The interplay between perceived quality and sustainability attitudes in consumers' modal choice in local transportation[1]

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Valeria Faralla - Graziano Abrate - Giovanni Fraquelli

Abstract

Frame of the research. *Modal choice in urban and inter-urban mobility holds a significant potential impact on sustainable well-being across multiple dimensions (e.g. environmental impact, health, social equity). The reliance on private modes of transport has been associated with negative effects for individuals and society at large, but at the same time it is crucial to understand consumers' attitudes and their willingness to shift towards more environmentally friendly modes of transportation, such as local public transport.*

Purpose of the paper. *The purpose of the study is to investigate the motivations and strategies that favour a modal shift from the use of private cars to local public transport, focusing on the role of two main multidimensional and interconnected factors: perceived quality and individual sustainability attitudes. The consumers' perspective is integrated with that of the managers of the local public transport supply to derive meaningful implications.*

Methodology. *The research employed both quantitative and qualitative methods, including a self-reported survey targeting mobility consumers, from which 542 responses were collected. Additionally, 15 semi-structured interviews were conducted with operators of local public transport services.*

Results. *The findings suggest that perception of quality differs for high and low levels of sustainability attitudes. We also found differences in these attitudes for users and non-users. Environmental attitudes also differed according to time preference. Strategies for modal shift were found to be heterogeneous and context-dependent. Our research findings can provide guidance for enhancing the appeal of local public transport for both current users and non-users with important implications in terms of sustainability and well-being for individuals and communities.*

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Research limitations*. The empirical analysis can be extended by integrating revealed and stated preference techniques, allowing for a direct discrimination between the use of public and private modes, particularly from the perspective of non-users. Additionally, the data examined in this study, consisting of a sample of consumers and interviews with some managers, may limit the generalizability of results. Future research could address this limitation by utilizing a more representative sample.*

Managerial implications. *The current study presents an integrated approach, combining various managerial policies that concurrently promote improvements in service quality, use of sustainable approaches, and long-term planning. This approach aims to create a synergistic effect that facilitates modal shift.*

Originality of the paper. *The paper contributes to the general debate on how to promote well-being in a sustainable manner, highlighting the application of behavioural insights to the case of modal choice in local transportation. In particular, it proposes an empirical investigation that integrates the consumers' view with that of local public transport actors. To the best of our knowledge, this study represents one of the first attempts to simultaneously examine perception of quality, sustainable attitudes, and time preferences.*

Keywords*: modal shift; perceived quality; revealed preference; socio-environmental attitudes; sustainable well-being*

1. Introduction

Air quality in European cities has been slowly increasing. Air pollution extends beyond environmental concerns. Elevated concentrations of key air pollutants have been implicated in numerous health issues, contributing to overall population vulnerability and the deterioration in the well-being of individuals and society. According to the European Environment Agency (2022a) "air pollution is the greatest single environmental health risk in the EU" and "around 96% of the EU's urban population remains exposed to levels of fine particulate matter that damage health". Although there is no single cause, pollution from emissions is largely attributed to road transport and urban traffic that rely heavily on private vehicles. According to the Organization for Economic Cooperation and Development (OECD, 2023, p. 3) "on average, energy industries generate 28% of greenhouse gas emissions in OECD countries, followed by transport (23%), manufacturing industries (12%), agriculture (10%), industrial processes (7%), and waste (3%). While the share of emissions from energy industries have slightly decreased since 2005, those from transport and agriculture increased".

The use of private cars is linked to many negative aspects other than air pollution that affect the urban environment, such as congestion, use of physical space, lack of parking space, and noise. For instance, excessive noise from transportation has adverse effects on human health and disproportionately affects those living in urban areas. According to the European Environment Agency (2022b), individuals with lower socioeconomic status are more affected by pollution. This contributes to inequality in pollution exposure and negatively affects well-being (Fleurbaey *et al.*, 2014) and social justice (Hanratty and Farmer, 2012),

and the use of electric vehicles may not sufficiently reduce these negative effects.

The use of public transport can reduce gas emission, relieve congestion, and enhance overall well-being as a broad concept: "a perspective on a good life that comprises access to basic materials for a good life, freedom and choice, health and physical well-being, good social relations, security, peace of mind and spiritual experience" (Díaz *et al.*, 2015, p 14). According to this view, well-being is a holistic concept that encompasses more than the economic dimension of human development. A strong connection exists between well-being, nature, and ecosystems (Roberts *et al.*, 2015) and also strong pro-social preferences (Bartolini, 2014; Bartolini and Sarracino, 2014; Camerer, 2011; Helliwell and Putnam, 2004). Innovative and sustainable business paradigms have recently been discussed by Kitchen (2020) and Tencati and Pogutz (2015). At present, the integration of the principles of sustainability with well-being is increasingly needed to balance the heterogeneity of the needs of present and future generations with the preservation of the integrity of natural resources. This has recently been defined as sustainable well-being (Hellström *et al.*, 2015; Helne and Hirvilammi, 2015; O'Mahony, 2022).

Starting from this framework, different types of intervention must be implemented to reduce the use of private vehicles and promote a modal shift to local public transport (LPT) which is considered a more sustainable means of transport. The relevance of this topic has been highlighted by Mattia *et al.* (2019) and Miramontes *et al.* (2017) in the context of shared and multimodal mobility. Guglielmetti Mugion *et al.* (2018) also found that service quality directly impacts the intention to increase public transport use, whereas De Cet *et al.* (2024) emphasised the growing need to reduce the negative externalities of private transport and pursue a balance between the environmental, economic, and social dimensions.

In this study, we investigated the relationship between modal shifts, perceived quality, and sustainability attitudes toward LPT using both quantitative and qualitative data. This study explores how perceived quality and individual sustainability attitudes influence modal shifts and interact with each other, how sustainability attitudes vary between users and non-users of LPT, how time preferences influence environmental attitudes, and what strategies can effectively promote a modal shift from the use of private cars to LPT.

First, we consider an efficient and high-quality transportation system as an essential starting point for a modal shift (Fraquelli, 2021). Moreover, we believe that pro-environmental or pro-social attitudes play a major role in choosing less impactful means of transportation (Nilsson and Küller, 2000). An online survey was used to collect information on modal choice patterns, and a revealed-preference set of questions was used to explore the characteristics of LPT trips, particularly the perceived quality of the service. In the online questionnaire, we collected data on sustainability attitudes in terms of the environmental and social well-being impacts of transport modes. Furthermore, considering that the choice of transport mode can be strongly influenced by habit formation in consumption preferences, we include a time-preference measure. Individuals with low time preference

may have greater self-control and be better able to delay gratification for sustainable purposes. Next, we conducted semi-structured interviews with LPT actors to deepen our understanding of the motivations for the modal shift towards LPT. Overall, our research findings can increase the attractiveness of LPT for both users and non-users with a possible reduction of environmental impact and increased awareness of the positive effects on sustainability and well-being for individuals and communities.

