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Report

SUSTRANS Project: Tourist transportation preferences in Geiranger area

Data collection for SUSTRANS project: Questionnaire design and results

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ABSTRACT

This document describes main findings of a survey among tourists in Geiranger area, conducted in summer 2018, to map tourists' transport preferences and travel behaviour. In addition, it is briefly explained how the results will be further used in a transport model. The model is to be used to explore how future traffic flow and emissions in the area would be in the presence of traffic management measures.

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Preface

This report is a deliverable to the research project SUSTRANS "Sustainable transportation in rural tourism pressure areas" which aims at developing methods to evaluate transport systems in rural tourism pressure areas with high seasonal fluctuations, using the Geiranger World Heritage area as a case study.

The project is financed by Norwegian Research Council (NFR) under the Transport 2025 program and it is a collaboration among NTNU, SINTEF, Volda University College and the University of Bonn. NTNU leads the project, with Dina Margrethe Aspen as project coordinator. At SINTEF, Sahar Babri is the main contact person for the project. More information about the project may be found on www.sustrans.no.

As part of the SUSTRANS project, two surveys were simultaneously conducted among tourists in Geiranger area in the summer 2018. One of the surveys aimed at mapping tourists travel patterns and preferences in Geiranger area. The purpose for the other survey was to increase knowledge about tourists' spending and understand their perception about the area. Despite having different objectives, the surveys were partly coordinated by including common questions. From SINTEF, Solveig Meland was involved in planning and implementing the surveys, and María Díez-Gutiérrez contributed with designing the questionnaire, especially questions about transport preferences and ferry inconvenience. This report presents the results for the first survey. The results for the second survey were published in (Yttredal & Homlong, 2019a) and (Yttredal & Homlong, 2019b).

All partners in the project collaborated to carry out the surveys. We would like to thank all who were involved, especially Dina Margrethe Aspen and Else Ragni Yttredal for their effort during the design and implementation of the surveys.

Finally, we would like to thank the survey interviewers Enrique A. Ruz Gamboa, Hugo Martem and Rebecka Snefugli Sondell whose enthusiasm and engagement helped us to collect the necessary data for the project.

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A. Questionnaire-English version

1 Background

This study, conducted as part of the SUSTRANS project, aims to improve the knowledge about tourists travel patterns and preferences, and to provide data in order to simulate the potential changes in the tourist-related road traffic against different traffic management measures. For this purpose, a questionnaire was designed and distributed among the tourists in Geiranger area to observe their current trip and their preferences, in relation to transportation mode, route and destinations.

1.1 SUSTRANS project

Rural tourism pressure areas like Geiranger, Flåm and Lofoten represent a unique challenge in transportation planning due to high seasonal fluctuations in requirements to transportation systems. These remote but honeypot areas have the combined problem of peripherality and congestion. In peak periods, traffic jams and visible local pollution are imminent problems. In a broader time-perspective, degradation of the environmental quality and scenic beauty of the areas are critical concerns. Policymakers and other stakeholders need to consider possible measures connected to sustainable transportation systems in these areas, seeing various modes of transportation in context and assessing both social, economic and environmental impacts.

SUSTRANS aims to assist decision-makers in improving transportation systems in rural tourism pressure areas, using the Geiranger World Heritage area as a case study. Through development and combination of transportation system modelling, decision analysis and stakeholder involvement, the project will explore alternative improvement measures in both the short and long term using holistic approaches.

1.2 Geiranger area

There are many attractions within the Geiranger area, such as Geiranger centre, Trollstigen and Dalsnibba. The area is considered among the top 10 destinations in Norway (Visit Norway, 2019). Nevertheless, this area suffers seasonality problems because of the climate conditions, similar to other cold climate destinations which are susceptible to this phenomena (Baum & Hagen, 1999). There is a high peak of visitors between June and August, which might even generate road capacity problems.

