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The hidden side of Norwegian cabin fairytale: climate implications of multi-dwelling lifestyle

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ABSTRACT

In addition to a primary dwelling, having access to a non-primary dwelling for leisure activities is a mass phenomenon with a long tradition in Norway. This paper questions the Norwegian multi-dwelling lifestyle by critically discussing its climate implications. Based on a questionnaire survey and in-depth interviews with persons having access to non-primary dwellings, the paper analyzes the mobility pattern and housing consumption pattern of the multi-dwelling lifestyle. Two lifestyle groups are distinguished: traditional, and modern multi-dwelling lifestyles. A discussion of the climate implications of the two multi-dwelling lifestyles suggests that the traditional non-primary dwelling lifestyle is less climate harmful than the modern one. Furthermore, informed by the weak and strong sustainability perspectives, the paper suggests two climate policy pathways in order to raise and enrich the debates on climate-friendly development of the multi-dwelling lifestyle.

KEYWORDS

Cabin; climate change; housing consumption; mobility; multi-dwelling lifestyle

Introduction

The traditional narrative about Norwegian cabin life is around primitiveness, a simple way of living, getting back-to-nature, and vacation from modernity (Garvey, 2008; Kaltenborn & Clout, 1998; Vittersø, 2007). These norms and ideals about cabin life can be discerned from both the simple physical setting of the cabins and people's activities (e.g. fishing, hunting, and hiking) in the cabin areas. This narrative depicts a cabin life that is friendly, respectful and harmonious to nature. However, in recent years, a noticeable development trend that deviates from the traditional narrative arises. Back-to-nature primitiveness and a simple life are replaced with new social norms for convenience, comfort and extraordinary experiences (Vittersø, 2007). The size of cabins is constantly growing, and the standards and associated infrastructure are improving. People make more frequent cabin trips and shorter stays. This development trend points to negative climate implications. Since up to 40% of households in Norway have access to a cabin (Vittersø, 2007), non-trivial

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consequences for consumption within the sector and for the climate can be expected. So far, very limited concern has been raised over the climate implications of this development trend. The purpose of this paper is to unfold the nuances of the Norwegian cabin lifestyles and discuss the implications of this lifestyle for climate change. Specifically, we address the following research questions:

(1) Based on differences in mobility and housing consumption patterns, which Norwegian multi-dwelling lifestyles can be identified?
(2) How do the identified multi-dwelling lifestyles affect climate change?
(3) What policies can be proposed for achieving a climate-friendly multi-dwelling lifestyle?

By answering these questions, the study aims, from the perspective of lifestyle, to probe how consumption and behavior patterns in the mobility and housing domains generate implications for climate change, and to contribute to a wider debate on sustainable consumption and lifestyle. In addition, since cabin use in Norway and other Scandinavian countries is dominated by recreational activities, it is traditionally regarded as tourism (Müller et al., 2004; Pitkänen & Vepsäläinen, 2008; Tuulentie, 2007). The findings of the study, although takes a lifestyle perspective, is highly relevant to sustainable second home tourism research (Hiltunen, 2007).

There is no available statistical data on energy consumption and greenhouse gas emissions derived from cabin use at the Norwegian national level. However, a few studies based on certain assumptions can give an indication of the magnitude of the issue. Aall (2011a) found that in 2001, the cabin-related energy consumption accounted for 8% of energy use for Norwegians' leisure consumption, equivalent to approximately 2% of total energy use in private and public consumption. Within this category, constructing, maintaining and use of the cabins represents 74% of total energy use and transportation to and from cabins represents 26%. Although the figure seems trivial, a few development trends suggest the importance of further investigating this issue. Generally, leisure-related consumption has been increasing in Norway, faster than private consumption (Aall et al., 2011). For cabins, the trend is towards more energy-intensive forms of development in terms of cabin use and transportation and an increased share of cabins located abroad. The travel related to the latter generates substantially higher CO_2 emissions than that of domestic cabins (Næss et al., 2019).

Nevertheless, the environment and climate implications of having access to more than one dwelling have been largely ignored by researchers (Hall, 2014). The priority for climate mitigation among planners and housing researchers has been given to permanent dwellings in urbanized areas, based on an understanding of single-dwelling lifestyle. Compact urban land use combined with smaller-size dwellings is considered as the way of sustainable living (Newman & Kenworthy, 1999) and has been widely adopted in Norwegian cities. However, the development of cabins has been more or less left on its own without being sufficiently addressed in either research or practice (Müller & Hoogendoorn, 2013). It is paradoxical that primary dwellings are more compact than before while secondary residences become bigger and more luxurious, which may partly counteract the environmental benefits of living compact.

Attaining a more nuanced understanding of the cabin life is fundamental to inform a discussion on its climate implications and solutions to making it climate-friendly.

Drawing on the concept of multi-dwelling lifestyle, the paper will unpack this lifestyle based on a questionnaire survey among 480 inhabitants in the Oslo region, Norway and 18 in-depth interviews with cabin owners and users in Norway. Combining quantitative and qualitative methods has been scarce in the relevant research fields such as second homes, residential multi-locality, and tourism. Analyzing the survey data helps us identify the aggregate mobility and housing consumption patterns. By analyzing the interview data, we obtain deep understanding of individual considerations that generate the mobility and housing consumption patterns. This deeper understanding of the multi-dwelling lifestyle will inform a discussion on its climate implications and solutions to reducing its climate impacts. However, the purpose is not the quantification of climate impacts by measuring accurate greenhouse gas emissions.

Multi-dwelling lifestyle, climate change and sustainable consumption

Lifestyle, behavior patterns and sustainability

The concept of lifestyle broadly depicts the way of living. Given its diverse and mixed origins rooted in different disciplines such as sociology, psychology and marketing, its definitions are plural and ambiguous (Heijs et al., 2009; Jensen, 2007). In sociology, lifestyle is seen as an expression of personal traits, manifested via behavioral patterns that are connected to consumption (Holt, 1997). However, according to different academic fields, the elements covered by the behavior dimension vary. There can be a multitude of behaviors (such as consumption, choice and use), behavior domains (e.g. transportation, dwelling, dressing, work), and factors influencing behaviors (like culture, value, motive) (Heijs et al., 2009; Pisman et al., 2011). Some scholars attempt to understand lifestyle from a scalar perspective, distinguishing the global, structural, positional and individual levels (Jensen, 2007).

In the last decades, lifestyle has gained increasing attention within the field of sustainable development. The rising concern on lifestyle both as a cause and solution to environmental crisis resonates an overall expansion of the sustainability debates from the production domain to the consumption domain. Within the field of ecological modernization theory, a consumerist turn can be identified since the late 1990s, which compensates for the original neglect of consumer behaviors and lifestyle patterns as a source of strain on the environment (Spaargaren & Van Vliet, 2000). The more recent radical environmental discourse of degrowth has a primary concern on consumption patterns. The discourse calls for a lifestyle shift from consumerism to a non-materialist simple way of living as a more effective way towards a sustainable future (Schneider et al., 2010).

Lifestyle drives environmental impacts in different ways. Lifestyle is mostly reflected through behavior and consumption patterns such as choice of residential location and dwelling size, purchase of goods, dietary habits, and ownership and use of equipment. The amount, size and type of these activities and consumptive goods directly or indirectly cause environmental problems to different degrees (Moore, 2015; Sanquist et al., 2012; Weber & Perrels, 2000). Lifestyle can also affect the carbon intensity of energy use. For instance, driving an electric car as either contributing to or demonstrating a lifestyle has different climate implications compared to driving a gasoline car. Moreover, lifestyle can influence the amount and size of consumption, which plays an important role in environmental impacts. Heating a larger dwelling tends to demand more energy than heating a

smaller one, if all the other conditions (building energy efficiency, room temperature) are equal. Given the above mechanisms, globally, the Western consumerist lifestyle characterized by high living standards, mobility and material consumption levels is often blamed as partly responsible for current global environmental and climate problems (Reusswig et al., 2003).

