, simultaneously with the decrease in the use of public transport. The consequences of this trend, such as traffic congestion, CO<sub>2</sub> emissions, and public health concerns, have highlighted the need to reduce reliance on private cars and encourage greater use of public transport. This shift in mobility patterns encompasses both social and economic dimensions, as car ownership has become an indicator of a population's standard of living in recent years [1]. However, there is also a distinct, genuinely psychological dimension, which must be considered to understand the choices individuals make regarding their preferred mode of transport—whether it be private or public. The reasons underlying the selection of a particular mode of transport are diverse and interconnected with an individual's needs, meanings, values, and motivations [2–6]. Therefore, to promote the transition from private cars to public transport, it is essential to comprehend the factors that influence individuals' mobility choices.

Plenty of research concerning the use and satisfaction with public transport has firstly highlighted that the wide use of private cars originates from the imbalance between the demands and needs of people's mobility and the supply of public transport [7,8]. Moreover, the choice to use private cars is strengthened by several advantages in terms of independence and freedom in schedules and itinerary. It is also based on cultural and

psychological reasons, since cars represent much more than a means of transport [9,10]. Finally, the physical characteristics of the territory are a key variable in the choice of the means of transport [11].

In this regard, public transport is more extensively utilized in large cities and urban areas, as it effectively caters to the diverse needs of users. On the contrary, traveling by car often entails spending a significant amount of time, even for short distances [12,13]. However, in country and in suburban areas consisting of small- and medium-sized inhabited centers, connected to each other by suburban roads, the gap between the demand for mobility and the supply of public transport widens. In such areas, services and workplaces can be reached only by private cars [7,8,14–17]. In these areas, public transport is primarily used by individuals who do not own a private car, including students, the elderly, and people with lower incomes [8,10,18,19]. Public transport is an essential service for these people, ensuring their mobility and access to remote services. Indeed, sociodemographic characteristics play an important role in the choice of public transport as well. Specifically, age dictates the different needs and the different mobility possibilities of an individual in the different periods of their life [20–22]. University students, for example, are likely to be more flexible in their choices of the public transport they use, in contrast to other categories of transport users [23,24].

In order to promote sustainability, it is necessary to promote and support the use of public transport, even for those who own and prefer to use private cars, by acting on the factors which may promote people's behavioral change towards the use of LPT. It is necessary to take into consideration the characteristics of the service provided as a response to the users' needs with the aim of providing a service that is up to the mobility needs and expectations of potential users [8,18,25–27]. Possible changes in public transport services should aim to overcome any resistance rooted in the lack of appeal of public transport compared to private cars [27].

Various characteristics of the public transport service have been identified in the literature as key factors influencing its usage. On one hand, these characteristics address the concrete mobility needs of users, while on the other hand, they relate to the pleasantness of the travel experience [26,28], including aspects related to psychological well-being [29]. The literature extensively emphasizes the impact of passengers' experiences on their satisfaction with the service and its usage [30–33], and satisfaction with the service and the travel is closely related to a higher likelihood of using public transportation. Higher satisfaction with the service and the travel experience is closely linked to a greater likelihood of using public transportation. However, there is no unified approach in the literature when addressing these themes. Some studies directly associate service characteristics with the probability of usage, while others correlate the same characteristics with satisfaction with the service itself. Hence, it is evident that the factors contributing to satisfaction with the service partially overlap with those influencing the decision to use it.

Turning to the body of literature that has investigated the relationship between service characteristics and the likelihood of usage, the accessibility of the service emerges as the primary and most significant factor in the choice of public transport [28,34–36]. Users' decisions are also influenced by operational conditions, specifically the time schedule, frequency of rides, reliability of the service, and adherence to scheduled travel times [26,37,38]. Additionally, the time involved in traveling plays a crucial role in determining the choice of public transport, while factors related to costs and travel comfort have a secondary impact [28,39,40].

As for studies that have focused on the user experience and its relationship with the use of public transportation, it has been widely emphasized that the user experience encompasses both cognitive evaluation and emotional aspects. Users and potential users have subjective experiences of the service, which arise from various forms of contact, including direct (use of the service) and indirect (news, advertisements, vicarious experiences, word of mouth, etc.) interactions, which influence the user's perceptions of the service at different levels [41–43]. In Italy, public transport is often poorly regarded in the collective imagi-

nation and is frequently associated with deficiencies, malfunctions, and unreliability [25]. In analyzing the service features that have the greatest impact on the user experience and satisfaction, different dimensions and factors have emerged. For example, a previous study [44] identified four dimensions of satisfaction based on the analysis of 17 different factors. Those dimensions are system, comfort, staff, and safety. Results were not consistent since some differences emerged in relation to the city in which data were collected. Such evidence proves that public transport services are perceived differently according to the local reality and to the urban context. Indeed, there are several factors determining such variations in travelers' perceptions, including factors related to management (how those services were supplied) and personal values (culture and tradition). Additional studies have highlighted that satisfaction with the use of public transport is influenced by factors such as comfort, modernity and cleanliness of the vehicles, and staff behavior [26,45]. However, the results may vary depending on the type of transportation analyzed. For instance, subway users consider vehicle cleanliness and staff behavior more significant, while bus travelers prioritize factors such as service regularity, coverage extension, and vehicle cleanliness [26]. From an economic perspective, the cost of tickets is an important feature that can negatively impact travelers' satisfaction [46].