2. Literature review

Individual decision-making in the transportation realm displays significant heterogeneity. According to classical theory, consumers choose the mode of transfer that maximises their utility, given their budget constraints and preferences. Nevertheless, the roles of psychological, social, and environmental factors in shaping modal choice behaviour have become prominent in recent years (Devika *et al.*, 2020; Mattauch *et al.*, 2016). Sociodemographic factors such as age and income can also play a role in the consumption preference for transport (Muhtadi *et al.*, 2020).

Modal choice involves considering accessibility, costs, and travel time. Understanding one's own preferences may be difficult to address and may give rise to a possible cognitive bias that negatively affects the relationship between decision-making and well-being (Kahneman, 2003; Thaler and Sunstein, 2008). Furthermore, laboratory and field experiments have revealed the importance of attitudes and behavioural patterns in predicting modal choices (John, 2017; Kahneman, 2003). Individuals may acquire habitual models based on past experiences and social influences (Duhigg, 2013) which can be difficult to break. The demand for public transport services can be significantly influenced by various subjective factors. This study explored the impact of perceived service quality, sustainability attitudes, and time preference on individual choices.

Service quality attributes have been grouped into eight areas: availability, accessibility, information, time, customer care, comfort, safety, and environmental impact (European Committee for Standardisation (CEN), 2002). These attributes have been investigated extensively (for a review, see Ojo, 2019), particularly using stated and revealed-preference methods (Bourgeat, 2015). The results show that perceived service quality is very important in promoting and facilitating the use of public transport (Fraquelli, 2021) and, in association with certain service attributes such as timetables or comfort, is particularly helpful in engaging new users (Levinger and McGehee, 2008). Service quality also influences behavioural intentions and loyalty (de Oña, 2021). Nevertheless, subjective quality can significantly influence modal choice in the absence of objective measures (Eboli and Mazzulla, 2012). Moreover, when a cognitive bias is involved, a change in the quality of the services alone does not necessarily support the use of public transport. For instance, satisfaction with public transportation systems tends to be underestimated by car-use habits (Pedersen *et al.*, 2011). Heterogeneity between users and potential user preferences has also been observed (Bellizzi *et al.*, 2020).

The segmentation of travel consumers into groups with similar attitudes has been used to promote sustainable transport. For instance, Haustein and Hunecke (2013) demonstrated that attitude-based segmentation can predict modal choices and support interventions for the reduction of car use. More specifically, environmental and social attitudes seem to be connected to both the use of personal transport and the increase in public transport (Anable, 2005; Avineri and Goodwin, 2010; Cassar, 2023; Giubergia *et al.*, 2023; Nilsson and Küller, 2000). Pro-environmental individuals may be more likely to choose environmentally friendly transportation modes such as public transport, walking, or cycling, particularly when informed about the impact of their transport choices (Lehner *et al.*, 2016). Anable (2005) reported that environmental attitudes and ecological norms can help reduce car travel and that social value orientation also plays a strong role in car use. A highly sustainable attitude may enhance the use of LPT through service quality. Borhan *et al.* (2014) show that the perception of quality differs between high and low levels of sustainability. One may suppose that these attitudes differ between users and non-users.

Finally, as noted earlier, a low time preference may lead to increased engagement in long-term benefit plans (O'Donoghue and Rabin, 1999). This finding has important implications in terms of sustainable mode choice, considering that future planning typically plays a strong role in environmental and social well-being policies. In contrast, high time preference can be related to present bias and self-control issues which can promote the assignment of greater weight to rewards that are closer in time and affect the cost-benefit analysis when considering the varying effort required by alternative transport modes (Mattauch *et al.*, 2016). In addition, a lack of self-control can prevent time-consistent preferences (Frederick *et al.*, 2002), and a return to old habits is possible, considering that individuals often rely on default effects and are affected by inertia (Fujii and Kitamura, 2003) when choosing travel options. Additionally, individuals with high- and low-level environmental concerns may have different patterns of subjective time perception (Franzen and Vogl, 2013; Schaub, 2022).

By delving into the themes presented, a deeper understanding of the factors that influence modal shifts can be attained. This is essential for designing efficient and quality transportation systems that are environmentally and socially sustainable with the aim of enhancing overall well-being at the individual, societal, and institutional levels. The link between well-being and sustainability is complex, particularly in the context of urban mobility. Sustainable well-being requires the integration of social, environmental, and economic aspects, reflecting the need for a balance between these systems. Specifically, the sustainable well-being approach recognises the need to shift from material growth to alternative goals that support both environmental and social welfare for individuals and communities. This entails a range of actions, such as reducing environmental pressures, addressing poverty, and promoting intra-generational equity in a framework that encompasses the cultural, spiritual, and psychological benefits derived from ecosystems (O'Mahony, 2022).

Modal choice is an example of how transportation affects environmental quality and economic and social well-being. Given the different nuances of this topic, a multidimensional approach is essential for understanding how modal choice sustainably impacts different dimensions of well-being. This study contributes to this comprehensive perspective by integrating perceived quality, sustainability attitudes, and managerial strategies rather than considering these concepts in isolation. Furthermore, investigating the interplay between quality, sustainability, and consumer choices in local transportation has significant relevance to several Sustainable Development Goals (SDGs) (United Nations General Assembly Resolution 70/1, 2015), particularly good health and well-being (SDG 3), sustainable cities and communities (SDG 11), climate action (SDG 13), and responsible consumption and production (SDG 12).

The shift from private to public transportation plays a crucial role in achieving SDG 3 by improving road safety and lowering hazardous air pollution levels and may promote good health and well-being at all ages. Simultaneously, in line with SDG 11, enhancing the quality and accessibility of LPT aims to make cities more inclusive, safe, and sustainable by mitigating urban challenges such as congestion and environmental pollution. This study also provides a deeper understanding of what increases the appeal of LPT for both users and non-users. Moreover, regarding climate action (SDG 13), the present findings may improve policy recommendations aimed at reducing carbon emissions in urban transportation systems by examining the motivations and strategies that favour a modal shift towards public transport. Additionally, this study offers a comprehensive approach that integrates consumer insights and managerial perspectives from LPT operators, promoting a synergistic approach to climate action. Finally, regarding SDG 12, this study sheds light on how sustainable attitudes influence modal choice and provides recommendations for policymakers to develop strategies that can promote responsible consumption through environmentally friendly mobility options, ensuring that people are aware of relevant information for choosing a sustainable development approach in their lifestyles. Therefore, transport service providers should be encouraged to improve their sustainability reporting and adopt green practices.