Scrutiny of environmental and climate impacts through the lens of lifestyle opens a new arena to tackle climate change and achieve sustainable development. In this vein, the study field of sustainable consumption and lifestyle provides relevant insights on policy solutions. Basically, sustainable consumption can be approached by addressing different dimensions of consumption: increasing resource efficiency embedded in consumer products, changing the pattern of consumption towards less environmentally harmful products, and reducing the volume of consumption (Aall, 2011b). Setting these approaches in a systematic view, two different, contrasting perspectives have developed, framed as weak and strong sustainable consumption (Lorek & Fuchs, 2013).

The weak sustainable consumption assumes the achievement of sustainable consumption through efficiency improvements in resource use. A technological optimism is held in this approach. Often, it is through markets that technological innovation is spread as a response to consumer demand. This approach addresses a greening of consumer products and services and the role of consumers as active market actors. Focus is on improving the resource efficiency of consumptions, rather than challenging patterns and volumes of consumption (Fuchs & Lorek, 2005). This approach resonates with the dominant eco-modernist political agenda on green growth and decoupling, without demanding substantial structural transformations and radical changes in lifestyle (Spaargaren, 2000; Spaargaren & Cohen, 2009). As such, it is more acceptable by consumers, businesses and governments.

In contrast, the strong sustainable consumption highlights the necessity of changing consumption pattern and reducing consumption to appropriate levels. This idea is developed based on the urgency of coping with environmental crises and the limitations of the technical solutions (Azar et al., 2002; Nørgård & Xue, 2016). Along with this perspective is a shift of perception on good life and well-being from material possession to non-material dimensions. Rather than emphasizing the individual responsibility and being voluntary, studies promoting the strong sustainable consumption approach address the insufficiency of individual actions and requires strong proactive government-led actions to solve system-wide problems and obstacles and adopt regulative policies such as capping (Lorek & Fuchs, 2013). A growing economy and resulting increase in income is arguably one of the structural obstacles to sustainable consumption. This approach shares affinities with the current degrowth debate with the core interest of pursuing environmental sustainability, well-being and social justice through downscaling consumption levels (Jackson, 2009; Schneider et al., 2010). The implementation of strong sustainable consumption would entail a radical change in the mainstream Western lifestyle.

Multi-dwelling lifestyles and consumption and behavior patterns

This study follows the sociological understanding of lifestyle and conceptualizes it as a way of life that influences and is manifested in behavior and consumption patterns. Such a conceptualization distinguishes the definition of lifestyle from the factors influencing it. From the lifestyle perspective, we can analyze behavior and consumption patterns in certain

socio-economic circumstances and differentiate between different lifestyle groups that generate differentiated environment impacts.

The subject of this study is multi-dwelling lifestyle – a way of living by using alternately multiple residences to which people have access. "Dwelling" in this concept refers to tangible, physical buildings. By drawing on this concept, we look at the multiple dwellings as different units, but relational and dependent on a particular lifestyle. In a multi-dwelling lifestyle, dwellings are relational, fulfilling different or overlapping functions (Figure 1). They all have a part to play in creating meaning for the people who live this lifestyle. We call the dwelling registered as the official home address the primary dwelling. Non-primary dwellings refer to any stationary dwellings – other than the primary dwelling – that the household or person has access to, regardless of location. The most frequently used non-primary dwelling is ranked no. 1.

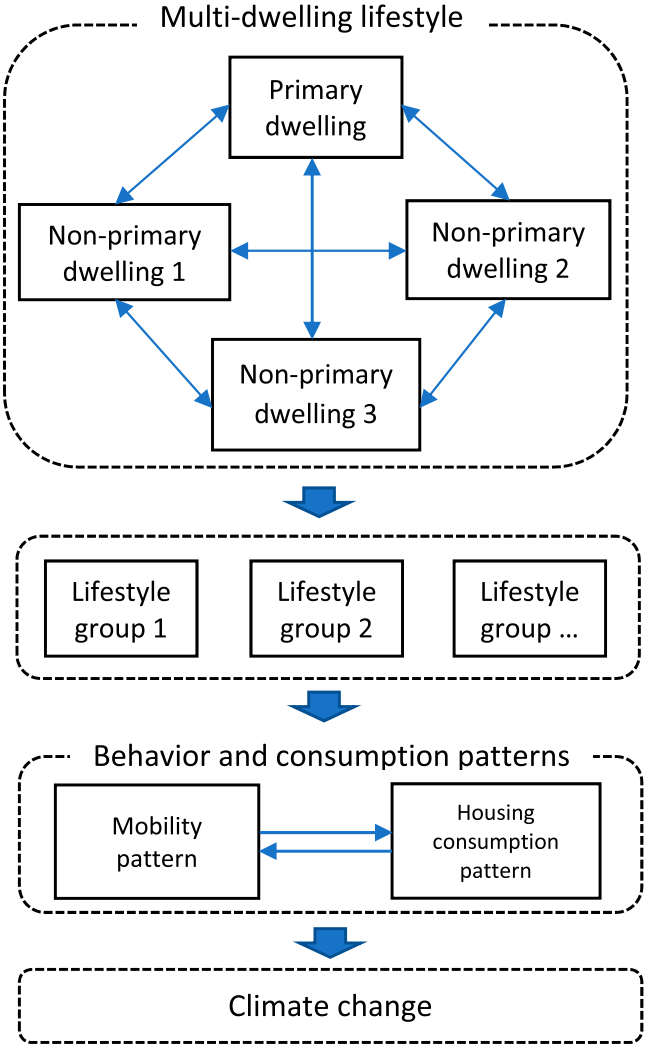

Figure 1. Structure of the research concept.

Under an overall lifestyle pattern that is common to a nation, region or social population group, different configurations exist that can be framed as "lifestyle groups" (Giddens, 1991). A lifestyle group is a group of people who share a similar configuration of patterns of behavior, attitudes or values. Different lifestyle groups have distinctive configurations, but all affiliated to an overall lifestyle pattern. In this sense, the multi-dwelling lifestyle can be seen as an overall lifestyle pattern under which different multi-dwelling lifestyle groups may be identified.

By drawing on the concept of multi-dwelling lifestyle, we intend to highlight the lifestyle perspective as the anchor point of our enquiry into the issue of climate change. The structure of the research concept is illustrated in Figure 1.

A multi-dwelling lifestyle brings about changes in the spatial and temporal aspects of peoples' lives, distinctive to a uni-local way of life. It affects a household's or person's mobility and housing consumption patterns. Depending on the configuration of the multi-dwelling lifestyle, new mobility patterns are generated, with circulation at one end of the spectrum and migration at the other (Bell & Ward, 2000; Hall & Müller, 2004). For example, the most prevalent Nordic multi-dwelling lifestyle based on recreational non-primary dwellings leads to inter-dwelling circulation, so frequent that it justifies using the term recreational commuting (Arnesen et al., 2013; Hiltunen & Rehunen, 2014). Another mobility pattern of a multi-dwelling lifestyle is related to retirees seeking amenities elsewhere from their primary dwelling, forming the so-called seasonal retirement migration (Breuer, 2005). The two examples are distinct from a job-induced multi-dwelling lifestyle, which shows a different mobility form (Reuschke, 2010). These different multi-dwelling mobility patterns generate different travel demands and choices of travel mode.