This wide range of factors contributes to the creation of a multidimensional subjective travel experience, which has been the subject of numerous specific studies in the literature. As previously emphasized, research findings have highlighted that the travel experience includes a cognitive component related to the evaluation of service quality and value, including costs, travel duration, and punctuality [47]. This latter aspect, in particular, we have seen to be strongly linked to the likelihood of choosing public transportation for one's journeys [26,28,37–40]. However, cognition is not the sole relevant aspect of the travel experience. For example, experiences related to bus services are influenced by affective and noninstrumental factors, such as cleanliness, privacy, safety, comfort, distress, social interaction, and surroundings [48]. Consequently, the evaluation of the travel experience and the aspects that should be considered in this assessment remain topics of debate [41,49]. One widely used measure to assess travel experience is the Satisfaction with Travel Scale, which aims to evaluate the quality of the travel experience in terms of the overall perception of the service, aligning with the holistic nature of the construct. Moreover, it integrates the assessment of both service features and offer characteristics, encompassing not only the cognitive dimension but also the affective dimension [32]. Specifically, the measure combines cognitive appraisals related to service quality with affective appraisals, which are further divided into two subdimensions: positive arousal (e.g., enthusiasm or boredom) and positive deactivation (e.g., excitement–relaxation). This measure was primarily designed to investigate travel well-being, a subjective psychological dimension which the literature has linked to broader personal well-being [29,50–52]. Furthermore, research has demonstrated that satisfaction with travel can enhance the motivation to use public transportation. In fact, the more satisfied travelers are with their public transport experiences, the more likely they are to use it again in the future [53]. Additionally, studies on satisfaction with travel have revealed an overlap between factors that increase satisfaction and factors identified as key reasons for using or not using public transport (e.g., service regularity and coverage extension) [26,28,37,38].

Within this research landscape, there is an aspect that has been explored to a lesser extent but is important to consider. Personal values, including concerns for ecological matters and the emphasis placed on sustainability, can also influence the choice to use public transport. While the balance between behavioral and economic costs and benefits remains the primary criterion, sustainability emerged as the second most influential factor in the choice to use public transport among a sample of university students in northern Italy [54]. Furthermore, a previous study on public transport use demonstrated that individuals who are concerned about environmental issues are more likely to shift their travel choices to public transport when experiencing a change in context, such as a work transfer, indicating the potential for changing travel habits [5]. Conversely, it has been

observed that when the use of private cars becomes a deeply ingrained habit, its benefits are often overestimated and the concern for the environment is less likely to drive a shift in travel choices towards public transport. In such cases, individuals tend to resolve the cognitive dissonance between their behavior (using an environmentally harmful means of transport) and their attitude (recognizing the importance of sustainable behavior) by modifying their attitudes instead [55].

Considering the above, to encourage the use of LPT it is necessary to detect the factors underlying travel behaviors, for political strategies will be more efficient if they are oriented to the antecedents of the behavior. The literature has primarily examined the factors influencing satisfaction with one's mode of travel; however, to our knowledge, there have been few studies that have specifically focused on the reasons for using or not using LPT. In particular, the different reasons for use or nonuse of LPT have not yet been specifically investigated enough with reference to both the specific modes of transport and the different categories of transport users, in relation to their specific travel needs. Furthermore, the possible influence of the importance assigned by users and potential users of LPT to the goal of sustainability on their choices of the means of transport deserves further investigation, compared to other factors that are known to affect mobility choices. Considering the need to deepen the understanding of the factors affecting the choice to use LPT, the present study investigates the reasons for use or nonuse of LPT, the users' experience, and subjective perception with relation to a specific public bus line. The investigated service connects a big hospital located in a suburban area to the surrounding towns. The present study examined various categories of users' subjective perceptions and experiences related to travel to the hospital.

#### *The Present Study*

The research forms part of the "SaMBA" project, a European territorial cooperation initiative led by the province of Padua in Italy. The project's objective is to promote the use of sustainable modes of transportation, particularly local public transport, in an area characterized by high private car usage and limited adoption of sustainable transportation options. Specifically, the project seeks to encourage the utilization of a specific public bus route connecting the hospital center in the municipality of Monselice-Schiavonia with the surrounding towns. In order to achieve this goal, it became apparent that a deeper understanding of the users' experience and transportation needs, both among current users and potential future users of the service, was necessary. Aligned with the project's focus and the knowledge requirements of its organizers, this study sought to investigate the mobility experience of individuals traveling to and from the hospital center of Monselice-Schiavonia, as well as the factors influencing their decision to use or not use the "suburban route E034/N" bus line. People who travel to the hospital belong to three categories: hospital employees, students of master's degree in nursing sciences, and hospital users (patients, caregivers, or visitors). A specific objective of the study is to understand how the service is evaluated and used, or not used, by these different types of travelers in relation to their different mobility needs. The large hospital complex is about 30 km from the city of Padua in a predominantly agricultural, semi-urban area, with some industrial areas and small- and medium-sized towns. The local public bus services connect the towns to each other and to the hospital. However, as is generally the case in rural and suburban areas [7,16–18,55], the most common mode of transportation is private car ownership, which offers greater flexibility for getting around the area. The research results aimed to facilitate the implementation of appropriate measures to promote the use of the public bus service, starting from the evaluation of the service by its users and an analysis of the factors influencing their choice to use or not use LPT.

The data collection period (May 2021) coincided with the final phase of the pandemic emergency. During this time, as the lockdown measures were lifted, individuals regained the ability to move freely, access hospitals, and utilize public transportation while adhering to pandemic containment measures, such as wearing masks, maintaining interpersonal

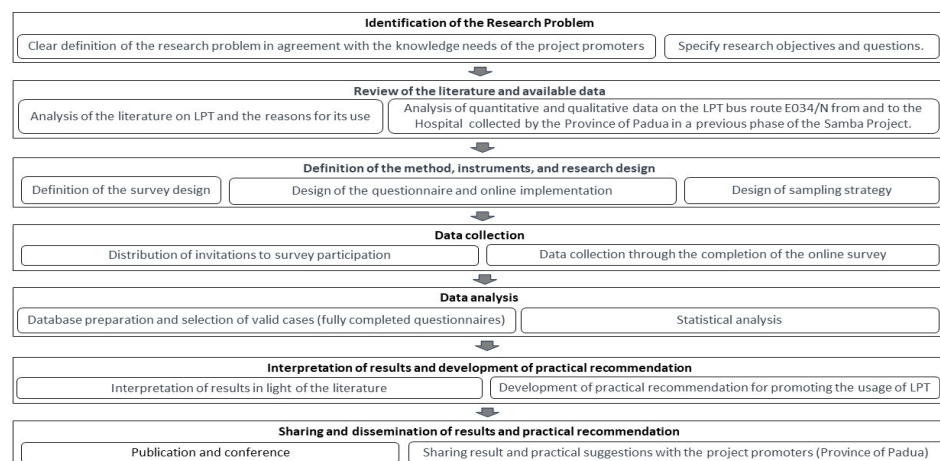
distances, and practicing hand disinfection. Preliminary data for this study, gathered as part of the SaMBA project, indicated that the number of hospital affiliates and public bus service users did not significantly differ from prepandemic levels. Consequently, in exploring the reasons for using or not using public transportation, as well as satisfaction with the travel experience, specific questions were developed and included in the questionnaire to assess the perception of the risk of COVID-19 contagion. Nevertheless, we believe that the collected data may also provide insights into the broader factors influencing public transportation use, even in the postpandemic period during which the study was conducted.

