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Mobility practices in the UNESCO Biosphere Reserve Entlebuch

Application of social practice theory to everyday household
mobility in a rural area of Switzerland

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Abstract

To reach the Sustainable Development Goals of sustainable consumption and combatting climate change as set out in the Agenda 2030, mobility patterns of households must become more sustainable. As a designated UNESCO Biosphere Reserve, the rural region of Entlebuch has committed to reaching these goals. To achieve a transition towards environmentally friendly mobility patterns, research around behaviour change frequently adopts an individualistic approach. This approach can however be criticised for overemphasising the sovereignty and rationality of consumers and assuming that values always translate into actual behaviour. Social practice theory provides an alternative approach by focussing not on individuals and their choices but on the practices they adopt. This turning away from the individual and conceptualising mobility as a practice leaves however little room for the agency and reflexivity of individuals in their practices. This thesis tries to address this lacuna by investigating motivations as part of a practice. By analysing the practices of driving, taking public transport, cycling and walking as well as the practices around the transport purposes, namely commuting, shopping and pursuing leisure activities, this thesis accounts for the embeddedness of mobility in everyday life. Through conducting semi-structured interviews with residents of the UNESCO Biosphere Reserve Entlebuch (UBE), this thesis analysed how mobility practices of households of the UBE are configured, how individuals justify their mobility practices in different contexts, and how environmentally friendly they perceive their mobility practices to be.

The frequent car use, as well as the mobility confined mostly to the region, are characteristic of the mobility practices of residents of the UBE. The thesis was able to show that mobility practices are configured and motivated differently depending on the purpose they are used for. Dominant motivations for performing mobility practices in a certain way revolve around associated meanings, such as flexibility, convenience, safety, privacy or degree of relaxation. Especially the connectedness to the region and the strong sense of community in the UBE have a positive influence on the environmental friendliness of mobility. The frequent desire to not spend a lot of time on mobility leads to either shorter distances travelled or more frequent car use. Material motivations, such as available infrastructure and alternatives, are a second type of motivation, which were found to be more relevant in the rural area of the UBE than in urban contexts. Lastly, spatiotemporal motivations determine the way a practice is performed. In the UBE, the regional mobility is more car dominated than the local or supra-regional mobility. Environmental concerns play only a minor role in how mobility practices are performed because of the strong necessity associated with being mobile. These findings highlight the importance of considering the embeddedness of mobility practices and going beyond the dominant research focus on car use and commuting. This will not only help to understand the challenges of shifting to more sustainable means of transport in different situations but also why people are mobile in the first place and the potential for avoiding being mobile. Investigating these challenges and potentials can be achieved by analysing practices around transport purposes and the motivations associated with them, which will contribute to a transition towards more environmentally friendly mobility practices.

Zusammenfassung

Um die in der Agenda 2030 formulierten Ziele für nachhaltige Entwicklung – unter anderem nachhaltiger Konsum und Bekämpfung des Klimawandels - zu erreichen, muss das Mobilitätsverhalten von Haushalten nachhaltiger werden. Die private Mobilität verursacht rund $\frac{1}{4}$ des CO₂-Fussabdruckes der Schweiz. Als ausgewiesenes UNESCO-Biosphärenreservat hat sich die ländliche Region Entlebuch verpflichtet, die Nachhaltigkeitsziele der Agenda 2030 zu erreichen und eine Modellregion für nachhaltige Entwicklung zu werden. Um einen Wandel hin zu umweltfreundlichen Mobilitätsmustern zu erreichen, verfolgt die Forschung zu Verhaltensänderungen häufig einen individualistischen Ansatz und konzentriert sich auf die Analyse von Werten und Einstellungen, welche die Wahl der Konsumenten beeinflussen. Dieser Ansatz kann jedoch dafür kritisiert werden, dass er Mobilitätsmuster im Alltag nur schlecht erklären kann, weil er von einer Souveränität und Rationalität der Konsumenten ausgeht und annimmt, dass sämtliche Wertvorstellungen sich auch im tatsächlichen Verhalten widerspiegeln. Die Forschung hat jedoch gezeigt, dass trotz vorhandener Werte sich diese aufgrund verschiedener Gegebenheiten nicht zwingend im Verhalten niederschlagen. So kann zum Beispiel beobachtet werden, dass trotz dem Willen, die Umwelt zu schützen, das Auto oft genutzt wird, weil zum Beispiel keine ÖV Anbindung vorhanden ist.

Die sogenannte Social Practice Theorie bietet einen alternativen Ansatz, indem sie sich nicht auf die Individuen und ihre Entscheidungen konzentriert, sondern auf die von ihnen ausgeübten Praktiken. Eine Praktik besteht aus verschiedenen Elementen, nämlich aus Materialien, Kompetenzen und Bedeutungen. Zum Beispiel besteht die Praktik des Autofahrens aus dem Material eines funktionierenden Autos, der Kompetenz das Auto bedienen zu können und einer persönlichen Bedeutung, wie z. B. dass Autofahren flexibel oder schnell ist. Nur wenn alle drei Elemente vorhanden sind, wird die Praktik des Autofahrens auch ausgeübt. Diese Abkehr vom Individuum hin zu einer Konzeptualisierung von Mobilität als Praktik lässt jedoch wenig Raum für die Handlungsfähigkeit und Reflexivität der Individuen in ihren Praktiken. Die vorliegende Arbeit versucht, diese Lücke zu schließen, indem sie Motivationen als viertes Element einer Praktik ergänzt. Indem sie sich nicht nur auf die Praktiken des Autofahrens, der Nutzung öffentlicher Verkehrsmittel, des Radfahrens und des Zu-Fuss-Gehens konzentriert, sondern auch die Verkehrszwecke analysiert, nämlich Pendeln, Einkaufen und Freizeitaktivitäten, trägt diese Arbeit zudem der Einbettung der Mobilität im Alltag Rechnung und geht über den dominanten Forschungsfokus auf Autonutzung und Pendeln hinaus. Anhand von halbstrukturierten Interviews mit Einwohnern und Einwohnerinnen des UNESCO-Biosphärenreservats Entlebuch wurde untersucht, welche Mobilitätspraktiken in den Haushalten der UBE vorhanden sind und wie deren Elemente konfiguriert sind, wie die Individuen ihre Mobilitätspraktiken in verschiedenen Kontexten rechtfertigen und welche Motivationen diesen zugrunde liegen und wie umweltfreundlich sie ihre Mobilitätspraktiken wahrnehmen.

Eine häufige Autonutzung, aber auch die meist auf die Region beschränkte Mobilität sind charakteristisch für das Mobilitätsverhalten von Bewohnenden des Entlebuchs. Beim Pendeln bestimmt vor allem die Flexibilität, die Privatsphäre, die Erholung und/oder die Möglichkeit, währenddessen etwas anderes zu machen, welches Verkehrsmittel genutzt wird. Je nach Prioritäten gehen Bewohnende mit dem Auto, Zug oder vereinzelt auch mit dem Velo oder zu Fuss arbeiten. Beim Einkaufen wiederum spielt viel mehr der einfache Transport der Einkäufe, die Verbindung mit anderen Aktivitäten, der Wunsch, lokale Läden zu unterstützen sowie die Möglichkeiten, Leute zu treffen, eine grosse Rolle. So nutzen sämtliche Personen das Auto für Einkäufe ausserhalb des Dorfes. Für Einkäufe innerhalb des Dorfes gehen Bewohnende vermehrt mit Fahrrad oder zu Fuss, allerdings nur, wenn die Personen auch in Zentrumsnähe wohnen. Obwohl alle Befragten ihre Freizeit grossmehrheitlich in der Biosphäre Entlebuch verbringen, wird dennoch fast ausschliesslich das Auto dafür genutzt. Gründe dafür sind oft die grössere zeitliche und räumliche Flexibilität sowie der Mangel an öffentlichen Verkehrsmitteln zu den gewünschten Orten. Nebst Vereinsaktivitäten, Skifahren oder andere Ausflüge sind Wandern und Biken verbreitete Freizeitaktivitäten. Obwohl einige diese Aktivitäten von zu Hause aus starten, nutzen viele zuerst das Auto, um zum Ausgangspunkt ihrer Wander- oder Bikerouten zu gelangen.

Diese Resultate zeigen, dass es drei Arten von Motivationen zur Nutzung eines Verkehrsmittels für einen bestimmten Zweck gibt. Erstens gibt es verschiedene Bedeutungen, die eine Person mit einem Verkehrsmittel verbindet, wobei Flexibilität, Freiheit, Schnelligkeit, Zuverlässigkeit, Bequemlichkeit, Komfort, Privatsphäre, Sicherheit, Möglichkeit zu entspannen, Umweltfreundlichkeit und positive Erfahrungen am häufigsten genannt wurden. Je nach Prioritäten und welche dieser Bedeutungen mit welchem Verkehrsmittel verknüpft wird, nutzt eine Person ein anderes Verkehrsmittel. Zweitens gibt es infrastrukturelle Motivationen, welche das genutzte Verkehrsmittel beeinflussen. Die vorhandenen Alternativen sowie der Transport von Materialien scheint insbesondere im ländlichen Raum eine zentrale Motivation zur Nutzung des Autos zu sein. Die letzte Art von Motivation hängt mit der zeitlichen und örtlichen Ausdehnung der Mobilität zusammen. Während für die lokale Mobilität im Dorf nebst dem Auto oft auch das Fahrrad genutzt wird oder zu Fuss gegangen wird, wird für die Mobilität innerhalb der Region fast ausschliesslich das Auto genutzt. Das regionale Busnetz wird kaum genutzt. Für die Mobilität aus der Region hinaus wird nebst dem Auto auch oft mit dem Zug gereist, insbesondere wenn Städte das Ziel sind. Umweltaspekte spielen bei der Ausübung von Mobilitätspraktiken nur eine untergeordnete Rolle. Dies könnte darauf zurückzuführen sein, dass die Einschätzung der Umweltfreundlichkeit der Mobilität oft positiver ausfällt, wenn eine starke Notwendigkeit, mobil zu sein besteht. Ebenfalls hat sich gezeigt, dass die Mobilitätspraktiken von Bewohnenden des Entlebuch durch die Verbundenheit mit der Region und dem Gemeinschaftsgefühl beeinflusst werden. So begünstigt der Wunsch nach der Möglichkeit, Personen zu treffen, während man mobil ist, nicht nur die Wahl von umweltfreundlicheren Verkehrsmitteln wie Fahrrad oder zu Fuss gehen, sondern auch die Orte, wo man hingehet. Die Freizeit wird oft in lokalen Vereinen verbracht, lokale Einkaufsläden werden Grossverteilern weiter weg bevorzugt und die regionalen Wander- und Bikerouten werden häufig genutzt. Ein weiterer Faktor, der kürzere Distanzen begünstigt, ist das häufige Bedürfnis, wenig Zeit mit der Mobilität zu verbringen. Dies kann aber auch dazu führen, dass vermehrt das Auto genutzt wird.

Die Resultate legen zwei Ansätze nahe, um Mobilitätspraktiken in der UBE in eine umweltfreundlichere Richtung zu lenken. Zum einen könnte die Nutzung von Elektrofahrrädern gefördert werden, da dies es ermöglichen, weitere und hügeligere Distanzen zurückzulegen. Auch ein auf die Mobilitätszwecke der Bewohnenden besser abgestimmtes regionales Busnetz kann dessen Nutzung erhöhen und somit auch dessen Umweltfreundlichkeit verbessern. Flexible Lösungen wie Rufbusse könnten zudem den Bedürfnissen der Bewohnenden besser Rechnung tragen. Zum anderen sind Reallabore ein weiterer Ansatz, um Mobilitätspraktiken neu zu gestalten. Bewohnende könnten zum Beispiel die Autonutzung für einen bestimmten Zeitraum und/oder bestimmte Aktivitäten oder Destinationen einschränken oder ein selbst definiertes Reduktionsziel an gefahrenen Kilometern definieren. Dadurch können Teilnehmende über einen gewissen Zeitraum ihre Praktiken verändern und Erfahrungen mit neuen Praktiken sammeln. Es können neue Kompetenzen erworben werden, neue Materialien beschafft werden oder neue Bedeutungen mit einer Praktik verbunden werden. Dies kann zu einer nachhaltigen Veränderung von Mobilitätspraktiken führen.

Da sich die Arbeit nicht auf ein Verkehrsmittel oder einen Verkehrszweck beschränkte, konnte gezeigt werden, dass Mobilitätspraktiken je nach Zweck unterschiedlich gestaltet und motiviert sind. Dies unterstreicht die Wichtigkeit, Mobilitätspraktiken immer auch im Kontext, wofür sie genutzt werden zu analysieren und auch bisher wenig erforschte Bereiche wie die Freizeit- oder Einkaufsmobilität zu untersuchen. Ausserdem sollte die Forschung sich nicht nur damit beschäftigen, welche Verkehrsmittel aus welchen Gründen in unterschiedlichen Situationen genutzt werden, sondern sich auch mit den Gründen, warum eine Person überhaupt mobil ist, auseinandersetzen. Nebst dem Verlagern hin zu nachhaltigeren Verkehrsmitteln sollte der Fokus vermehrt auch auf die Verkürzung und Vermeidung von Fahrten gesetzt werden. Dies kann mit der Analyse von Praktiken rund um die Verkehrszwecke und mit dem Fokus auf Motivationen von Praktiken erreicht werden, was zu einem Übergang zu umweltfreundlicheren Mobilitätspraktiken beitragen kann.

1 Introduction

The members of the United Nations (UN) agreed on the 2030 Agenda for Sustainable Development to address current sustainability challenges such as poverty, prosperity and planetary health (UN, 2020). In this Agenda, all member states agreed to reach the 17 Sustainable Development Goals (SDGs). In their Sustainable Development Strategy, Switzerland defined three topics of priority (Swiss Federal Council, 2022). Besides reaching equal opportunities and social cohesion (SDG 10) and the focus on climate, energy and biodiversity (SDGs 7, 13 and 15), the government wants to ensure sustainable production and consumption patterns (SDG 12). To reach the last two goals, the environmental impact of private consumption has to be lowered. In Switzerland, the areas with the highest environmental impact in private consumption are mobility, food and housing (FOEN, 2022a; Jungbluth et al., 2011).

Mobility causes the largest carbon footprint, accounting for 26% of total greenhouse gas (GHG) emissions of Swiss households in 2019 (FOEN, 2022a), and it is the third biggest consumption category, accounting for almost 15% of the total environmental impact of final consumption (Jungbluth et al., 2011). The GHG emissions from private mobility have remained relatively stable since 2000 despite improvements in vehicle efficiency (FOEN, 2022a). This is because the demand for large cars increased over the past years (BFE, 2022) and the number of kilometres driven has risen by 40% compared to 1990 (FOEN, 2022a). These developments show that actions in the area of mobility are required and can have a significant impact on achieving more sustainable consumption.

Several studies found differences between urban and rural mobility patterns (BFS & ARE, 2017; Drouilles et al., 2019; Marconi & Schad, 2016). The mobility of Swiss rural areas is characterised by a higher car dependency, medium to poor access to public transport and longer distances travelled (Marconi & Schad, 2016). These results point to a higher environmental impact of rural mobility than urban mobility, when excluding air travel (Ottelin et al., 2014). Furthermore, ¼ of the Swiss population lives in rural areas (Marconi & Schad, 2016). It is therefore important and relevant to investigate rural mobility in more detail to identify specific challenges and possible solutions for these regions.

The focus of this thesis lies on the UNESCO Biosphere Reserve Entlebuch (UBE). This is a typical rural region in Switzerland and it is designated as a biosphere reserve by the UNESCO, which means that they are required to contribute to the 17 SDGs as set out by the UN (UBE, 2022a). This is also reflected in the UBE's vision to become "an international model region for sustainable development" (UBE, 2022b). While a lot of efforts have been guided towards the economic development of the region as well as the protection of the vast moor landscapes, less emphasis has been put on the goal to reach more sustainable consumption and production patterns (UBE, 2022a). The biggest potential for reducing the environmental impact of households in the UBE lies in their mobility patterns (see chapter 4.1) (Wiesli et al., 2020c). However, because the average mobility footprint of a resident of the UBE is lower than the Swiss average as well as that of residents of similar rural areas (Wiesli et al., 2020b, 2020a, 2020c)¹, other regions might be able to learn from the UBE to reduce the environmental impact of their residents.

The Avoid-Shift-Improve framework provides three approaches to make everyday mobility more sustainable: The number of kilometres travelled should be reduced (avoid), the share of more sustainable means of transport should be increased (shift), and current technologies should be made more efficient (e.g. use electric cars) (improve) (Creutzig et al., 2022). The results of the Swiss Microcensus on Mobility and Transport from 2015 (BFS & ARE, 2017) show that over half of the distance covered is done by car. For about ¼ public transport is used and only for 8% of the distance covered active mobility is used. When looking at the purpose of mobility, 44% of all distances covered are for leisure purposes, 24% for commuting, 13% for shopping and the rest for business trips, education and services. Thus, the focus lies on reducing car dependency in the areas of leisure activities, commuting and shopping.

¹ All footprints are based on the same methodology and include car use, public transport use and air travel.

To reach a more sustainable everyday mobility, an interdisciplinary approach is required to account for the long recognised embeddedness of mobility in everyday life (Sheller & Urry, 2006; Watson, 2012). Mobility needs to be understood as a highly connected activity and a “means to accomplish particular activities” (Watson, 2012), such as shopping or working, rather than an isolated activity to get from A to B (Sheller & Urry, 2006). Therefore, it is necessary to analyse mobility in the context of the activities it enables to reach a more profound transition within the complex sociotechnical system of mobility (Kent, 2022; Watson, 2012).

Researchers are however not in agreement on how to achieve such a transition. There is increasing criticism on the focus on individuals and how their consumption behaviour can be influenced (Shove, 2010). Especially research in economics, psychology and behavioural sciences has mainstreamed concepts concerning the mechanism behind behavioural choices of individuals and the linear relationship between the values of a consumer and their behaviour (Barr & Prillwitz, 2014; Shove, 2010). Such concepts suggest introducing policy instruments such as incentives, information provisions, nudges and choice architectures, which all aim at motivating people and removing barriers for people to choose more sustainable consumption patterns (Barr & Prillwitz, 2014; Shove, 2010). Due to several shortfalls of these individualistic approaches (see chapter 2.1), the field of social practice theory (SPT) argues to shift the focus away from the individual, their values and alleged choices and instead focus on the practices they perform. Through analysing practices such as driving, cycling, commuting or shopping, new insights can be gained on how practices are sustained, how they evolve and how new, more sustainable practices can emerge (Shove, 2010). This prevents the shift of responsibility from politicians and producers to the individuals as the source of environmental damage (Chatterton, 2016; Shove, 2010). SPT promises to provide a new understanding of individual behaviour and new insights into how to achieve the societal change required for a more sustainable everyday mobility (Shove et al., 2012).

The goal of this thesis is to analyse the mobility patterns of residents of the UBE and uncover factors enabling or hindering the adoption of more sustainable mobility patterns through adopting a SPT-approach. This will be done by investigating the following three research questions:

1. What mobility practices are present in households of the UBE and how are they configured?
2. How do individuals justify their mobility practices in different contexts and what are the underlying motivations?
3. How environmentally friendly do households perceive their mobility practices to be?

The first research question aims at capturing the current configuration of mobility practices. It is guided by the approach introduced by Shove et al. (2012) to analyse the elements of different mobility practices in more detail as well as analyse how the different practices influence one another (see chapters 2.2 and 3). The second research question will help to uncover how individuals negotiate and justify their practices in different situations and contexts. This question is informed by the approach suggested by Welch (2017), which is to investigate the underlying motivations for performing a practice to account for the agency and reflexivity of individuals in their practices (see chapter 3). By investigating the perceived environmental friendliness of their practices, the third research question aims at providing insights about the role of environmental concerns in justifying practices.

In the next chapter, a literature overview of the key features, assumptions and limitations of traditional approaches to behaviour change as well as SPT will be provided. In chapter 3, the conceptual framework adopted in this thesis will be introduced along with the rationale for incorporating the approaches by Shove et al. (2012) and Welch (2017). Chapter 4 outlines the applied method as well as the data analysis procedure, which is used to investigate the research questions and empirically test the developed conceptual framework. In chapter 5, the results of the interviews are presented and the research questions are answered. Chapter 5.3 aims at discussing the results and their limitations and providing learnings from applying the conceptual framework. The thesis concludes with chapter 7, which summarises the most important findings and avenues for further research.

2 Literature overview

2.1 Traditional approaches to consumer behaviour and their limitations

Theorising consumer behaviour and behaviour change have a long history in scientific literature and different theories and conceptual models have been developed and adapted to understand human behaviour (Jackson, 2005). The most widely used models are summarised in the following sections along with the limitations each model brings. The overview draws from Tim Jackson's (2005) comprehensive summary of these models, if not indicated otherwise.

2.1.1 Individualistic approaches

A widely used approach to explain behaviour is to focus on individuals' intentions, interests and utility (Reckwitz, 2002). The commonalities of theories adopting this approach are that they theorise behaviour to follow an individual purpose and to be shaped by attitudes, values and personal norms, which are internal to the individual (Jackson, 2005; Reckwitz, 2002). Hence, behaviour is a result of cognitive and deliberative processes, setting the unit of analysis at the individual itself (Jackson, 2005).

2.1.1.1 *Rational Choice Model*

One of the most widely applied models especially in the field of behavioural economics is the rational choice model. The basic assumptions of the model are that individuals make rational choices and they aim to maximise their own benefits. For consumer behaviour, this means that individuals make a deliberative choice, weighing up the costs and benefits of their acts of consumption. This model is reflected in the economic conceptualisation of individuals as *homo economicus*, which portrays individuals as self-interested and utility-maximising (Reckwitz, 2002).

Jackson (2005) provides several lines of criticism on the rational choice model. First, it is impossible for individuals to make fully rational choices as their decisions are conditioned by the availability of information and the degree of uncertainty associated with it. Second, the lack of accounting for emotions, which can limit the cognitive deliberation of actions, has been highlighted. Third, it can be criticised that individuals don't act only to maximise their own utility. Rather there is often a moral and social dimension to many decisions. The desire to account for the wishes or expectations of others can therefore compromise the individual's rationality. In summary, the rational choice model can be criticised to be "under-socialising' individual choice" (Jackson, 2005, p. 39).

2.1.1.2 *Model of bounded rationality*

The model of bounded rationality as developed by Herbert Simon (1957) addresses some of these criticisms. This model however still belongs to the field of behavioural economics (Keller et al., 2016). The model assumes that individuals are not able to process all available information to make a rational choice. The irrationality of behaviour can therefore be explained by using the concept of heuristics and biases. Through using heuristics and biases, individuals are able not to make the most optimal decision but a decision that is satisfying their minimal expectations. They allow for low-effort decision-making because they are routinely applied. Due to this habitual nature of behaviour, higher cognitive efforts are needed to change behaviour.

Because the model of bounded rationality originates in the field of behavioural economics, critics argue that heuristics and biases are still based on the rationality of individuals. Their formation presupposes a prior rational decision by an individual. Thus, similar limitations as in the rational choice model apply.

2.1.1.3 *Theory of reasoned action and theory of planned behaviour*

Additional theories have been developed in the field of psychology to account for the shortfalls of economic models. Two of the most widely applied theories are the theory of reasoned action (Ajzen & Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1991), the latter being a refinement of the former. Both theories assume that "people behave according to their beliefs about the outcome of their behaviour and the values they attach to those outcomes" (Jackson, 2005, p. 46). Those beliefs and values about the outcome of behaviour shape the *attitude* an individual has towards a specific behaviour. Besides this *attitude*, individual behaviour is influenced by so-called *subjective norms*, which can be

understood as social pressure of how others think he or she should behave. The *subjective norms* and the *attitude* towards a specific behaviour shape the *intention* of a person to behave in a certain way. In the end, it is this *intention* that determines an individual's actual *behaviour*. In the theory of planned behaviour, an additional variable is feeding into the behavioural intention, which is *the perceived behavioural control* (PBC). This variable is defined as the perceived ease or difficulty to perform a specific behaviour. It is important to note that any social or material variable is considered external to the individual and hence can act in favour or as a barrier to behaviour change (Keller et al., 2016).

The limitations of these models can mainly be found in their empirical application. A meta-analysis found for example that pro-environmental behaviour can only partially be explained by the behavioural intention and the variables shaping it (Bamberg & Möser, 2007). Further critique on the implications these models have for policy-making can be found in the next section.

2.1.1.4 Implications of individualistic models for policy-making

The above-summarised models and theories received much attention in research as Shove (2010) explains. This branch of research suggests that policy-makers should follow what she calls the ABC model (A standing for attitude, B for behaviour and C for choice), which is derived from the theory of planned behaviour and reasoned action and is an adaptation of Stern's (2000) model. The ABC model assumes that behavioural change depends on the attitudes (A) an individual has, which influences the individual's behaviour (B) that he or she chooses to adopt (C). Key features are the linear relationship between attitudes, intention and behaviour as well as the underlying rationality and sovereignty of individuals (Keller et al., 2016; Tukker et al., 2010).

The features of the ABC model suggest that policy-makers can change the behaviour of individuals by changing people's values and attitudes through information campaigns or awareness raising on a certain topic and provide them with more sustainable alternatives that they can choose from (Keller et al., 2016; Shove, 2010). Several authors argue however that these kinds of interventions have limited success in addressing the dominant environmental problems (Blake, 1999; Geels et al., 2015; Hargreaves, 2011; Welch, 2017; Welch & Southerton, 2019). Sticking to the rationale of the ABC model, the limited effectiveness can be attributed to the so-called value-action gap (Blake, 1999; Kollmuss & Agyeman, 2002; Shove, 2010). This gap refers to the phenomenon that a person can have pro-environmental values, but doesn't always act in accordance with them (Shove, 2010). People who fail to adopt a more sustainable behaviour, even though they intend to do so, either lack a motivator or encounter a barrier (Chatterton, 2016; Shove, 2010). Therefore, besides promoting pro-environmental values and attitudes, policy-makers should aim at removing barriers (Chatterton, 2016; Shove, 2010). This is one way of explaining the value-action gap. Others argue that the underlying features of linearity, sovereignty and rationality simply do not reflect the reality and that the value-action gap is therefore only an artefact of a model based on false assumptions (Shove, 2010; Welch, 2016, 2017).

