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Zooming in and out on everyday mobility practices in a rural, mountainous area of Switzerland

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ABSTRACT

To combat climate change, carbon emissions from everyday mobility must be lowered. This can be achieved by improving vehicle efficiency, shifting to low-carbon modes of transport and avoiding travel. Most of the literature focuses on shifting mobility away from cars, mainly in the context of commuting. However, mobility is embedded deeply in everyday life and is much more complex. This research tries to broaden the scope and not only analyse the mode of transport that people choose but also the purposes that their mobility serves and how this influences their modal choice. Contrary to the dominant literature’s emphasis on urban mobility, this study focuses on rural mobility, highlighting its specific challenges. As a case study, the mobility practices of residents of the UNESCO Biosphere Reserve Entlebuch (UBE) in Switzerland were investigated. Using a social practice approach has proven useful in analysing how individuals shape their everyday mobility. The study ‘zooms in’ on how practices are configured and ‘zooms out’ on the connection between mobility practices and mobility purposes, with the overarching aim to explore the key characteristics and dynamics of rural everyday transport in Switzerland, using the UBE as a case study. Semi-structured interviews were conducted and analysed adopting a thematic analysis approach. The results indicate that in the rural context geographical conditions and infrastructure availability exert more influence on how practices are performed than in urban contexts. Also, the time spent on mobility was valued differently depending on the mobility purpose, leading to different modal choices for different mobility purposes. Finally, the results demonstrate that strong social capital within a community can foster low-carbon mobility in three ways: shorter distances travelled for shopping and leisure purposes; a preference for active modes of transport; and self-organised collective transport. These findings highlight the importance of considering mobility practices’ embeddedness in everyday life while identifying potentials for shifting to low-carbon modes of transport, as well as avoiding travel in the first place.

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1. Introduction

Accounting for 15% of total global greenhouse gas (GHG) emissions, the transport sector is one of the biggest emitters and continues to grow (IPCC, 2022). The Avoid-Shift-Improve (ASI) framework provides three approaches for making everyday mobility less carbon-intensive: Reduce the number of kilometres travelled (avoid); increase the share of low-carbon transport modes (shift); and make current technologies more efficient (improve) (IPCC, 2022). A growing body of literature has been investigating individuals’ modal choices and shifts (Camilleri et al., 2022; Charreire et al., 2021; Meinherz and Binder, 2020), and all agree that these choices and shifts are not yet understood sufficiently.

One challenge to understanding modal choices is to account for mobility’s embeddedness in everyday life (Charreire et al., 2021; Sheller and Urry, 2006; Watson, 2012). Mobility needs to be viewed as a “means to accomplish particular activities” (Watson, 2012), e.g., shopping or working, rather than as an isolated activity to get from points A to B (Sheller and Urry, 2006). Therefore, to understand modal choices, mobility should be analysed in the context of the activities that it enables (Kent, 2022; Watson, 2012), rather than in isolation, as is often the case (see 2.2).

A second challenge to understanding modal choices and shifts revolves around how behaviour is analysed. Individualistic approaches have been criticised for misconceptualising individuals’ roles and

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behavioural choices (Shove, 2010; Watson, 2012). Social practice theory (SPT) provides an alternative approach that places people's practices – e.g., driving, cycling or commuting - at the centre of analysis (see 2.1). By examining practices, new insights can be gained into how practices are sustained, how they evolve and how new, more sustainable practices can emerge (Shove, 2010).

Finally, most of the literature on private mobility has focused on urban areas (Gómez et al., 2021; Zhao and Yu, 2020). Challenges specific to rural mobility, e.g., poor access to public transport or travelling longer or hillier distances to access services, often remain unaddressed, even though they can lead to more carbon-intensive mobility practices (Marconi and Schad, 2016; Zhao and Yu, 2020).