### Objectives

Specifically, the study had the following objectives:

- To investigate the travel experience on the bus route E034/N from and to the hospital in terms of satisfaction for several aspects of the service (accessibility, travel time, timeliness, reliability, time schedule, cost, comfort, safety and sustainability), quality of the experience (using the Satisfaction with Travel Scale), and relationship between satisfaction with the bus service and the quality of the travel experience;
- To examine the characteristics of the mobility to and from the hospital by nonusers of LPT, along with their satisfaction with several aspects of their chosen mode of transport (accessibility, travel time, timeliness, reliability, time schedule, cost, comfort, safety and sustainability) compared to their satisfaction with LPT service;
- To explore the reasons behind the decision not to use public transport;
- To investigate possible differences based on gender, age, and the different categories of current and prospective bus service users, including those commuting to work, students, and individuals traveling to the hospital as patients, caregivers, or visitors.

The entire research process related to this study within the broader SaMBA project is illustrated in Figure 1. In the following paragraphs of the article, methodological choices and obtained results will be detailed. The results will then be discussed in the context of the literature, emphasizing the research limitations. Practical recommendations for promoting public transportation will be provided based on the collected data in the conclusions, along with suggestions for future research exploring the addressed theme.



**Figure 1.** Flow chart of the research process.

## 2. Materials and Methods

### 2.1. Procedure and Participants

People who travel to the hospital were invited to complete an anonymous online survey specifically developed for the purposes of the research. The survey instrument took approximately 5 to 10 min to complete and included different questions for the users and nonusers of LPT (local public transport). The choice of a brief questionnaire is motivated by

the need to maximize the likelihood of subjects completing the survey and not abandoning the completion. The invitation to take part in the survey was sent both to students and to the hospital employees via a specific mailing list, thanks to cooperation with the master's degree in nursing sciences, which has its headquarters in the Hospital, and of the hospital managers. Moreover, the LPT company distributed a broader invitation near the hospital, aiming to reach all individuals traveling to and from the hospital, including patients, caregivers, and visitors. The survey dissemination method was designed to achieve a sufficiently large sample size. However, it employed a partially convenience sampling strategy rather than a completely random sampling strategy. This choice was aligned with the requirements of the study, which aimed to conduct a pilot study to gain insights into transportation needs, experiences, and perceptions within the population affiliated with the hospital hub. The study did not seek to generalize the results at this stage. Therefore, the decision was made to collect a number of questionnaires that would be numerically representative of the population affiliated with the hospital. However, no specific criteria were followed for stratifying the sample based on demographic characteristics (such as gender and age) or the categories of hospital attendants. Based on the estimated 3650 people attending the hospital daily, a statistically significant sample representing the minimum target of questionnaires with fully complete responses was calculated. The formula used for sample size calculation was as follows:  $\text{sample size} = z^2 \cdot p \cdot (1 - p) / c^2$ , where:  $p$  = estimated proportion (0.5 for maximum variability);  $z$  = z-score (tabulated value found for the desired 95% confidence interval = 1.96); and  $c^2$  = confidence interval expressed as decimal. Based on this calculation, a sample of 348 questionnaires was determined to be statistically significant with a 5% margin of error for a 95% confidence interval. By collecting 400 questionnaires, the margin of error would be reduced to 4.6%.

Within one month, 400 fully completed questionnaires were collected out of the 599 accesses to the online questionnaire, and these were considered valid cases. A majority of respondents were women (71%) and individuals aged between 41 and 60 (55%; 14% 16–25 years old; 17% 26–40 years old; and 14% over 60). The respondents were asked to define the main reason why they travel to the hospital. Most respondents indicated that their primary reason for traveling to and from the hospital was for work (56%), followed by 31% traveling as customers (patients, caregivers, or visitors), and 13% as students enrolled in the nursing science master's degree program. Informed consent was obtained online before participants completed the questionnaire. They were provided with information regarding data collection, processing, and storage in accordance with privacy regulations, as well as the research objectives and compliance with ethical standards. The study was approved by the university ethics committee.

## 2.2. Instrument and Measures

The questionnaire comprised various sections designed to explore the travel experience to and from the hospital, as well as the factors influencing the use or nonuse of the LPT service. It was administered to both users and nonusers of the bus line.

The first section, addressed to all participants, aimed at collecting personal data (gender and age), the reasons for traveling to the hospital (this question split the respondents' sample into three categories of users: workers, students, and customers), the frequency of travel, and the use or nonuse of the public bus service (users were considered those who happened to use the bus at least once).

The second section, intended for users of the public bus service, included a range of measures related to their experiences of using the service.

Travel habits: regarding travel habits, we first assessed the frequency of using LPT to travel to the hospital using a specific 4-point scale (from 0 = almost never, to 3 = always; 2 = sometimes; 3 = often); secondly, further characteristics of the journey to the hospital were investigated: the exclusive use of the bus for journeys to the hospital or the use of alternative modes of travel (car used only as a passenger, car shared with other passengers, bicycle, train or scooter); the reasons for the possible exclusive use of LPT (two possible

answers: lack of alternative means of transport, preference for the bus even if other means of travel are available); and the need to use means other than the bus to complete the ride to the hospital.