As underlined by Rasmussen *et al.* (2023, p. 2) "modal shifts take place when the decisions of individuals, known as behaviour, change […] promoting modal shifts by targeted policies requires an understanding of individual travellers' motives as preconditions for fulfilling needs and avoiding barriers". In particular, this study explored the relationship between modal shifts and subjective factors. Understanding modal shift dynamics and identifying strategies to promote more sustainable transportation modes are essential for creating efficient, equitable, and environmentally sustainable transportation systems that meet the needs of present and future generations and for designing effective communication.

3. Research methodology

3.1 Self-reported survey on mobility consumers

We used data from an online survey on LPT conducted among members of a university community in northern Italy.

The survey was conducted using Qualtrics XM (https://www.qualtrics.com). Respondents received an invitation to participate via email using the newsletter of the staff and the communication office. The survey was conducted from June 26 to July 20, 2023. A reminder email was sent approximately two weeks later. The questionnaire was anonymous, and participation was voluntary. A total of 542 participants completed the questionnaire. The sample size is in line with those used in transportation studies dealing with similar areas of research (Lizana *et al.*, 2021; Nesheli *et al.*, 2016). The response rates of students, professors, and administrative staff were approximately 13%, 20%, and 28%, respectively.

3.2 Questionnaire design

All participants were presented with a disclaimer regarding the questionnaire and privacy policy. After the disclaimer was accepted, the participants were faced with three different sections: modal choice, a revealed-preference survey on perceived quality, social-environmental sustainability attitudes and time perception, and socio-demographics. The data were analysed using R x64 4.3.0 (R Core Team, 2023). The open responses were examined using word clouds. To generate word clouds, the responses were pre-processed (Eldeeb *et al.*, 2023) using normalisation, stop word and punctuation removal, tokenisation, stemming, unnecessary word removal (e.g. city names, km), and Italian to English translations.

3.2.1 Modal choice and revealed-preference survey on perceived quality

In the first part of the survey, participants were instructed to provide basic information about their modal transfer and their level of satisfaction with it. We also asked respondents to provide information about their use of LPT in the long-term (10-point Likert scale from 1 = not at all likely to 10 = extremely likely).

Participants who reported using LPT (we excluded those who stated that they never used LPT and classified them as "non-users") were asked to report the type, reason, and satisfaction relative to the main means of transport used. We then presented a revealed-preference set of questions that explored the characteristics of their last LPT trip. More specifically, respondents were asked the (1) date, time, duration, and purpose of their last trip; (2) type of LPT and mean to source and from destination stops used; (3) type of ticket, (4) general level of satisfaction (10-point Likert scale from 1 = very unsatisfied to 10 = very satisfied), and (5) evaluation of ten specific items that typically characterise the service quality (10-point Likert scale from 1 = not at all important to 10 = very important). The ten items that the subjects were required to evaluate on their last trip to characterise

service quality were frequency, punctuality, comfort, cleanliness, personal security, information, staff, other passengers' behaviour, intermodality, and ticket price (1 = cheap to 10 = too expensive). We refer to these variables as perceived quality items (Fraquelli, 2021). We added an item for disabled people services which allowed an answer "not applicable". As only approximately 50% of the subjects responded to this question, we analysed this item separately. At the end of the revealed-preferences section, the participants were asked to indicate the three most important parameters among the ten attributes.

Finally, for all participants, including non-users, four open-ended items about the main reason for using or not using LPT and private transportation mode (i.e. cars) were included in this section. The open-ended questions were intended for general feedback, and because non-users have no experience with the use of LPT, they were asked why they would prefer LPT over an individual transport mode.

We tested the effectiveness of the service quality attributes in the questionnaire by applying Cronbach's alpha as a measure of internal consistency which was equal to 0.90, indicating optimal internal consistency and reliability of the scale items. Moreover, using the ten perceived service items as regressors and the general level of satisfaction with the last trip as the dependent variable, we implemented an ordinal logistic model. The base for the independent variables was set by considering the mean value of the results obtained for the perceived quality items.

3.2.2 Sustainability attitudes and time perception

First, an assessment of all participants' concerns about global warming was administered (10-point Likert scale ranging from 1 = not at all concerned to 10 = very concerned). Second, the importance of the environmental and the social well-being impact of the selected transfer mode was evaluated (1 = not at all important to 10 = very important). Third, a time perception assessment randomised across participants concluded this part of the survey. Following Zauberman *et al.* (2009), we examined the respondents' subjective time which is an individual's estimate of the duration between today and the future. The time-perception task was randomised across participants. Respondents were asked to estimate the distance between today and the future (three months, one year, or, alternatively, three years) on a 180-point scale. The task was particularly aimed at eliciting the subjects' behavioural patterns in terms of impatience and combining the results with their environmental attitudes. Pro-environmental behaviour has been found to correlate with delay discounting and plays a role in intertemporal trade-offs and time perspectives (Hirsh *et al.*, 2015). To this end, participants were considered high- or low-importance individuals based on their responses regarding the importance of the environmental impact of their selected transfer mode. Ten participants were excluded because of non-response or misunderstanding.

3.2.3 Socio-demographics

The final section of the questionnaire mostly covered standard socio-demographic and economic items (e.g. gender, age, education, and income). However, additional questions, such as area of residence, use of smart working, and ownership of a driver's licence, were included. The participants were also asked about their role in the university community. Table 1 presents the descriptive statistics. The sample comprised 63% females, and the participants' mean age was 34.64 years (SD = 14.21). Furthermore, 31% live in peri-urban or rural areas, and 53% did not work remotely, suggesting that they had to travel to their workplace. The sample was evenly distributed among students (56%) and non-students (professors, administrative staff, and others: 44%). Almost all participants had a driver's licence (94%), and most were private car owners (68%). Moreover, the income level was mostly low to medium (47%), and approximately 50% had higher-level educations. Approximately half of the participants were considered frequent users, with 48.34% using the LPT daily, very often, or rather often. The groups reporting occasional/circumstantial (i.e. sporadic users) or non-users of LPT were much lower (29.34% and 22.32%, respectively). The percentages of users (frequent, sporadic, and non-users) are reported in Table 1.

3.3 Semi-structured interviews with LPT operators

We also developed semi-structured interviews to be administered to executives and managers of LPT companies (four interviews), executives and managers of public administrations at various levels (municipal: three interviews; regional/provincial: four interviews), associations, and LPT experts (four interviews). Interviews were conducted in three cities located near the university. The interview protocol included five questions related to effectiveness/efficiency measures, cost management, service quality, references to other realities and/or possible partnerships, strategies for potential users, and development plans. Given that the primary objective of the interviews was to uncover the reasons and motivations for the modal shift towards LPT, our attention was directed towards these findings. All the interviewees signed a privacy disclaimer.

Fifteen interviews were conducted from July to December 2023 with an average duration of 45 min. Eight interviews were conducted in person and seven were conducted online. The interviews took place in private rooms or via secure videoconferencing platforms (MS Teams). Thirteen of the 15 interviews were audio-recorded and transcribed verbatim. Following Creswell and Creswell (2018), the analysis included familiarisation with the data through repeated reading of transcripts, the generation of thematic codes (defining and naming themes), reviewing and refining themes, and interpretation of findings.