This study contributes to current knowledge on mobility practices while addressing the described challenges and literature gaps. To contribute to the scarce research on rural mobility, mobility practices in this study are investigated in the context of the UNESCO Biosphere Reserve Entlebuch (UBE), a typically rural and mountainous region in Switzerland. UNESCO designated the region as a biosphere reserve (Shove, 2010). This study adopts an SPT approach to develop a richer understanding of residents’ everyday mobility practices and the connection of transport with everyday life. The overarching aim of this study is to explore the key characteristics and dynamics of everyday transport in rural Switzerland, using the UBE as a case study.

2. Literature review

2.1. Social practice theory

The innovation of SPT, compared with established approaches from the psychology and behavioural science fields, is the shift away from the individual and towards practices as a unit of analysis (Shove et al., 2012; Watson, 2012). While individualistic approaches suggest analysing individuals' qualities (e.g., values and attitudes), with SPT, these qualities are part of a practice, and the individual is merely the carrier of that practice (Shove et al., 2012; Warde, 2005).

Practices are viewed as a routinised nexus of activities comprising several connecting elements (Reckwitz, 2002; Schatzki, 1996; Welch and Warde, 2015). The typology that Shove et al. (2012) introduced proposes that a practice consists of three elements: meaning; competence; and materials. Meaning includes symbolic meanings, ideas, aspirations, mental activities and emotional and motivational knowledge (e.g., a car provides flexibility). Competence encompasses know-how or skills, background knowledge and understanding of a practice (e.g., knowing traffic rules). Materials include objects, infrastructure and tools needed to perform a practice (e.g., a car and a road). For a person to be a carrier of a certain practice, a connection between the three elements must be formed and maintained through regular performance of that practice. Furthermore, elements can exist beyond a practice and can be introduced to new practices or change existing ones. For example, the meaning of comfort is a general understanding and independent of any practice. If a practice changes and is no longer associated with being comfortable, the notion of comfort still exists.

Much like how the elements of a practice are connected, so are the practices themselves interconnected (Shove et al., 2012). Practices can require one another, they can compete, or they can mutually transform one another. Practices can be interconnected through space if they are carried out in the same place. Practices can also link in time when they are performed simultaneously (synchronising) or one after the other (sequencing). For example, if a person always buys groceries after work, the practices of commuting and shopping are sequenced. This circumstance may have an influence on the place of shopping for groceries, the time available for the transit to the shop or the means of transport chosen for commuting. Lastly, two practices are connected if they share one common element. For example, the material headphones connect the practice of taking public transport and listening to music.

2.2. SPT in mobility and transport research

A large part of the studies on transport that adopted a SPT approach focuses on identifying the practice elements of the different transport practices to better understand how individuals negotiate their everyday mobility. SPT-based studies on driving identified several elements that reinforce the car as the default mode of transport, namely the freedom, flexibility, autonomy, privacy, convenience and comfort that it provides (Cass and Faulconbridge, 2016; Kent, 2014, 2015), time-saving attributes (Kent, 2014) and ease/safety in transporting heavy items (Laakso, 2017; McLaren, 2018). As for cycling, several studies have found that the performance of the practice depends on the available infrastructure and, thus, cycling safety (Caldwell and Boyer, 2019; Larsen, 2017; Spotswood et al., 2015). The same studies also identified a wide range of materials (e.g., weather protection, panniers) and competencies (e.g., cycling with kids, finding safer routes) that people need to engage in the practice of cycling. Furthermore, they found that flexibility, efficiency and speed were common meanings associated with cycling, but only when travelling short distances. Other meanings associated with cycling are that it is healthier, involves exercise (Cass and Faulconbridge, 2016; Spotswood et al., 2015) and is environmentally friendly (Caldwell and Boyer, 2019; Cass and Faulconbridge, 2016). One study that examined public transport found associated meanings tied to environmental friendliness and the ability to do something productive while being mobile (Cass and Faulconbridge, 2016). Other studies found that people do not use public transport because it is viewed as inflexible (Kent, 2014; Larsen, 2017). Across all these studies, environmental concerns were only among many reasons for engaging in or changing transport modes (Larsen, 2017; Meinheirz and Fritz, 2021; Volden and Hansen, 2022).