Psychological aspects influencing LPT use: to understand the psychological factors influencing LPT use, we assessed the quality of the travel experience using the Satisfaction with Travel Scale [31]. Participants were asked to evaluate their travel experience to and from the hospital using nine pairs of opposite adjectives (e.g., fed-up vs. engaged, jittery vs. relaxed, worried vs. serene, . . .). The sum of the scores obtained from all the answers (from a minimum of  $-3$  to a maximum of  $3$  for each answer) provides the overall score for satisfaction with the travel experience. Finally, the level of satisfaction for several aspects of the service was assessed through specifically designed questions. Participants were asked to express their satisfaction for ten different aspects of the service on a Likert scale ranking of 1 to 7 (from “not at all satisfied” to “completely satisfied”). Based on the literature reviewed in the introduction, the following aspects investigated emerged as the main motivations for the choice to use or not use the public service: services’ accessibility (ease in reaching the stops on the LPT line), expected time spent for the travel, timeliness, reliability (being certain that the service is actually carried out in times and ways as expected), time schedule (the possibility to benefit from the service at useful times), cost, comfort (for example the availability of seats, the suitability of the means, etc.), the safety and sustainability of the used mode of transport. Furthermore, in addition to those aspects, since the assessment took place during the last period of the pandemic emergency, it was chosen to also include risk management related to the possibility of an infection by COVID-19.

The third section, directed at individuals who have never used the LPT service to travel to the hospital, aimed to explore the reasons behind their choice of alternative transport modes instead of the bus. First, non-users of LPT were asked whether they were aware of the specific public bus service under investigation. Additionally, those who acknowledged awareness of the service but still chose not to use it were questioned about their primary reasons for this choice. Specifically, the subjects were asked to evaluate, on a Likert scale ranking of 1 to 7, how the following features of the bus service negatively impacted on the choice of using it: low accessibility, time spent for the journeys, timeliness, low reliability, inadequate time schedules with relation to their needs, costs, comfort (being uncomfortable, such as few seats available, inadequate means, etc.), lack of safety and sustainability of the used transport mode, and dissatisfaction with the management of the risk of contamination due to COVID-19. These characteristics of the service are the same ones that users of the LPT have assessed with respect to their level of satisfaction. Moreover, the availability of free parking near to the hospital was added as a possible reason influencing the choice not to use public transport. Finally, participants who had never used the public bus service were asked which means of transport they travel with to reach the hospital and subsequently to evaluate their level of satisfaction with the use of this means (Likert scale ranking of 1 to 7 from “not at all satisfied” to “completely satisfied”), considering the following aspects: time spent, cost, comfort, safety, autonomous schedules, sustainability, and COVID-19 infection risk.

### 3. Results

#### 3.1. LPT Users and Nonusers

Among the participants who completed the questionnaire, 23% (94 individuals) utilized the bus service to travel to the hospital (Table 1). When considering differences related to gender, age, and user categories, it was observed that women used the bus service more frequently than men ( $\chi^2 = 4.8$ ;  $p = 0.028$ ). Additionally, individuals under the age of 26 ( $\chi^2 = 10.2$ ;  $p < 0.001$ ) used the bus service more frequently compared to other age groups. Notably, among the student population, there was a higher percentage of individuals who relied on the bus service (64%), in contrast to workers (among whom only 20% used the bus service) and hospital users (with only 13% utilizing the bus) ( $\chi^2 = 55.4$ ;  $p < 0.001$ ) (Table 1).

**Table 1.** Percentage of LPT users and nonusers in gender, age and users' categories (total row 100%).

	LPT Users	Non-Users
Total	23%	77%
Gender:		
men	26%	74%
women	16%	84%
Age:		
16–25	59%	41%
26–40	2%	88%
41–50	19%	81%
51–60	16%	84%
Over 60	18%	82%
Users' categories:		
Students	36%	64%
Workers	20%	80%
Customer	13%	87%

Regarding the frequency of bus service usage, participants were asked to indicate how often they use the investigated bus line to travel to and from the hospital, using a four point scale ranging from “almost never” to “always”. The majority of users reported sporadic use, with 46% choosing “sometimes” and 28% selecting “almost never”. In contrast, 11% of users stated that they use the service “often”, and 16% reported using it “always”. A specific question was directed to individuals who exclusively use local public transport (LPT) to travel to the hospital, aimed at understanding the reasons for this specific and exclusive reliance. Among this group, 71% cited the lack of alternative transportation as the reason for exclusively using LPT to and from the hospital. The remaining 29% preferred to use the bus even though they had other means of transportation available. Therefore, among those who use LPT, multiple modes of transportation are utilized, with the bus being just one of the options for reaching the hospital. The primary alternative means of transportation used by most individuals is the car, with 65% traveling alone and 27% carpooling. A smaller number of individuals (seven) use other means of transportation, such as bicycles, trains, or scooters. Furthermore, significant differences in alternative transportation methods emerge among different categories of hospital users ( $\chi^2 = 25.9$ ;  $p < 0.001$ ). Specifically, over half of the students (53%) opt for carpooling, while about 25% of the users and a smaller percentage of workers (7%) primarily use a car alone (83%).

Among respondents who never use the bus service to travel to the hospital, the vast majority rely on private cars (97%), while a smaller number use carpooling (N = 6) or bicycles (N = 4).

### 3.2. Bus Users' Satisfaction with the LPT vs. Satisfaction with Car Use in Nonusers of LPT

LPT users were asked to assess their level of satisfaction with various aspects of the service, while nonusers were questioned about their satisfaction with similar aspects of the mode of transportation they used to travel to the hospital (Table 2). It should be noted that the data in Table 2 pertains specifically to nonusers who drive a car to reach the hospital (data related to bicycle users are not presented due to their low numbers, which would not allow for robust analysis). Some characteristics of the mode of transportation are unique to public transport, specifically accessibility, reliability, and punctuality. On the other hand, the ability to manage travel schedules is a common feature, but it is defined differently: as hourly coverage for LPT and as autonomous schedules for private cars. An analysis of variance was conducted to compare the level of satisfaction with common features between public transport and private cars (travel time, cost, comfort, safety, hourly coverage/autonomous schedules, sustainability, and COVID-19 infection risk) in order to identify statistically significant differences.