1.2.1 Access to Geiranger

Geiranger village can be reached either by the Geiranger fjord from the sea, or by land via the county road¹ 63, which runs through the village and includes the Norwegian scenic route Geiranger-Trollstigen². Figure 1 shows the access to Geiranger and the definition of the geographical areas mentioned in this report. The different geographical areas presented in Figure 1 will be further used to map the respondents' preferences regarding mode choice, route choice and visited attraction points within the defined areas.

¹ Fylkesveg

² <https://www.nasjonalturistveger.no/en/routes/geiranger-trollstigen>



Figure 1: Geiranger location, access and areas definition

County road 63 gives access to Geiranger village from the south as well as from the north. To the south, the road is usually only open between May and October because of snow and weather conditions in winter. During the summer months, the road is linked to national road³ 15, which connects to the European road⁴ E-6 towards the east (Oslo at 450 km), and to the west coast and the European road E-39 towards the south (Bergen at 350 km).

For the access from the north, county road 63 includes the ferry Eidsdal-Linge at 30 km from Geiranger centre, with the onboard time around 12 minutes and the ticket fee of 101 NOK⁵ (for a car including driver). This ferry is operated all year around with frequencies that vary from 4 departures per hour in the peak season (June-

³ Riksveg

⁴ Europavei

⁵ Pr. 09.sep.2019

August) to 2 departures per hour in the off-peak season (September-May). Following the county road 63, Trollstigen is reached at 65 km and Åndalsnes at 85 km approximately. Ålesund can be reached through the county road 650 in around 100 km, or by the county road 60 with two extra ferries Stranda-Liabygda and Magerholm-Ørnsneset, operating all year with same frequency of 3 departures per hour, with an onboard time between 10 and 15 minutes and the ticket fee of 101 and 93 NOK⁶ each (for a car including driver).

The car ferry Hellesylt-Geiranger is in operation between April and October with 8 departures per day in the peak season and reducing the frequency to half the other months. The duration is 60 minutes approximately and the ticket fee is 610 NOK⁷ (for a car including driver). From Hellesylt, following the county road 60, the European road E-39 is reachable in 25 km.

1.2.2 Traffic in the area

There are several road counting stations on the access roads to the north, south and west of Geiranger village (see Figure 1). Figure 2 shows the average daily traffic levels registered in year 2018 for the peak and off-peak seasons (June-August and September-May, respectively), and for July, which is the busiest month of the tourist season. For the road station (S1) and Hellesylt-Geiranger ferry, the daily off-peak traffic is calculated only for the period they are in operation i.e. May-November and April-October, respectively.