Many of the studies presented in the previous section analysed the elements of the different modes of transport in the context of commuting. Stein et al. (2022) went even further and identified four types of commuting practices independent of the mode of transport. The first type of commuting practice is influenced by material arrangements (lack of alternatives, bad infrastructure, heavy traffic). The second type focuses more on the benefits of the commute in terms of making use of the time. The third type focuses on the necessity of the commute and hence the habitual attitude towards it. The last type is influenced by the time constraints and heavy time framing of the commute. Their findings illustrate, how differently commuting practices can be framed and in turn explain the stability of means of transport used for the commute. A few studies have focused on mobility purposes other than commuting. Two studies on shopping found that grocery shopping often is viewed as boring, time-consuming and tedious, e.g., buying and transporting groceries home (Berg and Henriksson, 2020; Godin and Sahtahpin, 2018). The studies on mobility induced by parenting all agree that family life influences the mode of transport adopted (McLaren, 2018; Rau and Sattlegger, 2018). They found that parents prefer driving a car for safety and convenience reasons. In turn, the modal choice for parenting practices also influences the modal choice of other practices connected to that of parenting.

This SPT-based mobility research overview demonstrates that car use and commuting practices are studied well. Only a few studies have examined other modes of transport or mobility purposes. However, the studies that also investigated the elements of the practices that induce mobility (i.e., mobility purposes) were able to provide a deeper understanding of the mobility practices themselves. Furthermore, very little research has been conducted in non-urban settings and no study was found that explicitly analysed mobility in a rural area.

3. Research context and methods

3.1. Research context

The UNESCO Biosphere Reserve Entlebuch (UBE) is located in a
mountainous to alpine region in central Switzerland (see Fig. 1). UNESCO has designated this rural region a Biosphere Reserve, after a bottom-up process in which conservation implications were sought to be counterbalanced with sustainable development (UBE, 2022). UNESCO Biosphere reserves are required, besides their core tasks of preserving nature, culture and developing the local economy, to mitigate climate change (UNESCO, 2016). A recent study conducted in the UBE found that transport contributes most to households’ carbon footprint, similar to other comparative regions in Switzerland (Wiesli et al., 2020a; Wiesli et al., 2020b; Wiesli et al., 2020c). The UBE management has not (yet) taken any measures to promote sustainable modes of transport and because it has no regulatory authority, it is limited to voluntary instruments. The lack of knowledge of the UBE management on local mobility and the wish to initiate a project on sustainable local mobility induced the present research. Its purpose was to give insights into the UBE residents’ mobility practices and point to possible ways of intervention for the UBE and other rural regions. As one of the authors is working with UBE management, direct application of research results into practical implementation is possible.

The UBE covers an area of around 395 km² and contains around 17,000 inhabitants, with a population density of 43 inhabitants per km² (LUSTAT, 2022). The UBE is characterised by a scattered settlement pattern. Altogether, 22% of the inhabitants work in the agricultural sector, which is significantly higher than the Swiss average of 2.4% (BFS, 2022; LUSTAT, 2022). In Switzerland, over half of the daily distance covered is travelled by car (ARE and BFS, 2017). For about a fourth, public transport is used and active mobility is used only for 8% of the daily distance covered. The UBE’s road infrastructure is well-developed, and regional centres can be reached in 10 to 20 min (ARE, 2008). However, the area is characterised by poor access to public transport (Marconi and Schad, 2016). The UBE is accessible by train twice an hour and is served by seven local bus routes, but only three of those operate regularly (PostAuto AG, 2022). The rest operate either only during commuting times or on Sundays and holidays. The UBE is part of the pre- and northern Alps with altitudes ranging from 700 to 2350 m above sea level (swisstopo, 2022), making cycling or walking physically demanding. Furthermore, cycling is not very safe because very few cycling lanes are available amid high traffic volume. In return, the region offers many leisure and tourist activities, ranging from biking and hiking during the summer, to skiing and freeriding tours during the winter (UBE, 2022).