The model of bounded rationality suggests further and rather specific ways for policy-makers to influence behaviour. Through using nudges or a choice architecture approach, environments and regulations can be designed in a way that sets the desired option as default (Keller et al., 2016). Through this, peoples' decisions are externally edited (Keller et al., 2016). These approaches have been criticised for being in conflict with democratic values (Barr & Prillwitz, 2014; Keller et al., 2016).

Despite the wide critique of the assumed linearity and rationality of the model, the ABC model still prevails in research around behaviour change and could potentially inform policy-makers (Shove, 2010). There are several reasons for that. First, the linear model is simple and easy to understand for politicians and the public administration (Keller et al., 2016). Second, the model shifts the responsibility away from politicians and towards the individual as the source of environmental damage (Chatterton, 2016; Shove, 2010). Lastly, policy-makers can focus on designing instruments around removing barriers, which is in line with the short-term thinking and limited budget of policy-makers (Barr, 2015; Shove, 2010; Welch, 2017).

2.1.2 Structural approaches

A sociological approach frames behaviour as being conditioned or constrained by external processes and characteristics as well as collective norms and values about social oughtness (Jackson, 2005; Reckwitz, 2002). This approach is however far less dominant than individual approaches (Jackson, 2005). Theories adopting this approach see behaviour as a reaction to the behaviour of another person. Hence, our personal values, attitudes and beliefs are not our own but are socially constructed meanings that are internalised from social groups and constantly shaped by social relations. Material resources carry a socially-shared meaning too (e.g. a nice car is associated with success). Often, a person's behaviour is shaped by the social identification with a reference group they belong to. Behaviour is therefore not the outcome of a deliberative rational choice, but of social norms and socially-shared meanings of social groups and people we interact with.

This suggests that policy-makers should aim at changing the symbolic meanings of material things and foster more positive meanings around non-material resources. Additionally, it can be problematic when framing certain behaviour belonging to a specific group of people. Individuals may refuse to adopt any behaviour associated with a social group they don't want to be connected with.

This approach is criticised for assuming that behaviour is only shaped by external factors that are out of the control of individuals (Jackson, 2005; Shove et al., 2012). This suggests that people are "passive 'slaves' of structural pressures" (Røpke, 2009, p. 2491) and are "rule-following social being[s]" (Keller et al., 2016, p. 77) that can't influence their own behaviour.

2.2 Social practice theory

From the models and theories presented in the previous sections stems a profound debate on the unit of analysis. While followers of the individualistic approach from the field of economics and psychology see the unit of analysis in the individual agency, sociologists see the unit of analysis in the social structure (Jackson, 2005). This dichotomy is referred to as the debate between agency and structure (Jackson, 2005; Shove et al., 2012). The former perspective sees "consumers as atomistic agents autonomous of social structure" (Jackson, 2005, p. 89), while the latter sees "consumers as constrained operators programmed (or at least heavily influenced) by external forces beyond their comprehension or control" (Jackson, 2005, p. 89). The desire to "bridge the agency-structure dichotomy" (Jackson, 2005, p. 90) calls for a more integrative theory of consumer behaviour. This is what social practice theory (SPT) tries to achieve by shifting the unit of analysis away from the individual or social structure and towards the practice (Jackson, 2005; Shove et al., 2012).

2.2.1 Basic principles of social practice theory

SPT is not a homogeneously defined theory. Rather there exists a plurality of different conceptualisations (Gram-Hanssen, 2011; Warde, 2005; Warde et al., 2017). SPT draws from the work of Bourdieu (1977) and Giddens (1984) that started to theorise the first elements of SPT in the second half of the 20th century (Warde et al., 2017). What is referred to as the second-generation of practice theory focussed on the development of social practice theory and was largely influenced by the work of Theodore Schatzki (1996, 2002) and Andreas Reckwitz (2002) (Warde et al., 2017; Welch et al., 2020).

Practices can be defined as "a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" (Reckwitz, 2002, p. 249). Schatzki defines a practice as "a temporally unfolding and spatially dispersed nexus of doings and sayings" (Schatzki, 1996, p. 89). These doings and sayings are linked by four elements, namely general understandings, rules, practical understandings and teleoaffective structures (for a definition of elements see chapter 2.2.2) (Schatzki, 1996, 2002). A more recent and minimal definition defines a practice as "an organized, and recognizable, socially shared bundle of activities that involves the integration of a complex array of components" (Welch & Warde, 2015, p. 85). All these definitions have in common that practices are understood as routinised nexuses of activities that are composed of several connecting elements.

Because SPT shifts the focus from the individual towards the practice, it is important to reframe the role of the individual. While in individualistic approaches individuals have certain qualities (such as values and attitudes), in SPT these qualities are part of a practice and the individual is merely the carrier of that practice (Shove et al., 2012). For an individual to be a carrier of a practice, the performance of the practice must be reproduced regularly over time (Shove et al., 2012). Additionally, an individual carries a set of different practices. Practices therefore compete for the recruitment by a practitioner (Shove et al., 2012). However, it is not the individual's active deliberate choice, which practices he or she adopts as Shove et al. (2012) highlight. Rather the adoption of a practice depends on several factors, such as the capacity of an individual to adopt a practice, the access to the practice as well as the location of the individual and historic developments. Access can be limited mainly because practices are not uniformly distributed in space and time. For example, cities that are planned around cars often have limited access to public transport but in turn, make driving around by car much more accessible. Furthermore, the adoption of a practice can be influenced by networks and communities a person belongs to and the practices these groups regularly perform. Just as values or attitudes are not part of an individual but of a practice, social and material factors are likewise not external to practices but part of them (Keller et al., 2016; Welch, 2016).

A further refinement needs to be made to analyse practices and their development, which is the distinction between practice as entity and practice as performance. The notion of practice as entity goes back to the above-presented definition of practices as temporally unfolding and spatially dispersed nexus of doings and sayings, which indicates that practices endure across individual moments of enactment (Shove et al., 2012; Warde, 2005). Therefore, a practice as entity is something that can be spoken about and has a history and path of development (Shove et al., 2012; Welch & Warde, 2015). Conversely, practice as performance refers to the actual moments of performance of a practice (Shove et al., 2012; Warde, 2005). Only through these regular enactments of practices as performances does the practice as entity exist and persist, which makes the two notions recursively related (Shove et al., 2012; Welch & Warde, 2015). In empirical analysis, it is only the practice as performance that is observable (Keller et al., 2016; Røpke, 2009). The distinction shows that practices don't belong to an individual or are not a result of individual choice, but are socially shared actions (Spurling et al., 2013).

2.2.2 Elements of practices

As the above-introduced definitions of a practice indicate, a practice consists of several interconnected elements. There are two widely used typologies of elements. A definition of the elements according to their theorists and the distinct features of each typology will be presented in what follows.

The first typology was proposed by Shove et al. (2012) and is widely used in empirical studies. Their typology is based on Reckwitz's definition and provides a simple framework in which a practice consists of three elements: *meaning*, *competence* and *material*. *Materials* include the human body, objects, infrastructure, tools and hardware that are needed to perform a practice. *Competence* encompasses know-how or skills, background knowledge and understanding of a practice. *Meaning* includes symbolic meaning, ideas, aspirations, mental activities and emotional and motivational knowledge. The empirical application of this typology can be illustrated by the example of driving a car (Shove et al., 2012). At the time of the introduction of the car, the vehicles and their engines were very unreliable and would often need to be repaired while driving. Therefore, the practice of driving a car included the material of a car prone to breakdowns and the competence to repair a car. Rather than being perceived as inconvenient, driving was associated with the meanings of experiencing an adventure and masculinity.

The second typology directly draws from Schatzki's definition and conceptualises the elements of a practice to be *general understandings*, *rules*, *practical understandings* and *teleoaffective structures* (Warde et al., 2017). *General understandings* are "common to many practices and condition the manner in which practices are carried out" (Warde et al., 2017, p. 29). It is therefore an ideational element and part of several practices (Welch & Warde, 2016). Examples of general understandings are the concept of a nation, categories of gender, the notion of convenience or environmental consciousness (Gram-

Hanssen, 2011; Welch & Warde, 2016). Even though they are part of several practices, general understandings are not external to practices but on the same ontological level (Welch & Warde, 2016). *Rules* are explicit directions, instructions and principles (Warde, 2005; Warde et al., 2017). *Practical understanding* encompasses know-how and the understanding of how to go on with an activity (Warde et al., 2017). *Teleoaffective structures* are “normatively ordered arrays of ends, orientations, and affective engagements” (Warde et al., 2017, p. 29). In other words, the teleology refers to the orientation towards particular goals and ends, while the affectivity refers to the emotional and motivational engagements (Welch, 2020).

By defining the elements of the different typologies, it becomes apparent that there are some overlaps but also some unique elements to each typology. Table 1 summarises the elements of the two typologies and shows how they relate. The elements of *practical understanding* and *rules* are both present in Shove’s typology but are combined under the element of *competence* (Gram-Hanssen, 2010). One of the most important distinctions is the absence of materials in Schatzki’s typology. It is less clear how the elements of *general understandings* and *teleoaffective structure* overlap with that of *meanings*. While some authors refer to it synonymously (e.g. Gram-Hanssen, 2011; Meinherz & Binder, 2020) some highlight the differences between especially *teleoaffective structure* and *meanings* (Weenink & Spaargaren, 2016; Welch, 2017) (for a further discussion see chapter 3.2.3). In summary, the different typologies highlight different aspects of a practice, making them useful for different study purposes.

Table 1. Typologies of elements of practices. Elements on the same row are identical. Elements on the same row in brackets are only partially identical (adapted from Gram-Hanssen, 2011)

Schatzki (1996, 2002)	Shove et al. (2012)
General understanding	
Rules	Competence
Practical understanding (Teleoaffective structure)	Competence (Meanings)
	Materials

To understand how elements relate to each other and other practices, it is helpful to conceptualise the elements as having a life of their own as proposed by Shove et al. (2012). This way of thinking suggests that elements can move to different places and can emerge and disappear at different points in time. This can be illustrated by picking up the previous example of the taking up of driving a car. If the car technology hadn’t yet arrived in the continent you live on or you couldn’t afford a car, even though you would know how to repair it, individuals won’t be able to adopt the practice of driving. Also, if they don’t know how to repair the car or they don’t experience driving as being adventurous but rather annoying, the practice won’t be adopted. This example shows that for a practice to have the possibility to emerge, all elements of a practice must be present in the same place and at the same time. Additionally, elements can exist beyond a practice. For example, the rates of cycling dropped hugely in the 1970s in Europe as cycling changed to be perceived as a leisure activity and no longer as the standard and safe way to move around. Although commuting was usually done by car afterwards, the bicycle still existed and also many people still knew how to cycle. This persistence beyond the practice allows for the bicycle to be reintroduced into the practice of commuting in case the meaning changes again.

2.2.3 Connections between practices

Much like the elements of a practice are connected, so are the practices themselves connected to each other (Shove et al., 2012). Practices can form bundles or complexes as theorised by Shove et al (2012). Bundles are loose-knit patterns, in which practices co-exist without having a particular influence on one another. Complexes are a “stickier” form, in which practices are co-dependent. Bundles and complexes can be formed, if two practices share one common element (e.g. headphones connect the practices of taking public transport and listening to music) or if they are carried out at the same time and/or place. Practices that are connected through the time dimension are either connected through sequencing or synchronisation. Sequencing refers to situations, in which practices are performed after one another, while synchronising refers to situations, in which the practices are performed simultaneously.

The relationship between different practices can take different forms. Practices within a complex or bundle of practices can compete (e.g. being on the phone while having a family dinner leaves less time for socialising), they might require one another (e.g. docking a ship requires synchronisation and sequencing of several practices) or they can mutually transform one another. Similar to elements, bundles and complexes require continuous reproduction to sustain over time.

2.2.4 Analysing consumption using SPT

SPT provides a new approach to analysing consumer behaviour by shifting the focus away from the individual and towards the practice. Practices can be understood best by analysing how the elements of a practice relate as well as how different practices relate to each other (Shove et al., 2012). Nicolini (2009) suggests using a zooming in and zooming out approach. Zooming in refers to the analysis of the actual performance of a practice and the variations of configurations of elements of a practice (Castelo et al., 2021; Nicolini, 2009). By zooming out, connections between practices can be uncovered (Castelo et al., 2021; Nicolini, 2009). For analysing connections, it is important to shed light on how practices are related in space and time (sequencing and synchronisation) (Nicolini, 2009).

To go one step further and analyse consumption patterns, it is necessary to define the role of consumption in practices. In his work, Warde (2005) describes how “consumption is not itself a practice but is, rather, a moment in almost every practice” (Warde, 2005, p. 137). Understanding consumption as a part of a practice emphasises that people don’t consume for the sake of consuming but to be able to engage in a practice. This is very different from traditional approaches, which frame consumption to be steered by individual choices. SPT suggests that to understand consumption, it is necessary to understand the practices a person engages in and the moments of consumption these involve.

2.2.5 Limitations of Social Practice Theory

Although SPT promises to be a more realistic theory of how to understand consumption and human behaviour, it hasn’t yet become a mainstream approach (Keller et al., 2016; Welch et al., 2020). Welch et al. (2020) identified three conceptual lacunae in SPT. First, SPT lacks conceptualisation of culture and thus consumer culture. This makes it hard to address culture from within SPT. Second, in SPT consumption is separated from production, which leads to an insufficient conceptualisation of production. Several researchers call for a reconnection of consumption and production. Third, SPT lacks conceptualisation of the reflexive individual. Following the assumptions of SPT that practices are routinised types of behaviour and that individuals are merely carriers of practices, there is a risk of viewing change in a deterministic way not leaving room for reflexivity or individual agency (Weenink & Spaargaren, 2016).

Keller et al. (2016) mention several further limitations of the possible applicability of SPT in policy interventions. First, they highlight the difficulty of drawing boundaries of a practice due to the embeddedness of practices in a complex or bundle of practices. There is a risk of addressing practices in isolation and neglecting this embeddedness or the difficulty to identify the most crucial activity in a bundle of practices. Second, there is a lack of theorising social interaction and communication, which play a vital role in how practices are shared, adapted and negotiated. Third, there are several methodological limitations. For example, there is scepticism, about whether it is possible to evaluate the impact of an intervention because it is difficult to identify a causal link between intervention and outcome in interrelated practices.

2.3 SPT in mobility and transport research

SPT has been applied in a variety of areas in empirical research and has thus proven its strengths to analyse consumption patterns. Research around SPT focuses on the three areas that cause the majority of environmental impacts: housing, nutrition, and transport. A search for studies applying SPT in widely used databases such as Scopus and Web of Science yields several thousand results. Hence, this chapter aims at providing a brief overview of the dominant fields of research in mobility and transport research along with some example studies.

To get an overview of the mobility and transport research using SPT, an online search was done. A search in the Web of Science database with the following query "'social practice theory' OR 'theor* of practice*' AND mobility OR transport NOT migration" yielded 64 relevant results. Additionally, the snowballing technique was applied to identify further relevant articles.

The majority of studies were conducted in an urban context, while only about ¼ of the studies identified looked at a representative sample of residents of a country without particular distinction between urban and rural residents. There was no study identified that explicitly analysed mobility in a rural area using a SPT-approach. Some studies explicitly considered not just urban areas but also rural ones (Guell et al., 2012, 2013; Heisserer & Rau, 2015; Schäfer et al., 2018). The identified studies were predominantly conducted in European countries with a strong focus on the UK and to a lesser extent Sweden and Norway. A few studies were also conducted in Australia (e.g. Breadsell & Morrison, 2020; Kent, 2014, 2015; Kent & Mulley, 2017), North America (e.g. Caldwell & Boyer, 2019; McLaren, 2018; Ravensbergen et al., 2020) and Asia (e.g. Anantharaman, 2017; Hansen, 2017; Iyanna et al., 2019; Palliyani & Lee, 2021).

In Switzerland, four studies were identified that applied SPT to analyse transport. First, there is the work by Meinherz et al. (2020; 2021) that looked into shifts in urban commuting practices. They found three dynamics that lead to a shift in meanings associated with commuting or a means of transport: Changes in spatiotemporal complexity of the commute, changes in the social representation of everyday mobility or different means of transport, and changes in the experience of a means of transport (Meinherz & Fritz, 2021). Then there is the study by Sahakian et al. (2021) that looks into the practices around flying and designed and assessed different change initiatives. The last study analysed data from the Microcensus to identify linkages between different practices (Manderscheid, 2019).

Similar to the geographic concentration of studies, certain topics around mobility are researched more frequently than others. A strong focus lies on research around the car and to a lesser extent on cycling and flying. Only very few studies looking into the use of public transport (e.g. Cass & Faulconbridge, 2016), motorcycling (e.g. Hansen, 2017) or walking (e.g. Guell et al., 2012). The studies on car use identified several elements that reinforce the car as the default mode of transport for many: The freedom, flexibility and autonomy they get from using a car, the privacy, convenience and comfort it provides (Cass & Faulconbridge, 2016; Greene & Rau, 2018; Kent, 2014, 2015; McLaren, 2018; Rau & Sattlegger, 2018; Selzer & Lanzendorf, 2022), the saving of time (Kent, 2014; Laakso, 2017; McLaren, 2018), the ease and/or safety to transport heavy items (Laakso, 2017; Mattioli et al., 2016; McLaren, 2018), and travelling with children (Cass & Faulconbridge, 2016; McLaren, 2018; Rau & Sattlegger, 2018) or pets (Kent & Mulley, 2017; Mattioli et al., 2016). For cycling, several studies found the performance of the practice to depend on the available infrastructure and thus the safety of cycling (Caldwell & Boyer, 2019; Larsen, 2017; Ravensbergen et al., 2020; Scheurenbrand et al., 2018; Spotswood et al., 2015). The same studies also found a wide range of materials (e.g. weather protection, panniers) and competencies (e.g. cycling with kids, finding safer routes) that people needed to acquire before engaging in the practice of cycling. Furthermore, they found that flexibility, efficiency and speed were common meanings associated with cycling. However, they emphasise that this is only the case for short distances. Other meanings associated with cycling are that it is healthier and involves exercise (Cass & Faulconbridge, 2016; Spotswood et al., 2015), and it is environmentally friendlier (Caldwell & Boyer, 2019; Cass & Faulconbridge, 2016). The only study identified that looked into public transport found meanings of environmental friendliness and the ability to do something productive while being mobile associated with riding a bus (Cass & Faulconbridge, 2016). Additionally, it identified several competencies needed to perform this practice such as time management and ticket purchase. Other studies found that people often don't engage in public transport because it is perceived as too inflexible (e.g. Kent, 2014; Larsen, 2017; Selzer & Lanzendorf, 2022).

Across all these studies, environmental concerns were either only one amongst many reasons for engaging or defecting from one means of transport (e.g. Caldwell & Boyer, 2019; Cass & Faulconbridge, 2016; Selzer & Lanzendorf, 2022) or they found that environmental concerns do not play a significant

role. For example, the study by Meinherz and Fritz (2021) found that environmental concerns were affirmative to adopting low-carbon means of transport, but they didn't actively influence participants' decision to adopt an environmentally friendlier means of transport. Similarly, Spotswood et al. (2015) and Larsen (2017) didn't identify environmental responsibility as a meaning ascribed to cycling. Lastly, Volden and Hansen (2022) found that people with a strong sense of environmental responsibility still engage in the practice of flying because of the perceived necessity of such trips (e.g. visiting family).

While a lot of studies don't differentiate what the mode of transport is used for, some studies focus on analysing the mode of transport used to accomplish a specific associated practice. The biggest part of the studies identified focuses on commuting to work (e.g. Cass & Faulconbridge, 2016; Kent, 2015; Spotswood et al., 2015; Stein et al., 2022). While most of the studies presented in the previous section analysed elements of the different modes of transport in the context of commuting, they didn't investigate the elements of the practice of commuting itself and independent of the mode of transport. One exception is the study by Stein et al. (2022) that identified four types of commuting practices. The first type of commuting practice is influenced by material arrangements such as a lack of alternatives, bad infrastructure and stress from traffic situations. A second type focuses more on the benefits of the commute in terms of making use of the time and improving the work-life balance. The third type of commuting practice focuses on the necessity of the commute and hence the indifference and habitual attitude towards it. The last type is influenced by the time constraints and heavy time framing of the commute.

A few studies focus on practices other than commuting, namely shopping (e.g. Berg & Henriksson, 2020; Godin & Sahakian, 2018; Mattioli et al., 2016; Mattioli & Anable, 2017), parenting (Greene & Rau, 2018; e.g. McLaren, 2018; Rau & Sattlegger, 2018; Sersli et al., 2020), leisure activities (e.g. Boyer, 2018; Hui, 2012, 2013), or holidays (e.g. Fox et al., 2017; Sahakian, Nagel, et al., 2021; Volden & Hansen, 2022) and the different modes of transport used to perform these practices. Another area that receives a lot of attention is that of car sharing (e.g. Kent et al., 2017; Svennevik, 2021; Svennevik et al., 2020).

The studies on shopping found that shopping is often associated with being boring and time-consuming when compared to online grocery shopping (Berg & Henriksson, 2020). They also found that the carrying of groceries is perceived to be tedious and is thus tried to be limited (Berg & Henriksson, 2020; Godin & Sahakian, 2018; Mattioli et al., 2016). A Swiss study found that there is often a preference for one retailer over another (Godin & Sahakian, 2018). Additionally, they found that people are often not willing to spend extra time on their shopping trip and prefer closer shops or shops along the route of their commute. The identified studies investigating the practice of parenting all agree that family life has an influence not only on the mode of transport adopted (e.g. using a car because of safety or convenience) but also on the performance of other practices that are connected to parenting in space or time (McLaren, 2018; Rau & Sattlegger, 2018; Sersli et al., 2020).

This overview of the SPT-based mobility research shows that car use and commuting practices in urban contexts are well studied. There is however very limited research on other modes of transport, especially public transport, and practices other than commuting. Studies on rural mobility are absent too.

3 Conceptual framework

Because of the many limitations of traditional approaches of behavioural sciences, economics and psychology in assessing any type of consumption patterns, a SPT-approach is adopted in this thesis, which promises to overcome these limitations. Given the heterogeneity of SPTs, this section maps out the conceptual framework for this thesis.

3.1 Basic framework

As a basic framework, the typology of elements as presented by Shove et al. (2012) (meanings, competencies, materials) is adopted to analyse practices. There are two reasons for that. First, mobility practices are highly dependent on technological and infrastructure developments (Watson, 2012). This material element is only present in Shove's typology, which is why it was chosen over that of Schatzki. Second, the typology has been widely used in empirical research on transport and mobility practices (see for example Cass & Faulconbridge, 2016, 2017; Greene & Rau, 2018; Iyanna et al., 2019; Julsrud & Farstad, 2020; Kent, 2015; Laakso, 2017; McLaren, 2018; Rau & Sattlegger, 2018; Scheurenbrand et al., 2018). The vast empirical application of this typology (also in other domains) highlights its suitability for empirical research.

3.2 Expansion of the basic framework

As described in chapter 2.2.5, SPT is not free of conceptual limitations. Therefore, the basic framework is further developed to account for one of the main limitations of SPT. As the goal of this thesis is, among other things, to uncover factors preventing individuals to adopt more sustainable mobility patterns and the role of environmental concerns in negotiating practices, it seems pivotal to address the SPT's lack of conceptualising individual agency and reflexivity. In the next section follows an overview of how theorists thought to address this shortfall.

3.2.1 The role of individual agency

According to Weenink and Spaargaren "agency resides in emotions" (Weenink & Spaargaren, 2016, p. 61). Emotions shape action in three different ways (Schatzki, 2010; Weenink & Spaargaren, 2016): First, emotions create a sense or urge to perform an action to satisfy a desire or want (can be conscious or unconscious). Second, emotions indicate what action it makes sense to perform next (can diverge from what seems rational). Third, emotions can determine the action directly without trying to make sense of the action before performing it (e.g. bodily reactions). To understand agency in SPT, we therefore need to understand the role of emotions in practices.

Emotions and affectivity are concepts that have received very little attention in SPT-research and lack appropriate theorisation (Reckwitz, 2017; Weenink & Spaargaren, 2016; Welch, 2017). In the typology of Schatzki, emotions are part of the teleoaffective structure of a practice, along with goal orientation and motivational engagement (Welch, 2020). There are however two main reasons that limited the further investigation of the concept of affectivity. On the one hand, emotions are often assumed to be properties of an individual, as it is a phenomenon occurring within an individual's body and psyche (Reckwitz, 2017). This assumption is not compatible with SPT, because there are no individual qualities external to a practice (see chapter 2.2.1). Therefore, emotions and affectivity are often excluded from research that adopts SPT. On the other hand, many authors assume that modern society is rational and thus affect-neutral, which again shifts the focus away from the role of emotions in practices (Reckwitz, 2017).

Due to the recent recognition of this shortfall to account for emotions in practices, there are some empirical studies on household consumption that investigated the role of emotions in practices (Bassi et al., 2019; Kent, 2015; Sahakian, 2022; Sahakian et al., 2020; Sahakian & Bertho, 2018). However, the recent work of Reckwitz (2017) and Welch (2017) proposes to go one step further and focus on the connection between emotions and motivation.