As well as travel, multi-dwelling lifestyles have implications for a household's housing consumption pattern. However, compared to the mobility issue that has been subject to various inquiries, the topic of housing consumption pattern in a multi-dwelling lifestyle has rarely been studied. Paris (2009) called for positioning second homes within housing studies and viewing second homes as part of household investment and consumption strategies. From an economic perspective, Di (2009) investigated how second home ownership affects the demand for primary residences and found that second home ownership does not affect the decision on the price of a new primary residence among American second homeowners. Another branch of studies relevant to exploring the dynamics between residences in a multi-dwelling lifestyle attempts to test the so-called compensation hypothesis (Dijst et al., 2005; Modenes & Lopez-Colas, 2007; Næss, 2016; Norris & Winston, 2010; Strandell & Hall, 2015). This hypothesis suggests that people living in dense urban areas and compact types of primary dwellings are more likely to own and use second homes due to the lack of access to green areas in the primary residential areas. Studies on different geographical settings draw controversial conclusions on the validity of the compensation hypothesis. Despite these studies, no inquiry has so far been conducted on the dynamics between dwellings regarding type, size, and standard.

Climate implications of multi-dwelling lifestyles

Although the aforementioned studies provide certain insights into the multi-dwelling lifestyle in terms of mobility pattern and housing consumption pattern, very limited attempts have been made to shed light on the implications of climate change. Existing concerns

over the environmental impacts of the multi-dwelling lifestyles have been preoccupied with issues in local areas of non-primary dwellings, focusing on local environmental pollution, landscape protection, and biodiversity preservation (Gartner, 1987; Kaltenborn et al., 2008; Long & Hoogendoorn, 2013). With few exceptions (Aall, 2011a, 2011b; Hiltunen, 2007; Næss et al., 2019), the environmental and climate impacts arising from housing consumption and from transportation between primary and non-primary dwellings are neglected.

The climate impacts of the multi-dwelling lifestyles comprise two parts: the stationary and the mobile, corresponding to the housing consumption and mobility pattern. Within the stationary part, the impacts occur from the construction, maintenance and operation of non-primary dwellings and associated infrastructure. The level of impacts from the stationary part is associated with the type, size, standard and spatial pattern of the dwellings. The climate impacts from the mobile part refer to the travel between multiple residences and within residential areas. The level of these impacts is determined by travel mode, frequency and distance. Moreover, the implications on climate change vary within the multi-dwelling lifestyle, depending on different lifestyle groups that represent different configurations of behavior and consumption patterns.

Methodology

The study draws on empirical evidence from a questionnaire survey among inhabitants of the Oslo region, Norway and 18 in-depth qualitative interviews with persons having access to non-primary dwellings. The survey and interviews were both conducted in 2016. We mailed 10,000 invitation letters for participating in the web-based questionnaire survey to randomly chosen residential addresses from 45 selected postal zones in the Oslo region. The selection of these postal zones aims to ensure a geographically and socioeconomically representative sample in terms of housing types, distance to Oslo city center, and district-level income. We received 717 valid responses. Among the 717 respondents, 67% (480) have access to at least one non-primary dwelling, overrepresenting the share of Norwegian population with access to non-primary dwellings (40% at the national level and in the countries of Oslo and Akershus).

Table 1 compares the socio-economic characteristics of the survey respondents and interviewees with those of the population of the counties of Oslo and Akershus. As mentioned before, population having access to non-primary dwellings are overrepresented in the survey. This is mainly because the questionnaire focused on the use of non-primary dwellings, which is more of an interest to persons who have access to such dwellings. The survey respondents have on average higher education and income, are on average older, and belong to larger households with a higher occurrence of children than the general population in the two counties where they live. The socio-economic differences between respondents with and without access to non-primary dwellings correspond to findings at the national scale and in another county (Nordbø, 2008; Steinnes, 2016). The respondents with access to non-primary dwellings have on average higher education, income and household size, and a higher percentage are in employment. Since our study is confined to non-primary dwelling owners and users, we consider that the overrepresentation is not a problem and that the samples are fairly representative of the population of non-primary dwelling users/owners among Greater Oslo residents.

Table 1. Characteristics of the survey respondents and interviewees, compared to the population of the counties of Oslo and Akershus.

	Respondents of the survey (N = 717) (Values for those with and without second home access, respectively, in parenthesis)	Interviewees (N = 18)	Inhabitants of the counties Oslo and Akershus (including the Greater Oslo area)
Per cent with access to one or more second homes	67	100	Approx. 40
Average number of persons per household	2.49 (2.75/1.96)	2.83	1.94
Average number of children aged 0–6 years per household	0.25 (0.29/0.16)	0.22	0.15
Average number of children aged 7–17 years per household	0.36 (0.43/0.22)	0.78	0.13
Average age among respondents (all aged 18 or more)	55 (54/56)	51.0	46 (aged 16 or more)
Gender (per cent female)	51 (49/52)	44	50
Per cent of workforce participants among respondents	66 (70/59)	83	81
Average annual household income (1000 NOK)	928 (999/790)	1056	812
Per cent with education at master level or higher	54 (58/47)	90	16

In the questionnaire, we asked for information about the primary dwelling and up to three non-primary dwellings, including type, ownerships, size, location, and technical standards. In addition, we included questions about mobility pattern, motivations for using non-primary dwellings, and environmental attitudes concerning the multi-dwelling lifestyle.

After receiving the results of the survey, a preliminary analysis showed that the vast majority of non-primary dwellings among owned or used by our Oslo region respondents are used for recreation. We, therefore, decided to recruit interviewees who use their non-primary dwellings mainly for recreation. Nine of the interviewees were selected through the survey. An additional nine interviewees were recruited among non-primary dwelling owners/users from three Norwegian municipalities: Trysil, Oppdal and Kragerø. Trysil and Oppdal are typical mountain vacation home destinations, and Kragerø is a popular summer vacation home destination by the coast. Figure 2 shows the location of the vacation homes included in our interviews.

As seen in Table 1, compared to the survey respondents with access to non-primary dwellings, the interviewees have an even higher education level, higher income and belong to larger households. These differences between interviewees and survey respondents with access to non-primary dwellings may be due to the fact that 15 out of 18 interviewees own at least 1 non-primary dwelling, whereas the respondents include a larger share of persons who only have access to a non-primary dwelling without owning one. Table 2 shows key demographic, socioeconomic and spatial characteristics of the interviewees.

The interviews were semi-structured with predefined topics and questions. Each interview lasted 1–1.5 h. The interview started from a free speech by the interviewee about the