3.2. Data collection

For the purpose of this study, a qualitative approach was adopted. Semi-structured interviews with adult UBE residents on their mobility practices were conducted. Participants were recruited using the snowballing technique and they were contacted by email or phone. Starting point were the last author’s diverse professional contacts from working in the UBE for years, which were asked about potential participants. People that participated in an interview were then asked about further contacts with characteristics that were not yet reflected in our sample. To ensure a wide variety of participants, they were selected based on three criteria (principle of contrast sampling): distance to public transport to account for the convenience of accessing public transport; household size to account for other family members’ influence on mobility practices (McLaren, 2018; Rau and Sattlegger, 2018); and agricultural background due to the high share of UBE residents who work in this sector. Participants with different characteristics along these spectra were chosen. Furthermore, balance was sought on gender and age to account for people at different life stages (Greene and Rau, 2018).

The first author conducted interviews with 14 participants between 02.06.22 and 10.08.22 in person or by video call, lasting between 35 and 80 min each. Table 1 provides an overview of the sample’s sociodemographic data. The study focused on the most relevant practices that facilitate transport (mobility purposes). In Switzerland, commuting, shopping and pursuing leisure activities induce the most private mobility (ARE and BFS, 2017). The direct transport practices of driving, taking public transport, cycling and walking were investigated in the context of these facilitated practices. For each of the three investigated facilitated practices, a similar set of questions was employed to gather data on meanings, competencies and materials, as well as specific time and space details on the facilitated practice and direct transport practices performed to accomplish the facilitated practice (see the interview guide in Appendix A).
4. Results: Zooming in and out on mobility practices

For each facilitated practice, as well as the relevance of different elements in isolation. By overlapping the two analytical perspectives, methodology made it possible to zoom in and analyse each practice and variations in the configuration of the elements of a practice. However, the data were coded and summarised from the perspective of the first analysed from two analytical perspectives (see Fig. 2). On the one hand, the data were coded from the perspective of the direct transport practices. A deductively developed coding system containing the elements of a practice was applied for each direct transport practice. A deductively developed coding system containing the elements of each facilitated practice. This methodology made it possible to zoom in and analyse each practice and its elements in isolation. By overlapping the two analytical perspectives, it is possible to zoom out and analyse the direct transport practices used for each facilitated practice, as well as the relevance of different elements for the various facilitated practices. This served as a basis to identify the themes across all of the different mobility practices.

In the second round of thematic analysis, we inductively derived how practices are situated in time and space; the relevance of environmental factors for performing certain practices can be found in Table 2 and in a non-summarised form in Table A.5 in Appendix C. Furthermore, Tables A.2, A.3 and A.4 provide an overview of the identified elements of the mobility practices.

4.1. The spatio-temporal unfolding of everyday mobility practices of UBE residents

Commuting to work is a practice performed by all but one participant in this study. Interviewees’ commuting time ranged from two minutes to one hour and 50 min, covering distances ranging from 250 m to 70 km. Almost half of the participants work from home, but only one or two days per week. About half the interviewees use a car for their commute, while the rest mainly take the train, and only two frequently walk or cycle.

The practice of grocery shopping is performed by all participants, albeit to varying degrees. Many participants have one person in the household responsible for shopping, predominantly the women. While only a few participants mentioned that they shop spontaneously, most households have a structured shopping routine. They take one major grocery shopping trip around once a week and one or two smaller trips spread over the week. Shopping trips can be as short as 200 m or as long as 23 km. More than half the interviewees use cars to go grocery shopping, while the rest mainly walk, and only one person cycles frequently if the store is located in their residential village.