3.2.2 The role of motivation and emotions

As already proposed by Schatzki's teleoaffective structure, which not only refers to emotions but also motivations, the two concepts of emotions and motivation are closely related (Welch, 2017). Reckwitz (2017) describes that every practice must entail a specific motivation. This motivation is created by emotions or affects. He states that without any affects there wouldn't be any motivation, giving the example of serf's labourers who are motivated by the fear of punishment. Without this fear, the serf's labours wouldn't have any motivation to work. But just as there lacks a theory for affect, there is no adequate theorisation of motivation (Welch, 2017). Welch (2017) confronts this shortfall and provides an approach to analysing motivation:

“A practice theoretical approach to motivation engages with the specific forms of motivation that a practice entails for its participation, the forms of affective engagement this motivation entails (which may be positive, e.g. desire, or negative, e.g. fear), as a well as the conditions under which motivational engagement, and therefore competent performance of the practice, fails.” (Welch, 2017, p. 27)

At this point, it is important to emphasise that neither motivations nor emotions are the properties of an individual (Reckwitz, 2017; Welch, 2017). Rather both must be understood as a part of a practice. Reckwitz (2017) speaks of a “built-in motivation structure” that every practice has. He emphasises that not only the missing of elements such as competence, material or meaning can hinder the adoption or performance of a practice, but also the lack of motivation for performing a practice.

For the conceptual framework of this thesis, I follow this line of argumentation and the argument by Welch (2017) that the element of teleoaffective structure, of which motivation is a part, is missing from Shove's typology. Therefore, it seems inevitable to expand the basic framework and investigate motivations behind practices to account for individual agency in practices (M. Sahakian, personal communication, April 14, 2022). I propose to expand Shove's typology and add the element of motivation to the basic framework (see Figure 1). This implies that motivation, just as the other three elements of meaning, material and competence, is an element of every practice and has its own life (see chapter 2.2.2). Motivations can circulate in space and time and are connected to different practices and are therefore not a quality of an individual but a part of a practice.

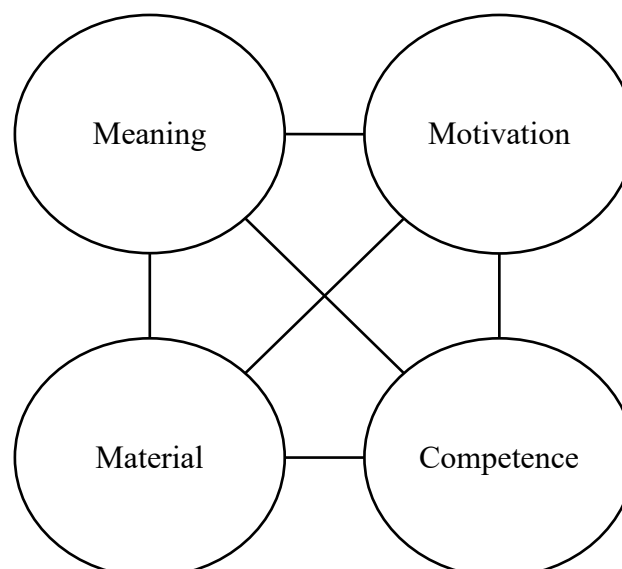


Figure 1. Elements of a practice and their relation to each other. Expansion of the typology by Shove et al. (2012).

3.2.3 Distinguishing motivation and meaning

Although Welch (2017) states that teleoaffectivity (and therefore also motivation) is not reflected in Shove's element of meanings, other authors understand the two elements as similar or even synonymous (see chapter 2.2.2). Therefore, it is important to provide a distinction between the two elements of motivation and meaning.

Shove et al. combine “mental activities, emotion and motivational knowledge into the one broad element of ‘meaning’, a term [...] [they] use to represent the social and symbolic significance of participation at any one moment” (Shove et al., 2012, p. 23). Their definition of meanings shows that emotions and motivations are subsumed under the term meaning. However, if we look into empirical work, authors interpreted meanings as follows:

- “Meanings ascribe social significance to a practice, associating it with things considered valuable in wider society” (Cass & Faulconbridge, 2016, p. 4)
- “Meaning: Cultural expectations, conventions and socially shared meanings” (Greene & Rau, 2018, p. 7)
- “meaning [...] reflects norms and values in society” (Rau & Sattlegger, 2018, p. 48)
- “Meaning refers to how practices are both socially and culturally negotiated, representing norms of acceptable ways of undertaking a practice” (Iyanna et al., 2019, p. 4)

These examples illustrate that the empirical application of the concept of meanings has led to a loss of its breadth and is reduced to only capture socially shared notions of what is considered acceptable, normal or valuable in society. This lack of recognising emotions and motivations in meanings is also something that Kent (2022) criticises in her review of SPT and transport research. This shortfall can be explained by the fact that emotions and motivations are often associated with an individualistic focus that SPT tries to avoid (Kent, 2022; Reckwitz, 2017).

The above-outlined approach to adding motivation as an element of a practice is therefore not a completely new innovation. Rather, it is a way to give space to a component that hasn’t received adequate attention in existing frameworks and the empirical application of them. By explicitly adding the element of motivation, this dimension of a practice can no longer be circumvented. Additionally, it allows one to conceptualise motivations as being part of a practice avoiding the individualistic focus.

In this thesis, meanings and motivations are to be understood as follows. I stick to the definition of meanings as often used in empirical work. Therefore, meaning is what is considered acceptable, normal or valuable in society. Meanings are therefore shaped by societal norms and values. For example, driving a car is associated with the meanings of comfort and speed, which is why society considers using a car as the default means of transport. In contrast, motivation is something that is shaped by emotions. For example, someone can be motivated by ecological concerns to use a bike to go to work, because he or she associates ecological concerns with fear or guilt.

3.2.4 Empirical testing of the expanded framework

A SPT-approach aims to analyse how the elements of a practice are related and how different practices relate to each other (Shove et al., 2012). Using the conceptual framework presented above, this means investigating how materials, meanings, competence and motivation are connected and how those elements are connected between different practices. Additionally, Welch’s approach to studying motivation requires also to focus on investigating conditions under which motivation fails to engage in the performance of a practice.

To the author’s knowledge, there is no empirical study yet that explicitly conceptualised motivation as an element of a practice in SPT-research around consumption patterns or behaviour change. Therefore, the conceptual framework still has to prove its empirical validity. Two recent studies focused on investigating the justifications for the performance or the abandonment of a practice in different contexts. Volden and Hansen (2022) analysed how people with environmentalist values justify their flying practices. Katan and Gram-Hanssen (2021) investigated in which situations individuals abandon the practice of waste sorting. Both studies however used the concepts of general understandings and teleoaffective structure to study justifications. Also, some empirical studies investigated the role of emotions in practices, however without focussing on motivations (Bassi et al., 2019; Kent, 2015; Sahakian, 2022; Sahakian et al., 2020; Sahakian & Bertho, 2018).

4 Methods

This thesis adopts a qualitative approach to answer the research questions. To collect the qualitative data, 14 semi-structured interviews with residents of the UBE were conducted. To analyse the data, a content structuring analysis was conducted using a deductive coding system. This qualitative procedure was chosen as the goal of this thesis is not to make statements about the frequency or distribution of people performing a certain practice, but rather to uncover the range of practices residents perform and the different elements they consist of.

4.1 Research Context

The UNESCO Biosphere Reserve Entlebuch (UBE) is a regional nature park situated in the Canton of Lucerne in Switzerland (see Figure 2) and is listed as a Park of National Importance by the Swiss Federal Office for the Environment (FOEN) (FOEN, 2022b). Additionally, the rural region is designated as a biosphere reserve by the UNESCO (UBE, 2022a). Therefore, the UBE has to meet several requirements of the FOEN and the UNESCO. One of them is to contribute to the 17 SDGs as set out by the UN (UBE, 2022a), which is reflected in the UBE's vision to become "an international model region for sustainable development" (UBE, 2022b).

The biggest potential for reducing the environmental impact of households in the UBE lies in their mobility patterns as a recent study on the quality of life and sustainability in the UBE found (Wiesli et al., 2020c). Out of the three areas dominating the environmental impact of individuals, mobility is the area causing the highest GHG emissions of residents of the UBE. However, the average mobility footprint of a resident of the UBE is lower than the Swiss average and lower than the mobility footprint of residents of other Swiss Parks of National Importance when looking at emissions from car use, public transport and air travel (Wiesli et al., 2020b, 2020a, 2020c).

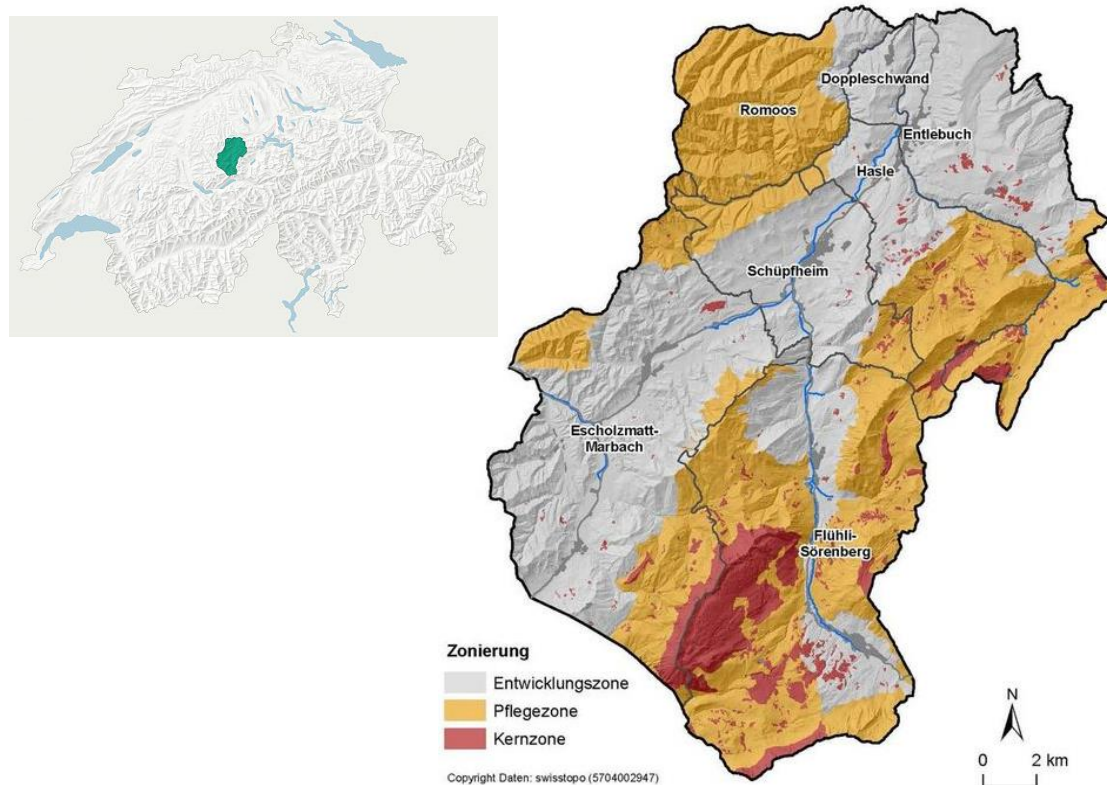


Figure 2: Location of the UBE (in green) (Netzwerk Schweizer Pärke, 2022). Municipalities and zoning of the UBE. In red is the core zone, in orange the care zone and in grey is the development zone (UBE, 2022a)

The UBE is composed of seven municipalities and covers an area of around 395 km², of which only 3.3% is settlement area (LUSTAT, 2022). All of the municipalities can be categorised as moderately populated peripheral rural areas² (ARE, 2013). In 2020, the UBE had 17'000 inhabitants and a population density of 43 inhabitants per km² (LUSTAT, 2022). 22% of the inhabitants work in the agricultural sector, which is significantly more than the Swiss average of 2.4% (BFS, 2022b; LUSTAT, 2022).

The level of motorisation is with 589 passenger cars per 1000 inhabitants higher than the Swiss average of 541 cars per 1000 inhabitants (BFS, 2022a; LUSTAT, 2022). The road infrastructure is well developed in peripheral rural areas and regional centres can be reached in 10 to 20 minutes (ARE, 2008). Peripheral rural areas are however characterised by a poor accessibility with public transport, where 90% of households have medium to low accessibility to public transport (Marconi & Schad, 2016). The UBE is accessible by train twice an hour and connects the municipalities Entlebuch, Hasle, Schüpfheim and Escholzmatt-Marbach to the cities of Bern and Lucerne (SBB, 2022). Additionally, there are eight local bus routes connecting different municipalities of the region (PostAuto AG, 2022). However, only three of them serve on a regular basis. The rest drives either only during commuting times, on Sundays and holidays or at night. As the UBE is part of the pre-alps and northern alps (Gonseth et al., 2001), the region is hilly, making cycling and walking physically more demanding. Additionally, cycling is not very safe, because there are very few cycling lanes and a high volume of traffic. In return, the region offers a lot of leisure and tourist activities, ranging from biking and hiking as well as cultural and educational experiences in summer to different skiing areas and lifts and freeriding tours in winter (UBE, 2022a).

4.2 Data collection

The focus of this master thesis is to analyse mobility practices, which requires a more detailed definition of the mobility practices that will be investigated. Kent (2022) proposes to differentiate between two categories of mobility practices. On the one hand, she refers to “*direct transport practices*”, such as driving a car or cycling. On the other hand, there are “*practices facilitated by transport*” or “*facilitated practices*”, such as shopping or commuting. The latter category of practices induces the direct transport practices and in turn, the former enables the facilitated practices to be performed. This distinction helps to investigate the configuration of practice elements in the context of the associated actions (Kent, 2022). After reviewing current SPT-based research on mobility, several different direct transport and facilitated practices could be identified. As covering all of these practices is not feasible within the study design, the thesis will focus on the most relevant practices in terms of sustainable everyday mobility. Informed by the Microcensus on mobility in Switzerland (BFS & ARE, 2017), the thesis will focus on the facilitated practices of commuting, shopping and pursuing leisure activities. The direct transport practices of driving, taking public transport, cycling and walking will be investigated in the context of these facilitated practices.

To collect qualitative data on these direct transport practices and facilitated practices, there are generally two possible methods, one being interviews and the other one being participant observations, each of which has its own strengths and limitations (Bryman, 2012; Halkier, 2017). While participant observations are suitable when focussing on analysing the materiality and embodied tacit dimension of practices, interviews are more suitable when analysing the explicit discursive dimension (Halkier, 2017). Due to the research focus on the justifications and motivations associated with mobility practices, interviews were deemed to be a more suitable method. Although interview methods are dominating in practice-based empirical research, one needs to keep in mind that particularly tacit knowledge on practices is harder to capture with this methodology (Halkier, 2017).

Semi-structured interviews on the mobility practices were conducted with residents of the UBE. An interview guide was developed to better compare interviews (see Appendix A). After some introductory

² Areas qualify as peripheral rural areas if it takes more than 20 minutes to reach the nearest agglomeration centre by car. Moderately populated areas have a population density of more than 10 inhabitants per km² (ARE, 2013).

questions on the topic of mobility, the interview is structured in four blocks. The first three blocks revolve around the three facilitated practices of commuting, shopping and pursuing leisure activities. For each of them, similar sets of questions around the meanings, motivations, competencies and materials as well as time and space specifics of the facilitated and direct transport practices were asked. This makes it possible to collect data on the configurations of their mobility practices as well as their motivations, which are the subject of the first two research questions. The questions of the last block of the interview guide are aimed at uncovering the perceived environmental friendliness of their mobility practices (research question three), mainly by asking them to compare their practices to other people. The project was approved by the Ethics Commission of ETH Zurich (see Appendix C).

Participants were recruited through the professional and personal network of the thesis' co-supervisor and the author. Additionally, the snowballing technique was applied to find new participants through other participants. To ensure that a large variety of participants was recruited, participants were selected according to three criteria, which allowed to obtain a contrasted sample: Distance to public transport, household size, agricultural background.

The first criterion makes it possible to contrast the practices of people that have more and less convenient access to public transport. An average distance to the next public transport station can either be considered 350 metres, which is the Swiss average (BFS, 2021) or 500 metres, which is the target distance of the UN SDG 11 (UN, 2020). Therefore, it was aimed at recruiting participants living much closer and further to public transport than the average distance. As a second criterion, the household size was chosen. It was aimed for participants living in a single or couple and a family household to account for the influence of other family members on mobility practices (McLaren, 2018; Rau & Sattlegger, 2018). The third criterion was chosen because farmers often have very different lifestyles from people not working in the agricultural sector. Additionally, because the share of people working in this sector is high in the UBE, it is important to have this part of the population represented in the sample. Thus, participants who are farmers were recruited. In addition to these three criteria, it was aimed at a balance between gender and a representation of different age groups, as people in different life stages adopt different practices (Greene & Rau, 2018). Three inclusion criteria were defined to be able to participate in an interview. One, participants need to be older than 18 years, which is the legal age to obtain a driver's licence in Switzerland. Two, they must currently live in the UBE. And three, they shall not have any major health restrictions in their mobility, as this would strongly influence their mobility practices.

The participants were contacted by phone or email. They were provided with an information sheet along with a consent form to inform them about the background and the procedure of the interview (see Appendix B). Participants were free to choose, whether they would like to carry out the interview in person at a location of their preference or online.

The interviews were conducted from 02.06.22 to 10.08.22 and lasted between 35 and 80 minutes. In total 14 participants from all municipalities of the UBE except Marbach were recruited. Table 2 provides an overview of the sociodemographic data of the sample. The age of the interviewees ranges from 27 to 64 and slightly more women than men were recruited. Four participants live more than 500 metres from the nearest public transport station, the rest having access to public transport within less than 500 metres. However, the quality of the access is very low. Access to public transport can be categorised depending on the type of public transport available, the time interval of the service and the distance to the bus/train stop (ARE, 2022). According to this categorisation, only participants P02 and P07 have access to public transport of quality class D, which is the lowest class. The rest of the participants live in an area of marginal to no public transport accessibility (no class), even if a bus stop or station is located nearby. The household size ranges from a single household to a family of 7. Three of the participants live and work on a farm.

Table 2: Sociodemographic data of anonymised sample for semi-structured interviews

Participant Number	Municipality	Age	Gender	Distance to bus stop	Distance to station	Farmer	Household size
P01	Schüpfheim	39	F	600 m	600 m	No	Family, 2 kids (6, 4 years)
P02	Schüpfheim	45	F	250 m	250 m	No	Family, 1 child (15 years)
P03	Romoos	42	F	140 m	7.6 km	No	Family, 3 kids (12, 10, 9 years)
P04	Hasle	34	M	500 m	1.3 km	No	Couple
P05	Escholzmatt	35	F	3.9 km	3.9 km	Yes	Single
P06	Entlebuch	36	F	250 m	950 m	No	Couple
P07	Sörenberg	56	M	66 m	16.9 km	No	Family, 2 kids (18, 16 years)
P08	Entlebuch	36	F	170 m	1.6 km	No	Family, 1 child (5 years)
P09	Doppleschwand	29	M	400 m	4.6 km	No	Couple
P10	Flühli	59	F	450 m	5.2 km	Yes	Couple
P11	Escholzmatt	47	M	5 km	5.4 km	Yes	Family, 5 children (20, 18, 17, 11, 10 years)
P12	Entlebuch	64	M	500 m	1.1 km	No	Couple
P13	Hasle	59	M	450 m	1.3 km	No	Family, 1 child (20 years)
P14	Hasle	27	F	5.2 km	9 km	No	Couple

4.3 Data analysis

The interviews were audio recorded and transcribed in an anonymous form, following the transcription rules as set out by Kuckartz and Rädiker (Kuckartz & Rädiker, 2019). The most important rules are:

- Speech is transcribed verbatim, i.e., not phonetically or in summary form.
- Language and punctuation are standardised slightly where necessary, i.e. to approximate written language. For example, from “He’s gonna write a book” to “He is going to write a book.”
- Affirmative or agreeing utterances made by interviewers (mhm, aha, etc.) are not transcribed so long as they do not interrupt the flow of speech of the interviewee.
- External interruptions or interferences are noted in brackets stating the cause, e.g., [cell phone rings].
- Incomprehensible words and sections are identified by [unclear].
- All information that would allow an interviewee to be identified is to be rendered anonymous.

Additionally or in contrast to the rules by Kuckartz and Rädiker the following rules were adopted:

- Dialects are not transcribed but translated as accurately as possible into the standard form (from Swiss German to standard German). Expressions that don’t have a direct translation or would lose parts of their meanings when translated were left in dialect.
- Vocal utterances made by both the interviewee and the interviewer are noted in brackets (e.g., [laughs], [groans]) only if it gives additional context as to how the sentence needs to be interpreted or if it is relevant for following the course of the interview.
- Speaking loudly or intentionally stressed words are not specially marked.

For analysing the transcripts the method of content structuring as defined by Mayring (2015) was adopted, which is a combination of structuring content analysis and summarising content analysis. First, a coding system was deductively developed (see chapter 3). For each code, a definition, an anchor example and coding rules were defined (see Appendix D). Second, all the transcripts were coded with the defined coding system. In a third step, all the coded segments were summarised for each category. This step allows for a reduction of the available material to its essential contents.

The data was analysed following the zooming in and zooming out approach as described in chapter 2.2.4. To do so, the material was analysed from two analytical perspectives. On the one hand, the material was coded from the perspective of the direct transport practices. A coding system containing the elements of a practice (see chapter 3.2.2) was applied for each direct transport practice. On the other hand, the material was coded from the perspective of the facilitated practices, again applying a separate coding system containing the elements of each facilitated practice. This approach makes it possible to analyse each practice and its elements in isolation. Furthermore, it allows one to zoom out and analyse the interactions between the practices. By overlapping the two analytical perspectives, the coded segment from one perspective can be assigned to a code of the other perspective and vice versa. This allows one to analyse which direct practices are used for which facilitated practice and which elements are more dominant in different contexts.

By summarising the coded segments, three result tables with the following dimensions can be produced: Practice elements \times direct transport practices, practice elements \times facilitated practices and direct transport practices \times facilitated practice. The first two result tables summarise the configuration of elements of the different mobility practices, which is the aim of the first research question. The third result table summarises how participants negotiate their practices, which is the focus of research question two. Additionally, a table with motivations for choosing one means of transport over another for the different facilitated practices was created to answer the second research question. While this table primarily displays the motivations for performing one direct transport practice over another, it can also be read the other way around and thus show the negative meanings associated with a direct transport practice preventing someone from performing it. Besides the focus on the practices, the coding system contains codes around the perception of the environmental friendliness of the mobility in comparison to other people (neighbours and city dwellers), which allows answering research question three. Figure 3 shows a simplified graphical breakdown of the steps conducted for data collection and data analysis.

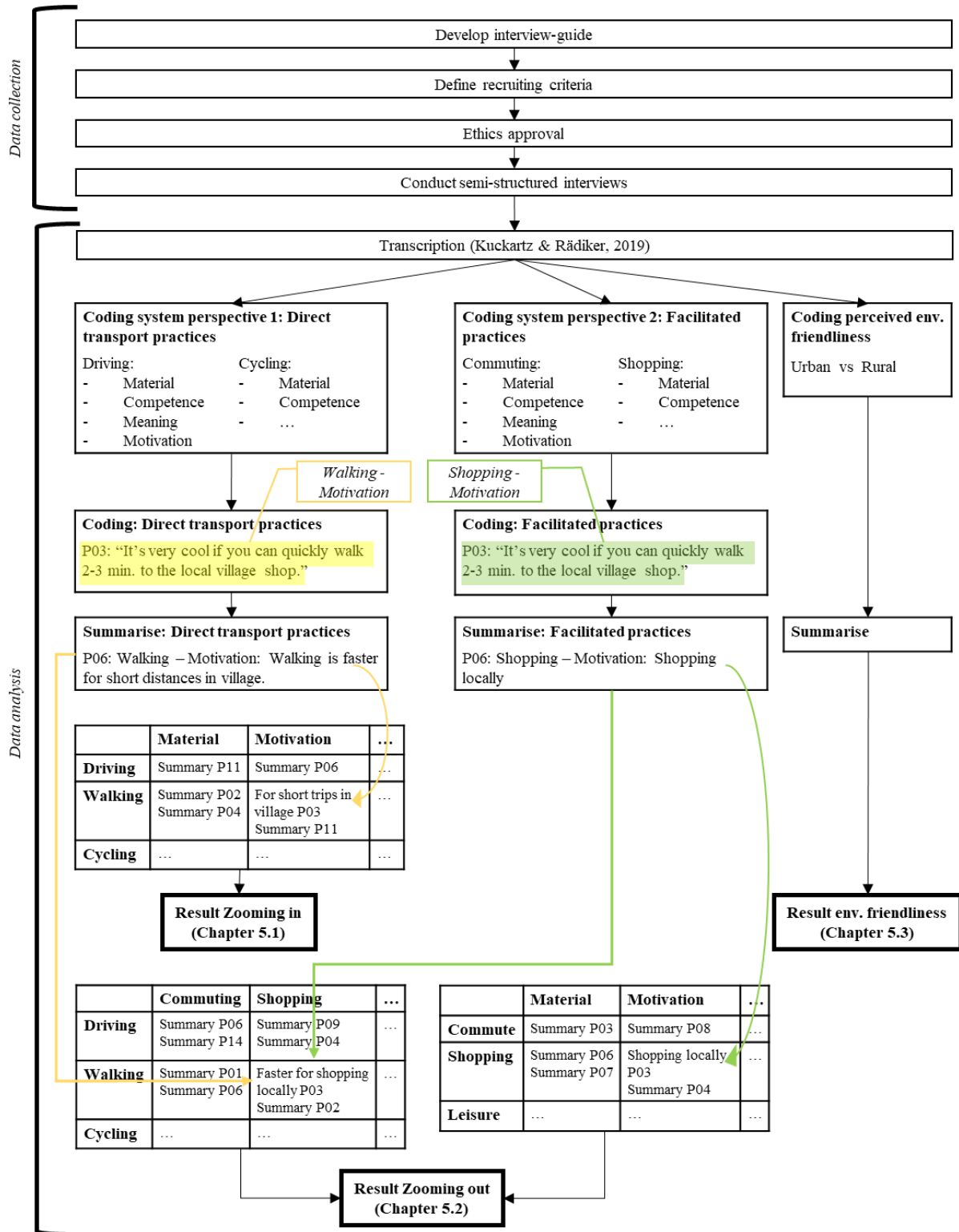


Figure 3. Process of data collection and data analysis.