Tab. 1: Descriptive statistics of socio-demographic variables of the sample

Characteristic	Category	Statistics
1. Area of residence	1 City centre 2 Periphery 3 Suburban 4 Peri-urban/rural	32.47% 26.38% 9.96% 31.18%
2. Time at residence	1 1 year 2 Between 2 and 5 years 3 Between 6 and 10 years 4 More than 10 years	6.46% 9.23% 7.38% 76.94%
3. Gender	1 Female 2 Male 3 Non-binary 4 No answer	62.73% 32.66% 0.74% 3.87%
4. Age		Mean = 34.64 SD = 14.21
5. Educational level	1 Elementary school 2 Middle school 3 High school diploma 4 Bachelor's degree 5 Master's degree 6 PhD 7 Other 8 No answer	- 0.55% 43.54% 17.53% 17.90% 15.31% 4.98% 0.18%
6. Employment status	1 Administrative staff 2 Professor 3 Student 4 Other 5 No answer	18.08% 16.05% 55.72% 9.41% 0.74%
7. Remote working	1 Yes 2 No 3 Sporadically 4 Not applicable 5 No answer	8.30% 52.95% 16.42% 22.14% 0.18%
8. Family members	1 1 2 2 3 3 4 4 5 5 or more 6 No answer	12.55% 19.56% 26.20% 30.63% 10.70% 0.37%
9. Driver's licence	1 Yes 2 No	93.73% 6.27%
10. Private car	1 Yes 2 No	68.45% 31.55%
11. Income level	1 Low 2 Between low and medium 3 Between medium and high 4 High 5 No answer	19.74% 47.23% 29.34% 2.77% 0.92%
12. Type of user	1 Frequent user (daily, very often, rather often) 2 Sporadic user (occasionally, circumstantial) 3 Non-user (never)	48.34% 29.34% 22.32%

Source: our elaboration

4. Results

4.1 Self-reported survey on mobility consumers

4.1.1 Modal choice results

Among all the means of transport used by respondents, cars foot, and trains were the most frequent occurrences. Regarding the main means of

transport, cars and trains were the most frequently selected.

The median level of satisfaction with the mean transport used was 6.72 (SD = 2.35, mode = 7 (17.90%), 10-point scale). Moreover, as predicted, non-users will rarely use LPT in the future (mean = 2.27, SD = 2.15, mode =1 (13.47%), 10-point scale). The long-term use of LPT by frequent users was quite high (mean = 7.39, SD = 2.28, mode = 10 (10.89%), 10-point scale) and medium for sporadic users who were more undecided about using LPT in the future (mean = 5.24, SD = 2.15, mode = 6 (4.98%), 10-point scale).

The main purpose for participants using LPT (N = 421 out of 542) was to travel to their study or work destination, and trains and buses were the most frequently selected means of LPT. The mean level of general satisfaction with LPT was 5.52 (SD = 2.08, mode = 6 (21.38%) on a 10-point scale). This suggests that the level of satisfaction was insufficient.

Finally, all subjects were asked to report their main reasons for not using LPT and for using or not using a private car. Frequent and sporadic users were also asked about their purpose of using public transport, whereas non-users were asked about possible reasons for switching transfer modes from private to public. The last two questions were combined into one question (i.e. LPT use). As noted earlier, we used open-ended questions for general feedback and generated four different word clouds, one for each open-ended question to illustrate the participants' main responses (Fig. 1; words with the largest size appeared most frequently).

Regarding the non-use of LPT, respondents mainly referred to timetables and time in general, underlying a general concern about being late and/or finding an appropriate schedule. The use of cars is definitely tied to comfort, whereas their non-use seems to be related to parking issues and maintenance costs. Finally, the use of LPT was reported in reference to work and study, suggesting that the participants preferred LPT to reach the university campus. Among the reasons for using LPT, one of the recurrent responses was "nothing", indicating that some respondents (i.e. non-users) struggled to find a simple or clear reason for using local public services.

Fig. 1: Word clouds for: (1) LPT use (upper-left panel), (2) LPT non-use (upper-right panel), (3) car use (lower-left panel), and (4) car non-use (lower-right panel)

Source: our elaboration

4.1.2 Perceived quality results

For participants who reported using LPT, we administered a revealed-preference survey on their last LPT trip. Three subjects were eliminated because they referred to a last trip that was not made using the LPT (i.e. car or by foot). Table 2 displays the general characteristics of the last trip as described by the respondents. The main purpose of the last trip was to university or work, and the train was the most used means of transport, followed by bus, metro, and tram. These results are consistent with the main purpose of general LPT use. The mean level of satisfaction with the last trip was 5.81 (SD = 2.00, mode = 6 (21.29%), 10-point scale). For disabled people, the mean score was 5.48 (SD = 2.44, mode = 6 (19.31%), 10-point scale).

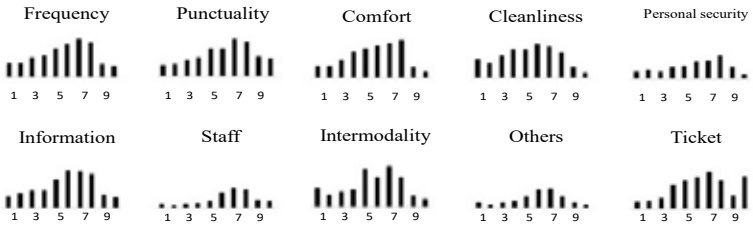
The summary statistics of the ten service quality attributes as perceived by the respondents for their last trip are presented in Table 3, and the distribution of the items is presented in Fig. 2. The average rating for the different items was between 5.22 (cleanliness) and 6.65 (staff), with only three items achieving sufficiency (staff, ticket price, and punctuality). Table 4 presents the ordinal logistic model outputs. Except for the staff variable, all items proved to be significant. The coefficients were positive except for price which had a negative effect on the dependent variable.

We built a perceptual map to visually determine the critical gaps in the last trip experience (Fig. 3; for perceptual mapping as a marketing research tool, see Palmatier and Crecelius, 2019; Schmalensee and Thisse, 1988). We set the relative importance of the ten perceived items on the vertical axis and the mean level of satisfaction with them on the horizontal axis (10-point score). The relative importance of the ten items was derived from the participants' responses regarding the three most important parameters among the ten attributes. The ticket price score was reversed (from 1 = too expensive to 10 = cheap) so that all items were represented in the map in a lower-to-higher order. The map was divided into four quadrants: Invest, Communicate, Control, and Maintain. The Invest quadrant includes crucial aspects that are not fully appreciated and require investment, and the Communicate quadrant includes aspects that are appreciated but require additional communication strategies. In the Control and Maintain quadrants, we identify the aspects that need to be checked (Control) or preserved (Maintain).