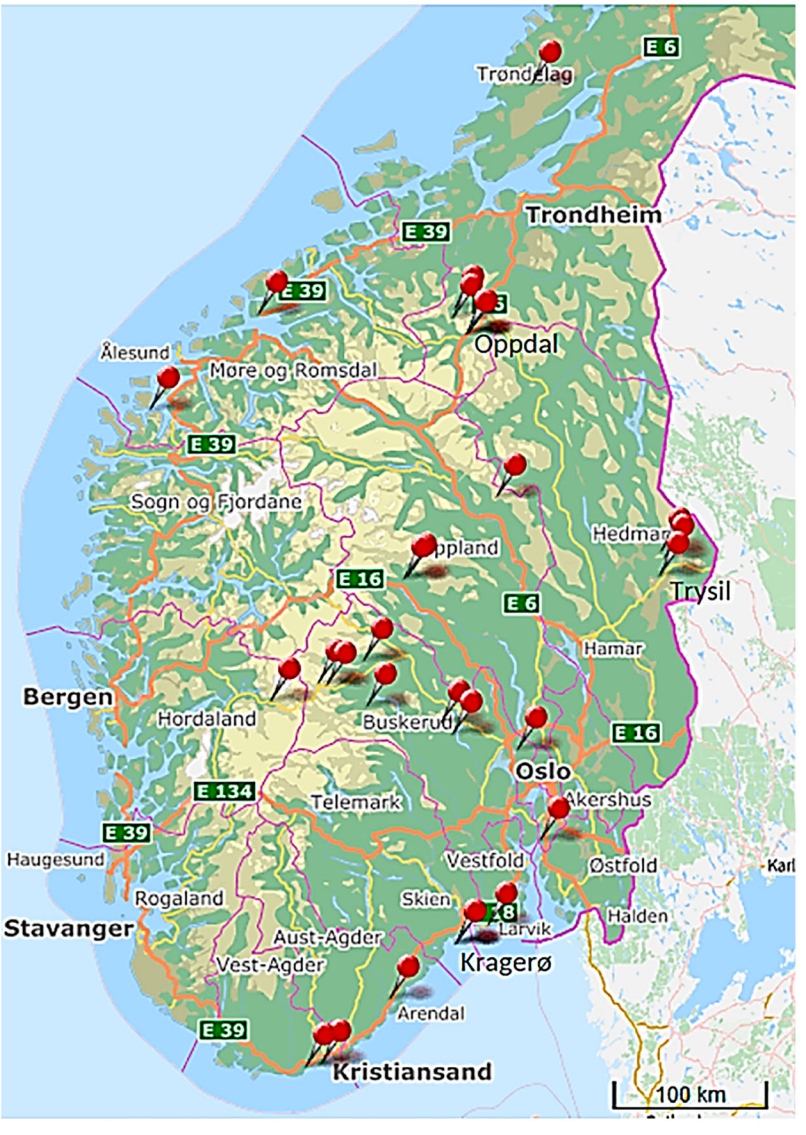

Figure 2. Locations of non-primary dwellings included in the interviews (One of the vacation homes owned by one of the interviewees was located in Turkey and is not shown on the map. At the locations Oppdal, Kragerø and Trysil, the number of vacation homes owned by interviewees within a concentrated area was too high to enable each such dwelling to be represented by a separate pin.).

use of the non-primary dwelling(s), followed by a conversation about questions that were not addressed in the free talk. The topics covered in the interviews are motives of visiting non-primary dwellings, activities in the non-primary dwelling areas, travel pattern, housing consumption pattern regarding size, technical standard, location, type, etc., and the perception on environmental and climate impacts of the multi-dwelling lifestyle. All interviews were recorded and transcribed for subsequent analysis.

The analysis of the interviews was both interpretive and explanatory and contains two steps. We first developed an interpretation scheme including 37 research questions and

Table 2. Demographic, socioeconomic and spatial characteristics of the interviewees.

ID no.	Alias	Age	Gender	Number of adult household members	Number of household members below 18 years	City of primary residence	Location(s) of non-primary dwelling(s) and ownership status	Education level	Household income (1000 NOK)
1	Anders	52	Male	3	2	Oslo	Dagali (owned)	Uni ≥ 4 years	≥1200
2	Berit	41	Female	1	2	Oslo	Ål (owned); Åfjord (access)	Uni ≥ 4 years	800–999
3	Christian	55	Male	1	0	Oslo	Heggenes (owned); Søgne (access)	Uni≥4 years	600–799
4	Dagny	39	Female	1	1	Oslo	Rovde (access)	Uni ≥ 4 years	400–599
5	Else	54	Female	2	0	Oslo	Søgne (owned); Hønefoss (owned); Vøringfoss (owned)	Uni ≥ 4 years	≥1200
6	Frida	53	Female	2	2	Oslo	Haugastøl (owned); Arendal (owned but rented out)	Uni ≥ 4 years	600–799
7	Gunnar	71	Male	2	0	Oslo	Norefjell (owned); Turkey (owned)	Uni ≤ 3 years	1000–1199
8	Haldis	40	Female	2	2	Oslo	Son (access); Stavern (access); Venabygdsfjellet (access)	Uni ≥ 4 years	1000–1199
9	Inga	68	Female	2	0	Oslo	Jomfruland (owned)	Uni ≥ 4 years	N.A.
10	Jan	58	Male	2	0	Oslo	Jomfuland (owned); Eggedal (owned)	Uni ≥ 4 years	N.A.
11	Kari	50	Female	1	0	Oslo	Jomfuland (owned); Haugastøl (owned)	Skilled worker/ craftswoman	N.A.
12	Liv	53	Female	1	1	Trondheim	Oppdal (owned); Molde (owned)	Skilled worker/ craftswoman	N.A.
13	Morten	40s	Male	2	2	Trondheim	Oppdal (owned)	Uni ≥ 4 years	N.A.
14	Nils	40s or 50s	Male	2	2	Trondheim	Oppdal (owned)	Uni ≤ 3 years	N.A.
15	Ola	64	Male	2	0	Trondheim	Oppdal (owned)	Uni ≥ 4 years	N.A.
16	Per	53	Male	2	3	Oslo	Trysil (owned)	Uni ≥ 4 years	N.A., but "good"
17	Quentin	34	Male	2	1	Oslo	Trysil (access)	Uni ≥ 4 years	N.A.
18	Rolf	42	Male	2	2	Oslo	Trysil (owned)	Uni ≥ 4 years	≥1200

interpreted each of the 18 interviews. The interpretation was then checked by another researcher in the research team. After that, we formed 17 question groups based on the original 37 questions and synthesized across the 18 interviews for each of the question groups. This analysis process helped us develop a deep understanding of different dimensions regarding the multi-dwelling lifestyle among the interviewees.

The survey data was used to identify the aggregate use pattern of non-primary dwellings and the statistic correlation between lifestyle, use pattern and climate implications, while the interviews provided in-depth and nuanced insights into the motivation, explanation and reflection on the use of non-primary dwellings as well as its climate implications. The combination of the qualitative and quantitative methods deepens the understanding of the multi-dwelling lifestyle, which provides a solid foundation for proposing policies promoting a more climate-friendly lifestyle.

Analysis of the multi-dwelling lifestyle: mobility, housing consumption and lifestyle groups

In this section, we provide an answer to research question (1), by analyzing the aggregate mobility pattern and housing consumption pattern of the multi-dwelling lifestyle, and identifying two lifestyle groups.

Among the survey respondents who have access to non-primary dwellings, 60% (289) have access to only one non-primary dwelling, 27% (130) have access to two, and 10% (47) have access to three. Among the total non-primary dwellings (710), more than one third are located in Norwegian mountainous areas, over a half are outside of mountainous areas in Norway, and 12% abroad. A higher share of the second and third than the first non-primary dwellings are located abroad. There is a clear trend that the proportion of owner-occupied non-primary dwellings (including both self-ownership and shared ownership) decreases from the first (72%) to the third (37) non-primary dwellings. Conversely, the proportion of respondents having access through relatives, friends and workplaces increases.

Our survey shows that the predominant function of non-primary dwellings is for leisure and recreation. Only 6% of all non-primary dwellings are claimed to be important for work or study, among which many are ordinary cabins located far away from workplace or place of education and are also important for leisure activities. We also find a type of multi-dwelling lifestyle based on the condition of "living apart together", in which a couple lives apart and has access to each other's dwelling. Another type of multi-dwelling lifestyle is a situation where people with an immigrant background have access to their own or parents' dwellings in their country of origin. However, the last two types of multi-dwelling lifestyle are found to be very marginal in the survey. In the case of immigrants' access to parent's dwellings, the low occurrence in the survey is probably due to a low response rate among immigrant residents. This analysis suggests that the predominant multi-dwelling lifestyle in Norway is a combination of urban-located primary dwelling for daily life and work and recreation-oriented non-primary dwelling located elsewhere.

Given that the use of non-primary dwellings is mainly for recreation, our interviews were targeted for the leisure-based multi-dwelling lifestyle. Compared to the survey data, all our interviewees can be seen as active users of non-primary dwellings. Their

visits to non-primary dwellings are of a routine character and they all spend quite some days in their non-primary dwellings.

Mobility pattern

Travel frequencies

Figure 3 shows the estimated average number of one-way trips (in total for the respondent's household members) during the last twelve months between primary and non-primary dwellings and place of work/education among non-primary dwelling owners/users. While the average number of one-way trips between primary dwellings and non-primary dwellings may seem moderate, some respondents are much more frequent users of non-primary dwellings and fit better into the concept of a multi-dwelling lifestyle. Five percent of the respondents who have access to non-primary dwellings have visited such dwellings 41 or more times during the last twelve months. Ten per cent had only one visit or no visit at all to any non-primary dwelling. Most of the respondents' trips go directly between the primary and non-primary dwellings. There are still a quite considerable number of trips between non-primary dwellings and places of work or education, especially for the first non-primary dwelling. Very few trips are conducted between non-primary dwellings.