There are four types of leisure activities that participants pursue regularly. Going to club meetings is a common leisure activity for most participants. Members meet one to four times a week, depending on the type of club. Generally, people only walk or cycle to club meetings if they live near (< 1 km) the meeting location. Participants who live farther away drive. Going on a trip is a practice in which primarily families with smaller children engage. Such trips mainly occur on weekends and are predominantly to a location in the region. Participants go on such trips almost exclusively by car. Public transport is viewed as practical only for trips to locations outside the region. Hiking or biking is another practice that almost all participants perform regularly, mainly during the summer. Therefore, cycling and walking, for most participants, are not only modes of transport but also leisure activities. Finally, skiing is a leisure activity performed during the winter. Most participants who engage in this practice go to local skiing areas. Participants almost exclusively go to the skiing area by car.
4.2. Space: Being mobile in a mountainous rural area

The mobility of residents in the UBE is influenced not only by the rural geography but also by the local infrastructure and the regional offer of activities. There are several participants that highlight the sheer necessity of using a car for commuting, shopping and pursuing leisure activities due to the long distances and the hilly conditions in the UBE. This goes hand in hand with an often-described lack of alternatives due to poor infrastructure or as Peter describes it more extremely:

“... and the lapping of the water and the calming and the forest to poor infrastructure or as Peter describes it more extremely:

“... and the lapping of the water and the calming and the forest

The rural context has however not only an influence on modal choice but also on the types of practices that facilitate transport performed. The region has a large offer of leisure activities such as local sports and culture clubs, skiing areas, and hiking and biking trails and also local shops, bakeries etc. Because of this diverse offer, almost all participants shop and spend their leisure time in the region resulting in relatively short distances travelled. For example Robert, who prefers his local hiking routes:

“I have the variety here in the Entlebuch, I have nature [... on my doorstep and the lapping of the water and the calming and the forest are always different too. It's different in spring than in early summer. I have interesting paths, and it can be the same thing over and over again. [...] It's not monotonous because the path itself is not monotonous.”

Due to the proximity to nature, many interviewees do not see a need to travel long distances, but start their leisure activity, for example hiking or biking, from home regularly. Similarly, the short trips to local shops are often done by foot or bike. However, equally as many interviewees still require a means of transport to get to their leisure activity. Participants usually drive by car, due to the limited public transport available as described before. In return, several participants refrain from doing certain leisure activities (e.g., going to movies, attending concerts) because the trip to it would be too long.

There is one distinct situation, in which some participants prefer to drive longer distances. When commuting, they value that they can create a physical distance from their workplace, allowing them to maintain a healthier work-life balance.

4.3. Time: Lose time or use time

Saving time was one of the most frequently mentioned justifications for driving across all mobility purposes. For most participants, it is faster to drive because they are much more flexible and independent particularly compared to the infrequent public transport in the UBE. However, time is perceived very differently depending on the mobility purpose. For most interviewees, mobility is a means to an end, hence people do not want to “waste” their time on mobility. The following two quotes describe two situations, in which mobility is perceived as a waste of time:

Samuel: “And shopping is also more of an evil than something pleasant for me. So, you actually want to waste as little time as possible with that.”

Anita: “I find, so just the balance of 4 hours driving, 2 hours hiking, that's absurd for me, although I mean, everyone may decide that for themselves. But I think I actually want to be active, I don't want to sit in the car.”

The first quote describes a situation, in which the practice that facilitates transport is perceived as unpleasant. Therefore, Samuel wants to spend as little time as possible on shopping and thus also with the trip...
to it. This was mainly observed with shopping and for some participants also for commuting. In contrast, in the second situation, the practice that facilitates transport is viewed as so pleasant that she does not want to waste time on mobility and instead spends it on the activity itself. This was something that interviewees almost exclusively mentioned in the context of leisure activities. Independent of the reason for wanting to limit the time of being mobile, in both situations participants opted for the fastest means of transport, which was usually the car. But it was also an additional reason, why they favoured spending their time in the UBE, leading to shorter distances travelled.

In the context of commuting, many interviewees described the time that they are being mobile as useful time. Participants commuting by train use their commuting time as productive time, as David describes it:

“[W]hen I’m on the train, […] I have half an hour to read the newspaper, maybe send off some emails or WhatsApp messages, and then I close my eyes for another quarter of an hour. And that’s a bit like a holiday, so it’s stress-free.”