5 Results

The structure of this chapter is based on the research questions as introduced in the introduction. The first and second chapters focus on the configuration of elements of the direct transport practices and the facilitated practices respectively (research question one) as well as the motivations for performing the different practices (a certain way) (research question two). The third chapter provides answers to the third research question and shows how environmentally friendly participants perceive their mobility practices.

5.1 Zooming in – Elements of direct transport practices

As a first step, this chapter zooms into the direct transport practices to identify the range of elements including the motivations each direct transport practice consists of. Due to the large number of elements and motivations identified, this chapter will focus on the most frequently mentioned elements. A list of all elements identified can be found in Table E.1. Additionally, Table E.2 provides an overview of different motivations for using one means of transport over another.

5.1.1 Driving

Driving is the dominant mode of transport in Entlebuch. All participants have at least one car in their household and the vast majority own two cars per household. All of the cars are powered by an internal combustion engine, except for one participant who owns an electric car. The size of the cars ranges from very small with low gasoline consumption to station wagons to a small number of participants owning SUVs and minibuses. Some participants own additional equipment for transporting large objects (e.g. bike or ski rack). Competencies around driving mainly revolve around managing traffic congestion and unforeseen events. While a few participants simply schedule more time for the trip, others either know how to circumvent congestion by taking a different route or adjusting their departure times to less traffic-prone times of the day. Furthermore, people have found strategies to better coordinate the car use with other people using the same car or connect trips that require using a car.

- *“And towards Lucerne, I know my side roads. Then you can say, you can go around here, you can circumvent the accident, yes.”³ (P05)*
- *“I actually still adapt my getting up and the timing exceptionally to the rush hours compared to others. I'd rather go early than somehow get caught up in the crowd.” (P09)*

With respect to research question two, there are three motivations⁴ for driving a car and not using a different means of transport shared by all of the interviewees. First, the car provides more flexibility, freedom and spontaneity compared to other means of transport. Second, they use the car for transporting heavy or large objects or goods. Third, participants would drive instead of taking public transport or cycling, because it allows them to access locations that would be hard or tedious to reach otherwise or because there is no station near their residency. Besides these shared motivations, there are a variety of other motivations for driving depending on the situation and context. For example, the car allows for privacy and time for oneself, it is perceived to be faster, more convenient, comfortable and relaxing, it opens up new possibilities for participants, it is not physically demanding and thus more suitable for long distances and it allows one to be independent of the weather. Furthermore, for participants living in family households driving is motivated by the person or pet they share the practice with. Some described that they use the car for trips that would otherwise be too demanding or dangerous for their kids or more convenient for their dog.

- *“I think we really wouldn't be able to do many things without a car, especially with smaller kids. I mean, if you want to go to Schratten in Sörenberg, you don't get far by public transport and the kids, they don't just walk up there for 4 or 5 hours.” (P01)*

³ All quotes are translated from the German transcripts by the author.

⁴ Several of the motivations identified in this results chapter can also be understood as meanings. For now, meanings that function as motivations are listed as motivations and not mentioned again as meanings. See chapter 6.4 for a discussion on the usefulness of this approach.

- *“Yes, because of my son that is certainly the main reason [for driving]. [...] [T]here are always a lot of lorries and traffic on the road and somehow I would feel more comfortable cycling on the pavement than on the road.”* (P08)
- *“I notice that sometimes it's a bit hard with the dog because he's quickly saturated by the stimuli, I notice that travelling by train is not good for him. And then I notice that when we take him with us, we say, let's take the car somewhere and go for a walk [...].”* (P02)

A common motivation for using the car for a trip, for which a different means of transport is normally used, is the combination of the trip with another activity that requires the use of a car (e.g. when transporting heavy objects for the other activity or when the other activity is not accessible with a different means of transport).

Lastly, there are several statements of interviewees highlighting the necessity of cars in the UBE:

- *“And if I think about it, I would take three times as long by public transport.”* (P03)
- *“But actually you're almost a bit lost without a car in a place like where we live. One of my colleagues lives about three kilometres from the next bus stop and then you want to go there quickly to do something”* (P04)
- *“We always start the meetings at 8 pm. [...] And then I'm home around midnight, sometimes later. And then I can't find a train.”* (P05)
- *“We are five kilometres from the train station, we have no public transport. The second reason is that there are also, what is it, 300 metres of altitude that we have to go up.”, “Yes and much more, so that's our vein, we need it. We can't do without it.”* (P11)
- *“Driving, that's just [...] that I can even get to people”* (P12)
- *“But when you talk about rural mobility, you still have to distinguish between what has the character of a neighbourhood or a village and those who live outside [...]. We simply have people, who have to get around by car, tractor or motorbike, because there is no other way”* (P12)

Even though these statements emphasise the necessity of driving for people living in the UBE, there are also statements indicating that driving is the default and unquestioned mode of transport in the UBE:

- *“Or also in [this sports club in Schüpfheim], almost all the women come [...] from Schüpfheim, but they all come by car except for two, me and one other. But I think it's just convenient. Or it's not only convenient, but I think it's just crept in. Somehow you know nothing else and that's why you just do it that way.”* (P01)
- *“It's in the village of Wolhusen and I wouldn't really need to take the car for that. I have never thought about it like that.”* (P03)
- *“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.”* (P04)
- *“Here, actually, everyone has a car. If you're 18, you have a car.”* (P05)
- *“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.”* (P08)

Because of all these reasons, the vast majority of interviewees state that they are not willing or able to give up their car.

Even though driving is the dominant mode of transport in Entlebuch, there are a variety of negative meanings associated with it. For example, driving is perceived to be more dangerous, because of other road users or adverse weather conditions, it is perceived to be less environmentally friendly and hence it leaves some participants with a bad conscience, it is perceived to be more stressful, especially when there is a lot of traffic and for some, it is associated with being more expensive. There are several meanings associated with driving that prevent people from taking the car. The most frequently named disadvantages of driving are that it is stressful, it requires a lot of concentration and thus can't be synchronised with other activities, it is not suitable for accessing cities, especially when there are limited parking spaces and it is perceived to be slower and unreasonable to drive for short distances in one's

own village. Several societal meanings around the car were mentioned, which the participants however do not share. None of the participants consider the car as a status symbol and only one of the participants mentioned that he actually enjoys performing the practice of driving. In contrast, several participants describe driving as being a means to an end. Furthermore, a handful of interviewees find it displeasing that people with good access to alternative modes of transport associate driving with a necessity instead of a luxury.

As a practice related to driving, the practice of carpooling was taken up by many participants. This practice is either performed with friends or family members. They all describe that carpooling is a matter of course when several people go to the same location. People would either pick up the others along the way or if people don't live on the route, they would drive to a free parking space, where they would be picked up. It is such a well-established practice that often almost no organisation is required, making the practice easy to maintain: *“And then you always make meeting points and that's how you fill the cars. Until they are full. No, and that's also clear among us. [...] [W]e actually know who has to drive, the one who lives furthest away.[...] It really organises itself.”* (P05)

5.1.2 Taking public transport

Public transport is only used by a minority of interviewees regularly. The rest only uses it sporadically. Trains are the most frequently used type of public transport, while only very few use the local buses from time to time. None of the participants has any particular material they use for taking public transport. However, some describe that the trains are prone to technical failures leading to frequent delays and train cancellations. Participants frequently using public transport report on competencies around time management, as there is often only one fast train connection per hour. One participant describes it like this: *“I have to think about which train I want to get on and I can't just think about it five minutes beforehand, I have to have everything packed and be on my way by then”* (P01).

With respect to the second research question, the most frequently named motivations for using public transport are that it is easier to access cities, it is less stressful, requires no concentration and allows to relax and rest, there are no problems with traffic or parking spaces, there is time to do other activities simultaneously (sleeping, reading etc.), it allows to connect with other people, it is more convenient and reliable, and it is more suitable and/or faster for long distances.

- *“I have to leave at a quarter past 5 and when I'm on the train, [...] I have half an hour to read the newspaper, maybe send off some emails or What's App 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.”* (P13)
- *“Then there are always lots of people around and then you have good conversations and that's actually what I don't have when I'm driving.”* (P09)
- *“Or to the cities in general, I always go by public transport or if we are somehow travelling with a few women or colleagues [...]. It's more pleasant, [...] no one has to take care of anything.”* (P14)

Furthermore, there are two distinct situations, in which even participants, who almost exclusively drive, switch to public transport, namely when only limited and/or expensive parking spaces are available or when consuming alcohol: *“When we do a wine-hike or a coffee-schnapps-hike, then you just go by public transport.”* (P09)

Participants frequently using public transport associate several negative meanings with public transport, namely lower flexibility, spontaneity and reliability as well as inconveniences around many people on the train. There are several meanings associated with using public transport that prevent people from taking the train or bus. Public transport is associated with the meanings of inflexibility, discomfort, inconvenience, being slower and a low accessibility of places.

- *“For me, the primary trigger [for going by car instead of the train], was the unreliability of this train through the Entlebuch. Very often the train in Wolhusen no longer continued because of*

coupling problems, really very often, and that made me late for work afterwards. [...]. In addition, I personally find the trains on our line quite scruffy, not decent.” (P06)

- *“If I didn't have a farm, I think I would go by train, but I can't wait [for the train connection].”* (P05)
- *“I would go by bus to Wolhusen, take the train there and with the train to Lucerne, turn around to go to Sursee and then take the bus again. [...] I think it would be over an hour and by car, I have half an hour for one way”* (P09)

Interviewees use the car instead of trains or buses, if there are no connections to the desired destination or the stop would be too far from the desired destination. Additionally, participants living far away from the next bus or train connection describe the following situation hindering them from using public transport: *“That's just the thing, I live far away and I always have to get into a car first. [...] that's sometimes the barrier. You say, I'm already on my way by car and then change to the train again, you say to yourself, oh come on, [...] we'll go by car anyway”* (P14). Lastly, participants refrain from using public transport, if they have to transport a lot of heavy items or luggage.

While many participants don't use public transport regularly, the majority appreciate having public transport available, especially having a fast train connection to the next bigger cities Lucerne and Berne. Having many small bus connections was criticised by a few participants for not being reasonable, efficient or profitable. Two parents however highlighted the importance of these bus connections for the independence of their children and another interviewee their importance for life after retirement.

5.1.3 Cycling and Walking

Almost all of the interviewees own a bicycle, however only a minority use it as a means of transport regularly. Similarly, only a minority describes situations, in which walking can be considered a mode of transport. The elements of cycling and walking as leisure activities can be found in chapter 5.2.3. For cycling and walking, participants use additional materials mainly for transporting goods (e.g. side-bags, bike trailers, baskets, carts) as well as rainwear and special cycling clothing. Five of the participants own an electric bike, which enables them to cycle longer distances or physically demanding routes and thus opens up new opportunities for them. Several participants describe that cycling in the UBE is challenging due to the high volume of traffic and the lack of cycling lanes. Therefore, competencies for safe cycling needed to be acquired, especially when cycling with kids. Additionally, participants found new strategies to transport goods by bike and by foot more safely and comfortably.

- *“Well, I have an e-bike, I need it in [this village], otherwise I couldn't go cycling at all.”* (P03)
- *“[I have an e-bike so] that I can go up the hills. Here in the Entlebuch, there is no cycle path that goes flat. [...] [T]he e-bike enables me [...] to go to places where my health would otherwise restrict me.”*(P12)
- *“So in the village, there is no bicycle lane, there are a lot of parking spaces and it is quite tedious, especially with the children, because it is so much coming and going.”* (P01)

Looking at research question two, the motivations for cycling and walking are similar. There are three main motivations for performing these practices. First, it allows to exercise and spend time outside: *“The cycling and walking provide exercise and switching off, psychologically. The exercise is good, in terms of physical mobility. But for me, it's mainly psychological. Just switching off, thinking about something else.”* (P12). Second, the vast majority of participants perceive cycling and walking to be more reasonable and faster than driving for short distances in the village. However, several interviewees mentioned that many people in the UBE use the car for such short trips. Third, these modes of transport allow for meeting people along the way and connecting with neighbours and people from the village:

- *“Yes, like this farm [we pass], I think that's nice when we walk to the Migros. [...] [I]t's valuable for the children and it's also cute, sometimes they're even allowed to take out the egg [from the hen house].”* (P01)

- *“The advantage is that [...] you might see people around that you wouldn't otherwise see by car or drive past, so that's what I like about cycling.”* (P10)

Having no problems with heavy traffic and parking, being less stressful, being more environmentally friendly and increased happiness were further motivations mentioned by a few participants. Two participants described that they walk or cycle to compensate for their driving or being a role model: *“So the role model function, yes, that actually came after having children, that I found like, [...] we also have a bike, we can also use that and give them a piece of advice for life.”* (P01). However, for most participants, certain requirements must be met for them to go by bike or walk and not use the car. These requirements are that the weather needs to be good, that they have no time constraints or that they only need to transport a few goods. Otherwise, they would use the car.

Negative meanings frequently associated with cycling or walking are that it's more dangerous, it's inconvenient when it's raining or snowing, it leads to sweating and it is less flexible. Further meanings that prevent interviewees from walking and/or cycling are that it is not suitable for destinations further than their own village, it is slower, it is less convenient or if one of the requirements mentioned above is not met. Participants who usually cycle or walk refrain from it, when they combine the trip with another activity that requires them to use the car (e.g. when transporting heavy objects for the other activity or when the other activity is not accessible on foot or by bike).

5.2 Zooming out – Facilitated practices

As a second step, this chapter zooms out on the practices that facilitate transport to uncover the different elements of facilitated practices and how the facilitated and direct transport practices are interconnected. With respect to research question one, a list of all elements identified can be found in Table E.3. The following subchapters focus on the motivations for performing the facilitated practices a certain way answering the second research question. Table 3 provides an overview of the justifications and motivations for using a certain means of transport to perform the different facilitated practices.

5.2.1 Commuting

Commuting to work is a practice performed by all but one of the participants. Interviewees' commuting times range from 2 minutes to 1 hour and 50 minutes and they cover distances from 250 metres to 70 kilometres. On average they commute four to five times a week. Only female participants with children work part-time. Many of the participants, who work in the same or a neighbouring municipality, commute twice a day because they eat lunch at home. Even all of the participants working in farming have a commute because they either have a second farm nearby or they are dependent on a sideline. Almost half of the participants make use of the possibility to work at home, however only one or two days per week. About half of the interviewees use the car to go to work, while the rest mainly goes by train and only two persons frequently walk or cycle.

There are different motivations and meanings associated with the practice of commuting that determine the way the commute is performed. Most of the participants state that they want to have a short commute and not spend a lot of time on it. *“Now that roads are so congested, I started to calculate how much longer it takes each time, I realised, yes, I could work 10% more.”* (P05). Participants, for whom commuting is a necessity, stressful and lost time predominantly drive to work as it is often faster, especially when needing to change trains/buses often or if the nearest station would be too far away from the working place. One exception is most participants that work in a big city because in this case, it is faster by train.

About half of the participants indicate that they don't want a commute that is too short in terms of duration and/or distance, because commuting allows them to switch off, relax and rest before they get home and it creates a physical distance allowing them to maintain a healthier work-life balance. Participant 13 describes it like this: *“And then it's more about creating a bit of distance or switching off from the stress in the office. I think that's an important aspect because when I'm at home, I'm at home. And if I go to the office, [...] you stay there, because you've had a long commute and when I go back,*

I've done everything and then I can switch off. So it's really about creating a bit of a distance between work and home". For many, it is also a time in the day that they have just for themselves, which they enjoy. Depending on the meanings and motivations a participant associates with the different direct transport practices, different means of transport are used for a relaxing commute. Interviewees commuting by car value having privacy more than avoiding stress from a high volume of traffic. Participant 04 describes it like this: *"And the other big advantage is simply that nobody else upsets you. Maybe other road users, but you don't have to talk to anyone if you don't want to [...]. It's actually somehow the quietest half hour of the day in the car. [...] You know, if you grow up in a place like Entlebuch, you simply know ¾ 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"*. Furthermore, the higher convenience and comfort associated with driving motivates participants to drive to work. In contrast, interviewees commuting by train describe having a more relaxing commute too, because they avoid any stress from traffic. Thus, taking the train allows them to relax much better and they put more emphasis on the possibility to use the time of the commute for other activities such as reading or sleeping. A similar reasoning applies to participants cycling or walking to work. They describe it as much more relaxing, on the one hand because they can avoid traffic and on the other hand because it is combined with exercising and being outside allowing them to switch off.

Another important aspect that motivates the way the commute is conducted, is being flexible and independent. Almost all of the participants have flexible working hours and have a desire to come and go to work as it fits in their daily schedules and family commitments. This is one of the biggest motivations for participants to drive, cycle or walk to work. They don't have to rush off in case something comes up at work and they can easily and spontaneously sequence it with other practices, for example bringing or fetching their kids, going shopping, going to weekly club meetings or meeting friends or family. Participant 03 describes it like this: *"I want to go out to the house, then when the children also leave. Not leaving 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"*. Participants commuting by train mention that this is something they have to sacrifice for a more relaxing commute.

Because commuting is such a routinised and frequent practice participants engage in, most organise their commute so that they can minimise the risk of disruptions or additional effort, which also contributes to a more relaxed commute. Again, there are two different views on this issue depending on the meanings associated with the different transport practices. While some participants don't go by train because they perceive it as very unreliable (delays, cancellations), other participants prefer commuting by train, because driving is less predictable (delays from construction sites, accidents, traffic congestions).

Lastly, different material and infrastructural conditions influence the direct transport practice performed for going to work. Missing or expensive parking spaces at the working place was a frequently mentioned reason for taking public transport. Another issue mentioned was the availability of public transport near the residence. For some this reality, often in combination with frequent changes of train/bus, was one reason for not commuting by public transport. However, some participants commute by train, even though they live more than one kilometre away from the nearest bus and train station. The consequence is that these participants take the car to go to the train station because the distance is perceived to be too long and/or hilly by bike. Finally, some participants occasionally cycle or walk to work. These participants refrain from these modes of transport and go by car instead if it is raining or snowing, if they are time constrained or if they have to bring a lot of goods to work.

5.2.2 Shopping

Grocery shopping is a practice performed by all participants, albeit to a varying degree. Many participants have one person in the household responsible for shopping, predominantly the woman. It is therefore mainly male interviewees that report only sporadic shopping. Other participants share this task with their partner or spouse. On average participants shop for food twice a week. Most households have

a structured shopping routine and only a few mention that they usually shop spontaneously. Most would do a major grocery shopping once a week or even less frequently and one or two smaller shopping trips spread over the week. Several participants describe their shopping frequency is influenced by family life. Participants shopped more frequently and spontaneously when they lived alone or had no children. Most of the participants shop in the stores of their village, however especially the major grocery shopping is often done in Wolhusen or Langnau, municipalities adjacent to the UBE, where larger retailers are located. Shopping trips can therefore be as short as 200 metres or as long as 23 kilometres. More than half of the interviewees use the car to go grocery shopping, while the rest mainly walks and only one person frequently cycles. Participants cycling or walking to the shops only do so if they shop in stores located in the residential village. For any shopping trip further than the village, the car is used by all participants.

There are different motivations and meanings associated with the practice of shopping that determine the way the shopping trip is performed. One of the most frequently named issues with shopping was that of transporting the purchased goods. As this is by all participants perceived to be much easier by car, this was often mentioned as a reason why even people, who would usually walk or cycle to the shops, deviate from these modes of transport occasionally, especially when going to a larger retailer, even if it is in the same village. However, some participants highlight that with the help of additional equipment, such as a shopping trolley, a bike trailer or a cart, they can walk or cycle to the shops, even if they have to carry a lot. But these are all participants that live close to the city centre, where the retailers are located.

Shopping is a practice that is very often sequenced with other practices. The majority combine it with their commute, especially for the smaller purchases, as well as running errands (waste recycling, post office), healthcare appointments or visiting friends and family. Participants highlight their desire to reduce the number of shopping trips and instead combine activities that take place in the same village. This is a second reason, with which participants justify the use of the car or would refrain from walking or cycling.

- *“If it's sometimes like connected [I drive instead of cycle] - shopping at Migros and then, for example, visiting our grandmother and disposing of waste at the recycling centre.”* (P01)
- *“Well, shopping trips in that sense exist almost only on Saturdays, because otherwise, I combine it with my commute. [...] And then it's usually not groceries.”* (P09)
- *“When I go to Wolhusen or Schüpfheim to do the major grocery shopping, I usually have something else to do in the area.”* (P08)

Supporting local grocery stores in combination with preferring a shorter shopping trip over shopping at a specific retailer is one of the biggest motivations that influences almost all of the participants' shopping practices. In terms of mobility, shopping locally can lead to a trade-off as participant 12 describes: *“We would also have closer shopping possibilities and that is always the dilemma. Do I now take the longer trip, because I want to support the regional product or do I go to the large retailer, where I can just buy everything.”* These longer trips are often for a small number of specific products that they buy at a local farmer, for example, making it a rather inefficient trip. However, most participants describe that they go to the local village shop, bakery, butcher or cheese dairy, which are usually located in the same village centre. These additional trips therefore make the shopping trip only marginally longer compared to going to a single retailer. Because local stores are usually located in the same village, most of the participants walk or cycle, even those interviewees that usually shop by car when going to a retailer, as it is perceived to be faster and/or more reasonable.

- *“So of course it's super cool to be able to walk to the village shop so quickly in two to three minutes. If I have the trip down to Wolhusen that also burdens me sometimes. If I know exactly that I actually get the exact same [products] in the village shop. [...] And of course, it's also a way of supporting the village shop. And I'm really happy that it exists and would like it to stay. And if no one goes shopping there, it will eventually disappear.”* (P03)

- *"I find that if you can take the village [store] into account that is a more important factor for me than whether it is good or not good to go by car."* (P10)
- *"That [the shopping trip] is as short as possible. So I don't have to go to Langnau to a two- or three-M Migros or to a giant supermarket, where I have more choice and get much more or the more special things. The local things are enough for me"* (P14)

Another motivation influencing the practice of shopping is the social dimension of shopping. For some of the participants, shopping is a social activity, especially for those shopping in their own village. Meeting friends and acquaintances or doing activities with their children along the way were motivations for cycling or walking instead of taking the car. The car is perceived to take away this opportunity to have social encounters.

- *"In the village [...] maybe you'll see someone and can exchange a few words or something. That's always nice too. [...] you know most of the people, who are there [in the village store]. So it's just the personal touch."* (P03).
- *"With the car, you are focused on the car, going there, shopping and going back and the other is more. When you walk, it is more of an experience [...]. But not only to switch off but because of meeting people."* (P12)

5.2.3 Pursuing leisure activities

Practices participants pursue as a leisure activity can be broadly categorised into four groups: Going to club meetings (e.g. sports clubs, choirs, orchestra), going on trips (e.g. going to the zoo, picnicking, swimming, fishing), hiking and biking, and skiing.

Going to club meetings is a common leisure activity for the majority of participants. Depending on the type of club, members would meet between one and four times a week. While most participants are in village clubs, some are part of regional or even national clubs requiring interviewees to drive longer distances. Generally, people only walk or cycle to club meetings, if it takes place in the same village and they live close (< 1 km) to the meeting location. Participants that live further away from the meeting location drive, even if it's located in the same municipality. For many, the reason is a lack of alternatives as biking or walking is perceived to be too long and no public transport is available, especially because club meetings take place in the evening when bus and train connections are limited. For others, it is simply more convenient and comfortable. Other justifications for driving instead of cycling are that it is too dangerous, as they need to bring large objects such as an instrument or that the practices in sports clubs are already physically demanding enough.

Going on trips or to an event to experience something for fun at a specific location is mostly a practice families with smaller children engage in. Such trips are mainly concentrated on weekends and often take place at a location in the region, however rarely in the same village. Participants go on such trips almost exclusively by car, either because the trips would otherwise be too demanding or dangerous, especially for kids, or because the destination is not served by public transport. Furthermore, it is easier to bring required materials and it is generally described as being much more convenient, comfortable and flexible. *"So just here around the house, there's nothing nearby [...]. Mostly it's up to Finsterwald or Romoos to Zyberliland [...]. It's almost inaccessible by public transport. Or right now, when you have a day trip like this, when you first have to walk for half an hour to get on the bus and be on the move the whole day and then have to walk home again with luggage and everything – [...] until now it has been like sometimes convenience that [my child] can even do it. That's why we mainly go by car."* (P08). For trips to locations outside the region, the train is the preferred means of transport, as it is much easier to access destinations in bigger cities. Half of the participants describe that they don't do certain activities, because the trip would be too long or tedious. For example, interviewees would like to go swimming or squashing more often as well as going to the cinema or concerts, activities that often take place in cities.

Hiking or biking is another practice that is pursued regularly by almost all participants, mainly in summer. Cycling and walking are for most participants therefore not just a mode of transport but also

leisure activities. Interviewees describe that they predominantly bike and hike in the region and only rarely leave the region to pursue this activity:

- *“No, I like walking around here a lot, because I've lived here for 35 years and I still don't know everything. I still haven't been everywhere.”* (P10),
- *“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 is 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 and it's still not the same.[...] [I]t's not monotonous, because the path itself is not monotonous.”* (P12).

These statements summarise well the appreciation for the nature the participants have available so close to them as well as the wide range of hiking and biking trails the region offers. Most of the participants therefore don't feel the need to hike or bike in different regions very often. Some also describe their familiarity with the region, which makes hiking and biking very effortless and convenient: *“Actually, I'm not really curious to go to any other region. I actually love it, when I know where I am and what to expect.”* (P09). Even though they describe this proximity to nature, most interviewees still require a means of transport for going hiking, but less for biking, especially those who don't have a bike rack for their car. When going hiking, participants usually use the car as many locations are not accessible by public transport and the car provides more flexibility and freedom in terms of timing, luggage transport and starting point of their hike. Some people would use public transport, if they plan on consuming alcohol or because it is more pleasant and easier when hiking with a group of friends. There are however equally as many interviewees that start hiking from home regularly. Motivations for doing so are that they find it more reasonable, when they have hiking and biking trails right at home, they want to spend their time on hiking/biking and not on driving to the trails, and it leaves them with a positive feeling: *“But I think it's just super cool when you can say, I started hiking from home and back again. [...] The trip until you are at the location, it's so inconvenient, then it's two hours to get there and back home again in the evening, then I think that is annoying and I think, [...] you actually have everything on your doorstep.”* (P14)

Lastly, skiing is one of the dominant leisure activities in winter. Most of the participants who engage in this practice make use of the local skiing areas and ski lifts. On the one hand, participants mention again that they prefer to spend time skiing rather than driving to skiing areas. On the other hand, they want to support the local ski lifts. The main reason for interviewees not to ski in the region is that they use a family member's holiday home. Participants almost exclusively go skiing by car. The main reason is that it is easier to transport the material required for skiing. Also, more flexibility and being faster were motivations mentioned. One participant would occasionally go by train as reaching a faraway skiing area by car is much more expensive than by train. Directly walking or skiing to the skiing area is another possibility for a few participants, when they go to a nearby skiing area.