Non-primary dwellings located close to the primary dwelling tend to be visited more frequently than those located further away. This applies to the first, second and any third non-primary dwelling to which a household has access (excluding non-primary

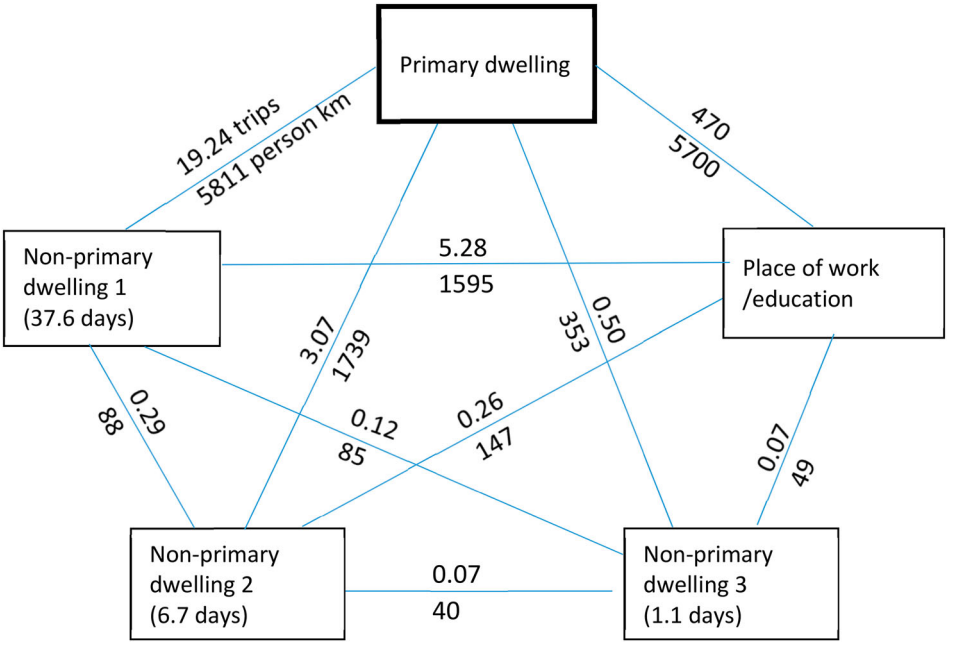

Figure 3. Mean annual number of one-way trips and travel distance (person km) per household between primary and non-primary dwellings and place of work/education among respondents with access to non-primary dwellings ($N = 426$).

dwellings located more than 1000 km away from the primary dwelling). For first non-primary dwellings, the number of annual visits tend to be reduced by on average four visits per 100 km increase in the distance from the primary dwelling. Respondents' lower frequency of visits to non-primary dwellings located far away from their primary dwellings tends to be compensated somewhat by longer stay at the non-primary dwelling each time. For the first primary dwelling, the number of days per stay increases by one per 100 km increase in the distance between the primary and non-primary dwelling. Despite this compensatory effect, the total number of days spent at non-primary dwellings is still on average higher, the closer to the primary dwelling the non-primary dwelling is located.

Travel distances

Figure 3 shows the mean travel distances per household between primary and non-primary dwellings and place of work/education among respondents with access to non-primary dwellings. As illustrated in Figure 4, when comparing the mean annual travel distances to non-primary dwellings located in Norway and abroad, the mean travel distances are much longer to the non-primary dwellings located abroad.

Travel modes

According to our survey, not surprisingly, car is the main travel mode used by most respondents for trips between primary and non-primary dwellings, accounting for 81% of respondents' trips to the first non-primary dwelling, and 75% of trips to the second and third non-primary dwelling. Flights play a more important role for trips to second or third non-primary dwellings, being the main travel mode for 15% of respondents when traveling to their second and 19% when traveling to their third non-primary dwelling, compared

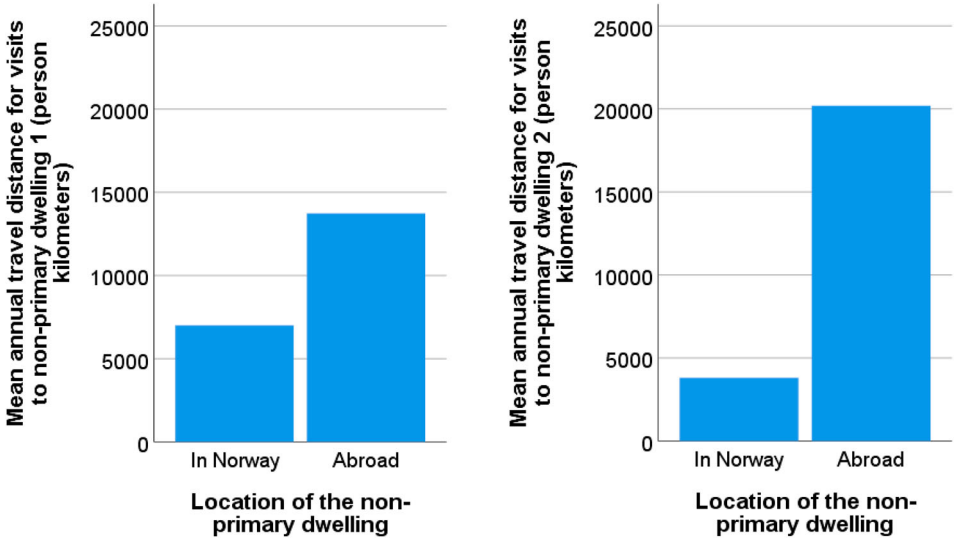

Figure 4. Mean annual travel distance (person kilometers) for visits to non-primary dwelling 1 (left) and 2 (right), depending on whether the non-primary dwelling is located in Norway or abroad. $N = 413$ for non-primary dwelling 1 (of which 369 in Norway and 44 abroad), and 139 for non-primary dwelling 2 (of which 116 in Norway and 23 abroad).

to 8% for trips to their first non-primary dwelling. Train and bus each is the dominant travel mode for 4% of respondents when traveling between primary and non-primary dwellings. Many respondents often combine the main travel mode with other modes for a shorter part of the journey.

Measured in the number of kilometers, for all non-primary dwellings, trips with car as the main travel mode account for 71% of the kilometers traveled, airplane 24% and the remaining amount of travel equally distributed between bus and train.

The private car is also the dominant mode for the relatively few trips (62 altogether) between non-primary dwellings, being the main travel mode for 82% of these trips, followed by airplane and train. Trips within the non-primary dwelling areas are also heavily dependent on car. Among our eighteen interviewees, fifteen use private cars when traveling within non-primary dwelling areas.

Housing consumption pattern

Size

The mean floor areas of the first, second and third non-primary dwellings are 88, 93, and 83 m^2, and the median is 80 m^2 for all three categories of non-primary dwellings. However, there exist large variations within each category, ranging from 12 m^2 to 450 m^2. The majority (59%) of the first non-primary dwellings are 50–100 m^2 in size, and 7% are larger than 150 m^2. Non-primary dwellings are on average smaller than primary dwellings, the latter with an average size of 139 m^2 (median 130 m^2) among respondents who have access to non-primary dwellings. Interestingly, respondents who have access to non-primary dwellings also tend to have larger primary dwellings than those who do not have access. The mean floor area of a primary dwelling among the latter is 109 m^2 with the median being 97 m^2.

Statistically, there is a tendency that respondents who live in larger primary dwellings use or own larger non-primary dwellings. This applies to the first and second non-primary dwellings, but is not significant for the third non-primary dwellings. This is likely because 60% of the third non-primary dwellings are inherited, implying the very limited freedom in choosing the size of the third non-primary dwelling according to respondents' preferences.