Participants that commute by car use their time to listen to music or doing calls and those who commute by bike or walk, see their commute as time to exercise and be outside. For almost all of the participants independent of the means of transport, the commuting time is also a time in the day, when they have time to switch off, relax and do something for themselves. This is something that almost all value in their commuting time and, along with the physical distance the commute creates, contributes to a better work-life balance. This example illustrates well that participants evaluate their time spent on mobility differently depending on how convenient the trip is for them. Mobility for shopping or leisure purposes was hardly ever associated with being productive time.

Another temporal dynamic that some of the participants described was that of sequencing their mobility practices. Most interviewees mentioned that they connect the commute or shopping trip to one another or to other activities that require them to be mobile. A few participants even link all their activities of the day before they return home. The sequencing of direct transport practices was observed much less frequently. Usually, participants stick to one means of transport per trip, either for lack of alternatives or for the reason of convenience, as

| Table 2 |
|-----------------|-----------------|-----------------|-----------------|
| **All facilitated practices** | **Commuting** | **Shopping** | **Pursuing leisure activities** |
| **Driving** | - Departure/arrival locations more flexible | - If time constrained | - Safer |
| | - Habit | - More predictable/reliable | - Cheaper |
| | - If sequenced/easier to sequence activities | - Privacy | - Easier to access cities |
| | - More convenient/comfortable (weather, effort, transport good, for long distances) | - Productive time (e.g., calling) | - Allows for social encounters |
| | - More flexible/free/spontaneous | | - Cheaper |
| | - Faster | | - Easier to travel with a group |
| **Taking public transport** | - If sequenced/easier to sequence activities | - Allows for social encounters | - If consuming alcohol |
| | | - Cheaper | - If not time constrained |
| | | - Easier to access cities | - If transporting only a few goods |
| | | - Habit | - Time to relax, rest |
| | | - Faster | - More convenient/comfortable (for long distances, no parking) |
| | | - Safer | - More environmentally friendly |
| | | - More convenient/comfortable (for long distances, no parking) | - Requires less planning |
| | | - More environmentally friendly | |
| | | - More predictable/reliable | |
| | | - Time to relax, rest | |
| | | - Productive time (e.g., reading, sleeping) | |
| **Cycling** | - Allows for social encounters | | |
| | - More environmentally friendly | | |
| | - More reasonable/faster for short distances in village (no parking) | | |
| **Walking** | - Allows for social encounters | | |
| | - More reasonable/faster for short distances in village (no parking) | | |
| | - Getting exercise | | |
| | - If no other means of transport available | | |
| | - If transporting only a few goods | | |
| | - If raining/snowing | | |
| | - Physically less demanding | | |
| | - Time to relax, time for yourself | | |
Lisa describes:

“That's just the thing. I live far away [from the village centre], and I always have to get into a car first. […] [T]hat's sometimes the barrier. You say, 'I'm already on my way by car', and then change to the train again, and you say to yourself, 'Oh come on […] we'll go by car anyway'.”

Again, convenience influences the temporal unfolding of interviewees’ mobility practices. However, due to the geography of and infrastructural constraints in the UBE, sequencing of direct transport practices would be necessary to use public transport more frequently for many of the participants.

Car use is mainly dominating for pursuing leisure activities. Even though interviewees tend to spend most of their leisure time in the region, most of them are not willing to reduce the frequency of their leisure activities as Susanne describes it:

“You notice that from an ecological point of view, it's actually not very good [to go by car], and we know that and still, we do it because the other thing [such as hiking] is also important to us, to somehow be able to show and pass on certain things [to our kids].”

4.4. Perceived environmental friendliness of mobility practices

Similar to the perception of time as relative, participants also view the environmental friendliness of their mobility as relative. When participants were asked how environmentally friendly they view their mobility patterns, they put their mobility into perspective:

Peter: “Yes, [the environmental friendliness of our mobility is] actually good. We're not the ones who drive around unnecessarily. Yes, I would say, well, there are those who drive more. So many, in terms of unnecessarily.”