Another aspect to highlight is that some participants state that they are not willing to limit their leisure activities, even though they acknowledge that this is an area that causes a lot of car use in their lives. Farmers however are a group of participants, who state that they don't have much time for leisure activities apart from going to club meetings, which is reflected in the low frequency of going on trips, skiing or hiking. One positive aspect of mobility frequently mentioned by farmers was the possibility to see what other farmers do, as it is of interest to them when other farmers start harvesting.

- *“You notice that from an ecological point of view it's actually not very good [to go by car instead of public transport] 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].”* (P01)
- *“I really try to get around as environmentally friendly as possible and at the same time to meet my, yes, my basic needs somehow.”* (P06)
- *“But there used to be more hobbies [when I didn't have a farm], but now, I'd be lying if I said I still had a lot of free time.”* (P05)

In general, participants don't combine their leisure activities with any other trip or activity. Only a few state that they combine going to club meetings or other events with their commute. Also, some occasionally combine it with visiting friends or family before or after a leisure activity.

There are several other facilitated practices that participants pursue requiring them to be mobile. Holidays are an area requiring a high degree of mobility. A lot of participants state that they would use their holidays to discover other regions of Switzerland, as they spent the majority of their leisure time in the region. About half of the participants spend one long holiday per year abroad, predominantly in Europe, while the rest mainly stays in Switzerland and goes abroad very rarely⁵. Hence, very few interviewees engage in the practice of flying regularly, because they prefer going by car or train even to locations in Europe. However, only very few state environmental reasons for doing so, even though almost all think that flying should be limited or become more expensive for environmental reasons. Almost half of the participants don't fly, because they have no desire for travelling and visiting foreign cultures. Other frequently named facilitated practices participants engage in are visiting friends and family as well as parenting requiring them to drive their kids somewhere. These practices can take a similar room in their everyday mobility as other leisure activities. Lastly, going to healthcare or body care appointments (doctor, dentist, hairdresser, masseur) were other practices mentioned by some of the interviewees, however not making up a lot of their everyday mobility.

5.3 Perceived environmental friendliness of mobility practices

In general, participants consider walking and cycling as more environmentally friendly than taking public transport. Driving is perceived as the least environmentally friendly mode of transport. With respect to research question three, participants' perception of the environmental friendliness of their own mobility depends on whether they compare their mobility to that of someone living in the same village or someone living in an urban region.

Almost half of the interviewees perceive themselves as less environmentally friendly than their neighbours because they use the car for almost all their facilitated practices, thus driving longer distances and/or more frequently than their neighbours. The other half of the participants perceive their mobility as more or equally environmentally friendly because they frequently use a different mode of transport than the car and they avoid any unnecessary trips. There are however also car frequent-users that perceive their mobility as more environmentally friendly because they drive only short distances or less frequently than others.

In comparison to people living in the city, the vast majority of the interviewees perceive their mobility as less environmentally friendly, because of their high car dependency, longer commuting distances 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 perceiving their mobility as environmental friendlier, because they expect a higher mobility for pursuing leisure activities or their environmental unfriendliness in other areas of life: "*[City dwellers] go on more trips or at the weekend they go to I don't know where [...]. I don't think they're better, on the contrary, they're more mobile or go out more.*" (P07)

Furthermore, many participants highlight the importance of putting their mobility in perspective. According to this rationale, mobility is perceived as environmentally friendly, if it is a necessary trip and no other means of transport than the car is suitable for the trip. Conversely, mobility is perceived as not environmentally friendly, if the trip itself is not necessary or if a means of transport other than the car would be available. Therefore, participants generally perceive their mobility as environmentally friendly, as they have no other choice.

⁵ For almost all, this was already true before the Covid-19 pandemic. None of the interviewees state that they significantly changed their holiday practices in the long term because of the pandemic.

- *“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 more, in terms of unnecessarily. (P11)*
- *“That's why [the environmental friendliness] is going to balance out, but just with the argument that they could do without [the car], I can't do it.” (P14)*
- *“It depends a bit to whom you compare yourself to. I would say, [the city resident] would have to come to the countryside first and see what it's like here.” (P01)*

As participants are generally not willing or able to give up their car, many bring up the electric car as an alternative, even if not directly asked about it. All but one of the participants that brought up electric vehicles consider replacing their current car with an electric vehicle in case it breaks down. However, all these participants have reservations regarding the environmental friendliness of electric cars, mainly because of the battery production and disposal as well as the electricity production. Moreover, there are only very few participants that actually have concrete plans to replace their current car if it breaks down and plan on setting up their own solar roof to power their electric car. The rest states that the technology and infrastructure are not yet advanced enough. They hope that their current care doesn't break down soon so they can wait some more years for the technology to mature until they purchase an electric vehicle.

Table 3: Overview of motivations for using the direct transport practice for the different facilitated practices

Commuting	Shopping	Pursuing leisure activities
<p>Driving</p> <ul style="list-style-type: none"> - Arrival directly at desired destination (P03-P05, P07) - Departure directly from residence (P04, P10, P11, P13, P14) - Easier to transport goods (P07, P10, P12) - Even if dangerous with other road users/in winter (P05, P10, P12) - Even if less env. friendly/bad conscience (P03, P09, P10, P12) - Even if less predictable/reliable (P05) - Even if more expensive (P04, P09) - Even if no exercise (P04, P10) - Even if no opportunity for social encounters (P10) - Even if no time to relax/for oneself (P05, P10, P12) - Even if waiting in traffic/construction site (P03-P06, P08-P10) - Habit (P05, P11) - If connected to/easier to connect with other activities (P04-P09, P11, P14) - If raining/snowing/winter (P04, P06, P10) - If time constrained (P06, P10, P12) - If train cancelled (P13) - Is faster (P01, P03-P05, P08-P10, P14) - Less expensive (P05) - Location not accessible (P01, P11-P13) - More convenient/comfortable (P05, P06, P08-P10, P12, P14) - More flexible/free/spontaneous (P03-P06, P09, P10, P12) - More predictable/reliable (P04, P06) - More suitable/faster for long distances outside village (P12, P13) - No connections at night (P13) - No frequent change of trains (P01, P03, P05, P09) - No social encounters/privacy (P04-P06, P09) - No sweating/physically less demanding (P03, P06, P11, P14) - Protected from weather (P09, P13) - Time to synchronise with other activities (listen music, calling) (P04-P06, P09) 	<ul style="list-style-type: none"> - Arrival directly at desired destination (P08) - Departure directly from residence (P08, P11, P14) - Easier to transport goods (P01-P05, P07-P14) - Even if hard to find parking space (P08, P12) - Even if less env. friendly/bad conscience (P01, P10, P14) - Even if more expensive (P14) - Even if no opportunity for social encounters (P10, P12) - Even if waiting in traffic congestion/construction site (P09, P12, P14) - Habit (P11) - If connected to/easier to connect with other activities (P01-P04, P07-P10, P13, P14) - If raining/snowing/winter (P10, P12) - If time constrained (P10) - Is faster (P02, P08) - Is safer with kids (P08) - More convenient/comfortable (P10, P12, P13) - More flexible/free/spontaneous (P03, P09, P10, P13) - More suitable/faster for long distances outside village (P02, P04, P06, P09, P10, P12, P14) - Protected from weather (P02, P05, P13, P14) 	<ul style="list-style-type: none"> - Arrival directly at desired destination (P01, P02, P04, P06-P09, P11, P14) - Departure directly from residence (P08, P11, P13, P14) - Easier to transport goods (P01-P04, P06-P09, P11, P13, P14) - Even if dangerous with other road users/in winter (P05, P06) - Even if hard to find parking space (P04, P08) - Even if less env. friendly/bad conscience (P01) - Even if waiting in traffic congestion/construction site (P07, P09) - Habit (P05, P08, P11) - If connected to/easier to connect with other activities (P02, P04-P06, P09, P14) - If raining/snowing/winter (P01, P04, P12) - If they take their dog (P02, P06) - Is faster (P02, P03, P13) - Is safer (P02) - Less expensive (P05) - More convenient/comfortable (P01, P02, P04-P06, P08, P09, P13, P14) - More flexible/free/spontaneous (P01-P07, P09, P13, P14) - More suitable/faster for long distances outside village (P01, P02, P04, P06-P09, P13, P14) - No connections at night (P02, P05, P07) - No frequent change of trains (P01) - No social encounters/privacy (P04, P06) - Opens up new possibilities for leisure activities (P01, P13) - Physically less demanding (P04, P11) - Time to synchronise with other activities (listen music, calling) (P04)

	Commuting	Shopping	Pursuing leisure activities
Taking public transport	<ul style="list-style-type: none"> - Allows for social encounters (P14) - Cheaper (P13) - Easier to access cities (P06, P14) - Even if bigger health risk (P14) - Even if less flexible/spontaneous (P01, P08, P14) - Even if not arriving at desired destination (P08) - Even if sometimes uncomfortable (P08, P13, P14) - Even if sometimes delayed/cancelled/unreliable (P01, P13, P14) - Habit (P13) - If connected to/easier to connect with other activities (P04, P10) - Is faster (P01, P08, P13, P14) - Is safer (P13) - More convenient/comfortable (P08, P13, P14) - More env. friendly (P01, P14) - More predictable/reliable (P08, P13) - More suitable for long distances (P01, P13) - No searching/paying for parking space (P01, P08) - No waiting in traffic congestions (P01, P08, P14) - Positive feeling/prefers PT (P14) - Time to relax, rest, time for yourself (P01, P08, P13, P14) - Time to synchronise with other activities (sleep, read, work, listen music) (P01, P08, P13, P14) 	<ul style="list-style-type: none"> - If connected to/easier to connect with other activities (P14) 	<ul style="list-style-type: none"> - Allows for social encounters (P10) - Arrival directly at desired destination (P03) - Cheaper (P08) - Easier to access cities (P01, P02, P04, P08, P10, P14) - Easier/nicer to travel with group of people (P06, P09, P14) - If consumption of alcohol (P04, P06, P09) - If not time constrained (P03, P07) - If only few goods to transport (P11) - If place of departure of an activity not equal to place of arrival (P04, P11) - If you have free ticket (P02) - Less stressful, less concentration required (P09, P10) - More convenient/comfortable (P03) - More suitable for long distances (P06, P14) - No searching/paying for parking space (P11) - Positive feeling/prefers PT (P03, P10) - Requires less planning (P10, P14)
Cycling	<ul style="list-style-type: none"> - Allows for social encounters (P10) - Being outside/in nature (P04, P06, P10) - Even if more dangerous (P06, P07, P12) - Even if raining/snowing (P07) - Even if sweating (P06) - Exercising (P04, P06, P07, P10, P12) - If connected to/easier to connect with other activities (P12) - If not time constrained (P06, P10, P12) - If only few goods to transport (P07, P10, P12) - If weather is good (P04, P06, P12) - Increases happiness (P04) - More convenient (P01) - More env. friendly (P10) - More flexible/free/spontaneous (P01, P06) - More reasonable/faster for short distances in village (P01, P07, P12) - Time to relax, rest, time for yourself (P10, P12) 	<ul style="list-style-type: none"> - Allows for social encounters (P10) - Being outside/in nature (P01, P04) - Being role model (P01) - Even if challenging with a lot of goods (P01) - Even if more dangerous (with kids) (P01) - Even if raining/snowing (P01) - Exercising (P01, P04, P10, P12) - If connected to/easier to connect with other activities (P12) - If not time constrained (P10, P12) - If only few goods to transport (P01, P04, P10, P12) - If weather is good (P04, P10, P12) - More env. friendly (P01, P10) - More reasonable/faster for short distances in village (P01, P06, P09, P12) - Time to relax, rest, time for yourself (P10) - To compensate for car use/better conscience (P01) 	<ul style="list-style-type: none"> - Being role model (P01) - Doesn't drive somewhere to go biking because it's not reasonable (P02-P04, P07, P12, P14) - Even if more dangerous (P06) - Even if raining/snowing (P01) - If car not available (P04) - More env. friendly (P01) - More reasonable for short distances outside own village (P06) - More reasonable/faster for short distances in village (P01, P14) - To compensate for car use/better conscience (P01)

	Commuting	Shopping	Pursuing leisure activities
Walking	<ul style="list-style-type: none"> - Even if more dangerous (P12) - Even if raining/snowing (P12) - Exercising (P12) - If bicycle not available at right place (P08) - If no PT connection available (P08) - If only few goods to transport (P12) - If raining/snowing/winter (P01, P07, P12) - More reasonable/faster for short distances in village (P07, P12) - Physically less demanding/no sweating (P08) - Time to relax, rest, time for yourself (P12) 	<ul style="list-style-type: none"> - Allows for social encounters (P02, P03, P12) - Being outside/in nature (P06, P12) - Easier to transport goods (P02) - Even if challenging with a lot of goods (P02, P03, P06) - Even if less flexible/spontaneous (P06) - Even if more dangerous (P02, P12) - Even if raining/snowing (P02, P12) - Exercising (P12) - Gives a positive feeling (P03) - If connected to/easier to connect with other activities (P08, P12) - If kids prefer to walk (P01) - If only few goods to transport (P01, P08, P12) - If weather is good (P12) - Is faster (P14) - Is safer with kids (P08) - More env. friendly (P02) - More reasonable/faster for short distances in village (P02-P04, P06, P07, P09) - More spontaneous (P02) - No need to find parking space (P06, P08, P12) - No waiting in traffic congestions (P06, P12) - Offers possibility for additional experiences (P01) - Route is safe (P02) - Time to relax, rest, time for yourself (P12) - To compensate for car use/better conscience (P02) 	<ul style="list-style-type: none"> - Allows for social encounters (P02) - Doesn't drive somewhere to go walking because it's not reasonable (P02, P03, P06, P07, P10, P12, P14) - Easier with dog (P10) - Even if raining/snowing (P02) - Gives a positive feeling (P14) - If connected to/easier to connect with other activities (P08) - More reasonable/faster for short distances in village (P01, P04, P07, P12) - No need to find parking space (P12)

6 Discussion

The discussion of the results is structured as follows. In the first section, the results of each research question will be discussed. In the second section, the potential of policy interventions and living-lab approaches in shifting current mobility practices of residents of the UBE into a more environmentally friendly direction will be discussed. The third section will discuss the limitations of the results. Lastly, the learnings from applying the expanded conceptual framework in empirics are summarised.

6.1 The mobility practices of UBE residents

This section discusses the findings with respect to each research question, each subchapter focussing on the respective research question.

6.1.1 Mobility practices across diversity

Contrary to the popular conception that rural mobility consists only of driving, a variety of direct mobility practices are present in the UBE. The results of the first research question show that although driving is the dominant mode of transport for many, people also frequently engage in the practices of cycling, walking and taking public transport. Driving is perceived as a necessity, because of the remoteness of residents or the locations they need to access. This is not just true for people living far away from the village centre or public transport, but all participants use the car for at least some of their activities. The car dependence is enforced by the poor public transport accessibility and the hilly topographical conditions making cycling and walking less attractive. However, the motivations for driving go far beyond being a necessity. Several meanings and motivations around the car in rural areas make it the default mode of transport for most people. The degree of car dependency varies however depending on why people are mobile. While driving is far more predominant for pursuing leisure activities, other modes of transport are increasingly adopted for commuting and shopping.

In line with the findings of McLaren (2018) and Rau et al. (2018), the mobility of participants is influenced by family life. According to McLarens' typology, almost all of the family households with small children can be categorised as auto-dependent parents. Motivations like safety, convenience and the accessibility of locations are especially important for family households and determine their car use. Besides the influence on the mode of transport, the results confirm that family life influences the temporal and spatial extension of mobility practices compared to single or couple households (McLaren, 2018; Rau & Sattlegger, 2018). Parents adapt their schedules to the needs of their children, they shop or work (and thus commute) less frequently or they take longer trips for pursuing family activities. Additionally, the results also support the finding by Kent et al. (2017), who found that owning a dog influences mobility practices and leads to a more frequent use of the car, especially for leisure practices.

Besides the already recognised influence of family members and pets, the results also show that the sense of community and familiarity among residents of the small villages in the UBE influence how practices are performed. Being able to spontaneously meet and communicate with someone while being mobile is a common motivation for preferring walking, cycling or taking public transport over driving, especially for shopping and commuting. The familiarity also makes carpooling very effortless. However, this familiarity can also be a reason for using the car in situations, in which privacy is valued higher. Besides the influence on the means of transport used, the sense of community and connectedness to the region influences shopping practices and the type of leisure activities pursued. The common leisure activity of going to local club meetings as well as the desire to shop in local village stores often leads to smaller distances covered, especially compared to other leisure activities pursued.

When looking at the mobility of farmers compared to not farmers, the hypothesis that the different lifestyle of farmers leads to different mobility patterns (see chapter 4.2) can partially be confirmed. This is especially true for leisure activities, which farmers pursue much less frequently than other people. The mobility for commuting is however higher than expected. This is in line with other studies that found increased commuting mobility of farmers due to a shift from full-time to part-time farming (Zhao et al., 2022).

When comparing the direct transport practices of UBE residents to those of urban residents, the elements of these practices largely overlap. All the elements that were found to be associated with the different modes of transport by studies in urban contexts (see chapter 2.3) were also identified in UBE residents' practices. However, one difference concerning cycling can be identified. The studies by Larsen (2017) and Caldwell and Boyer (2019), which focus on urban cycling, didn't find fitness or the lack thereof as a meaning associated with cycling. This is different to the results of this thesis and the results by Spotswood et al. (2015), who analysed a representative country sample. The study by Larsen, which was conducted in the city of Copenhagen, even emphasises that fitness is no constraint and hence prevents almost no one from engaging in cycling. The differences in topography and the distance to be covered in urban vs rural regions such as the UBE indicates that these conditions might influence the meanings associated with cycling.

Not just the elements of direct transport practices largely overlap with that of existing literature, but also the configuration of elements of commuting is very similar to what other studies found. All of the four types of commuting practices identified by Stein et al. (2022) (see chapter 2.3) can also be found in the UBE. The influence of bad material arrangements and stress from traffic (type 1), the commute as a useful time improving the work-life balance (type 2) and the necessity and habitual attitude towards the commute (type 3) were the most frequently found meanings and motivations associated with the practice of commuting in the UBE. The last type as proposed by Stein et al., which is characterised by time constraints and heavy time framing of the commute, was less frequently described. This is probably because of the flexible working hours most participants enjoy.

Mobility can be viewed as a means to an end or a pleasant and useful time (Kent, 2015; Sheller & Urry, 2006; Watson, 2012) or even a leisure activity in and of itself. In the UBE, the latter is true for the practices of walking and cycling. When talking about mobility as a means to an end, people don't want to "waste" their time on mobility. This desire has two different origins depending on what they are being mobile for. On the one hand, mobility is considered a means to an end, if the practice it facilitates is not perceived to be pleasant too. This is especially apparent when looking at commuting, as discussed before, and shopping. Besides the social dimension of shopping as mentioned before, the meanings and motivations around shopping are rather negative. It is often described as being a waste of time, boring or tedious, which is what other studies analysing the practice of shopping found as well (Berg & Henriksson, 2020; Godin & Sahakian, 2018). Not wanting to spend time on shopping also leads to not wanting to spend time on the trip. On the other hand, not wanting to spend time on mobility originates in the desire to spend more time on the facilitated practices. This was found to be especially true for leisure activities, which are perceived to be much more pleasant than the direct transport practices. Irrespective of the origin of this desire to limit the time spent on trips, the consequences are the same. People either opt for the means of transport that brings them to their destination the fastest and most conveniently, which is often the car, or they favour locations less far away. While this "not wanting to spend time on mobility" is relevant for all of the three investigated facilitated practices, direct transport practices are associated with being a pleasant and/or useful time mostly for commuting and to some extent for shopping, if considering the social benefits. Being mobile for leisure activities is hardly ever associated with these meanings.

In summary, the UBE residents don't exhibit many differences in terms of the configuration of elements of mobility practices compared to other study areas. An interesting finding is however that in this rural setting social relations beyond family life seem to have a more prominent influence on mobility practices. More research in the areas of shopping and leisure mobility would be needed to compare these practices of UBE residents to other contexts. However, it is interesting to note that leisure mobility in particular is seen as a means to an end, which can have positive or negative effects on the environmental friendliness of mobility.

6.1.2 The diversity of motivations

As the results of the second research question show, depending on the facilitated practice and the individual context different motivations are more relevant and influence the way a practice is performed or the means of transport used to perform the practice. The large variety of motivations identified can be broadly grouped into three different types of motivations: meanings functioning as motivations, infrastructural/material motivations, and temporal and spatial motivations.

Meanings associated with a practice can also serve as a motivation for performing it a certain way. From the results, several different meanings functioning as motivations could be identified, with flexibility, freedom, speed, reliability, convenience, comfort, privacy, safety, degree of relaxation, environmental friendliness and positive experience being the most prevalent. These are all not new findings in SPT-research. Several authors already discussed the importance of these meanings in different areas of everyday mobility and for different means of transport (Caldwell & Boyer, 2019; Cass & Faulconbridge, 2016; Kent, 2014, 2015; Larsen, 2017; McLaren, 2018; Selzer & Lanzendorf, 2022). What is new however, is that these meanings can also function as motivation for different people or in different contexts. It goes even further because meanings serving as motivations can even vary for the same person in different contexts. To illustrate this, we can look at an example: P01 states that she generally uses the car for any leisure activities in other villages, the main motivation being that any other means of transport would be too inconvenient for her and her kids. She clearly associates the meaning of convenience with the car. In the case of commuting however, she uses the train, because she experiences the car as being stressful when commuting. Thus, while the meaning of convenience associated with the car functions as a motivation for pursuing leisure activities, it doesn't for commuting. For commuting the motivation for having a relaxing commute overweighs, which is something she associates with using public transport. While behavioural scientists would call this a value-action gap (see chapter 2.1.1.4), SPT and the concept of motivations are able to capture the different negotiations and justifications behind performing a practice differently in different situations, because it reframes motivations as a part of a practice and not a person.

Besides meanings, infrastructural or material conditions can function as a motivation. The most frequently named motivations are the availability of alternatives and the ease of transporting goods. While transporting large and heavy goods is a widely recognised motivation for using a car (Mattioli et al., 2016), the accessibility of locations as a motivation for car use is often criticised for being too simplifying and categorised to belong to an utilitarian approach (Kent, 2014). For the people interviewed however, the perceived lack of alternatives is often a central argument for using one mode of transport over the other. Therefore, it seems that this motivation is more relevant in a rural than an urban context, which most of the literature focuses on. Furthermore, this is especially a dominating motivation for leisure activities. Leisure activities often take place in nature and thus in remote places. The perceived lack of alternatives for accessing leisure activities is further exacerbated because people don't want to waste their time on leisure mobility, hence not considering any other mode of transport slower than the car as a viable alternative.

Lastly, there are temporal and spatial motivations influencing the individual practices. Especially the mode of transport used for the different facilitated practices is influenced by the distance to cover, the duration of the trip as well as the activities that are sequenced and synchronised with it. The results indicate that practices are performed differently depending on whether they move locally (in the same village), regionally (in the UBE) or supra-regional (in Switzerland) independent of the exact facilitated practices. While walking and cycling are limited to local mobility, for regional mobility the car is almost exclusively used. Public transport is generally only considered for destinations further than the UBE. This type of motivation was often mentioned as a motivation in and of itself and not just because of the benefits or challenges that come with using a certain means of transport for a certain destination or distance. For example, participants often said that it just doesn't make sense for them to use the car in a village or that they use the car by default for everything further than their own village.

In summary, UBE residents exhibit a variety of different motivations for performing their mobility practices. While the meanings functioning as motivations they associate with their practices are also found in other contexts, it is mainly the material and spatiotemporal motivations that seem more relevant in the rural area of the UBE. The way a practice is performed depends however often not on a single motivation but rather a combination of different motivations.

6.1.3 The environmental friendliness of mobility practices

Even though many participants judge the environmental friendliness of their mobility based on the necessity of the trip, this has of course no influence on the actual environmental impact of the trip. The actual environmental friendliness of different means of transport can be assessed with life-cycle assessment (LCA) results. For Switzerland, there are standard emission factors, which consider the country-specific processes (see Table 4) (Treeze Ltd., 2020). Participants' perceptions were consistent with LCA-results, which show that the car is less environmentally friendly than public transport and active means of transport. One important distinction that needs to be made and that was also pointed out by a few participants, is that buses are much less environmentally friendly than trains because they are powered by an internal combustion engine (ICE) and have a lower occupancy rate compared to other means of public transport (Treeze Ltd., 2020). Furthermore, it needs to be highlighted that there are differences in the impact on global warming (GHG emissions) and general environmental impact (UBP⁶). While the general scepticism towards electric cars is justified when looking at the environmental impact, which is almost as high as the one of a conventional car, it is less justified when looking at the GHG emissions. An electric car causes less than half of the GHG emissions of a regular car over its lifetime. Also, when cycling the same distance instead of going by train, the GHG emissions would be the same but not the environmental impact. Lastly, air travel was often mentioned as very bad for the environment. This is mainly because of the usually large distances covered rather than the intensity of flying.