**Table 2.** Satisfaction with the different characteristics of LPT and car use to travel to the hospital.

Characteristics of Means of Transport	M (SD)		F	p
	LPT (Users of LPT)	Car (Nonusers of LPT)		
Avoid risk of COVID infection	4.31 (1.82)	5.05 (2.32)	6.38	0.012
Sustainability	5.54 (1.59)	4.00 (2.07)	38.05	<0.001
Safety	5.05 (1.67)	5.22 (1.84)	0.92	0.339
Comfort	4.55 (1.70)	5.95 (1.69)	43.51	<0.001
Cost	3.36 (2.03)	4.78 (1.87)	35.69	<0.001
Time spent on travel	4.17 (2.11)	5.50 (1.91)	30.49	<0.001
Hourly coverage/ Autonomous schedules	3.08 (2.06)	6.32 (1.47)	260.35	<0.001
Reliability	4.78 (1.84)	-	-	-
Punctuality	4.97 (1.77)	-	-	-
Accessibility	3.86 (2.05)	-	-	-

Regarding users' satisfaction with various aspects of the LPT service, the results indicate that the most highly valued features of the service were sustainability, safety, punctuality, and reliability. The service's comfort and the measures taken to minimize the risk of COVID-19 infection also received positive feedback (with mean scores exceeding four). Conversely, the aspects that emerged as areas of concern were the time schedule and the cost of the service, followed by accessibility, particularly the ease of reaching the bus stop.

No significant differences were observed based on gender or the categories of individuals traveling to and from the hospital. However, in terms of age, a positive correlation was found between age and satisfaction with the accessibility of the service ( $r = 0.24$ ;  $p < 0.05$ ). This highlights that satisfaction with accessibility increases with age, suggesting that younger individuals tend to be less satisfied with the accessibility of the service. Satisfaction with other aspects of the LPT service did not exhibit variations based on the age of users.

The satisfaction level among car users (who do not use public transport) is notably high, with mean scores equal to or higher than 4.7, except for "sustainability". The most appreciated feature is the independence from time schedules, followed by comfort, travel time, perceived risk of contagion, and costs.

Some effects related to gender, age, and the categories of individuals traveling to and from the hospital on satisfaction with car travel were observed. In terms of gender, a significant difference in satisfaction was found for car sustainability, with women expressing lower satisfaction compared to men (women:  $M(SD) = 3.84(2.01)$ ; men:  $M(SD) = 4.45(2.21)$ ;  $F = 4.47$ ;  $p < 0.035$ ). Regarding age, negative and significant correlations were identified between age and satisfaction with independence from time schedules ( $r = -0.14$ ;  $p < 0.05$ ) and the comfort of the mode of transport ( $r = -0.15$ ;  $p < 0.05$ ), indicating that satisfaction levels for these aspects tend to decrease with age. In relation to the different categories of individuals traveling to and from the hospital, lower satisfaction was reported among hospital users (patients, caregivers, visitors) compared to workers and students regarding travel time (users:  $M(SD) = 4.69(2.21)$ ; workers:  $M(SD) = 6.01(1.54)$ ; students:  $M(SD) = 5.50(1.41)$ ;  $F = 13.81$ ;  $p < 0.001$ ) and the independence from time schedules (users:  $M(SD) = 5.70(1.96)$ ; workers:  $M(SD) = 6.62(1.06)$ ; students:  $M(SD) = 6.56(0.96)$ ;  $F = 13.81$ ;  $p < 0.001$ ).

When comparing the satisfaction levels of LPT users and car users, it was observed that car users were more satisfied with schedules, comfort, cost, travel time, and the mitigation of the risk of COVID-19 infection. No significant difference was found in satisfaction with safety between LPT and car users (Table 2). However, LPT users expressed higher satisfaction with the sustainability of their chosen mode of transport.

### 3.3. Quality of the Travel Experience and Satisfaction in LPT Users

The quality of the travel experience on the LPT was evaluated using the Satisfaction with Travel Scale [32]. The results indicate that the mean scores for each aspect related to the travel experience are positive (Figure 2). This implies that passengers tended to choose adjectives that describe pleasant aspects of their travel experience rather than unpleasant ones. Specifically, they reported experiencing predominantly low arousal and positive emotions during the trip. They felt calm, relaxed, and at ease, perceiving that the travel experience was proceeding smoothly. Overall, the travel experience appeared to be quietly satisfying.



**Figure 2.** Quality for the perceived travel experience on the LPT (Satisfaction with Travel Scale: mean values).

Regarding potential variations in the perception of the travel experience based on gender and the categories of individuals traveling to and from the hospital (workers, students, customers), no statistically significant differences were identified. However, correlation analysis revealed a noteworthy connection between the perceived quality of the LPT and age. More precisely, a positive correlation was observed between age and the total score on the Satisfaction with Travel Scale ( $r = 0.23$ ,  $p < 0.05$ ), indicating that younger individuals tended to report a lower quality of the travel experience.

The perceived quality of the travel experience, as assessed by the Satisfaction with Travel Scale, displayed strong correlations ( $r$  values ranging from 0.35 to 0.53) with satisfaction levels for all the aspects of the LPT service under consideration. Notably, comfort, accessibility, hourly coverage, and protection from COVID-19 contagion were identified as the characteristics most closely linked to a higher quality of travel experience. Conversely, satisfaction with the cost of the service appeared to be the least significant factor influencing the perceived quality of the travel experience (Table 3).

### 3.4. Reasons for Not Using the LPT

Through the administration of the questionnaire, we investigated the primary reasons behind the decision not to use LPT (local public transport). Initially, we inquired whether respondents who claimed to have never used the bus service were aware of its existence. From our data, we found that 16% of the respondents (50 individuals) were unaware of the bus service to the hospital.