The primary rationale for choosing the size of non-primary dwelling is to have enough space to accommodate non-primary dwelling users. What is considered as sufficient space is justified by household size and the preferred level of convenience and comfort. The latter varies among interviewees. For example, one interviewee can accept bunk beds for family members, while another wishes that each family member had his/her own bedroom. Having sufficient space for a certain level of technical standard, such as modern bathroom and living room, is also stressed by several interviewees. Apart from having sufficient space for family members, keeping social contact through providing space for overnight guests constitutes another important consideration for choosing the size of a non-primary dwelling. The last two rationales seem to favor a larger size of the non-primary dwelling.

Standard

Although traditional Norwegian cabins have a primitive standard, for instance, with outdoor toilet, no running water, no electricity and only sparse insulation, this type of

non-primary dwelling accounts for the smallest portion (29%) of all non-primary dwellings among the respondents. Actually, the largest category (40%) of non-primary dwellings is high standard, equipped with electricity, water, flush toilet, shower/tub, washing machine, and dishwasher. About 31% are medium-standard non-primary dwellings with running water, electricity, flush toilet, shower, and full insulation. Despite a relatively high proportion of medium- and high-standard non-primary dwellings, most non-primary dwellings (65%) are of a lower standard than their primary dwellings and 28% have a similar standard.

According to our above-mentioned definition of standard, only three interviewees' non-primary dwellings can be regarded as low standard. The claimed main reason for having a low-standard cabin is a preference for primitiveness, which is in line with the traditional narrative on Norwegian cabin life, as illustrated by one interviewee who owns a simple mountain cabin:

> So, that's what attracts me, to find the peace in the nature and not to have all the luxury (in the cabin). (Christian, 55)

Among the majority of interviewees who have medium- to high-standard non-primary dwellings, the main considerations referred to as reasons for keeping the standard high are: comfort and convenience, time-saving on domestic chores, and year-round usefulness.

Eight interviewees mention the importance of reaching a certain level of convenience and comfort as one of the reasons for having medium- to high-standard non-primary dwellings. Having electricity and running water are most frequently addressed by interviewees. Several mention the comfort associated with taking a shower after skiing and having a comfortable room temperature when arriving at the cabin in the winter. Two interviewees also argue that it is more practical with modern facilities since they use the non-primary dwellings quite a lot.

Another relatively frequent reason for having medium- to high-standard non-primary dwellings is that interviewees want to save time from doing cumbersome domestic chores, such as washing clothes and dishes, and fixing:

> I think it's very nice that it has a washing machine … so you don't have to transport everything, like the bed linen and, and the towels. You can wash them there, and you don't have to bring (them). Because I remember this, you know the cabin by … , we brought everything. We brought all the food almost. My mother would cook several weeks in advance and she would make steaks and things and we would bring them all up to have for dinner, so that (by having a proper kitchen) we wouldn't have to spend all our time cooking. (Haldis, 40)

Four interviewees mention the year-round usefulness as a reason for having certain technical standards in their non-primary dwellings. They mostly mention water, electricity, toilet and shower.

The analysis of our survey indicates that non-primary dwellings with higher standard are usually associated especially with larger size, but also with more frequent visits, higher annual number of days stayed, and higher transport-related CO_2 emissions. Table 3 shows this association for the first non-primary dwellings (excluding non-primary dwellings outside Norway). All the correlations are statistically significant.

Table 3. The relation between standard of the first non-primary dwelling and average size, average annual number of visits, average annual number of days and average annual travel-related per capita CO_2 emissions.

	Low standard	Medium standard	High standard	Correlation with standard[a]
Average size (m^2) ($N = 392$)	62.2	79.1	110.0	0.407 (0.000)
Average annual number of visits ($N = 355$)	7.6	13.3	14.9	0.160 (0.000)
Average annual number of days ($N = 355$)	27.8	35.7	45.7	0.171 (0.000)
Average annual travel-related CO_2-equivalent emissions[b] per capita (kg) ($N = 362$)	110.0	185.8	503.3	0.144 (0.001)

Notes: Only non-primary dwellings in Norway are included. For the second non-primary dwelling, high standard is associated with size, travel-related CO_2 emissions and annual number of days stayed. For the third non-primary dwelling, high standard is associated only with size.

[a]Kendall's Tau-b, *p*-values in parentheses.

[b]Measured in Global Temperature change Potential. Only direct emissions are included, thus omitting the indirect CO2 -equivalent emissions resulting from the production and maintenance of vehicles, planes and transport infrastructure. All emission factors are taken from Aamaas and Peters (2017), Appendix Table S12. For car, emissions are estimated to be 0.114 kg per person kilometer. For airplane, emissions per person kilometer are estimated to be 0.312 kg, which is the average value for trips below (0.342 kg) and above 800 km (0.291 kg), weighted by the proportions of respondents' flights to domestic second homes shorter than and longer than 800 km. For bus and train, we have used emission factors of 0.060 and 0.018 kg per person km.

The tendency that high standards lead to more extensive use is also confirmed by a mountain cabin user who owns a brand-new, high-standard cabin that is equipped with floor heating, good insulation, internet and so on:

> I have friends that have those primitive cabins, and they have like 20 days at maximum staying there every year, and we have 75, because … it's as good as being at home, and we have the great nature outside your cabin, so that's, the higher (standard) you have the more you will use it. I'm quite sure. (Rolf, 42)

Two multi-dwelling lifestyle groups

Through the analyses above, we can find that the Norwegian multi-dwelling lifestyle is not homogeneous. Two large lifestyle groups can be distinguished, with different configurations of housing standard, size and travel pattern that can potentially have different implications for climate change.

One lifestyle group comprises owners/users of the more traditional, simple non-primary dwellings (mainly referring to the low-standard non-primary dwellings). These non-primary dwellings are on average smaller, without centralized energy supply and modern domestic appliances. In addition, low standard of non-primary dwellings tends to reduce their use, leading to fewer trips and fewer annual days stayed. This "discouraging effect" can be caused by the low level of practicality, comfort, and convenience. For instance, the limited access by road and low level of insulation in these simple non-primary dwellings can restrain their use to certain seasons of a year. This is particularly the case for non-primary dwellings by the sea, which are often more primitive than mountain ones. These traditional non-primary dwellings are usually dispersed over the landscape with long distance between each building.

Users/owners of the more modern, high-standard non-primary dwellings constitute the other lifestyle group (referring to the medium- and high-standard non-primary dwellings). These non-primary dwellings are usually larger than the simpler traditional ones. The most luxury ones are similar to detached single-family houses, with the availability of garages,

year-round road access, centralized energy supply, and modern domestic appliances. Regarding mobility, higher standards are positively correlated with a more frequent visit. Unlike the simpler traditional non-primary dwellings, modern ones are often concentrated in high-density agglomerations.

Our survey data indicate that the standard of the first non-primary dwelling shows significant positive correlations with the following motivations for going to this non-primary dwelling: Carrying out sports activities, being with the family, contact with other people than the family, and experiencing cultural events. These motivations can be categorized as "activity-based" purpose of using non-primary dwellings. However, the standard of the first non-primary dwelling shows significant negative correlations with the following motivations for going to this non-primary dwelling: Experiencing silence and tranquility that is missing at home, experiencing "untouched nature", and doing practical work. These motivations belong to the "place-based" purpose of visiting non-primary dwellings. The two purpose categories lead to different activities in the local areas. Activity-based non-primary dwelling users would go to different areas to carry out different sports and outdoor activities requiring particular kinds of facilities, such as alpine skiing. The amount of movement around in the non-primary dwelling area increases. For place-based non-primary dwelling visitors, using and experiencing the same landscape is the main reason for going there, and the activities, such as cross-country skiing, hiking and berry-picking, start from the doorstep of the non-primary dwelling.