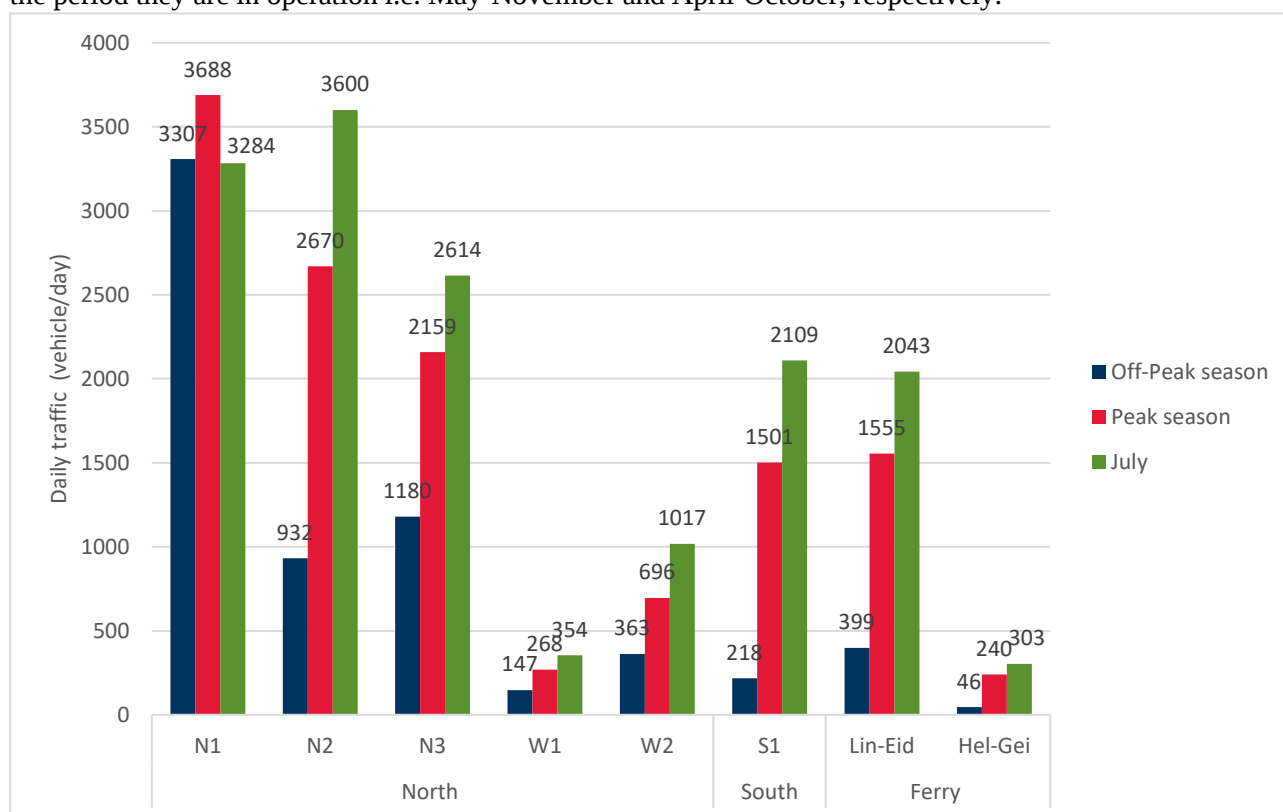


Figure 2: Average daily traffic registered in road counting stations and ferries in the area (both directions), 2018

As it is observed in Figure 2, there was considerable difference between average daily traffic in peak and off-peak seasons. The main fluctuations were on south (S1) and north (N2, N3) access roads. Roads to the west

⁶ Pr. 09.sep.2019

⁷ Pr. 09.sep.2019

(W1, W2) and north west (N1) of Geiranger village were less exposed to seasonality fluctuations. This indicates that tourists prefer other routes to access the Geiranger village.

Figure 3 presents the average number of vehicles per day travelling towards Geiranger village (one-way) from the three access roads/ferries in 2018. The traffic is presented for July, peak season and off-peak season (for periods the access road/ferry was open and operating), and is divided in three vehicle categories:

- Light vehicles: less than 5.6 metres long for road counts / 6 metres for ferry counts
- Medium vehicles: between 5.6 and 7.5 meters long for road counts/ between 6 and 8 metres long for ferry counts
- Heavy vehicles: more than 7.5 meters long for road counts / 8 metres long for ferry counts.