Additionally, we asked respondents who were aware of the bus service but chose not to use it about the main factors influencing their decision. In the questionnaire, we presented the same service characteristics that were used to assess LPT users' satisfaction. Specifically, participants were asked to rate, on a Likert scale from 1 to 7, how various factors hindered their use of the bus service. These factors included low accessibility, travel time, timeliness, reliability, inadequate schedules that did not align with their needs, costs, comfort issues (such as insufficient seating or inadequate vehicles), safety concerns, sustainability concerns regarding the vehicles, and dissatisfaction with the management of

COVID-19 infection risks. Furthermore, the availability of free parking near the hospital was also considered. Table 4 presents the mean scores of these factors affecting the decision not to use LPT.

**Table 3.** Relations between quality of the travel experience and satisfaction with different characteristics of the LPT service.

Correlations (Pearson's r)	
Quality for the perceived travel experience on the LPT	
Level of satisfaction with:	
- Avoid risk of COVID infection	0.54 **
- Sustainability	0.46 **
- Safety	0.41 **
- Comfort	0.53 **
- Cost	0.35 **
- Time spent on travel	0.50 **
- Hourly coverage	0.52 **
- Reliability	0.51 **
- Punctuality	0.41 **
- Accessibility	0.52 **

\*\*  $p < 0.001$ .

**Table 4.** Reasons for the lack of LPT use.

Reason for the Lack of LPT Use	M(SD)			
	All Nonusers of LPT	Hospital Workers	Hospital Students	Hospital Users
Poor accessibility	4.89(2.46)	5.16(2.36)	5.06(2.04)	4.37(2.64)
Too time spent	4.33(2.33)	4.39(2.35)	4.50(2.06)	4.18(2.38)
Poor reliability *	3.36(2.07)	2.80(1.92) a	3.88(1.68) ab	4.38(2.04) b
Poor punctuality *	3.20(1.99)	2.86(1.88) a	3.00(1.15) a	4.05(2.18) b
Poor hourly coverage	5.25(2.28)	5.33(2.25)	5.43(2.06)	5.03(2.42)
High cost	3.89(2.27)	3.67(2.28)	4.25(2.13)	4.27(2.29)
Discomfort *	3.08(1.96)	2.60(1.79) a	3.75(1.91) ab	3.93(2.00) b
Unsafety *	2.37(1.64)	2.10(1.52) a	2.50(1.38) a	3.02(1.64) b
Poor sustainability *	2.68(1.94)	2.25(1.73) a	2.92(1.97) a	3.54(2.11) b
Risk of COVID-19 infection *	4.04(2.16)	3.76(2.15) a	3.92(1.19) a	4.63(2.16) b
Free car parking	5.46(2.14)	5.48(2.28)	5.93(1.83)	5.3(1.93)

\* Significant difference in mean scores among different categories of people traveling to and from the hospital (one way ANOVA)—Tukey's post hoc test: the same letter indicates no statistically significant difference between means.

The results indicate that the availability of free parking near the hospital encourages the use of private cars over LPT. Additionally, irrespective of the service's characteristics, the most influential factor in the decision not to use LPT is the inadequacy of the service's schedule to meet users' needs. This scheduling issue is followed by problems related to accessibility and the perception of longer travel times to reach the hospital. Concerns about the risk of COVID-19 contagion also play a significant role ( $M = 4.04$ ) (Table 4). Interestingly, these reasons align with the most critical service factors (sources of lower satisfaction) identified by users (see Table 2).

Furthermore, we examined the impact of gender, age, and the categories of people traveling to and from the hospital on the reasons for not using LPT. No differences were observed based on gender and age. However, hospital users (patients, caregivers, and visitors) indicated that certain factors had a more substantial influence on their decision

not to use LPT compared to students and workers. Specifically, they associated their choice not to use the bus service with service unreliability, lack of timeliness, discomfort, safety concerns, lower sustainability, and the perceived risk of COVID-19 contagion (Table 4).

#### 4. Discussion

Regarding the specific usage patterns of local public transport (LPT) on Bus Line E034/N for accessing Schiavonia Hospital, the majority of individuals, especially users such as patients, visitors, caregivers, and those commuting to the hospital for work, typically opt for private cars. These cars are predominantly privately owned and usually have only one passenger, typically the driver. In contrast, among students, the use of public transportation is more prevalent, although the private car, often utilized through carpooling arrangements, remains a primary alternative mode of transportation. Notably, women and individuals under the age of 26 are the most frequent users of public transport. These findings align with the existing literature, which underscores the influence of age on mobility choices, with students displaying a greater inclination toward using public transport and walking in comparison to adults [15,20–22,56–58]. Gender-related differences in LPT usage vary across studies, with some indicating a higher prevalence of LPT use among women [9], while others find no significant gender-based differences [4,59].

The majority of participants use public transport infrequently. Specifically, less than one-fifth of the respondents consistently utilize the bus to reach the hospital. For those who use the bus sporadically, the car remains the predominant alternative mode of transportation in the vast majority of cases. Consequently, the utilization of public transport services reflects the prevailing trend in contemporary mobility choices, characterized by a dynamic and multifaceted pattern, particularly emphasizing multimodal options where individuals or groups alternate between car usage and bus services. The existing literature highlights the greater adaptability of students in selecting transportation methods [23,24,54]. This flexibility likely stems not only from their lifestyle but also their varying needs and available resources, often necessitating the integration of different modes of transportation for those who do not own a car. The results of this study reveal that students are not the sole category of users who switch between public transport and other transportation means. In fact, the current user base of the public bus service to the hospital extends beyond students, encompassing workers and patients as well, thus presenting new potential scenarios for users.