Generally, interviewees perceived mobility as environmentally friendly if it is a necessary trip, for which no other mode of transport is suitable. Conversely, mobility is perceived as environmentally unfriendly if the trip itself is unnecessary, or if a mode of transport other than a car is available/suitable. Many highlight the geographical conditions in the UBE and the poor access to public transport in the UBE as justification for having no other choice than to drive. Therefore, more than half of the participants perceive their mobility as environmentally friendly. However, there are several statements indicating that driving is the default and unquestioned mode of transport in the UBE:

Alex: “So, it has always been clear to me that the moment I move back to the region, I want a car immediately, and I will always have a car here.”;

Gaby: “Here, actually, everyone has a car. If you're 18 years old, you have a car.”;

Angela: “So, we don't usually think about whether we should take the train or the car. Most of the time, the car is very easy to take, so we take it.”.

When comparing their mobility practices to urban residents, the interviewees in general acknowledge that their mobility is likely to be less environmentally friendly, because of their high car dependency, longer distances travelled and/or their less frequent use of public transport compared to city dwellers. However, there are also some participants being sceptical about the environmental friendliness of urban mobility or even perceive their mobility as environmentally friendlier. Compared to the spatial extension of their leisure activities, which is mainly in the UBE itself, they expect urban residents to have a higher mobility for pursuing leisure activities.

4.5. Social dynamics and mobility practices in the UBE

There are two types of social dynamics that were found to have an influence on the mobility practices of interviewees. The first one is family life. All participants with children state that their modal choice but also the activities they pursue are influenced by family life. In terms of modal choice, for most interviewees cycling or walking is either too dangerous or too demanding for their kids. This is a common justification for driving to the shops or the locations of their leisure activities. Furthermore, participants tend to have to carry along more materials for their children, which makes driving more convenient. For Susanne it was even the case that the meanings she associates with the same practice changed depending on whether she is mobile with her kids or not. She stated that she uses the train to go to work because she views driving as stressful and inconvenient due to traffic congestion. However, in the case of pursuing leisure activities with her kids, she generally drives with her car because other means of transport are too inconvenient for her and her kids. Thus, while she associated the meaning of convenience with driving when pursuing leisure activities with her kids, this was not the case with commuting.

In addition to the requirements for the means of transport, participants mention that they need to be very flexible and independent in their mobility to account for their children's needs, as Ruth describes:

“I want to leave the house, when the children also leave, and not leave them alone already in the morning. […] I really appreciate that at the moment, I can be so flexible at my workplace, and with the car, I am, of course, even more so.”

As described in 4.3, participants that want to be flexible also tend to opt for the fastest means of transport, which is often the car.

As a second influence, the social dynamics between residents of the UBE influence the modes of transport and the types of activities performed. Several interviewees mentioned that they prefer going by bike or walking because they can meet someone spontaneously while being mobile:

Robert: “With the car, you are focused on the car, going there, shopping and going back, and the other thing is more. When you walk, it is more of an experience […] But not only to switch off, but because of meeting people.”.

The car is viewed as depriving them of the opportunity to experience social encounters. This illustrates that social encounters among residents are a common motivation for preferring active modes of transport, particularly when shopping and commuting. The familiarity among residents also makes carpooling very effortless and participants described it as a matter of course when friends and family travel to the same location:

Gaby: “You always decide on meeting points, and that's how you fill the cars. Until they are full. No, and that's also clear among us. […] We actually know who has to drive, the one who lives the furthest away. […] It really organises itself.”

These two examples illustrate that having social encounters while being mobile can be interpreted as productive time, leading participants to not necessarily opt for the fastest mode of transport. However, there is one participant, Alex, that describes the exact opposite and prefers commuting by car due to unwanted social encounters:

“And the other big advantage [of driving] is simply that nobody else upsets you. […] [I]f you grow up in a place like Entlebuch, you simply know three-fourths of the people, to put it exaggeratedly. And when you get on the train in the morning and maybe just want a bit of peace and quiet, and you already know four people at the station […], being on the train with them for half an hour afterwards is quite nerve-wracking”.