As shown in Fig. 3, punctuality, frequency, and ticket prices were treated differently than the other seven items. These three items were rated as the most important parameters (21.30%, 18.28%, and 14.47%, respectively; see Table 3, last column) and were visually distant from other perceived quality attributes on the map. First, punctuality is located between the Communicate and Invest. This suggests that this quality attribute is important but is not fully appreciated by the respondents. Prejudice regarding the lack of punctuality in LPT services is common; however, the survey revealed that this attribute achieved on average a sufficient score. Thus, an investment in communication strategies may be the first step in reducing a priori negative perceptions and increasing the attractiveness of public services. Frequency was the second most important attribute, and

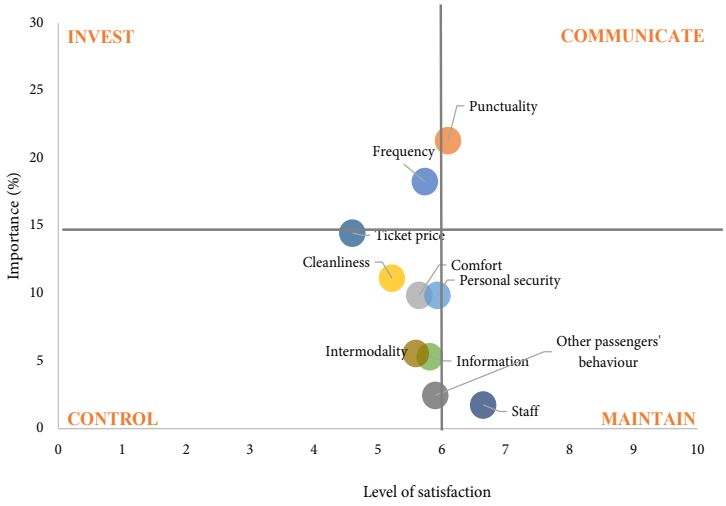
its evaluation was below the reference point; consequently, it is an attribute that requires the investment of resources. Third, the ticket price is located between Control and Invest. On average, LPT services were evaluated as too expensive, despite the fact that alternative travel modes are usually more expensive. However, interventions aimed at maintaining control of ticket prices may be sufficient. Implementing an intervention to improve the frequency of LPT and reduce ticket prices would be challenging. Fourth, staff was the only item that was completely located in the Maintain quadrant, suggesting that this attribute is not of particular interest to the respondents (in both the regression and the question regarding the most important parameters) (Table 3). In line with this view, it seems sufficient to maintain the actual level. Finally, despite being at different levels, the remaining items are in the Control quadrant, suggesting that they are critical issues, particularly cleanliness, comfort, and intermodality, and need to be checked by transport managers. Personal security, information, and other passenger behaviours are near the Maintain quadrant, and minimal effort would be necessary to switch those attributes to the Maintain quadrant.

Fig. 2: Distribution of perceived quality items on the last trip (10-point scale)



Source: our elaboration

Fig. 3: Perceptual map



Source: our elaboration

Tab. 2: Last trip as described by respondents

Characteristic	Statistics
Date (main response)	June and July, 2023
Time (main response)	7:00 and 9:00 a.m.
Duration (main response)	1 hour
Mean	Train: 62.44% Bus: 30.62% Metro: 5.26% Tram: 0.72% Other: 0.96%
Main purpose	Work: 30.14% Study: 48.09% Family management: 4.78% Shopping: 0.48% Free time: 14.11% Other: 2.39%
Ticket	Single ticket: 32.20% Round-trip ticket: 26.08% One-day pass: 1.44% Season pass: 37.56% Other: 2.63%

Source: our elaboration

Tab. 3: Summary statistics of perceived quality items on last trip (10-point scale)

Characteristic	Mean	SD	Mode	Mode %	Importance %[a]
1. Frequency	5.73	2.40	7	16.99	18.28
2. Punctuality	6.10	2.47	7	16.99	21.30
3. Comfort	5.64	2.28	8	17.22	9.86
4. Cleanliness	5.22	2.37	6	15.31	11.13
5. Personal security	5.93	2.43	8	19.14	9.86
6. Information	5.81	2.36	6	16.99	5.33
7. Staff	6.65	2.15	7	22.25	1.75
8. Other passengers' behaviour	5.89	2.16	7	21.77	2.46
9. Intermodality	5.59	2.38	7	18.66	5.56
10. Ticket price	6.40	2.42	7	16.75	14.47

[a] This column refers to the question surveying the three most important parameters among the ten attributes.

Source: our elaboration

Tab. 4: Ordinal logistic model output (dependent variable = satisfaction with the last trip)

Perceived quality item (base = 1-6)	Coeff.	Std. Error	t-value	p-value
1. Frequency	1.48	0.27	5.57	<0.001
2. Punctuality	1.40	0.26	5.40	<0.001
3. Comfort	0.61	0.30	2.04	<0.05
4. Cleanliness	1.06	0.30	3.54	<0.001
5. Personal security	1.04	0.28	3.75	<0.001
6. Information	1.18	0.25	4.74	<0.001
7. Staff	0.25	0.25	1.03	=0.30
8. Other passengers' behaviour	0.64	0.25	2.54	<0.05
9. Intermodality	0.90	0.26	3.51	<0.001
10. Ticket price	-0.54	0.18	-2.91	<0.01
Residual Deviance	*1211.28*			
AIC	*1249.28*			
McFadden Pseudo R-squared	*0.30*			
Number of observations	*418*			

Source: our elaboration

4.1.3 Sustainability attitudes results

Sustainability attitudes were analysed using three different approaches. First, we investigated the perceived quality of LPT services by jointly considering the role of respondents' attitudes in terms of social well-being and the environmental impact of their selected transfer mode. Concerns about global warming were also raised.

Moreover, sustainability attitudes were crossed with modal choices. In particular, we examined the types of users: frequent, sporadic, and non-users.

Finally, an exploratory analysis was conducted to assess the relationship between the participants' environmental attitudes and their subjective time perception.

As noted earlier, sustainability attitudes may play a role in all three different approaches used: (1) perception of quality may differ for high and low levels of sustainability attitudes; (2) sustainability attitudes may differ according to the type of user; and (3) individuals with high- and low-level environmental concerns may have a different pattern of subjective time perception.