As research question three didn't aim at collecting quantitative data on the exact length and frequency of participants' trips, it is not possible to compare the perceived environmental friendliness of their mobility with the actual one. However, participants' assumptions that their mobility is environmentally friendlier if they don't use the car is in line with LCA-results. Cycling instead of driving with a petroleum car leads to 96% lower GHG emissions and a 96% lower environmental impact. The perception of most participants that their mobility is less environmentally friendly compared to city dwellers is probably accurate, as people living in the city generally drive fewer kilometres per day and have a lower share of individual motorised transport, if excluding air travel (Marconi & Schad, 2016; Ottelin et al., 2014).

Looking at the motivations participants associate with the different means of transport (see chapter 6.1.2), it becomes clear that environmental friendliness is only one amongst many different motivations and thus has only little influence on the performance of mobility practices, which is in line with the results of other studies (e.g. Larsen, 2017; Meinherz & Fritz, 2021) (see chapter 2.3). Even though residents of the UBE seem to be aware of the environmental impact of their mobility as the comparison of their perception to LCA-results shows, it was often not mentioned as a motivation for using an environmentally friendlier mode of transport. While this absence could be the result of the low importance of environmental concerns for UBE residents compared to other motivations, it could also be due to the strong influence of the necessity of trips on the perceived environmental friendliness of mobility, downplaying the environmental impact of it. This would confirm Volden and Hansen's (2022) findings that the perceived necessity of trips outweighs the desire to not engage in high-carbon mobility practices. These insights support Larsen's (2017) conclusion that in order to normalise low-carbon means of transport, one should focus on other motivations than environmental concerns.

⁶ UBPs are eco-points, an aggregated index composed of 21 indicators (global warming potential, land use impacts, heavy metals, pesticide use etc.) and weighed by the targets as set out in Swiss environmental legislation.

Table 4. Standard emission factors of different means of transport in Switzerland (Treeze Ltd., 2020)

Means of transport ⁷	GHG Emissions [g CO ₂ -eq/pkm]	Environmental impact [UBP/pkm]
Walking	0	0
Cycling regular bike	8	10
Cycling electric bike (electricity mix CH)	14	30
Taking regional train	8	25
Taking bus (ICE)	152	174
Driving electric car (electricity mix CH)	89	212
Driving diesel car	190	226
Driving petroleum car	221	227
Flying	263	136

6.2 How to change practices

After analysing and discussing the different mobility practices present in the UBE, what elements they consist of and how they are connected, the question remains how practices can be changed to make everyday mobility more environmentally friendly. The findings of this thesis provide some insights on possible ways of intervention. As already mentioned in the introduction, environmentally friendlier mobility requires a modal shift away from the car and a reduction of the distance and frequency of trips. Translated in the language of SPT, this means that we need to shift the direct transport practices and change the way and frequency facilitated practices are performed.

6.2.1 Policy interventions

Just as SPT shifts the unit of analysis from individuals to the practice, it also shifts the unit of intervention from the individual to the practice (Welch, 2016). Spurling et al. (2013) propose three different possibilities to intervene in practices and hence change mobility patterns. First, practices can be *recreated* by changing one or more of the elements a practice consists of (e.g. changing the material used for the practice to make practice less resource intensive). Second, practices can be *substituted* by new practices (e.g. replacing driving a car with cycling). Third, the *interlocking of practices can be changed* (e.g. change how practices synchronise or sequence).

The biggest potential for making mobility practices in the UBE more environmentally friendlier lies in the regional mobility, for which the car is used almost exclusively independent of the purpose. One of the easiest ways for policy-makers to intervene is to change the material elements of practices (Cass & Faulconbridge, 2016). To reach a shift away from the car, the results suggest two possible approaches. On the one hand, electric bikes provide a viable alternative to the car. On the other hand, the regional bus infrastructure could be strengthened, which is currently hardly used by residents.

Even though electric bikes can lead to a slightly higher environmental impact compared to a regular bike when the practice of cycling is simply *recreated*, the results show that residents use the electric bike to *substitute* driving with cycling. The electric bike is especially suitable for trips in the UBE because it allows covering the often longer and hillier distances of regional mobility. The UBE could make shared electric bikes available to residents for their regional trips. In addition, the region would need to focus on improving the regional cycling infrastructure, as current electric bike users mostly limit their use to local trips due to safety concerns, among other reasons. Electric bikes could not just make regional mobility more sustainable, it would also provide an alternative for local trips for residents that live far away from the city centre.

Besides electric bikes, residents rarely use the available regional public transport. Even though chapter 6.1.3 showed that buses are only slightly more environmentally friendlier than cars, shifting to bus use could still improve the environmental friendliness of residents' mobility. On the one hand, the carbon intensity of the regional buses decreases with every person that uses them due to higher occupancy rates.

⁷ Average fleet and average occupation were assumed

On the other hand, the regional bus operator has committed to phasing out fossil fuel based buses (Post AG, 2021), which makes taking a bus a much less carbon intensive practice in the future. Depending on the alternative propulsion system introduced, it would however need to be ensured that the improvements in carbon intensity don't come at the expense of significantly higher environmental impacts in other areas. To improve the occupancy rates of the regional buses, the UBE could reassess the residents' needs and adapt bus connections and schedules not only to commuting times of residents but also to the other mobility purposes. Another option could be to replace or complement the current bus offer with buses on request, which could reduce the number of bus-trips and improve the often criticised inflexibility of public transport. Integrating ridesharing into public transport is another promising alternative to improve the accessibility of public transport in rural areas (Thao et al., 2021). Besides these infrastructural improvements, interventions could focus on improving the competencies around using public transport.

Besides these material interventions, policy-makers can focus on the social dimension of practices. As the results of the UBE demonstrate, the sense of community and the wide range of leisure activities the region offers positively influence the sustainability of mobility practices of residents. The UBE as well as other regions could therefore focus on community building and increasing the connectedness between villagers, for example through local cultural events or supporting local clubs. This could result in higher active transport, shorter distances covered and a higher engagement in carpooling. Also, they could improve their offer of local leisure activities and shopping possibilities, again leading to shorter distances covered.

Despite the new insights SPT-research provides and its aspiration to change how environmental problems are framed, the design of practice-informed initiatives is very limited and they have yet to prove their effectiveness (Watson et al., 2020). Some even argue that "attempting to make practice theories amenable to current policy means losing their critical value, which lies in their paradigmatic opposition to dominant economic and behavioural models" (Watson et al., 2020, p. 3). A SPT-approach is therefore often considered more suitable to assess reasons for the success or failure of behaviour change initiatives (Hargreaves et al., 2013; Welch, 2017). Furthermore, many interventions, such as the ones presented above, focus on changing a single element of a practice (e.g. intervening in the materials of a practice). This has however often limited effectiveness due to the complexity and interconnectedness of practices (Watson et al., 2020; Welch, 2017). Nevertheless, these types of interventions can also be seen as a catalyst that triggers change in other related practices (Welch, 2017). These challenges and limitations of SPT make it very hard to suggest concrete actions to take.

6.2.2 Living lab approaches

Besides policy interventions, living lab approaches have gained increased importance for changing practices (Laakso, 2019; Matschoss et al., 2021; Sahakian, Rau, et al., 2021). By letting people experiment with their practices, living lab approaches disrupt current practices, which allows them to recraft and renegotiate them (Sahakian, Rau, et al., 2021) or reveal elements preventing people from changing (Laakso, 2019). Additionally, a living lab considers the local conditions and contexts, in which practices are embedded (Laakso et al., 2021).

Living labs allow for new competencies to be gained and material arrangements to be changed. One experiment found that by giving up a car for a limited period of time, people were able to gain new competencies around how to use public transport or cycle in traffic (Laakso, 2019). Another study found that when people were forced to wash less often, they would adopt a different laundry sorting system (Godin et al., 2020; Sahakian, Rau, et al., 2021). These examples show that living lab approaches are able to introduce new materials and competencies into people's practices.

Additionally, living labs challenge social norms around practices. It forces people to reflect on the meanings they associate with practices. Illustrating this again on the example of doing laundry, people challenged their understanding of cleanliness and changed how long they wear clothes until they considered them to be unclean (Sahakian, Rau, et al., 2021). Living lab approaches can also lead to

positive spill-overs into other areas of life, because of the interrelation of different practices and the challenging of fundamental social norms (Sahakian, Rau, et al., 2021). Also, such change initiatives are often characterised by social learning and community support leading to challenging not just one's own practices but also that of family members, co-workers or friends (Matschoss et al., 2021).

A living lab approach in the UBE could focus on the perception of distance and the notion of convenience. These are the predominant motivations when looking at the regional car-dominated mobility of UBE residents. Residents could be challenged to redefine what they perceive as too far or too tedious to reach by bike or public transport by limiting their car use for a certain period of time and/or certain destinations or activities or by offering them an electric bike for testing. It would be interesting to see whether people would change their utilitarian view on mobility. While some already see for example commuting as valuable time for themselves, it would be interesting to see whether they start to develop similar meanings around leisure mobility. Besides the focus on the means of transport, a living lab could also challenge the necessity of trips. For example, people could set a self-defined reduction target for the distance covered in general or by car. This could spark discussions around the idea of sufficiency and self-limitation (Sahakian, Rau, et al., 2021).

6.3 Limitations

Several theoretical and methodological limitations need to be kept in mind when interpreting the results. One of the main limitations of any type of qualitative data analysis is the statistical generalisation of the results (Halkier & Jensen, 2011). Due to the recruitment of participants based on contrasting criteria (see chapter 4.2), a wide variety of practice elements could be identified, allowing to generalise the results analytically. However, the sample is not representative of UBE residents and is far too small to draw any conclusions about the statistical distribution of the results. This was however also not the goal of this thesis. This limitation was addressed by refraining from using absolute numbers and statistical expression when presenting the results, as this gives a false impression of statistical patterns (Halkier & Jensen, 2011). Similarly, qualitative data analysis always comes with some degree of subjectivity (Halkier & Jensen, 2011; Mayring, 2015). Even though, there will always remain some subjectivity in categorising and summarising the available data, the provided coding system along with coding guidelines (see Appendix D) and the detailed results tables (see Appendix E) increase transparency and allow to critically review the results.

Another limitation of the results arose due to the choice of semi-structured interviews for collecting data. This method was chosen, because of its strength for analysing the discursive elements of practices, such as meanings and motivations, while being aware of its limitations in capturing the materiality and embodied dimensions of practices (see chapter 4.2). It is however this limitation that probably manifested itself in the results. The limited number of materials and competencies identified is very likely not reflecting the reality, but can be attributed to this methodological limitation. Furthermore, interviewees often forgot to mention something. It happened several times that a participant would forget to report on a means of transport they own, such as an old bike they would occasionally use, or a leisure activity they maybe perform less regularly. For future research, it would be advisable to follow Halkier's (2017) suggestion and use a combination of methods. For example, interviews could be complemented with the use of diaries or a photo journal (Cass & Faulconbridge, 2016) to better capture the tacit dimension of practices and make it easier for participants to report on their practices.

6.4 Motivation as an element – Learnings

In this thesis, the frequently applied framework as set out by Shove et al. (2012) was expanded by the element of motivation to account for the role of individual agency in practices (see chapter 3.2). The empirical application of this framework provides several insights into the benefits and challenges of adding motivation as an element of a practice.

As already touched upon in chapter 3.2.3, the main challenge was to differentiate between meanings and motivations. By going through the collected data and identifying meanings and motivations, it became apparent that it is not possible to clearly separate the two from one another. Rather, meanings can

function as one type of motivation as described in the discussion (see chapter 6.1.2). Therefore, I came to the conclusion that any meaning can serve as a motivation but doesn't have to and vice versa every motivation can also be a meaning but doesn't have to be. This is an important finding, as it challenges the understanding by Shove et al. (2012), who assume motivations to be a part of meanings. Therefore, I would side with Welch's (2017) argumentation that Shove's meanings and Schatzki's teleoaffective structures are indeed not identical (see chapter 2.2.2). Adding motivation as an element thus provides new insights compared to the basic typology of Shove et al. It especially also allows one to investigate the role and significance of a specific motivation in different contexts, illustrated in this thesis by the focus on the role of environmental concerns in mobility practices.

In the course of analysing the data, it also became clear that it is not just meanings that can function as motivations but also material arrangements. Even though no competencies were found to function as a motivation for performing a practice a certain way, it is not possible to rule out this possibility. As mentioned in the previous section, due to methodological limitations only a small number of competencies could be identified. It is therefore possible that competencies functioning as motivations were simply not captured. These considerations suggest that a conceptual framework might look more like Figure 4. Motivations can be meanings, materials, competencies or they can be something else, in the case of mobility, these were mainly spatiotemporal motivations (see chapter 6.1.2).

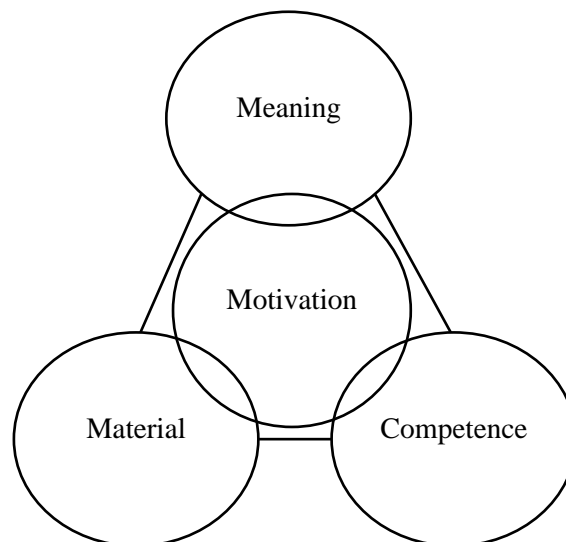


Figure 4. Proposal of alternative expanded conceptual framework based on the learnings from empirical application.

This overlap of elements makes the data analysis however more challenging. Either you need to work with redundancies and categories a segment belonging to two elements, or you need to prioritise one element over the other. This second approach was applied in this thesis and motivations were prioritised over the other elements. While this makes it harder to analyse the configuration of elements of a single practice (because e.g. meanings functioning as motivations are not listed as meanings but only as motivations), it was very useful for analysing the justifications of a practice. It is therefore advisable to choose the approach depending on the research question asked.

Lastly, we can look again at the practice theoretical approach Welch (2017) proposed to analyse motivations (see chapter 3.2.2). With the proposed conceptual framework of this thesis, it was possible to analyse “the specific forms of motivation that a practice entails for its participation” and the “conditions under which motivational engagement, and therefore competent performance of the practice fails”. One challenge that remains however, is the analysis of “the forms of affective engagement this motivation entails (which may be positive, e.g. desire, or negative, e.g. fear)”. The affectivity behind motivations remains hidden with the proposed conceptual framework. Further research and conceptual work are required to incorporate this aspect as well.

7 Conclusion

This thesis contributes to the literature on SPT-research on everyday mobility in rural areas and provides insights on how the environmental impact of mobility can be reduced in pursuit of the Agenda 2030. It uses a SPT-approach with a new focus on motivations of practices to account for the reflexivity of individuals in their practices. By zooming into the direct transport practices of driving, taking public transport, cycling and walking in the context of the practices that are facilitated by transport, namely commuting, shopping and pursuing leisure activities, the thesis goes beyond the dominant focus on the practices of driving and commuting. Rather it allows one to zoom out and considers a wider pallet of practices relevant for everyday mobility and investigates how they are connected.

The thesis was able to show that direct transport practices as well as facilitated practices are not configured very differently in terms of elements they consist of compared to the results of empirical studies in other contexts such as cities. However, taking a closer look at the motivations behind the different practices new insights were gathered. It is the frequent car use, but also the mobility confined mostly to the region, which is characteristic of mobility practices of UBE residents. Especially the strong sense of community within villages of the UBE and the connectedness of residents to the region has a positive influence on the environmental friendliness of mobility. The frequent desire to not spent a lot of time on mobility often leads to either shorter distances travelled or more frequent car use. Dominant motivations for performing practices a certain way revolve around meanings associated with them, such as flexibility, convenience, safety, privacy or degree of relaxation. Additionally, material motivations, such as available infrastructure and alternatives seem to be especially relevant in the rural context. Lastly, spatiotemporal motivations determine the way a practice is performed and it is especially the regional mobility that is more car dominated than local or supra-regional mobility. The results of this thesis also show that environmental concerns play only a minor role in how mobility practices are performed because of the strong necessity associated with being mobile

With the focus on motivations of practices, the thesis provides new insights on how people negotiate their mobility practices in different situations. By not restricting the analysis to a single means of transport, different motivations for using one means of transport over another could be identified. This negotiation between different means of transport should be of interest in further research to identify factors hindering the adoption of more sustainable mobility practices. Especially the role of material and infrastructural motivations should be investigated in other research contexts, to determine their relevance more broadly. Additionally, the thesis showed that it is relevant to analyse transport practices in the context of the purpose for which they are used. While transport research using SPT has mainly focused on the use of different means of transport for commuting, additional research should be conducted in other areas such as leisure activities or shopping, because different motivations are more dominant depending on the transport purpose.

Besides focussing on modes of transport used in different situations, SPT should also start to address the motivations for engaging in mobility practices in the first place. This is necessary because the goals of sustainable consumption and combating climate change cannot be reached by modal choice alone. It is important to shed light on the practices that facilitate mobility and investigate how trips can be avoided to reach more sufficient and sustainable transport practices. The possibilities for interventions in mobility practices informed by SPT are still scarce and mainly limited to interventions in the material or infrastructural arrangements of practices. Living lab approaches provide a promising alternative of intervention and their effectiveness in recrafting current mobility practices should be further investigated.

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Appendix A. Interview guide

Interview Leitfaden

Herzlichen Dank, dass Sie sich bereit erklärt haben, an einem Interview teilzunehmen. Bevor wir mit dem Interview starten, habe ich noch ein paar Infos zum Ziel und Ablauf des Interviews.

Das Ziel meiner Masterarbeit an der ETH Zürich ist es, die Alltagsmobilität in der Biosphäre Entlebuch genauer zu untersuchen. Dazu führen wir Interviews mit verschiedenen Bewohnenden der Biosphäre Entlebuch durch. Im Interview stelle ich Ihnen verschiedene Fragen zu Ihrem aktuellen Mobilitätsverhalten und zu Ihren Gründen, warum Sie sich so fortbewegen, wie Sie es beschreiben. Sie können also einfach von Ihrem persönlichen Verhalten und Ihren Erfahrungen erzählen. Einige Fragen können sich im Verlaufe des Interviews wiederholen. Versuchen Sie die Frage im jeweiligen Kontext neu zu beantworten. Ich erinnere Sie daran, dass sämtliche Daten anonymisiert werden und das am Ende, kein Rückschluss auf Ihre Person möglich ist. Sie dürfen das Interview jederzeit abbrechen ohne Angabe von Gründen und Sie müssen keine Fragen beantworten, die Sie nicht möchten. Das Gespräch wird etwa 45-90 Minuten dauern und wird aufgezeichnet. Sind Sie damit einverstanden?

Haben Sie noch Fragen bevor wir starten?

Einleitungsfragen (*inkl. Einführung ca. 5-10min*)

Dann würden wir mit einer ersten Einstiegsfrage starten:

- Welche Verkehrsmittel brauchen Sie am häufigsten und für welche Zwecke ist das jeweils?
- Welche Verkehrsmittel haben Sie alle in Ihrem Haushalt?
- Wie nahe von Ihrem Zuhause ist die nächste Bus und Zughaltestelle?

Wir würden nun zum Hauptteil des Interviews übergehen. Dabei geht es jetzt um Ihre heutige Mobilität in unterschiedlichen Lebensbereichen. Dazu bräuchte ich noch ein paar weitere Infos zu Ihnen, um Ihr Mobilitätsverhalten noch etwas besser verstehen zu können.

- Sind Sie berufstätig und wenn ja, was arbeiten Sie?
- Sind Sie in einer Ausbildung und wenn ja, welche Ausbildung machen Sie gerade?
- Wie alt sind Sie?
- Wer lebt alles in Ihrem Haushalt und wie alt sind die Personen?
- Wer geht bei Ihnen mehrheitlich einkaufen?
- Wo wohnen Sie momentan und an welchen Orten haben Sie schon alles gelebt?

Dann würden wir nun mit dem ersten Mobilitätsbereich starten und zwar geht es am Anfang um den *Arbeits-/Ausbildungsweg oder Einkaufsweg*. Wie Sie mir vorhin erzählt haben, sind Sie...

Hauptfragen (*15min pro Block*)

Pendeln (falls noch in Ausbildung → Ausbildungsweg anschauen)

- Beschreiben Sie möglichst detailliert, wie Sie zur Arbeit und wieder nach Hause gehen.
- Dauer
 - Wie lange dauert Ihr Arbeitsweg (in Minuten)?
 - Wo Arbeiten Sie?
 - Wie oft pro Woche legen Sie den Arbeitsweg zurück?
- Material
 - Welches Verkehrsmittel nutzen Sie dazu?
 - Welches Automodell/Velomodell/welche Art ÖV nutzen Sie?

- Nutzen Sie irgendwelche spezifischen Gegenstände oder Ausrüstungen oder haben Sie irgendetwas spezifisch für Ihren Arbeitsweg gekauft? Wieso? Z.B. Velohelm, Regenschutz, Musikanlage etc.
- Gibt oder gab es Situationen in denen Sie ein anderes Verkehrsmittel nutzen, um zur Arbeit zu gehen? Was waren das für Situationen und welches Verkehrsmittel haben Sie genutzt? Z.B. bei Regen, im Winter etc.
- Competence
 - Wenn eine Kollegin oder ein Kollege zum ersten Mal denselben Arbeitsweg mit demselben Verkehrsmittel wie Sie machen würde, welche Tipps würden Sie ihm oder ihr mitgeben bezüglich Weg und Verkehrsmittel, was Sie nutzen? Z.B. Einschätzung von Verkehrslage, Platz im ÖV, Wahl der Veloroute etc.
 - Machen Sie irgendetwas anders oder hat sich im Verlaufe der Zeit etwas an der Fahrt verändert?
- Motivation/Meaning Verkehrsmittel
 - Was sind für Sie die grössten Vor- & Nachteile an der Nutzung des bevorzugten Verkehrsmittels, um zur Arbeit zu gehen? Und welche Vor- & Nachteile ergeben sich für Sie, wenn Sie in der vorher beschriebenen *Situation x* mit dem *Verkehrsmittel x* zur Arbeit gehen?
 - Haben Sie schonmal überlegt, ein anderes Verkehrsmittel zu nutzen, um zur Arbeit zu gehen? Welches Verkehrsmittel wäre das und in welchen Situationen könnten Sie sich vorstellen, dieses zu nutzen, um zur Arbeit zu gehen?
 - Haben Sie schonmal überlegt, ein anderes Modell des Verkehrsmittels zu nutzen, um zur Arbeit zu gehen?
 - Was erhoffen Sie sich für Vorteile bei der Nutzung dieses anderen Verkehrsmittels, um zur Arbeit zu gehen? Was hindert Sie momentan daran, diese Verkehrsmittel zu nutzen?
- Motivation/Meaning Weg
 - Was ist Ihnen grundsätzlich an Ihrem Arbeitsweg wichtig?
 - Muss es vor allem schnell/bequem/umweltfreundlich/sicher etc. sein?
 - Auf was freuen Sie sich an Ihrem Arbeitsweg oder was mögen Sie an Ihrem Arbeitsweg oder am Verkehrsmittel, was Sie dazu nutzen?
 - Stört Sie etwas an Ihrem derzeitigen Arbeitsweg, was ist besonders mühsam oder was würden Sie gerne an Ihrem Arbeitsweg oder am Verkehrsmittel, was Sie dazu nutzen, ändern?
 - Hat der Arbeitsweg eine Rolle bei der Wahl Ihres Wohnorts oder Arbeitsorts gespielt?
- Sequenzierung/Synchronisation
 - Nutzen Sie die Zeit während Ihres Arbeitsweges, um noch etwas anderes zu machen?
 - Gehen Sie vor oder nach dem Arbeitsweg noch irgendwo anders hin?

Das wären nun alle Fragen zu Ihrem Arbeitsweg gewesen. Dann würden wir uns nun etwas vertiefter dem Bereich *Einkaufen oder Freizeitaktivitäten* zuwenden.

Einkaufen

- Beschreiben Sie mal, wie eine Woche oder einen Monat Lebensmitteleinkauf bei Ihnen aussieht. Wie und wo machen sie das?
- Dauer
 - Wie lange dauert Ihr Einkaufsweg (in Minuten)?
 - Wie oft pro Woche legen Sie den Einkaufsweg zurück?
- Material
 - Welches Verkehrsmittel nutzen Sie dazu?