Table 4 summarizes the differences in housing consumption, mobility pattern, spatial form, motivations and local activities associated in the two multi-dwelling lifestyle groups and indicates their climate implications.

Climate implications of the multi-dwelling lifestyles and policy implications

In this section, based on the analysis above, we discuss the climate implications of the Norwegian multi-dwelling lifestyles and how they can become less climate harmful, responding to research questions (2) and (3).

Climate implications of the two multi-dwelling lifestyles

Given the differences in housing consumption and mobility pattern as well as motivations and local activities embedded in the two multi-dwelling lifestyle groups, one can expect different implications for climate change, as indicated in Table 4.

The non-primary dwellings associated with the traditional multi-dwelling lifestyle are on average smaller in size which suggests low material and energy dependency in construction and use. On one hand, low standard means fewer energy-demanding equipment, which is positive for reducing climate impact. On the other hand, low standard can also mean poor building insulation and thus lower energy efficiency for space heating. If the cabin employs centralized electricity supply for heating, the low efficiency will increase energy consumption. In case of no centralized energy supply, the primitive cabins may resort to wood burning or solar panel for heating and electricity, leading to differentiated climate impacts. Due to the low and simple standard, the traditional multi-dwelling lifestyle leads to low level of use in terms of both visit frequency and length of stay, contributing to reducing travel-related energy consumption and CO_2 emissions both between primary and non-primary dwellings. As found out in our case,

Table 4. Comparison of the two multi-dwelling lifestyle groups and their relative climate impacts.

Lifestyle group	Traditional multi-dwelling lifestyle		Modern multi-dwelling lifestyle	
		Climate impact		Climate impact
Housing size	Small	Low	Large	High
Housing standard	Low	High/low	Middle to high	High/low
Visit frequency	Low	Low	High	High
Spatial form	Dispersed	High	Concentrated	Low
Key motivations	"Place-based" purpose: Experiencing silence and tranquility that is missing at home, experiencing "untouched nature", and doing practical work	Low	"Activity-based" activities: Carrying out sports activities, being with the family, contact with other people than the family, and experiencing cultural events	High
Associated activities	Cross-country skiing, hiking, berry-picking	Low	Modern sports requiring facilities, e.g. alpine skiing	High

users belonging to the traditional multi-dwelling lifestyle tend to carry out activities motivated by place-based purposes. This category of activities would impose less burden on climate change compared to the activity category driven by "activity-based" purpose. However, negative environmental impacts of the traditional multi-dwelling lifestyle can arise from its often dispersed spatial structure typical for the primitive cabin locations. This can increase encroachment on nature and disturbance to wildlife, lower the use efficiency of infrastructure and make it less efficient to provide public transport service (Hiltunen et al., 2013).

The average large size and modern comfort of non-primary dwellings associated with the modern multi-dwelling lifestyle imply higher energy and material consumption for both construction and use of cabins, because larger space needs to be filled in with more furniture and appliances and because the use of fridge, dishwasher, floor heating, etc. is energy demanding. The preference for an all-year-round use non-primary dwelling may also result in extra energy consumption to keep the dwelling suitable for use in a longer season. Several interviewees mention that in order to use the non-primary dwelling in the wintertime, they have to keep 4 degree's room temperature to prevent the tap water from being frozen, leading to a parallel consumption of energy without the presence of owners/users. On the other hand, higher standard of building insulation will increase energy efficiency. However, this energy benefit is highly likely to be counteracted by large living space, high equipment rate and intensive use. With regard to travel, the modern multi-dwelling lifestyle leads to higher transport-related energy use and CO_2 emissions due to more frequent visit. This lifestyle is often associated with activity-based motivation, leading to climatically unfavorable modern sport activities. These activities in combination with average longer stay in the high-standard non-primary dwellings generate higher climate impacts in the local areas than the traditional multi-dwelling lifestyle. However, the positive climate impact of the modern multi-dwelling lifestyle derives from its concentrated spatial form that is conducive to protecting undeveloped land, enhancing use efficiency of infrastructure and promoting public transport.

The above discussion suggests that the traditional non-primary dwelling lifestyle group is less climate harmful than the modern group. Table 3 (the last row) shows the average per capita CO_2 emissions of respondents for travel to and from their first non-primary

dwellings in Norway according to the standard of these non-primary dwellings. The owners/users of high-standard non-primary dwellings generate more than four times as high travel-related per capita CO_2 emissions as the owners/users of low-standard non-primary dwellings, partly because of their higher visiting frequency. In addition, one can expect an even larger difference in CO_2 emission per capita by the modern multi-dwelling lifestyle compared to the traditional one if the energy consumption in buildings is included in the calculation.

Although the boundary between the two large lifestyle groups is not completely strict and clear, and there is in reality more of a continuum in standard and size, there is nevertheless a trend towards the modernization and up-grading of the Norwegian non-primary dwelling stock. The number of modern non-primary dwellings has overgrown the more traditional ones. The trend of future development might point at a shrinking demand for the more traditional and primitive non-primary dwellings and a further increase in the number of modern ones. This trend can emerge as a result of an increased demand for higher level of convenience and comfort, an interest in using non-primary dwellings all-year round, a lost interest of the new generations in the traditional cabin life, and a better household economic capability due to economic growth. These conditions may lead to the renovation of existing non-primary dwellings and accelerate the construction of more modern, high-standard ones. As commented by one interviewee who owns a primitive cabin, she planned to join the energy grid provided in the cabin area because it will make it easy to sell the cabin in future, although she and her family were satisfied with the current solar energy supply. It will cause worse climate impacts if the future development is dominated by the building of modern, high-standard non-primary dwellings. There do, however, exist counteracting mechanisms that may deflate the demand for the spacious, modern non-primary dwellings. One of these mechanisms could be the ever-inflated prices for both buying and maintaining a non-primary dwelling in Norway (Hammersmark, 2018).

Arguments for the environmental benefits of this lifestyle often take a relative position. It is argued that visits to domestic non-primary dwelling substitute part of, if not all, alternative holiday trips that are even more environmentally harmful, such as long-haul tourism abroad (Gallent et al., 2005; Paris, 2013). These arguments are often made in a very speculative way. However, a more recent study in Finland shows that the use of non-primary dwellings does not seem to be a substitute for high emission long-haul travels, but is rather a part of an overall highly mobile leisure lifestyle (Adamiak et al., 2016). The analysis of our interviews shows a rather mixed picture. A few interviewees claimed that they would have gone abroad more often if they had no access to non-primary dwellings, while for some interviewees, going for holiday abroad every year is a routine. The experiences they seek at foreign destinations cannot be replaced by trips to the domestic non-primary dwellings. In addition, perhaps for many, their trips to domestic non-primary dwellings mainly take place at weekends, while long holidays are used for traveling to long-distance destinations.

Compared to the conventional uni-local living, owning or using multiple dwellings increases the total volume of housing stock in a society and per capita housing consumption. Especially the purposely-built dwellings to satisfy the demand for non-primary dwellings are an addition to the existing housing stock. The construction of these "additional" dwellings is not climate neutral, regardless of their size and standard. Increased residential

spaces need to be filled by furniture and domestic appliances, the production and usage of which demand raw materials and energy. A multi-dwelling lifestyle is highly dependent on mobility, as argued by Urry (2000, p. 132) that "contemporary forms of dwelling almost always involve diverse forms of mobility". Although the more traditional multi-dwelling lifestyle group is more climate-friendly, it does not mean that it exerts no harm to the climate, given that its related mobility is heavily dependent on private cars. Furthermore, although a person or household can only alternately use each dwelling due to the fact that a person cannot physically be in two places simultaneously, the consumption taking place in dwellings, however, can go in parallel. The phenomenon of "parallel consumption" (Heinonen et al., 2013) is manifested through the physical existence of the non-primary dwellings and the energy consumption for maintaining the dwellings even when they are not in use. Since the non-primary dwellings are often built in locations with natural amenity, their construction takes up natural land that can have carbon sequestration functions.