4.1.3.1 Sustainability attitudes and perceived quality

To assess the relationship between the participants' overall evaluation of the ten perceived service quality items and their attitudes regarding global warming, social well-being, and the environmental impact of their selected transfer mode, we used the mean value of the ten perceived quality items as dependent variables. Participants were simultaneously profiled regarding their sustainability attitudes. Specifically, they were treated as factors with two levels: high- or low-concern individuals for global warming and high- or low-importance individuals for environmental and social well-being. Owing to numerosity, the cutoff was set to seven on a 10-point scale (summary statistics for sustainable attitudes are reported in Table 5). We then computed a non-parametric test of group differences (i.e. the Mann-Whitney U test) between the mean value and the three constructed dichotomous variables. The results suggest that being more or less concerned about global warming did not influence the perceived quality results ($p = 0.19$). Nevertheless, the importance assigned to the environmental and social well-being of the selected transfer mode significantly influenced the overall perceived service quality ($p < 0.01$ and $p < 0.001$, respectively). Notably, for both environmental and social well-being attitudes, high-importance individuals tended to be more satisfied than low-importance ones (average point difference). In particular, for social well-being, high-importance subjects were more satisfied with all perceived quality items, except ticket price and punctuality, which were evaluated similarly by low- and high-importance individuals. As for the environmental variables, frequency, staff, comfort, and intermodality were appreciated more by high-importance respondents.

Tab. 5: Summary statistics of sustainability attitudes (10-point scale)

Characteristic	Mean	SD	Mode	Mode %
Global warming concern	8.12	1.88	10	31.58
Environmental impact	7.73	2.01	8	26.08
Social well-being impact	7.61	2.03	8	25.84

Source: our elaboration

4.1.3.2 Sustainability attitudes and modal choice

In this section, we investigate the sustainability attitudes of the respondents according to user type (Table 6). Frequent and sporadic users seemed to be more concerned than non-users about sustainability. First, non-users assigned less importance to the environmental impact of their selected transfer mode than did frequent and sporadic users (mean values were 6.61, 7.62, and 7.90, respectively). The differences between non-users and frequent users and between non-users and sporadic users were both found to be significant ($p < 0.01$ and $p < 0.001$, respectively, Mann-Whitney U test). Non-users assigned less importance to the social well-being variable (mean = 6.77 for non-users; 7.52 for frequent users; and 7.72 for sporadic users), and the comparisons between frequent and sporadic users were significant ($p < 0.05$ and $p < 0.01$, respectively). The coherence of these results provides evidence that frequent users tend to be significantly more concerned about the impact of their choice of transport mode than non-users but less concerned than sporadic users. However, non-users did not significantly differ from the other two types of respondents in terms of concern for global warming, where the difference between frequent and sporadic users was only significant at $p < 0.05$. Because global warming is particularly challenging and less controllable, the impact of individual behaviour may be regarded as slightly incisive. In line with this view, people may decrease their involvement in global warming because they do not feel that their choices can make a difference. This may have reduced the difference between non-users and the other two types of respondents.

Tab. 6: Sustainability attitudes by type of user

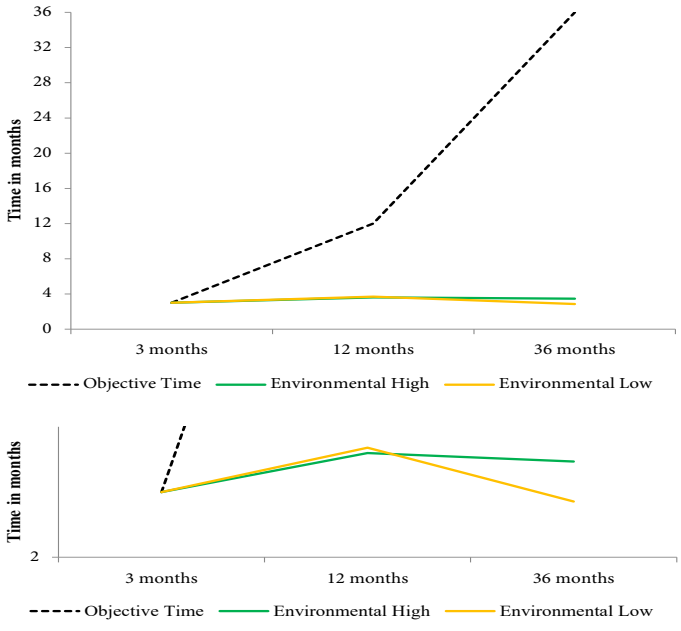
Characteristic	Mean	SD
Global warming:		
Frequent user	7.95	1.96
Sporadic user	8.36	1.77
Non-user	7.89	2.19
Environmental impact:		
Frequent user	7.62	2.07
Sporadic user	7.90	1.88
Non-user	6.61	2.75
Social well-being impact:		
Frequent user	7.52	2.07
Sporadic user	7.72	1.97
Non-user	6.77	2.68

Source: our elaboration

4.1.3.3 Environmental attitude and time perception

Fig. 4 (top panel) displays the results obtained for the estimates of the duration between today and the future, as given by the respondents according to their low or high level of importance. As noted earlier, participants were considered high- or low-importance individuals based on their responses regarding the importance of the environmental impact of their selected transfer mode. Compared to the objective time (i.e. 3, 12, and 36 months; dashed line), the subjective times appear to be less sensitive to change. As shown in the bottom panel of Fig. 4, this is particularly true for high-importance participants. More specifically, for this group of respondents, compared with low-important ones, subjective time was lower at 12 months (not significant - Mann-Whitney U test) but also particularly higher at 36 months ($p < 0.05$). For low-importance individuals, subjective time tended to decrease over time (between one and three years, $p < 0.05$; not significant for the high-importance group). These findings are closely tied to the tendency of some individuals to assign greater weight to rewards that are closer in time (i.e., present bias; O'Donoghue & Rabin, 1999). This present-biased attitude may prevent low environmentally concerned individuals (or at least some of them) from providing a correct cost-benefit analysis of consumption in general and LPT use. In other words, present bias may lead to an underestimation of the benefits of LPT and an overestimation of its costs, with potential negative consequences for the perception of the service and the overall demand for public transport.

Fig. 4: Environmental attitude and time perception (top panel; close-up on the bottom panel)



Source: our elaboration

4.2 Semi-structured interviews with LPT operators[2]

The main aim of the interviews was to identify the reasons and motivations for the modal shift towards LPT. To this end, the interviewees emphasised various strategies that could be categorised into several broad areas including conventional and innovative approaches. The strategies appear heterogeneous for some characteristics, such as the type of users (e.g. systematic, sporadic, business) or the environment (i.e. urban and suburban). As an LPT expert clarified:

This is not a recipe, there are many elements that contribute to increasing the attractiveness of public transport.

Innovative strategies include technology and digitalisation processes such as electronic ticketing and credit card validation. In the pay-per-use payment context, a single ticket is less convenient for users. By facilitating free movement within the LPT network, all subscriptions should encourage users to increase their use of public transport, particularly in urban environments. Strategies along this line should consider the release of transportation bonuses and the possibility of monthly subscriptions in pay checks for using LPT. This may reduce LPT costs through integrated welfare policies.