- Welches Automodell/Velomodell/welche Art ÖV nutzen Sie?
- Nutzen Sie irgendwelche spezifischen Gegenstände oder Ausrüstungen oder haben Sie irgendetwas spezifisch für Ihren Einkaufsweg gekauft? Wieso? Z.B. Velohelm, Regenschutz etc.
- Gibt oder gab es Situationen in denen Sie ein anderes Verkehrsmittel nutzen, um einkaufen zu gehen? Was waren das für Situationen und welches Verkehrsmittel haben Sie genutzt? Z.B. bei Regen, im Winter etc.
- Competence
 - Wenn eine Kollegin oder ein Kollege zum ersten Mal denselben Einkaufsweg mit demselben Verkehrsmittel wie Sie machen würde, welche Tipps würden Sie ihm oder ihr mitgeben bezüglich Weg und Verkehrsmittel, was Sie nutzen? Z.B. Einschätzung von Verkehrslage, Platz im ÖV, Wahl der Veloroute etc.
 - Machen Sie irgendetwas anders oder hat sich im Verlaufe der Zeit etwas an der Fahrt verändert?
- Motivation/Meaning Verkehrsmittel
 - Was sind für Sie die grössten Vor- & Nachteile an der Nutzung des bevorzugten Verkehrsmittels, um einkaufen zu gehen? Und welche Vor- & Nachteile ergeben sich für Sie, wenn Sie in der vorher beschriebenen *Situation x* mit dem *Verkehrsmittel x* einkaufen gehen?
 - Haben Sie schonmal überlegt, ein anderes Verkehrsmittel zu nutzen, um einkaufen zu gehen? Welches Verkehrsmittel wäre das und in welchen Situationen könnten Sie sich vorstellen, dieses zu nutzen, um einkaufen zu gehen?
 - Haben Sie schonmal überlegt, ein anderes Modell des Verkehrsmittels zu nutzen, um einkaufen zu gehen?
 - Was erhoffen Sie sich für Vorteile bei der Nutzung dieses anderen Verkehrsmittels, um einkaufen zu gehen? Was hindert Sie momentan daran, diese Verkehrsmittel zu nutzen?
- Motivation/Meaning Weg
 - Was ist Ihnen grundsätzlich an Ihrem Einkaufsweg wichtig?
 - Muss es vor allem schnell/bequem/umweltfreundlich/sicher etc. sein?
 - Auf was freuen Sie sich an Ihrem Einkaufsweg oder was mögen Sie an Ihrem Einkaufsweg oder am Verkehrsmittel, was Sie dazu nutzen?
 - Stört Sie etwas an Ihrem derzeitigen Einkaufsweg, was ist besonders mühsam oder was würden Sie gerne an Ihrem Einkaufsweg oder am Verkehrsmittel, was Sie dazu nutzen, ändern?
 - Hat der Einkaufsweg eine Rolle bei der Wahl Ihres Wohnorts oder Einkaufsorts gespielt?
- Sequenzierung/Synchronisation
 - Nutzen Sie die Zeit während des Einkaufsweges, um noch etwas anderes zu machen?
 - Gehen Sie vor oder nach dem Einkaufsweg noch irgendwo anders hin?

Das wären nun alle Fragen zu Ihrem Einkaufsweg gewesen. Dann würden wir uns nun etwas vertiefter dem Bereich Freizeitaktivitäten zuwenden.

Freizeitaktivität

- Wenn Sie nun an Ihre Freizeit denken, welche Hobbies und Freizeitaktivitäten machen Sie regelmässig und für welche davon ist es nötig, dass Sie irgendwo hin gehen?

Frage jeweils direkt für alle genannten Aktivitäten stellen (z.B. Frage nach Vor- & Nachteilen: Und wie sieht es für die Fahrt zur Chorprobe aus?; Ist das ähnlich wie für den Weg zum Fussballtraining? etc.)

- Beschreiben Sie, wie sie zu diesen Orten, wo Sie Ihre Freizeitaktivität ausüben, hingehen
- Dauer
 - Wie lange dauert Ihr Weg zur Freizeitaktivität (in Minuten)?
 - Wo gehen Sie hin? Ist das eher in der Region oder ausserhalb?
 - Wie oft pro Woche legen Sie den Weg zur Freizeitaktivität zurück?
- Material
 - Welches Verkehrsmittel nutzen Sie dazu?
 - Welches Automodell/Velomodell/welche Art ÖV?
 - Nutzen Sie irgendwelche spezifischen Gegenstände oder Ausrüstungen oder haben Sie irgendetwas spezifisch für Ihren Weg zur Freizeitaktivität gekauft? Wieso? Z.B. Velohelm etc.
 - Gibt oder gab es Situationen in denen Sie ein anderes Verkehrsmittel nutzen, um zur Freizeitaktivität zu gehen? Was waren das für Situationen und welches Verkehrsmittel haben Sie genutzt? Z.B. bei Regen, im Winter etc.
- Competence
 - Wenn eine Kollegin oder ein Kollege zum ersten Mal denselben Weg zur Freizeitaktivität mit demselben Verkehrsmittel wie Sie machen würde, welche Tipps würden Sie ihm oder ihr mitgeben bezüglich Weg und Verkehrsmittel, was Sie nutzen? Z.B. Einschätzung von Verkehrslage, Platz im ÖV, Wahl der Veloroute etc.
 - Machen Sie irgendetwas anders oder hat sich im Verlaufe der Zeit etwas an der Fahrt verändert?
- Motivation/Meaning Verkehrsmittel
 - Was sind für Sie die grössten Vor- & Nachteile an der Nutzung des bevorzugten Verkehrsmittels, um zur Freizeitaktivität zu gehen? Und welche Vor- & Nachteile ergeben sich für Sie, wenn Sie in der vorher beschriebenen *Situation x* mit dem *Verkehrsmittel x* zur Freizeitaktivität gehen?
 - Haben Sie schonmal überlegt, ein anderes Verkehrsmittel zu nutzen, um zur Freizeitaktivität zu gehen? Welches Verkehrsmittel wäre das und in welchen Situationen könnten Sie sich vorstellen, dieses zu nutzen?
 - Haben Sie schonmal überlegt, ein anderes Modell des Verkehrsmittels zu nutzen, um zur Freizeitaktivität zu gehen?
 - Was erhoffen Sie sich für Vorteile bei der Nutzung dieses anderen Verkehrsmittels, um zur Freizeitaktivität zu gehen? Was hindert Sie momentan daran, diese Verkehrsmittel zu nutzen?
 - Würden Sie irgendeine Fortbewegungsart auch als eine Ihrer Freizeitaktivitäten bezeichnen?
- Motivation/Meaning Weg
 - Was ist Ihnen grundsätzlich an Ihrem Weg zur Freizeitaktivität wichtig?
 - Muss es vor allem schnell/bequem/umweltfreundlich/sicher etc. sein?
 - Auf was freuen Sie sich an Ihrem Weg zur Freizeitaktivität oder was mögen Sie an Ihrem Weg zur Freizeitaktivität oder am Verkehrsmittel, was Sie dazu nutzen?
 - Stört Sie etwas an Ihrem derzeitigen Weg zur Freizeitaktivität, was ist besonders mühsam oder was würden Sie gerne an Ihrem Weg zur Freizeitaktivität oder am Verkehrsmittel, was Sie dazu nutzen, ändern?
 - Gibt es Freizeitaktivitäten, die Sie aufgrund des Weges dorthin nicht machen? Haben Ihre Freizeitaktivitäten eine Rolle bei der Wahl Ihres Wohnortes gespielt?
- Sequenzierung/Synchronisation
 - Nutzen Sie die Zeit während Ihres Weges zur Freizeitaktivität, um noch etwas anderes zu machen?

- Gehen Sie vor oder nach der Freizeitaktivität noch irgendwo anders hin?

Das wären nun alle Fragen zu Ihren Freizeitaktivitäten gewesen. Wir haben nun über die Mobilität in den Bereichen *Arbeit und/oder Einkaufen und/oder Freizeit* gesprochen.

- Gibt es noch andere Bereich oder Aktivitäten, die erfordern, dass Sie sich regelmässig fortbewegen?
 - o Bewegen Sie sich in diesen Bereichen sehr anders fort als in den bereits besprochenen Bereichen? Nutzen Sie dort andere Verkehrsmittel oder legen Sie den Weg viel öfters zurück oder ist der Weg viel länger?
 - o Wenn ja
 - Was sind für Sie die grössten Vor- & Nachteile bei der Nutzung eines anderen Verkehrsmittels, um *dorthin* zu gehen?

Umweltfreundlichkeit / Weiterführende Fragen (10-15 Minuten)

Zum Schluss folgen noch einige Fragen, zur Umweltfreundlichkeit der Mobilität

- Was macht für Sie eine umweltfreundliche Mobilität aus? Was bedeutet es für Sie, sich umweltfreundlich fortzubewegen? Wie würde sich eine sehr umweltbewusste Person fortbewegen? Z.B. Verbraucht keine fossilen Brennstoffe, braucht wenig Platz, verursacht wenig Lärm, umweltschonende Herstellung
 - Ganz unabhängig von der Wahl des Verkehrsmittels, gibt es andere Dinge, wo Sie glauben, dass sie für eine umweltfreundliche Mobilität wichtig wären? Z.B. auch hinsichtlich kürzere oder weniger Fahren zu machen (Homeoffice, auf Fahrten verzichten, Nahe Einkaufsmöglichkeiten bevorzugen etc.)
- Im Vergleich mit anderen Leuten aus Ihrem Dorf, als wie umweltfreundlich würden Sie Ihr eigenes Mobilitätsverhalten einschätzen? Warum schätzen Sie das so ein, was macht den Unterschied Ihrer Meinung nach aus?
- Und als wie umweltfreundlich würden Sie Ihr Mobilitätsverhalten im Vergleich mit Personen aus der Stadt einschätzen? Warum schätzen Sie das so ein, was macht den Unterschied Ihrer Meinung nach aus?
- In welchen Aspekten bewegen sich andere Personen umweltfreundlicher oder weniger umweltfreundlich als Sie fort?
- Wie stehen Sie zum Thema Flugreisen? Verreisen Sie selber oft mit dem Flugzeug? In welchen Situationen finden Sie es ok mit dem Flugzeug zu reisen? Gibt es Situationen, wo eine Flugreise für Sie nicht in Frage kommt?
- Was könnten Sie tun, um Ihre persönliche Mobilität umweltfreundlicher zu gestalten? Und was könnten Sie beitrage, um die Mobilität im Entlebuch allgemein umweltfreundlicher zu gestalten? Was würde es Ihnen einfacher machen, sich umweltfreundlich zu bewegen?
- Als wie realistisch schätzen Sie die Umsetzung dieser Vorschläge ein?
- Möchten Sie sonst noch etwas zu Ihrer Mobilität sagen, was wir noch nicht besprochen haben?

Herzlichen Dank für Ihre Zeit und Ihre Teilnahme!

Appendix B. Information & consent form



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Informationsblatt und Einverständniserklärung zur Studie

Potenziale und Hindernisse für nachhaltiges Mobilitätsverhalten in der UNESCO Biosphäre Entlebuch

Teilnehmender (vollständiger Name):

Adresse (optional):

.....

Kontaktperson für Fragen: Stefanie Maeder, ETH Zürich, smaeder@student.ethz.ch

Kontakt Projektteam: Stefanie Maeder, ETH Zürich, smaeder@student.ethz.ch

Michael Stauffacher, ETH Zürich,
michael.stauffacher@usys.ethz.ch

Datenschutzbeauftragter ETH Zürich: Tomislav Mitar (tomislav.mitar@sl.ethz.ch)

Wir fragen Sie hier an, ob Sie bereit wären, an unserem Forschungsvorhaben mitzuwirken.

Ihre Teilnahme ist freiwillig. Bitte lesen Sie die folgenden Informationen sorgfältig durch und fragen Sie, wenn Sie etwas wissen möchten.

Was wird untersucht und wie?

Das Ziel dieser Masterarbeit ist es, Potenziale und Barrieren für ein nachhaltiges Mobilitätsverhalten in der UNESCO Biosphäre Entlebuch zu untersuchen. Es geht darum, das aktuelle Mobilitätsverhalten der Bewohnerinnen und Bewohner zu ermitteln und ihre Motivation für verschiedene Verhaltensweisen zu verstehen. Dazu führen wir halbstrukturierte Interviews mit einem breiten Spektrum von Bewohnenden der UNESCO Biosphäre Entlebuch durch.

Wer kann teilnehmen?

Um an dieser Studie teilzunehmen, müssen Sie die folgenden Einschlusskriterien erfüllen:

- Sie sind 18 Jahre oder älter
- Sie sind in der Lage, diese Einverständniserklärung zu lesen und zu verstehen
- Sie haben Ihren Wohnsitz in der UNESCO Biosphäre Entlebuch
- Sie haben keine größeren gesundheitlichen Einschränkungen in Ihrer Mobilität

Was muss ich bei einer Teilnahme tun?

Es werden Ihnen mehrere offene Fragen zu Ihrem Mobilitätsverhalten gestellt. Sie werden gebeten, zu beschreiben, wie Sie sich von Ihrem Zuhause zu verschiedenen Orten bewegen und Gründe dafür zu nennen, warum Sie sich so fortbewegen, wie Sie es tun. Der Schwerpunkt liegt dabei auf Ihrem persönlichen Verhalten und Ihren Erfahrungen. Das Gespräch wird etwa 45-90 Minuten dauern. Sie können der durchführenden Person im Voraus mitteilen, wie viel Zeit Sie zur Verfügung haben.

Was sind meine Rechte während der Teilnahme?

Ihre Teilnahme an dieser Studie ist freiwillig. Sie können jederzeit ohne Angabe von Gründen und ohne Nachteil die Teilnahme abbrechen.

Welche Risiken und welchen Nutzen kann ich erwarten?

Es gibt keine bekannten Risiken im Zusammenhang mit der Teilnahme an dieser Studie. Um den Gesundheitsrisiken im Zusammenhang mit der aktuellen Covid-19-Pandemie entgegenzuwirken, werden die Interviews persönlich oder online per Zoom-Videokonferenz durchgeführt. Sie können frei entscheiden, ob das Interview online oder persönlich durchgeführt werden soll. Die Interviews werden unter strikter Einhaltung der aktuellen Covid-19-Vorschriften der ETH Zürich und des BAG durchgeführt.

Werde ich für die Teilnahme entschädigt?

Für die Teilnahme an dieser Studie wird keine Vergütung gezahlt.

Welche Daten werden von mir erhoben und wie werden diese verwendet?

Ihr Name, Ihre Adresse (optional), Ihre E-Mail-Adresse und Ihre Unterschrift werden in der Einverständniserklärung erfasst und getrennt von den während des Interviews erhobenen Daten gespeichert. Ein Pseudonymisierungsschlüssel (verschlüsseltes Dokument) wird verwendet, um Ihren Namen mit den während des Interviews erhobenen Daten zu verknüpfen. Das Interview wird aufgezeichnet (nur Audio) und anschließend transkribiert. Alle identifizierenden Informationen, die während des Gesprächs genannt werden (mit Ausnahme der ausdrücklich erfragten persönlichen Daten), werden im Transkript verschlüsselt. Im Interview werden wir Sie nach folgenden persönlichen Daten fragen, die Sie freiwillig angeben können: Alter, Beruf, vergangene Wohnorte, Anzahl und Alter der Haushaltsmitglieder. Die persönlichen Daten werden nicht an Dritte weitergegeben. Die erhobenen Daten werden ausschliesslich zu Forschungszwecken im Rahmen der Masterarbeit von Stefanie Maeder verwendet, die nach erfolgreichem Abschluss über die ETH-Website, die ETH-Forschungssammlung und die Website der UNESCO Biosphäre Entlebuch öffentlich zugänglich gemacht werden könnte. Darüber hinaus behalten wir uns vor, die Masterarbeit und damit alle in diesem Zusammenhang erhobenen Daten zur Erstellung einer wissenschaftlichen Publikation zu verwenden. Sämtliche Daten werden in anonymisierter Form publiziert. Somit sind keine Rückschlüsse auf Ihre Person möglich.

Alle persönlichen Daten (Einverständniserklärung, Audioaufnahme und anonymisiertes Transkript) werden auf passwortgeschützten Computern und lokalen Servern der ETH Zürich sicher gespeichert. Nur Stefanie Maeder, Prof. Dr. Michael Stauffacher und das IT-Personal vom TdLab haben Zugang zu diesen Daten. Die Audioaufnahmen werden nach Abschluss der Masterarbeit von Stefanie Maeder gelöscht und alle übrigen Daten (Einverständniserklärung und Transkript) werden nach 10 Jahren vollständig gelöscht.

Die Mitglieder der Ethikkommission der ETH Zürich können die Originaldaten zu Prüf- und Kontrollzwecken einsehen, jedoch unter strikter Einhaltung der Vertraulichkeit.

Welches sind meine Rechte an den Personendaten?

Vor der unwiderruflichen Anonymisierung der erhobenen Daten können Sie jederzeit und ohne Angabe von Gründen Auskunft über die von Ihnen gesammelten Personendaten verlangen. Sie können zudem verlangen, dass diese berichtigt, Ihnen ausgehändigt, für die Bearbeitung gesperrt oder gelöscht werden. Wenden Sie sich dazu an die oben angegebene Kontaktperson.

Wer finanziert die Studie?

Diese Studie wird im Rahmen einer Masterarbeit durchgeführt und erhält keine finanzielle Unterstützung.

Sind allfällige Gesundheitsschäden versichert?

Allfällige Gesundheitsschäden, die in direktem Zusammenhang mit der Studie entstehen und auf nachweisliches Verschulden der ETH Zürich zurückzuführen sind, sind durch die Betriebs-Haftpflichtversicherung der ETH Zürich gedeckt. Darüber hinaus liegt die Unfall- / Krankenversicherung in Ihrer eigenen Verantwortung (z. B. für die Hin- und Rückreise).

Wer hat die Studie geprüft?

Diese Studie wurde von der Ethikkommission der ETH Zürich unter der Gesuchsnummer 2022-N-86 geprüft und bewilligt.

Beschwerdestelle

Das Sekretariat der ETH Zürich Ethikkommission nimmt Ihre Beschwerden im Zusammenhang mit Ihrer Studienteilnahme entgegen. Kontakt: *ethics@sl.ethz.ch* oder 0041 44 632 85 72.

Einverständniserklärung

Als teilnehmende Person bestätige ich mit meiner Unterschrift:

- Ich habe die Informationen zur Studie gelesen und verstanden. Allfällige Fragen wurden mir vollständig und zu meiner Zufriedenheit beantwortet.
- Ich hatte genug Zeit, über meine Teilnahme zu entscheiden.
- Ich erfülle die genannten Bedingungen für die Teilnahme und bin mir bewusst, dass die genannten Anforderungen einzuhalten sind.
- Ich nehme an der Studie freiwillig teil und bin einverstanden, dass die von mir gesammelten Daten wie oben beschrieben verarbeitet werden.
- Ich weiss, dass ich meine Teilnahme jederzeit abbrechen kann.

Über die Ergebnisse dieser Studie möchte ich

- informiert werden: Name, Telefon oder E-Mail:
- nicht informiert werden

Name teilnehmende Person

.....

Ort, Datum

.....

Unterschrift teilnehmende Person

.....

Ort, Datum

.....

Unterschrift Kontaktperson

.....

Appendix C. Letter of approval from Ethics Board



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Vice President for Research

ETH Zurich
Prof. Dr. Detlef Günther
HG F 57
Rämistrasse 101
8092 Zurich

ETH Zurich
Herr Prof. Dr. Michael Stauffacher
CHN K78
Universitätstrasse 16
8092 Zürich

Contact:
Office of Research
ethics@sl.ethz.ch

Zurich, 12 May 2022 ZS

EK 2022-N-86: Potentials and barriers to sustainable mobility patterns in the UNESCO Biosphere Reserve Entlebuch

Dear Mr Stauffacher,

Your above proposal, submitted on 27 April 2022, has been reviewed by the following members of the ETH Zurich Ethics Commission:

Prof. Dr. Lutz Wingert, Präsident	Professur für Philosophie
Dr. Marino Menozzi	Institut für Umweltentscheidungen
Prof. Dr. Isabel Günther	Professur für Entwicklungsökonomie

Based on the Commission's recommendation, the Vice President for Research of ETH Zurich has come to the following decision:

- Approval without reservation
 Approval with reservation
 Revise and reply
 Revise and resubmit
 Rejection
 Not evaluated

Final provisions

You are required to inform the Ethics Commission immediately on any of the following occasions:

- a) if an event occurred that affects the integrity of the participants or the continuation of the research project;
- b) if you wish to make changes to the research protocol or to extend the project; or
- c) if the study is prematurely terminated.

Kind regards,

Prof. Detlef Günther
Vice President for Research

Prof. Lutz Wingert
Chair ETH Zurich Ethics Commission

Appendix D. Coding system for qualitative content analysis

Table D.1. Coding System applied for the qualitative content analysis

Level 1	Level 2	Level 3	Level 4	Level 5
Direct Practices				
	Driving	CAR - Material	CAR - Electric car CAR - Pooling	
		CAR - Competence CAR - Meaning CAR - Motivation		
	Public transport	PT - Material PT - Competence PT - Meaning PT - Motivation		
	Cycling	CY - Material CY - Competence CY - Meaning CY - Motivation		
	Walking	WAK - Material WAK - Competence WAK - Meaning WAK - Motivation		
	Other mode			
Facilitated Practices				
	Commuting	COM - Timespace	COM - Timespace COM - Synchronizing COM - Sequencing	
		COM - Material COM - Competence COM - Meaning COM - Motivation		
	Shopping	SHO - Timespace	SHO - Timespace SHO - Synchronizing SHO - Sequencing	
		SHO - Material SHO - Competence SHO - Meaning SHO - Motivation		
	Hobby	HOB - Skiing	HOB - SKI - Timespace	SKI - Timespace SKI - Synchronizing SKI - Sequencing
			HOB - SKI - Material HOB - SKI - Competence HOB - SKI - Meaning HOB - SKI - Motivation	
		HOB - Trips		

Level 1	Level 2	Level 3	Level 4	Level 5
			HOB - TRP - Timespace	
				TRP - Timespace
				TRP - Synchronizing
				TRP - Sequencing
			HOB - TRP - Material	
			HOB - TRP - Competence	
			HOB - TRP - Meaning	
			HOB - TRP - Motivation	
		HOB - Clubs		
			HOB - CLB - Timespace	
				CLB - Timespace
				CLB - Synchronizing
				CLB - Sequencing
			HOB - CLB - Material	
			HOB - CLB - Competence	
			HOB - CLB - Meaning	
			HOB - CLB - Motivation	
		HOB - Hiking/Biking		
			HOB - HIK - Timespace	
				HIK - Timespace
				HIK - Synchronizing
				HIK - Sequencing
			HOB - HIK - Material	
			HOB - HIK - Competence	
			HOB - HIK - Meaning	
			HOB - HIK - Motivation	
		HOB - Other		
	Holidays			
		HOL - Practice		
		HOL - Flying		
Environment				
	ENV - Perception			
	ENV - Better than others			
	ENV - Worse than others			
	ENV - Measures			
	ENV - Other			

Table D.2. Coding guidelines for the qualitative content analysis. XXX stands for the different direct transport and facilitated practices.

Code	Definition	Anchor Sample	Encoding rules
Direct practices	Code only for structuring purposes.		No segments should be assigned here.
Driving / Public transport / Cycling / Walking	Everything related to the mode of transport that doesn't belong in any of the respective subcodes.	Ich reise auch für die Arbeit eigentlich ausschliesslich mit dem Zug.	- Include statements not belonging to any of the subcategories but are important to be associated with the mode of transport XXX for the purpose of the interaction analysis
XXX – Material	Describes the type of means of transport they are using or other materials/items they use in combination with the mode of transport XXX	1. Wir sind zu dritt und haben ein Auto. Ein fetter VW T6, ein VW Bus, wo man auch noch gerade drin schlafen kann. 2. Ich habe einen Leiterwagen. Wenn ich weiss, dass ich viel brauche, dann nehme ich den mit.	
CAR – Electric car	Includes statements about materials, competences, meanings, motivations and other statements related to the use of electric cars	Darum wird es wahrscheinlich eher so sein, dass wir auf ein Elektroauto umstellen werden, wenn wir dann die Energie auch vom Dach nehmen können.	
Car – Pooling	Includes materials, competences, meanings, motivations and other statements related to carpooling	Und dann machst du immer Treffpunkte und so füllst du die Autos bis sie voll sind. Und das ist für uns auch klar unter den Leuten.	
XXX – Competence	Describes the competences & skills associated with the mode of transport XXX	Plastikflaschen entsorgen ist auch mühsamer mit dem Velo . Und dann muss man auch wie zuerst ein bisschen wie ein System entwickeln.	
XXX – Meaning	Describes the meanings associated with the mode of transport XXX. This includes: - what they think society or other people associate with XXX (anchor sample 1) - statements about the meaning of XXX if they don't actually perform the practice (anchor sample 2) - the negative meanings associated with XXX if they perform the practice (anchor sample 3)	1. Aber ich meine wie viel haben heute 3 Autos, weil man hat ja dann noch ein Cabrio. 2. Weil für so eine Kurzstrecke ein Auto aus der Garage zu nehmen und dort hin zu fahren, das ist völlig unnütz für mich. 3. Man ist nicht so flexibel, der Zug fährt halt einfach jede Stunde.	- Negative meanings doesn't mean that they don't perform the practice
XXX – Motivation	Describes the personal motivation to take the mode of transport XXX or for having specific type of material	1. Also ich glaube, wir würden wirklich viel nicht machen können ohne Auto vor allem noch mit kleineren Kindern. 2. Wenn ich mit dem Zug gehe habe ich viel Zeit, um noch abzuschalten, bevor zu Hause wieder Trubel ist.	- Can only include statements about practices they engage in. If they don't actually perform the practice it shall be coded as meaning - Motivation for E-Car shall be under "CAR - Electric car"
Other mode	Materials, Competences, Meanings, Motivations or other statements related to different modes of transport than driving, PT, cycling or walking.	1. Das Motorrad ist einfach ein reines Funmobil. 2. Ab und zu mache ich mal Home Office, das gibt es viel.	- This can also include not to be mobile at all.
Facilitated Practices	Code only for structuring purposes.		- No segments should be assigned here.
Commuting / Shopping / Hobby	Everything related to the respective practice that doesn't belong in any of the respective subcodes.	Den Zug nehme ich eigentlich, ich würde sagen zu 99%, weil es ist einfach sehr sehr mühsam in der Stadt Parkplätze zu finden	- Includes statements about elements of direct transport practices mentioned in the context of the respective facilitated practice
XXX- Timespace	Describes any specifics about the time and space of the practice XXX. This includes the temporal and spatial extension of the trip to it (frequency, duration, distance, location)	1. Mein Arbeitsweg ist 15 Minuten mit dem Auto. 2. Zur Arbeit gehe ich von Schüpfheim nach Luzern und wieder retour	
XXX – Synchronization	Describes other practices or activities they are conducting parallel to (the trip to) XXX	1. Sehr grosser Vorteil im Zug ist schon, dass man Sachen erledigen kann, also ich kann zum Beispiel noch weiter arbeiten.	