In this case, the familiarity among residents in the UBE can also be a reason for using a car use in situations in which privacy is valued higher.

Aside from influencing modal choice, the strong social capital in the UBE and the connectedness to the region influence shopping practices
and the type of leisure activities pursued. Some interviewees view shopping as a social activity and prefer shopping in local stores because they know the people working and shopping there and they prefer the personal touch. For the same reasons, the vast majority of participants spend their leisure time attending local club meetings or spending time in the nature of the UBE, as Samuel described:

“Actually, I'm not really curious about going to any other region. I actually love it when I know where I am and what to expect.”", "'I prefer [skiing in the local skiing area] […]', somehow you know all the people, you know everything a little bit.”

Therefore, these social dynamics in the UBE have led participants to spend more time in the UBE, and thus travel shorter distances.

5. Concluding discussion

The themes identified in the results of this study describe the key characteristics and dynamics of rural everyday transport in the UBE. They showed how interconnected the spatial and temporal extension of practices, the social dynamics in the UBE and the environmental friendliness of residents' mobility are and as a whole describe how mobility practices of residents in the UBE unfold. When looking at the described elements participants associated with the direct transport practices, they largely overlap with those of the existing literature. However, the role of infrastructure and geographical conditions (i.e. steep slopes) is much more prominent in the UBE compared to the extant literature on urban mobility. In the rural UBE context, the absence of good access to public transport or service to desired destinations makes it often impossible for people to take public transport. This is hardly ever mentioned in studies conducted in an urban context and is probably also owed to the scattered settlement patterns in the UBE. Furthermore, in the UBE case, cycling almost always has a strong fitness component, which is similar to another study that examined a representative country sample (Spotswood et al., 2015). However, studies on urban cycling did not find the meaning of fitness to be associated with cycling (Caldwell and Boyer, 2019; Larsen, 2017). Differences in topography and distances covered in urban vs. rural regions such as the UBE indicate that these conditions might influence means associated with cycling and, thus, influence cycling frequency and occasions. Therefore, material and infrastructural conditions are important to consider when taking measures to facilitate a shift towards low Carbon means of transport in a rural setting. Possible measures are the promotion of electric bikes in combination with improving cycling infrastructure and safety. Also, offers such as ridesharing could complement the regional public transport infrastructure (Thao et al., 2021).

Concerning the social dynamics of mobility, this study's results confirm other studies' findings, demonstrating the influence of family life on modal choices and the temporal and spatial extension of mobility practices (McLaren, 2018; Rau and Sattlegger, 2018). Furthermore, it confirms the findings of several studies conducted in an urban context that showed a connection between high levels of social capital and choosing active modes of transport (Kim et al., 2018; Morales-Flores and Marmolejo-Duarte, 2021). However, the relation between strong social capital and the type of leisure activities pursued. Some interviewees view shopping as a social activity and prefer shopping in local stores because they know the people working and shopping there and they prefer the personal touch. For the same reasons, the vast majority of participants spend their leisure time attending local club meetings or spending time in the nature of the UBE, as Samuel described:

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Therefore, these social dynamics in the UBE have led participants to spend more time in the UBE, and thus travel shorter distances.
working, shopping and leisure practices, which in turn would induce change in mobility practices in general. It could also spark discussions around the idea of sufficiency and self-limitation (Sahakian et al., 2021a), which is necessary because combating climate change effectively must involve more than just focusing on modal choice.

CRediT authorship contribution statement

Stefanie Maeder: Conceptualization, Methodology, Formal analysis, Writing – original draft, Visualization. Michael Stauffacher: Conceptualization, Writing – review & editing. Florian Knaus: Conceptualization, Writing – review & editing.

Declaration of Competing Interest

None.

Data availability

The data that has been used is confidential.

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Appendix. Supplementary data

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References