Real-time information is considered as a strategy for increasing public transport use, especially among occasional users. Information will be increasingly digitised in real-time through maps, social channels, and apps. This guarantees maximum accessibility and timeliness within an inclusive mobility framework. Note that the information also comes from traffic models and the simulation of mobility demand, particularly in terms of frequency, availability, and travel distance. These models can provide timely information on the reasons and types of movement of LPT users and non-users and are crucial in building adequate offerings based on mobility, including logistic mobility, in the area. Considering the heterogeneity of user mobility, creating a range of offerings based on the type of LPT recipient is essential. For example, senior citizens tend to make local trips and prefer buses as a means of transport, while business users usually have a greater need for fast and more frequent means of transportation such as subways. Data-driven offers can adapt to the continuous evolution that characterises requests for LPT. Additionally, information plays a crucial role in both urban and suburban contexts, where waiting for public transport without timely information can lead to frustration and general dissatisfaction with LPT services. The lack of adequate information and fragmented access to services are frequently cited as primary obstacles to engaging in LPT.

Another strategy is characterised by intermodal and mobility sharing, including urban and suburban services, which shares multiple services using an integrated ticket. Intermodal and mobility sharing, such as carpooling services or community car-sharing, tends to decline according to the urban configuration, population density, and geographical location

[2] All interview citations are provided in italics and translated from Italian.

of the reference area, particularly in suburban areas where accessibility is reduced. Intermodal services reduce the need for parking in areas with a high-traffic concentration. Intermodal and mobility sharing are increasingly prevalent in urban contexts, where services such as bike-sharing, free-floating, and electric charging points simplify mobility. This integrated offering encourages the use of multiple modes of transport and peaks in mobility as a service business model: a flexible and territorially distributed LPT offering which integrates public and private modes of transportation. Integrated services appear crucial, particularly for first- and last-mile coverage, which typically represent a weakness of LPT.

Another classical strategy is to increase the quality of LPT services. The interviewees mainly referred to capillarity and frequency as well as accessibility (networks, infrastructure, better comfort at stops), service punctuality and regularity, cleanliness and comfort, crowding, and safety (particularly for night lines). For metro stations, running auxiliary systems such as lift and stairlift services is also important. Effective and efficient LPT is essential for modal shifts. Some interviewees emphasised that there has been a change in the perception of crowding since the pandemic. For instance, an LPT expert remarked:

On the parameters linked to crowding, which is not the same as in 2019, […] we do not remember much more what the crowding levels were in 2019, compared to what we find now, and perhaps we are more inclined to consider, for example, a subway train carriage or a bus very full when we are at 75-80% and in 2019 we considered it to be at the same level of crowding when it was at 90%.

Therefore, quality assessment depends on perceived quality rather than on objective indicators. Although an indicator such as cleanliness is more difficult to evaluate objectively, quantitative assessments exist for others, such as crowding. However, users may have different perceptions of these indicators. Another critical issue that needs to be addressed promptly pertains to staff and their interactions with customers, driver guidance, and recruitment. In recent years, the competitiveness of pay has diminished, requirements for substantial hourly commitments (e.g. night shifts) have intensified, and concerns regarding driver safety owing to potential aggression from users during interactions have emerged. The approaches implemented for improving the quality of service can be different (alignment of timetables and general reprogramming of the service). However, given the lack of additional resources, an increase in service as an action to expand it is not feasible.

Other strategies that have been reported to be helpful for model transfer are the following: educational campaigns (e.g. European Mobility Week), promotion of sustainability (a cleaner system in terms of emissions may lead to an increase in the use of LPT, especially considering the growing awareness of environmental issues), urban planning (securing the areas around schools, home-work travel plans, general improvement of the perception of quality space), and reduction of alternatives to LPT. LPT is made more competitive by limiting the number of parking spaces

in central and high-traffic areas, and increasing parking rates. Regarding private transport, according to the president of an LPT association:

If I can't get to a place with my private car, or it becomes hyper-expensive, I can choose the [public] transport and I have to be tied to that.

Also, an LPT executive (public administrations, municipal level) emphasised that:

It would be better not to own a car because owning a car is a hidden cost that the citizen doesn't perceive (tyre changes, mechanic, all the maintenance that you never take into account).

As for sustainability policies, the executive of a LPT company referred to the building of a

great workplace, a workplace where all people have these values, these principles, and promote the principles of sustainability.

In contrast, the reduction in service offerings and increase in local transport fares generally reduce user satisfaction and the demand for LPT disproportionately.

The interviews also showed that peak hours currently have a different impact on LPT services than they have in the past. First, a general decrease in demand exists due to the different ways of working (i.e. remote working), but particularly because of the substantial increase in the use of mobility which is not systematic (i.e. different than home-work travel plans). This can be considered a "regeneration" of lifestyle habits rather than dissatisfaction with LPT. Furthermore, peak hours now occur in conjunction with events (exhibitions, concerts, etc.) which are neither stable nor distributed over time.

5. Discussion

Sustainable well-being is a complex and multidimensional construct that has recently been integrated into various components. In this new framework, well-being is not limited to economic needs, but is widening to environmental, social, and relational needs. In particular, despite well-being typically being human-centred, considering recent phenomena such as global warming and climate change, it is now more crucial than ever to promote well-being in a sustainable manner. Given that the recovery timeframe has shortened, the long-term environmental and social impacts of individuals' decisions in the present and future must be considered.

This study contributes to this theme by focusing on the modal choices in urban and interurban mobility. This is an area of consumer decision-making that has a significant potential impact on sustainable well-being from various perspectives, including environmental impacts, health, quality of life, social equity, and the interconnectedness between

natural and social systems. More specifically, this study investigates the motivations and strategies that may favour a modal shift from private cars to LPT, emphasising the role of perceived quality and individual sustainability attitudes. Compared with previous research, our study incorporates multiple dimensions: service quality, sustainability attitudes, and time preferences. It also integrates the perspectives from different types of consumers and LPT managers. To this end, both an online survey and semi-structured interviews were designed to complement users' and non-users' opinions from the perspective of LPT operators.

Regarding perceived quality, semi-structured interviews with LPT operators highlighted the importance of users' perceptions more than that of objective indicators in the assessment of service quality. The quality items most reported during the interviews corroborated those found by participants in the online survey to be most significant, particularly frequency and punctuality. Overall, our findings suggest that the most decisive intervention for improving the attractiveness of LPT is to improve frequency attributes. As this requires significant structural investments, managers instead stressed the role of information, technology, digitalisation, and intermodal mobility.

Sustainability was also recurrent in both the survey data and qualitative interviews. Experts identified the promotion of sustainability as a strategy for modal shifts. In line with this, in the online survey, we found that the importance assigned to the environmental impact of the selected transfer mode positively influenced the overall LPT perceived service quality as frequent users were more concerned about the environmental and social well-being impacts of their transfer mode. Individuals who were less concerned about the environmental impact of their transfer mode showed subjective time perception consistent with that of a present-biased attitude. This implies a difficulty in delaying gratification in favour of immediate satisfaction and can affect a variety of decision-making situations, including the environmental and sustainability areas.