Code	Definition	Anchor Sample	Encoding rules
XXX – Sequencing	Describes other practices or activities they are conducting right before or after (the trip to) practice XXX	1. m Montag musste ich zum Zahnarzt und dann bin ich danach einkaufen gegangen	- Statements about sequencing with other facilitated practices reflected in the codesystem shall be coded in both subcodes.
XXX – Material	Describes materials/items they are using for practice XXX and on the trip to perform practice XXX	1. Wir haben einfach einen Veloträger.	- They mode of transport shall be included in the Code Level 2 (or 3 for Hobbies)
XXX – Competence	Describes competences and skills associated with practice XXX and the trip to perform practice XXX	Ich muss mir überlegen, ja auf welchen Zug will ich und kann das nicht erst 5 Minuten vorher überlegen	- Competences associated only with the mode of transport shall be included in the Code Level 2 (or 3 for Hobbies)
XXX – Meaning	Describes meanings associated with practice XXX and the trip to perform XXX. This includes: - what they think society or other people associate with XXX (anchor sample 1) - statements about the meaning of XXX when they don't actually perform the practice (anchor sample 2) - the negative meanings associated with XXX in cases where they perform the practice (anchor sample 3)	1. Das ist so in den Köpfen und man will am liebsten mit dem Auto noch direkt vor die Türe des Ladens fahren. 2. Ich würde gerne in einem Hallenbad schwimmen aber es ist mir zu weit, zu umständlich. 3. Es ist halt einfach Pflichtübung, dass ich einkaufen muss.	- Meanings associated only with the mode of transport shall be included in the Code Level 2 (or 3 for Hobbies)
XXX – Motivation	Describes the personal motivation to perform practice XXX (a certain way) and the personal motivation for the specific trip to perform practice XXX	1. Also das ist wirklich so ein bisschen eine Distanz schaffen zwischen Arbeit und Wohnen 2. Trotzdem machen wir es, weil es ist uns auch wichtig, unseren Kindern gewisse Sachen zu zeigen und mitzugeben	- Motivations associated only with the mode of transport shall be included in the Code Level 2 (or 3 for Hobbies)
HOB – Skiing	Everything related to Skiing that doesn't belong in any of the respective subcodes	Eben ich habe schon immer eigentlich ein grosse Autos gewollt, etwas wo man mindestens zu viert Skifahren gehen kann	- Includes statements about elements of direct transport practices mentioned in the context of the respective facilitated practice
HOB – Trips	Everything related to trips that doesn't belong in any of the respective subcodes. Trips are anything where people go to experience or to do something for fun at a specific location and doesn't include hiking or biking (e.g. go swimming, go to the zoo, go fishing)	Oder zum Beispiel regelmässig in die Bibliothek gehen wir auch, das geht eben auch nur mit dem Auto.	- Includes statements about elements of direct transport practices mentioned in the context of the respective facilitated practice
HOB – Clubs	Everything related to activities with clubs/associations that doesn't belong in any of the respective subcodes. Clubs are associations that have regular get togethers for leisure purposes. (e.g. choirs, sports clubs)	Ich habe ein zweiteiliges Alphorn und wenn ich mich drehe und alles auf dem Velo, dann finde ich es ein bisschen heikel.	- Includes statements about elements of direct transport practices mentioned in the context of the respective facilitated practice
HOB – Hiking/Biking	Everything related to hiking and biking that doesn't belong in any of the respective subcodes.	Das ist manchmal mit dem Hund, weil Zufahren ihm nicht gut tut, nehmen wir halt das Auto.	- Includes statements about elements of direct transport practices mentioned in the context of the respective facilitated practice - Can include statements about hiking/biking itself and not just the trip to/from it. - Can include statements about hikes/biking trips that have a start/endpoint at home
HOB – Other	Materials, Competences, Meanings, Motivations or other statements related to different hobbies than skiing, making trips, going to clubs, hiking and biking or other activities done during free time.	1. Ab und zu unter der Woche auch mit Kolleginnen und Kollegen noch eines trinken gehen in der Stadt 2. Und dort bewege ich mich natürlich, indem ich meine Tochter bringe und holen.	
Holidays	Code only for structuring purposes.		- No segments should be assigned here.

Code	Definition	Anchor Sample	Encoding rules
HOL – Practice	Materials, Competences, Meanings, Motivations or other statements related to the practice of going on holidays	Für ein paar Tage gehen wir hauptsächlich mit dem Zug und wenn es halt länger ist, dann gehen wir mit dem Auto, weil es vom Gepäck her viel einfacher ist.	
HOL - Flying	Materials, Competences, Meanings, Motivations or other statements related to the practice of flying	Abgesehen von dem ich fliege auch nicht gerne, es ist wirklich Mittel zum Zweck	
Environment	Code only for structuring purposes.		- No segments should be assigned here.
ENV - Perception	Statements about perceived environmental friendliness of their mobility	also im Sommer bin ich sicher jemand, die der Umwelt viel antut, im Vergleich mit jemandem der im Dorf wohnt	
ENV - Better than others	Statements about aspects the interviewee thinks he/she is more environmentally friendly than others	Aber es gibt auch solche, die in den Dorfladen halt mit dem Auto gehen, weil sie zu faul sind 10 Minuten zu laufen	- May include also other aspects than mobility
ENV - Worse than others	Statements about aspects the interviewee thinks he/she is less environmentally friendly than others.	Ja der Arbeitsweg ist sicher länger gegenüber anderen	- May include also other aspects than mobility
ENV - Measures	Statements about what the interviewee thinks could make his/her or the regions mobility more environmentally friendly.	Eigentlich muss man einfach die Autos füllen	
ENV - Other	Any other statement about the environmental friendliness of mobility	Man fördert die Individualität in der Schule. Wenn man die Individualität will, dann hat man es dann eben in der Mobilität auch.	- Statements about the environmental friendliness of other areas than mobility shall not be included

Appendix E. Element Tables

Table E.1. Identified elements of the direct transport practices. *Note that these are only general meanings and motivations associated with the direct transport practice. Specific motivations for using one transport practice over another can be found in Table E.2.

	Material	Competence	Meaning*	Motivation*
Driving	<ul style="list-style-type: none"> - 0.5 car/adult (P01, P02, P08) - 1 car/adult (P03, P04, P05, P06, P07, P09, P10, P11, P12, P13, P14) - Bike rack (P06, P07, P12) - Dog box (P06) - Electric (P06) - Internal combustion engine (P01, P02, P03, P04, P05, P07, P08, P09, P10, P11, P12, P13, P14) - Minibus (P02, P08, P11) - Music installation (P04) - Parking space at/near train station (P13, P14) - Ski rack (P06) - Small car (P04, P05, P06, P07, P12, P13) - Smartphone connections (P09) - Station wagon/family car (P01, P03, P09, P10) - SUV (P14) 	<ul style="list-style-type: none"> - Adapted departure time to traffic (P04, P05, P06, P08, P09) - Allow enough time for unplanned events/construction site/in winter (P03, P14) - Knows alternative routes in case of traffic congestion, accidents (P05, P08) - Knows which dates are more/less prone to traffic congestion (P05) - Learnt how to coordinated with only 1 car in household (P02, P08) - Plan trips to avoid unnecessary trips (P11, P14) 	<ul style="list-style-type: none"> - (Luxury) car to show off (P02, P05, P07, P13) - At home charging station is expensive (P06) - Car is no luxury item, if there are no alternatives (P14) - Car is not considered a luxury item any more (P14) - Driving as a treat (P02) - E-car considered when old car breaks down (P01, P04, P05, P07, P08, P10, P11, P12, P14) - E-car technology & charging infrastructure not advanced enough yet (P05, P08, P12, P13, P14) - E-car too expensive (P10, P14) - E-car too little power (P07, P10, P14) - E-car will be purchased when own electricity production (P01, P11) - Is default means of transport in Entlebuch (P01, P05, P06, P07) - Means to an end (P12, P13, P14) - Not convinced of E-car, battery lifetime is too short (P09) - People in city could live without car (P03, P05, P13, P14) - People that perceive themselves as green shouldn't drive a car (P05) - Perceived to be a tradition (P02) - Perceived to be cheaper (P02) - Sceptical about environmental friendliness of batteries, e-car production, disposal and/or electricity production (P01, P04, P05, P06, P07, P08, P09, P11, P12, P13, P14) 	<ul style="list-style-type: none"> - Can be compensated in other areas (P01, P02, P09) - Car is default/habitual mode of transport (P04, P08, P09, P10, P11) - Car with all-wheel drive for winter (P07, P14) - Car with combustion engine for enough power (P10) - Doesn't want to/can't give up car (P01, P02, P03, P04, P05, P07, P09, P11, P12, P13, P14) - E-car for environmental reasons, leads to positive feelings (P06) - Likes to drive (P04) - Opens up new opportunities for (leisure) activities (P03) - Small car for environmental reasons (P07, P13) - Spacious car because of large family (P11) - Spacious car for holidays (P02) - Spacious car for transporting large items (P02, P09, P10, P11)
Taking public transport	<ul style="list-style-type: none"> - Problems with train composition (P01, P04, P06) - Shopping bag (P14) - Uncomfortable/unclean trains (P01, P06, P13) 	<ul style="list-style-type: none"> - Comparison with car in traffic congestion leads to not being upset when delayed (P01) - Doesn't have required time management competences (P11) - Finding best/fastest way to go to train station (P08) - Knows using public transport from residence in city (P01) - Learnt how to deal with many/noisy people on train (P14) - Time management skills to not miss the train (P01, P13) 	<ul style="list-style-type: none"> - Allows for independence for children (P03, P07) - Allows for social encounters (P02) - Buses going everywhere is not efficient (P01, P05, P11) - Not comfortable (no seat, unclean) (P02) - Unsafe, unwanted social encounters (P02) 	<ul style="list-style-type: none"> - Appreciates having PT available (P03, P04, P05, P10, P12, P13, P14)

	Material	Competence	Meaning*	Motivation*
Cycling	<ul style="list-style-type: none"> - Basket (P01, P08) - Bike trailer (P01) - Electric bicycle (P01, P03, P06, P10, P12) - Helmet (P01, P06) - Mountain bike (P02, P14) - No bicycle lanes (P01, P06, P08) - Rainwear (P01, P06) - Regular bicycle (P01, P02, P04, P06, P07, P08, P09, P13) - Showering items, clothes for changing (P06) - Side-bag (P06) - Zipper bag (P10) 	<ul style="list-style-type: none"> - Cycling with kids (P01) - Knows cycling with traffic from residence in city (P01) - Knows how to cycle in traffic (P06) - New systems for transporting goods developed (P01) - Selection of efficient cycling route (P01) 	<ul style="list-style-type: none"> - Bikes get stolen (P05) - E-bike is less safe (P02) - Would like to buy E-bike for relaxing, being in nature (P05) 	<ul style="list-style-type: none"> - E-bike is physically less demanding & opens up new opportunities compared to normal bicycle (P03, P12)
Walking	<ul style="list-style-type: none"> - 2 wheel shopping trolley (P02) - Backpack (P01, P06, P12) - Cart (P03) - Rainwear (P02) - Umbrella (P01, P12, P13) 	<ul style="list-style-type: none"> - Backpack to be able to still carry the umbrella when it's raining (P12) - Transport heavy & fragile goods (P02) 	<ul style="list-style-type: none"> - Not suitable for long distances (P02) 	

Table E.2. Identified motivations for using one means of transport over another for the same trip. While this table summarises the different motivations to perform one practice, it also captures negative meanings associated with the other practice.

	Not driving	Not taking public transport	Not cycling	Not walking
Driving		<ul style="list-style-type: none"> - Arrival directly at desired destination (P01, P02, P03, P04, P05, P06, P07, P08, P09, P11, P14) - Departure directly from residence (P04, P08, P10, P11, P13, P14) - Easier to transport luggage/goods (P01, P03, P04, P06, P07, P08, P09, P10, P11, P13, P14) - Even if dangerous with other road users/in winter (P05, P06, P12) - Even if hard to find parking space (P04, P08) - Even if less env. friendly/bad conscience (P01, P03, P09, P12) - Even if less predictable/reliable (P05) - Even if more expensive (P04, P09) - Even if no time to relax/for oneself (P05) - Even if waiting in traffic congestion/construction site (P03, P04, P05, P06, P07, P08, P09) - Habit (P03, P05, P08, P11) - If connected to/easier to connect with other activities (P03, P04, P05, P06, P08, P09, P13, P14) - If several people in one car (P10, P14) - If they take their dog (P02, P06) - If train cancelled (P13) - Is faster (P01, P02, P03, P04, P05, P07, P08, P09, P10, P13) - Less expensive (P05, P10) - Location not accessible (P01, P11, P12, P13) - More convenient/comfortable (P02, P05, P06, P09, P13, P14) - More convenient/comfortable with kids (P01, P08, P10) - More flexible/free/spontaneous (P01, P02, P03, P04, P05, P06, P07, P08, P09, P11, P12, P13, P14) - More predictable/reliable (P04, P06) - More suitable/faster for long distances outside village (P08, P09, P14) - No connections at night (P02, P05, P07, P13) - No frequent change of trains (P01, P03, P05, P07, P09) - No social encounters/privacy (P04, P05, P06, P09) - Opens up new possibilities for leisure activities (P01) - Time to synchronise with other activities (listen music, calling) (P04, P05, P06, P09) 	<ul style="list-style-type: none"> - Easier to transport luggage/goods (P01, P02, P04, P05, P07, P08, P10, P12) - Even if dangerous with other road users/in winter (P10) - Even if less env. friendly/bad conscience (P02, P10) - Even if no exercise (P04, P10) - Even if no opportunity for social encounters (P10) - Even if no time to relax/for oneself (P10, P12) - Even if waiting in traffic congestion/construction site (P06, P10) - Habit (P05, P11) - Health constraints of partner (P12) - If connected to/easier to connect with other activities (P01, P04, P07, P10, P12) - If raining/snowing/winter (P01, P04, P06, P10, P12) - If time constrained (P06, P10, P12) - Is faster (P02, P04, P05, P10, P14) - Is safer (P02) - Is safer with kids (P08) - More convenient/comfortable (P04, P09, P10, P12, P14) - More convenient/comfortable with kids (P12) - More flexible/free/spontaneous (P03, P10) - More relaxing (P05) - More suitable/faster for long distances outside village (P01, P02, P07, P09, P10, P12, P13) - No sweating (P03, P06, P14) - Physically less demanding (P04, P11, P12, P14) - Protected from weather (P02, P05, P09, P13) 	<ul style="list-style-type: none"> - Arrival directly at desired destination (P04) - Easier to transport luggage/goods (P01, P02, P03, P04, P07, P08, P12, P13) - Even if hard to find parking space (P08, P12) - Even if no opportunity for social encounters (P12) - Even if no time to relax/for oneself (P12) - Even if waiting in traffic congestion/construction site (P12) - If connected to/easier to connect with other activities (P02, P03, P07, P08, P14) - If raining/snowing/winter (P12) - If they take their dog (P02) - Is faster (P08, P13) - More convenient/comfortable (P13) - More suitable/faster for long distances outside village (P02, P04, P06, P13, P14, P14) - Opens up new possibilities for leisure activities (P13)

	Not driving	Not taking public transport	Not cycling	Not walking
Taking public transport	<ul style="list-style-type: none"> - Allows for social encounters (P10, P14) - Cheaper (P08, P13) - Easier to access cities (P01, P02, P04, P05, P06, P08, P10, P11, P12, P14) - Easier/nicer to travel with group of people (P06, P09, P14) - Even if bigger health risk (P14) - Even if less flexible/spontaneous (P01, P08, P14) - Even if not arriving at desired destination (P08) - Even if sometimes delayed/cancelled/unreliable (P01, P13, P14) - Even if sometimes uncomfortable (P14) - Habit (P13) - If connected to/easier to connect with other activities (P01, P04, P10, P14) - If consumption of alcohol (P04, P06, P09) - If not time constrained (P03, P07) - If only few luggage/goods to transport (P11) - If place of departure of an activity not equal to place of arrival (P04, P11) - If you have free ticket (P02) - Is faster (P01, P08, P13, P14) - Is safer (P13) - Less stressful, less concentration required (P01, P02, P08, P09, P10, P13, P14) - More convenient/comfortable (P02, P03, P08, P13, P14) - More env. friendly (P14) - More predictable/reliable (P02, P08, P13) - More suitable for long distances (P06, P14) - No searching/paying for parking space (P01, P08, P11) - No waiting in traffic congestions (P01, P08, P14) - Positive feeling/prefers PT (P03, P10, P14) - Requires less planning (P10, P14) - Time boundedness forces to finish activity on time (P14) - Time to relax, rest, time for yourself (P01, P08, P13, P14) - Time to synchronise with other activities (sleep, read, work, listen music) (P01, P05, P08, P13, P14) 		<ul style="list-style-type: none"> - More suitable for long distances (P01, P13) 	<ul style="list-style-type: none"> - Arrival directly at desired destination (P03)

	Not driving	Not taking public transport	Not cycling	Not walking
Cycling	<ul style="list-style-type: none"> - Allows for social encounters (P10) - Being outside/in nature (P01, P02, P04, P06, P10) - Being role model (P01) - Doesn't drive somewhere to go biking because it's not reasonable (P02, P03, P04, P07, P12, P14) - Even if challenging with a lot of luggage/goods (P01) - Even if more dangerous (P06, P07, P12) - Even if more dangerous (with kids) (P01) - Even if raining/snowing (P01, P07) - Even if sweating (P06) - Exercising (P01, P04, P06, P07, P10, P12) - If car not available (P04) - If consumption of alcohol (P08) - If not time constrained (P06, P10, P12) - If only few luggage/goods to transport (P01, P04, P07, P10, P12) - If weather is good (P04, P06, P10, P12) - Increases happiness (P04) - Less stressful, less concentration required (P10) - More env. friendly (P01, P02, P10) - More reasonable for short distances outside own village (P06) - More reasonable/faster for short distances in village (P01, P06, P07, P08, P09, P12) - Time to relax, rest, time for yourself (P10, P12) - To compensate for car use/better conscience (P01, P02) 	<ul style="list-style-type: none"> - Being outside/in nature (P02) - More flexible/free/spontaneous (P06) 		<ul style="list-style-type: none"> - If connected to/easier to connect with other activities (P12) - More convenient (P01) - More flexible/free/spontaneous (P01) - More reasonable/faster for short distances in village (P01, P14) - More suitable for long distances in village (P12)

	Not driving	Not taking public transport	Not cycling	Not walking
Walking	<ul style="list-style-type: none"> - Allows for social encounters (P02, P03, P12) - Being outside/in nature (P06, P12) - Doesn't drive somewhere to go walking because it's not reasonable (P02, P03, P06, P07, P10, P12, P14) - Easier with dog (P10) - Even if challenging with a lot of luggage/goods (P02, P03, P06) - Even if less flexible/spontaneous (P06) - Even if more dangerous (P02, P12) - Even if raining/snowing (P02, P12) - Exercising (P12) - Gives a positive feeling (P03, P14) - If connected to/easier to connect with other activities (P08, P12) - If only few luggage/goods to transport (P01, P08, P12) - If weather is good (P12) - Is faster (P14) - More env. friendly (P02) - More reasonable/faster for short distances in village (P01, P02, P03, P04, P06, P07, P09, P12) - More spontaneous (P02) - No need to find parking space (P06, P08, P12) - No waiting in traffic congestions (P06, P12) - Offers possibility for additional experiences (P01) - Route is safe (P02) - Time to relax, rest, time for yourself (P12) - To compensate for car use/better conscience (P02) 	<ul style="list-style-type: none"> - Being outside/in nature (P02) - If no PT connection available (P08) - More reasonable/faster for short distances in village (P12) 	<ul style="list-style-type: none"> - Easier to transport luggage/goods (P02) - If bicycle not available at right place (P08) - If kids prefer to walk (P01) - If raining/snowing/winter (P01, P07, P12) - Is safer with kids (P08) - More reasonable/faster for short distances in village (P02) - Offers possibility for additional experiences (P01) - Physically less demanding/no sweating (P08) 	

Table E.3. Identified elements of the facilitated transport practices

	Material	Competence	Meaning	Motivation
Commuting	<ul style="list-style-type: none"> - Clothes for changing (P06) - Private parking space (P13, P14) - Rainwear (P01, P06) - Showering items (P06) - Side-bag (P06) - Smartphone connection (P09) - Umbrella (P01, P12, P13) 	<ul style="list-style-type: none"> - Being on time (P01, P03, P05, P06, P09, P13, P14) - Finding best/fastest way to go to train station (P08) 	<ul style="list-style-type: none"> - Annoying when there are disruptions or additional effort is needed (P01, P05, P06, P08, P09, P10, P12, P13, P14) - Commute as few times as possible (P10, P14) - Commute is necessity/(working) time lost (P05, P06, P08, P09, P11) - Commute is stressful/no rest (P05) - Has to be safe (P02) - Home office as possibility to be more environmentally friendly, but not suitable for all (P01, P13) 	<ul style="list-style-type: none"> - Adapt commute to kids (P01, P03, P13) - Combine with all activities of the day (P09, P14) - Commute allows to relax/switch off (P01, P04, P06, P08, P10, P12, P13, P14) - Commute to create distance to work (P06, P12, P13, P14) - Has to be comfortable (P13) - Has to be safe (P13) - Having time for oneself/privacy (P04, P09) - Max. 1h commute (P01, P14) - More frequent commute to get work done in timely manner (P10) - Nice scenery (P03, P09) - No sweating (P03, P14) - Opportunity to meet other people (P10, P14) - Short/fast commute (P01, P03, P04, P05, P06, P07, P09, P12, P13, P14) - To exercise (P06, P07, P10, P12) - Type of work more important than duration of commute (P06, P10, P11, P14) - Use of commute to do something for oneself (P01, P08, P13, P14) - Wants to be flexible and independent (to sequence with other activity) (P01, P03, P04, P05, P06, P08, P10) - Workplace in city as a balance to life in the countryside (P06)
Shopping	<ul style="list-style-type: none"> - 2 wheel shopping trolley (P02) - Backpack (P01, P04, P06, P12) - Basket (P01) - Bike trailer (P01) - Cart (P03) - Umbrella (P12) - Zipper bag (P10) 	<ul style="list-style-type: none"> - Backpack to be able to still carry the umbrella when it's raining (P12) - New systems for transporting goods more easily developed (P01, P02) 	<ul style="list-style-type: none"> - Being uncoordinated without knowing what one has/needs leads to additional shopping trips (P01, P10) - Is necessity (P03, P09) - Shopping locally needs more time (P08, P13) - Without kids/partner more spontaneous shopper (P01, P04, P10, P14) 	<ul style="list-style-type: none"> - Goes shopping more often to carry less each time (P02) - Goes shopping more often to get fresh produce (P01, P02, P03, P14) - Goes to large retailer because of prices/family packs (P03, P11) - Has to be safe (P02, P08) - Having stocks leads to less frequent shopping (P01) - Prefers longer opening hours (P02) - Prefers one retailer over other (P01, P08, P09) - Prefers shorter shopping trip (P02, P03, P09, P14) - Prefers spontaneous shopping (P02, P09, P10) - Shopping less often because it's a long trip (P14) - Shopping locally (village shop, bakery, etc.) (P01, P02, P03, P04, P05, P06, P07, P10, P11, P12, P14) - Shopping trip as experience when stopping for activity/conversation along the way (P01, P02, P03, P10, P12, P13)

	Material	Competence	Meaning	Motivation
Going on trips			<ul style="list-style-type: none"> - Annoying, when leisure activity can't be reached in environmentally friendly manner (P01) - Doing less leisure activities is more environmentally friendly (P01) - Going swimming is too far and tedious (P01, P06, P08, P12) - Going to cinema/concert is too far and tedious (P06, P07, P10, P12) - Going to play squash is too far and tedious (P01, P06, P09) - More comfortable/convenient staying at home (P03) - No time when working on farm (P05, P10) 	<ul style="list-style-type: none"> - Being flexible (P13) - Compensate environmentally unfriendly trips in other areas (P01) - Doesn't want to limit leisure activities (P01) - Have to be safe trips (P08) - Leisure activities to educate kids (P01) - Likes to go early to nature activities (P13) - Region offers a lot of activities (P08, P13)
Going to club meetings	- Rainwear (P01)		<ul style="list-style-type: none"> - Doing less leisure activities is more environmentally friendly (P07) - No time for clubs next to work (P09) 	<ul style="list-style-type: none"> - Doesn't want to limit leisure activities (P07) - To do something for oneself (P01) - Trip to activity shouldn't be physically demanding as activity itself already is (P04)
Hiking/Biking	<ul style="list-style-type: none"> - Bike rack (P06, P07, P12) - Dog box (P06) 	- Spontaneously gathering to go for a walk (P03)	<ul style="list-style-type: none"> - Biking to relax (P09) - Biking too physically demand (P11) - Doesn't feel welcome in region due to bad signage (P10) - Doing less leisure activities is more environmentally friendly (P02, P06, P07, P09) - Lack of respect on trails (biker, littering, dogs) (P02, P10, P12) - Less time for hiking/biking when partner is farmer (P14) - More comfortable/convenient staying at home (P03) - To be in nature (P05) 	<ul style="list-style-type: none"> - Choice of hiking route depends on dog (P02) - Doesn't want to limit leisure activities (P02, P06, P07, P09) - For exercising (P12) - For social interaction with friends (P03, P06, P09) - Have to be safe trips (P06) - Likes to be in nature (P02, P06, P12) - No social interaction with strangers (P06) - Region offers a lot of nice (new) paths (P02, P03, P04, P07, P09, P10, P12, P14) - Spend time on activity not on trip to it (P02, P04, P07, P09, P14) - Starts from home because it leaves better feeling (P14) - Stays in region as less organisation is required/more familiar (P09, P14) - Stays in region because of dog (P10) - Wants to be flexible (P06, P07)
Skiing	- Ski rack (P06)		<ul style="list-style-type: none"> - No time when working on farm (P05) - Skiing in region is boring (P05) 	<ul style="list-style-type: none"> - Stays in region as less organisation is required/more familiar/faster (P07, P09) - Skiing not in region because owning holiday apartment/house in different region (P05, P11) - Spend time on activity not on trip to it (P07, P09) - Support local ski lifts (P03, P14)



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