When examining the travel experience and taking into account both satisfaction with various aspects of the LPT service and the quality of the travel experience assessed through the Satisfaction with Travel Scale, the results indicate that LPT users generally express satisfaction with various aspects of the service. However, they have reservations about the cost and the frequency of the service. The frequency of the service is particularly crucial for meeting the needs of individuals traveling to the hospital, yet it appears to be the least satisfying aspect in their view. This finding aligns with the existing literature [26,40], which emphasizes the close relationship between the frequency of service and the perceived quality of the travel experience, alongside factors like comfort, accessibility, and reliability.

It is worth noting that this research was conducted during the last phase of COVID-19 pandemic, and it revealed some interesting insights. The study found that the ability to reduce the risk of COVID-19 transmission was associated with a more positive perception of the travel experience. Although using public transport inherently carries a higher risk of contagion compared to using a personal vehicle with no passengers, users of the bus service to the hospital reported satisfaction with this safety aspect. Furthermore, this satisfaction level did not differ significantly from that of nonusers of LPT. This could be attributed to the relatively small number of passengers on the bus, allowing for effective social distancing measures to be implemented. It would be valuable to explore in future research whether perceptions of contagion risk for other types of viruses continue to influence the choice of transportation mode or the overall travel experience quality, especially as the pandemic situation evolves [60].

Furthermore, the results revealed that individuals who exclusively use cars to travel to the hospital express higher satisfaction with their mode of transportation compared to LPT users' satisfaction with bus services. This outcome aligns with expectations based on the existing literature [9,10,61,62], where cars are praised for their comfort, speed, and, most importantly, the freedom they offer in terms of scheduling and timetables. Interestingly, despite the higher costs associated with using a car compared to public transport, car users report greater satisfaction with the costs incurred than bus passengers. This suggests that the perception of travel cost is not solely based on the actual price, but also on the subjective assessment of whether the cost aligns with the benefits provided by the service. It is worth noting that habitual car users tend to underestimate the true costs of using a car [62]. Additionally, the cost of using LPT, which users rate as unsatisfactory, appears to be the least influential factor on the overall quality of the travel experience with the specific bus line under consideration in this study.

Taking a closer look at the perception of the travel experience with LPT, the findings indicate that passengers experience predominantly positive emotions characterized by low arousal during bus travel. Passengers primarily feel calm, relaxed, and at ease during their journey, and they perceive the travel experience as generally trouble free. This emotional component plays a significant role in assessing satisfaction with the service, contributing to passengers' overall sense of well-being during their trip [32].

However, it is important to note that not all passengers shared the same positive judgment of the travel experience, and differences in satisfaction with various aspects of the service emerged, primarily based on age and secondarily on the different categories of users traveling to and from the hospital.

Regarding age, younger passengers reported a less positive travel experience and expressed lower satisfaction with the comfort and hourly coverage of the LPT. This finding, consistent with the existing literature [63], might seem contradictory to the higher usage of bus services by young people compared to other age groups. However, this could be explained by the fact that young people often use public transport due to a lack of alternative means, especially private cars, rather than a genuine preference for LPT. This insight helps to understand the negative emotions experienced by younger passengers during their journeys.

Furthermore, the varying needs which motivated people to travel to the hospital (work, study, or health-related issues) were linked to their different levels of satisfaction with certain aspects of the service. Specifically, hospital users (patients, caregivers, and visitors) expressed lower satisfaction than workers and students regarding the time spent traveling and the hourly coverage. This highlights the importance of tailoring measures to promote LPT use based on an analysis of the travel needs of different user groups. By addressing the factors that align with the specific needs of various categories of passengers, it becomes possible to enhance overall satisfaction with the service effectively.

This assertion is further reinforced by the differences observed regarding the reasons for not using local public transport (LPT) among various categories of individuals traveling to the hospital. For nonusers, such as students, workers, and hospital customers, the primary reasons for not using public transportation were related to inadequate accessibility, insufficient hourly service coverage, longer travel times, and the availability of free parking. In contrast, patients, caregivers, and visitors cited additional reasons for not using LPT, including low punctuality, unreliability, safety concerns, discomfort, and a desire to avoid potential contagion from COVID-19.

These motivations differed from the opinions of regular LPT users, who expressed satisfaction with the service's reliability, punctuality, and other mentioned aspects. It is possible that the divergent perception of service characteristics between hospital users and students/employees reflects a negative view of public service in the Italian context, where public transportation is regarded as uncomfortable, unreliable, less safe, and lacking punctuality. This negative perception might result from a lack of knowledge about the actual features of the service. In contrast, workers and students who travel to the hospital more

frequently may have a better understanding of the service through their own experiences or the experiences shared by their peers who use it regularly.

As previously identified in other studies [64], individuals who use cars tend to be aware of sustainability issues. In our study, this was particularly true for women, who expressed greater dissatisfaction with the environmental sustainability of car travel compared with men. In contrast, LPT users displayed higher levels of satisfaction with the sustainability of this mode of transportation than those who solely relied on their own cars to reach the hospital. Satisfaction with the sustainability of LPT was found to be positively associated with the perceived quality of the travel experience, albeit to a lesser extent than factors such as comfort, hourly coverage, accessibility, and the reliability of the service. Interestingly, these latter factors also played a significant role in the decision not to use LPT. This suggests that, while environmental concerns and personal values related to sustainability are important, they may not be sufficient on their own to promote the use of LPT. Instead, individuals also need a service that caters to their specific needs, offering greater accessibility and frequency of trips to accommodate various hospital-related schedules. This appears especially crucial for individuals who have a strong habit of traveling by car and find it challenging to integrate sustainability considerations with the perceived benefits of car travel, which are often overestimated by those who use it regularly [5,55,65,66].

As a case study, the results from our research are not intended for broad generalization. However, they can be valuable for understanding and further investigating the factors influencing the use or nonuse of LPT in similar contexts. These contexts typically involve public transportation serving locations with a high number of users, situated in extrarurban areas characterized by small- to medium-sized settlements spaced apart from each other and isolated from rural or industrial areas. Furthermore, the insights gained from understanding the reasons for using or not using LPT can inform specific interventions aimed at promoting its utilization. Our study's findings can also be useful for comparative purposes, contrasting LPT use in extrarurban areas with that in urban areas or large cities.