Policy implications

Following the debates on the weak (green growth) and strong (degrowth) sustainable consumption, we present two versions of climate policy that attempt to make the multi-dwelling lifestyle less climate harmful.

Policy informed by the weak sustainable consumption approach

The weak version would not fundamentally challenge either the market demand for living a multi-dwelling lifestyle or the interests of developers, landowners and local governments in investing in such development. The purpose is to make the multi-dwelling lifestyle more resource-efficient, which in principle means countering the development trend within the non-primary dwelling sector that deviates from the traditional values of cabin life. Since the modern multi-dwelling lifestyle group imposes larger impacts on climate change, climate policies could try to reverse the consumptive modernization of the cabin life by constraining the new development of large, high-standard cabins. Instead, new development could take the form of dense, simple and small cabin villages. A spatial concentration of small-size and simple non-primary dwellings can reduce the intrusion on nature, save energy use by building common infrastructures and decrease the energy demand for operation in the buildings. A dense structure will also provide necessary physical conditions for public transport solutions between primary dwelling and major non-primary dwelling destinations. Stricter land use and building regulations for cabin development than nowadays have to be adopted in order to restrict market preference for developing luxury holiday homes.

For the existing traditional non-primary dwellings, building renovation can be done to increase insulation levels in order to save indoor energy consumption. For trips between major non-primary dwelling areas and primary dwellings, shuttle buses can be provided. In addition, to increase the energy efficiency embedded in travel, a shift to electric cars could be promoted.

However, these solutions are not without limitations. A dense structure contradicts the desire of many Norwegians for an isolated non-primary dwelling in wilderness. Local authorities may be reluctant to develop high-density non-primary dwelling villages if this development lacks attractiveness to potential buyers. As articulated by several

interviewees, although they are in favor of a dense cabin development given its positive environmental impacts, they do not themselves prefer such a cabin. Moreover, electric cars, despite being carbon neutral during driving, do not solve all climate problems. These include the indirect emissions from car manufacturing, provision of massive charging facilities along roads to cabin destinations, reinforcing a car culture for trips to cabins. In addition, trips to and from non-primary dwellings are difficult to be accommodated by public transport. The need to bring heavy baggage, traveling with children and long distances to transit stops can be obstacles to a shift from car driving to public transport (Næss et al., 2019).

Policy informed by the strong sustainable consumption approach

The principle of the strong climate policy in accordance with the strong sustainable consumption/degrowth approach would be to reduce the demand for a multi-dwelling lifestyle including reducing housing consumption and travel related to such a lifestyle. To reduce the demand for further development of cabins, increasing the sharing of existing cabins could potentially reduce the number of cabin owners and users. Even stricter land use regulation than the weak policy version should be adopted, directed at making a halt in all new development. A capping and quota system can be developed for both housing and travel in order to limit the levels of household consumption. For example, household consumption of housing including primary and non-primary dwellings can be capped. This will discourage owning non-primary dwellings if the household lives in a large primary dwelling. The same policy can be applied to the total car driving and air travel distances of a household, which could constrain the number of visits to non-primary dwellings. Furthermore, the traditional narrative of Norwegian cabin life depicts it as an important element enhancing the quality of life. Since this narrative plays an important role in facilitating a multi-dwelling lifestyle, this narrative should be seriously reflected on and reformulated in order to send a holistic and genuine picture to the wide public. For one thing, the negative environmental and climate impacts generated by this lifestyle should be addressed in this narrative. For another thing, the validity of this narrative has been shaken given that the quality of life actually practiced in the cabin life is based more on material consumption than simplicity.

Despite the cultural and historical contexts giving rise to the Norwegian multi-dwelling lifestyle, one could argue that the wide public access to this lifestyle and its recent modernization process can only be made possible by inflated household purchasing power facilitated by a growing Norwegian economy. Deflating the multi-dwelling lifestyle, without addressing the income level and a growing economy, will lead to an indirect rebound effect. Households will find other channels to spend the "saved" money when abstaining from a multi-dwelling lifestyle, and these alternative ways of consumption can be more or less climate harmful. Both on the national and regional scales, climate impacts are closely associated with affluence level (Knight & Schor, 2014). The multi-dwelling lifestyle, in particular its modern version, can be seen as one type of overconsumption fueled by growth and affluence. This points to what the strong sustainable consumption approach addresses as the structural problem. The "sufficiency" principle (interpreted as voluntary shrinking the multi-dwelling lifestyle) cannot be made individually effective, without being applied at the societal level (understood as a sufficient overall level of affluence).

The discussion so far demonstrates that following the weak or strong sustainability discourses can lead to different policy paths. The realization of the strong sustainability alternative will require profound societal transformation that is less practical and realistic with the current socio-economic circumstances. However, the purpose of the discussion is to not to conclude with one alternative but to raise debates on the future development of the multi-dwelling lifestyle.

Conclusion

In this paper, we have questioned the Norwegian multi-dwelling lifestyle from the perspective of climate change and explored climate policy pathways informed by the weak and strong sustainability approaches. The climate perspective has been missing in the dominant narrative on Norwegian cabin life that revolves around the simple way of life and back to nature. Through analyzing mobility patterns and housing consumption patterns of non-primary dwelling owners/users, we identified two large lifestyle groups: the traditional and the modern multi-dwelling lifestyle. The traditional multi-dwelling lifestyle is a configuration of smaller-size non-primary dwellings with simpler technical standards, which are visited with on average lower frequency. In contrast, the modern multi-dwelling lifestyle is composed of larger, medium- to high-standard non-primary dwellings which are used to a higher degree in terms of both higher visiting frequency and higher annual number of days stayed. The paper examined the climate implications of the two lifestyle groups and found that the more modern lifestyle group imposes larger impacts on climate change. The modern non-primary dwellings have dominated the development, leading to a modernization of the Norwegian non-primary dwelling stock, unfavorable from a climate perspective. As more households, fueled by growing affluence and increased mobility, are enrolled in the modern multi-dwelling lifestyle, it becomes quantitatively relevant and could affect the climate in a substantial way.

The challenge to making climate-friendly cabin development can be reinforced by the COVID-19 pandemic. The pandemic has given rise to an increased demand in domestic cabins, compensating for the lost possibilities of making holiday trips abroad (Kaspersen & Mikalsen, 2020). In the long run, we may also foresee a growing number of people using cabins for remote work, as a result of the likely more flexible working conditions offered by employers. The post-COVID-19 development trend is yet to be observed, but so far it seems to suggest a more frequent and intensive use of cabins in the future, which challenges the cabin policies for mitigating climate change.

The dominant narrative on the Norwegian ideal cabin life of simplicity, primitiveness and back-to-nature seems to be valid only to the past and relevant to a small proportion of the existing non-primary dwelling as well as future demand. This cabin fairytale conceals the development trend that is based on a stronger materialist manifestation and thus is more climate and environmentally harmful. The desire to escape from modernity by cabin life is, paradoxically, achieved through modernity (for example, the reliance on car driving for cabin trips) and high material consumption (Berker & Gansmo, 2010; Garvey, 2008).

Norway has set an ambitious climate goal of reducing emissions with at least 50% by 2030 compared to 1990 levels (Ministry of Climate and Environment, 2020). With the intention of contributing to the achievement of this goal, the paper suggests weak and strong

climate policies targeting the multi-dwelling lifestyles. The weak climate policy follows the mainstream green growth idea and suggests greening the multi-dwelling lifestyle through reversing the development trend of the modern multi-dwelling lifestyle and by developing small, simple, dense cabin areas, while the strong climate policy challenges the multi-dwelling lifestyle per se as a type of overconsumption by the affluent people and countries. Instead of concluding with a particular policy path, we intend that the discussion on the two sustainability alternatives can contribute to broadening and enriching the debates on climate-friendly development of the Norwegian multi-dwelling lifestyle.

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