6. Conclusions

6.1 Theoretical implications

This study contributes to the literature on sustainable well-being, particularly by integrating sustainability into well-being (O'Mahony, 2022). According to our survey, in the context of LPT, we found significant support for the idea that perceptions of service quality differ between high and low sustainability attitudes (Borhan *et al.*, 2014). The study found that differences in these attitudes are present when comparing LPT users with non-users and that environmental attitudes differ according to time preferences.

Moreover, this study provides insights into the factors influencing modal choice, particularly the shift towards more sustainable transport modes. Our findings are consistent with previous results showing that personal transport can be modified through appropriate strategies (Avineri and

Goodwin, 2010; Lehner *et al.*, 2016; Metcalfe and Dolan, 2012; Tørnblad *et al.*, 2014). Lehner *et al.* (2016) discussed strategies aimed at supporting modal shifts, such as information dissemination and marketing, alongside behavioural approaches (Mattauch *et al.*, 2016; Steg and Vlek, 1997).

Finally, our insights can enrich the intertemporal decision theory in modal choice by providing hypotheses for testing transport shifts over time. The role of intertemporal preference in modal choice is typically classified as a self-control issue which can arise in a cost-benefit analysis when considering alternative modes (Malmendier and Della Vigna, 2006; Mattauch *et al.*, 2016). Acquiring travel information has a short-term cost that returns benefits in the long run. This may prevent the prioritisation of long-term goals such as environmental safety and social well-being.

6.2 Practical implications

Our findings suggest that managers can take action to promote modal shifts. These actions may include promoting active transportation, enhancing the quality and infrastructure of public transport, considering the heterogeneity of transport users, and reducing public transport alternatives by encouraging collaboration among LPT stakeholders. Implementing these actions can contribute to sustainable mobility and enhance the long-term well-being of both the environment and society.

The finding that individuals with stronger environmental and social attitudes tend to report higher satisfaction with quality items has crucial managerial implications. Managers should consider these insights when designing communication strategies to ensure that messages are coherent across channels. However, managers can implement campaigns targeted at specific user groups, highlighting the environmental and social benefits of using LPT. Providing ongoing feedback on the sustainability status of LPT and how individuals can contribute to creating a more sustainable and liveable community can also be effective.

Regarding transport modes, education and training programs can empower individuals to use public transport effectively and confidently and incorporate subjective feedback into service enhancements and communication strategies. Drawing from behavioural studies, mobility managers can design, test, and implement interventions aimed at directing individuals towards more sustainable transport choices. This approach may involve choice architecture, social norms, and other tools to encourage behavioural change. Therefore, managers should acknowledge the diversity in attitudes and personal characteristics among those targeted for modal shifts and tailor information to provide timely and individualised insights into the benefits of choosing LPT. This can facilitate a long-term modal shift and contribute to the establishment of a "great workplace", where as stated by one of the experts, "all people promote the principles of sustainability", aligning with the concept of sustainable well-being.

Our findings suggest that sustainable transport can be promoted directly by managers through service quality improvements by effective communication aimed at improving consumer perceptions and indirectly

through interventions targeting attitudes and perceptions of time. Consequently, an integrated approach that combines various managerial policies and promotes sustainable approaches and long-term planning can have a synergistic effect on modal shifts. At the same time, the results also showed that a modal shift can be particularly challenging for non-users. According to experts, managers of LPT companies must rely on the support of local policymakers to make LPT more competitive by, for instance, limiting parking space and increasing parking rates and, more generally, removing convenience for private transport. Equally important, some interviewees emphasised that managers should work to overcome the classic concepts of car use and ownership. To this end, everything that makes car ownership less necessary, particularly promoting clean mobility and efficient means of transport, intermodality, and mobility sharing, can provide a strong boost for the use of LPT. In the near future, holders of LPT service contracts will increasingly be required to provide appropriate offerings providing intermodal and mobility sharing and to satisfy the sustainability criteria in tender specifications for the procurement of goods, work, and services. Additionally, managers must simplify accessibility to LPT. This should be realised in conjunction with policymakers, associations, and all key stakeholders (e.g. mobility managers), considering that, as emphasised by the interviewees, these strategies are deeply related to urban planning and city management which require time-consuming regulatory changes and must be consistent with municipal policies, plans, provincial regulations, and concerted efforts at different levels.

6.3 Limitations and future research

Future research should assess the extent to which individuals' time preferences apply to modal shifts by estimating subjective discount rates (Faralla *et al.*, 2017; Kirby *et al.*, 1999). In this study, we used time preference which reflects an individual's attitudes towards receiving a payoff sooner rather than later. Discount rates represent a personal assessment of the value of future outcomes and can be used to model decisions in different areas, including transportation, using a more systematic approach.

Another limitation of the present study relates to the use of a self-selected sample for the online survey which can have potential limitations, including self-selection bias and overall reduced generalisability. For instance, a self-selected sample may overrepresent individuals with strong attitudes towards sustainability. Before participating in the survey, the participants were unaware of the contents of the study. We indicated that they would participate in a survey on LPT. Moreover, we ensured that diverse subgroups were represented in the sample (students, administrative staff, and professors) which likely had different commuting habits owing to differences in schedules and responsibilities. This type of sampling may capture these variations and increase generalisability when developing policies or marketing strategies. The results were consistent with both the literature and the qualitative data, suggesting that the findings may be representative of a broader population.

We used a revealed-preference approach in the online survey. While the direct approach used in this study effectively elicited individuals' actual behaviour, future research could enhance our understanding of hypothetical scenarios related to LPT by combining it with a stated preference technique, possibly a discrete choice experiment that directly discriminates between the use of public and private modes. This approach can provide valuable insights, particularly from the perspective of non-users.

Overall, modal shift appears to be multidimensional and context-dependent. As we have seen, the choice of transport mode can be strongly influenced by habit formation in consumption preferences and cognitive biases, which may lead to the over or underestimation of LPT characteristics. These biases may have negative consequences on perceptions of service quality and demand for public transport. In these cases, the strategies presented are extremely useful, but may nevertheless prove to be insufficient in promoting a modal shift towards public transport for some specific groups of users. Future studies should investigate the heterogeneity of responses to modal shifts towards public transport by employing behavioural approaches (Thaler and Sunstein, 2008) and conducting field experimentation (John, 2017) to develop tailored strategies.

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Academic or professional position and contacts

Valeria Faralla
Post-doctoral Research Fellow in Management
University of Piemonte Orientale - Italy
e-mail: valeria.faralla@uniupo.it

Graziano Abrate
Full Professor of Management
University of Piemonte Orientale - Italy
e-mail: graziano.abrate@uniupo.it

Giovanni Fraquelli
Full Professor of Management
University of Piemonte Orientale - Italy
e-mail: giovanni.fraquelli@uniupo.it

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