#### *Limitations and Future Perspectives*

However, the study does have limitations, primarily associated with its case and pilot study nature. The main limitation of the study is associated with the convenience sampling strategy, which, although consistent with the study type and aim, does not provide broadly generalizable results. While the number of subjects reached by the survey is statistically representative of the hospital's population, the sample exhibits characteristics that do not make it fully representative of the general population. Firstly, the sample is unbalanced in terms of gender, with a greater participation of women in the survey than men. Additionally, it is not accurately stratified based on the different categories of hospital users (students, workers, patients, and visitors) and age groups considered in the study. Furthermore, the sample is not balanced in terms of the number of users and nonusers of the LPT service, with a lower number of users included. These limitations suggest that the use of more rigorous sampling strategies would be useful in future studies to support the findings from this initial pilot study, particularly in understanding differences between groups. Despite these limitations, the study is still relevant in highlighting the importance of understanding and recognizing the distinct perceptions and needs of various categories of users and potential users of public transportation services, especially in similar contexts. This knowledge is crucial in developing more effective strategies for promoting public transport usage in nonurban environments, tailored to specific target populations. The study has highlighted that a negative perception of certain aspects of public transportation is more common among nonusers of LPT (hospital visitors and patients) who have less experience with public transportation, although this perception may not necessarily be realistic. Future research is needed to gain a deeper understanding of the extent to which this negative perception is rooted in generic stereotypes and its potential influence on the choice not to use public transport.

Furthermore, there are additional limitations that should be explored in future research. For example, it would be interesting to compare the satisfaction of public transport users with the satisfaction of nonusers regarding similar aspects related to car usage. Since LPT users often use the bus as an alternative to private cars, assessing their satisfaction with car usage and comparing it to satisfaction with LPT use among users and satisfaction related to car use among non-LPT users would provide valuable insights.

Lastly, the study evaluated the relationships between the Satisfaction with Travel Scale and satisfaction with different service aspects considered separately. It would be beneficial to explore possible interactions between these factors at a more complex level, both in terms of the travel experience and the likelihood of service utilization.

## 5. Conclusions

Despite car users generally rating their mode of transportation as more comfortable, the study revealed a noteworthy level of satisfaction among users of the examined public bus service. Specifically, users expressed satisfaction with the punctuality, reliability, and safety of the service. These positive aspects stand in contrast to the common Italian stereotype of public transport as unreliable and prone to delays. Furthermore, the data collected indicated a positive assessment of the service's comfort and its perceived effectiveness in containing the risk of COVID-19 transmission. Again, this contradicts the traditional image of public transport in Italy, often associated with discomfort and overcrowding. These strengths contribute to the overall satisfaction of bus service users.

On the contrary, those nonusers who do not have either direct or vicarious experience with the public transportation service (patients and visitors) showed a negative view of it, judging the reliability and punctuality of the service as deficient.

Despite the moderately positive assessment from the service users, the study also identified certain shortcomings of the LPT. Users expressed dissatisfaction with the service's scheduling, accessibility (ease of reaching bus stops), and fare cost. As previously discussed in the literature, these critical issues are a source of discontent among LPT users and are among the primary reasons for nonuse of the service.

Another valuable contribution of this research to the literature is its examination of the differing perceptions of the service among various categories of users and nonusers. These categories were not only based on age, gender, or socioeconomic status, but also on different travel motivations. The study highlighted that people travel to the hospital for various reasons, including study, work, and medical treatment, leading to different perceptions of the service and varying levels of satisfaction among LPT users. This underscores the importance of understanding the specific needs of different user groups and tailoring policies and interventions to address the diverse needs of these user segments.

The study also delved into the relationship between the perceived sustainability of LPT, satisfaction with the service, and the motivations behind using LPT. This is an aspect that has not been extensively explored in the literature. The results indicate that LPT passengers tend to be significantly more satisfied with the sustainability of their mode of transport compared with car users. However, sustainability is less closely linked to the quality of the travel experience compared to other factors, such as scheduling, frequency of rides, reliability, compliance with scheduled travel times, and comfort. Consequently, sustainability alone may not be sufficient to sway individuals to choose public transport, especially when other factors, such as scheduling and service accessibility, do not adequately meet their mobility needs. This is particularly true when individuals have the option to use their own cars and there is the availability of free parking at the destination (the availability of free parking at the hospital, in this case, emerged as a significant reason for not using LPT). These findings offer valuable insights for stakeholders seeking to promote LPT use in extraurban contexts.

### Practical Recommendations

The findings of the study provide valuable insights for stakeholders and policymakers aiming to promote the use of LPT in nonurban settings. The results emphasize that service hours and accessibility are crucial variables to consider when promoting public transportation, as they play a vital role in meeting the mobility needs of users. Improving other aspects of service quality, such as cost and comfort, can serve as secondary incentives. However, while sustainability is acknowledged as an important aspect by users, it is overshadowed by other factors such as accessibility, reliability, and service coverage, which drive their mobility choices. Furthermore, the results indicate a disparity in the perception of the service among different user categories, highlighting the importance of gaining a comprehensive understanding of the characteristics and mobility needs of these users. This understanding is essential in developing effective promotional strategies tailored to the diverse user groups. Quantitative and qualitative tools, such as interviews or focus groups, can be employed to acquire this knowledge, comprehend the specific needs of different target users, and hypothesize potential improvements to LPT beyond customer satisfaction.

Additionally, the data provide valuable insights regarding the significance of providing accurate, realistic, and detailed information about the characteristics of the service. The study underscores the importance of not only improving the quality of the service but also changing the negative perceptions of public transportation to encourage new potential users, especially those without direct or indirect experience with the service. A targeted communications campaign aimed at these potential users could help to overcome the perception of LPT as unreliable and the associated resistance to its use. Furthermore, communications campaigns should address the existing knowledge and perceptions among users regarding how LPT can meet their specific needs.

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