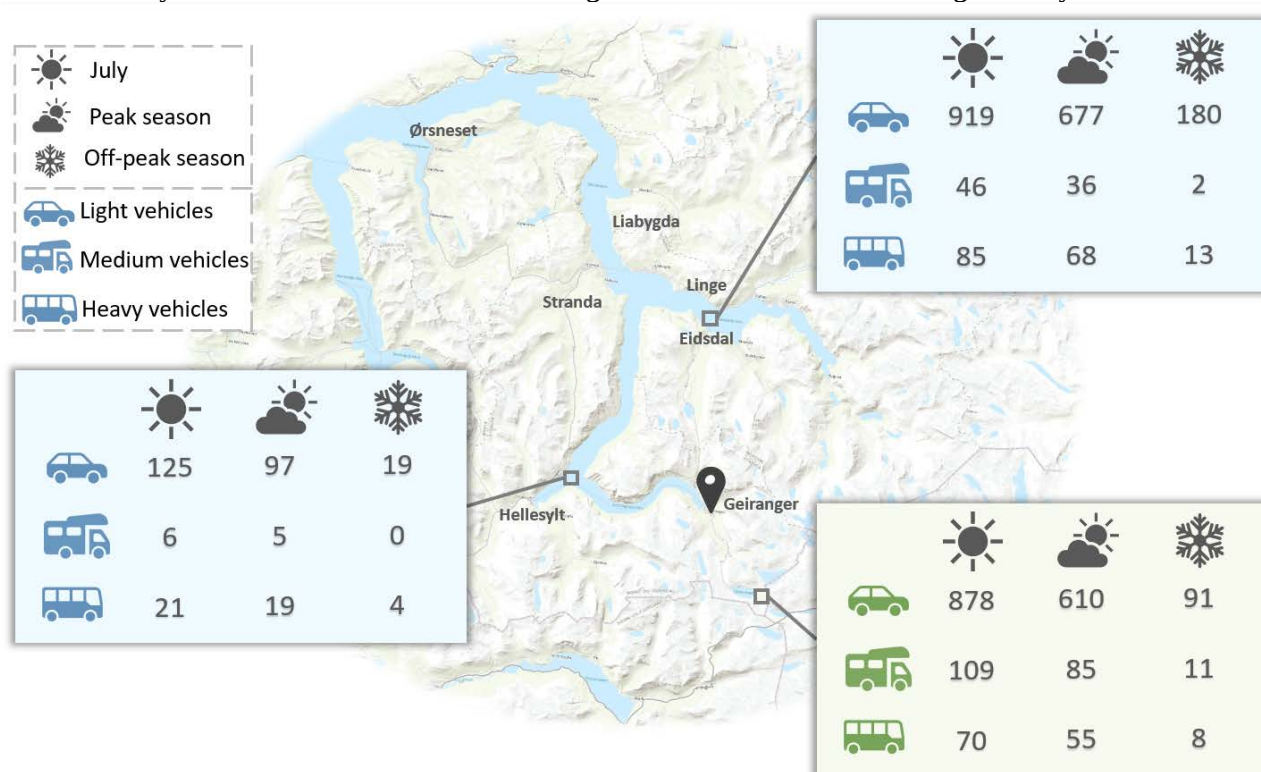


Figure 3: Average daily traffic (light, medium, and heavy vehicles) for July, peak season (June-August) and off-peak season (September-May) in 2018 on access links towards Geiranger village (one way)

The west access by the Hellesylt-Geiranger ferry was the least used, probably as there were few departures per day, and it was only in operation during April-October, to follow the tourist demand. The raw data from the operating company reported daily traffic for motorcycles, cars/caravans and buses, i.e. number of light and medium vehicles were aggregated in the database. In Figure 3, it was assumed that the traffic distribution between light and medium vehicles follows a similar distribution to that of the other ferry access (Linge-Eidsdal).

Most of the traffic arrived via the road 63 both from the north and the south; 677 light vehicles, such as motorbikes and cars, used the ferry Linge-Eidsdal in the peak season in 2018, while 610 arrived from the south (S1). In contrast, medium vehicles, such as caravans, mainly used the south connection 85, against 36 in the north access (one-way towards Geiranger village). There were significant differences between peak and off-peak seasons, this might also be due to closure of parts of the road 63 during winter months (November- May⁸).

⁸ <https://www.vegvesen.no/trafikkinformasjon/reiseinformasjon/Trafikkmeldinger/Vinterstenginger>

In addition, cruise ships arrive to the Geirangerfjorden and usually stay from 2 up to 10 hours, allowing cruise passengers to explore the area mainly by foot/ bike or tourist buses. Figure 4 presents the average number of cruise passengers arriving in Geirangerfjorden per day for July, peak (June-August) and off-peak (May, September, October) seasons in 2018.

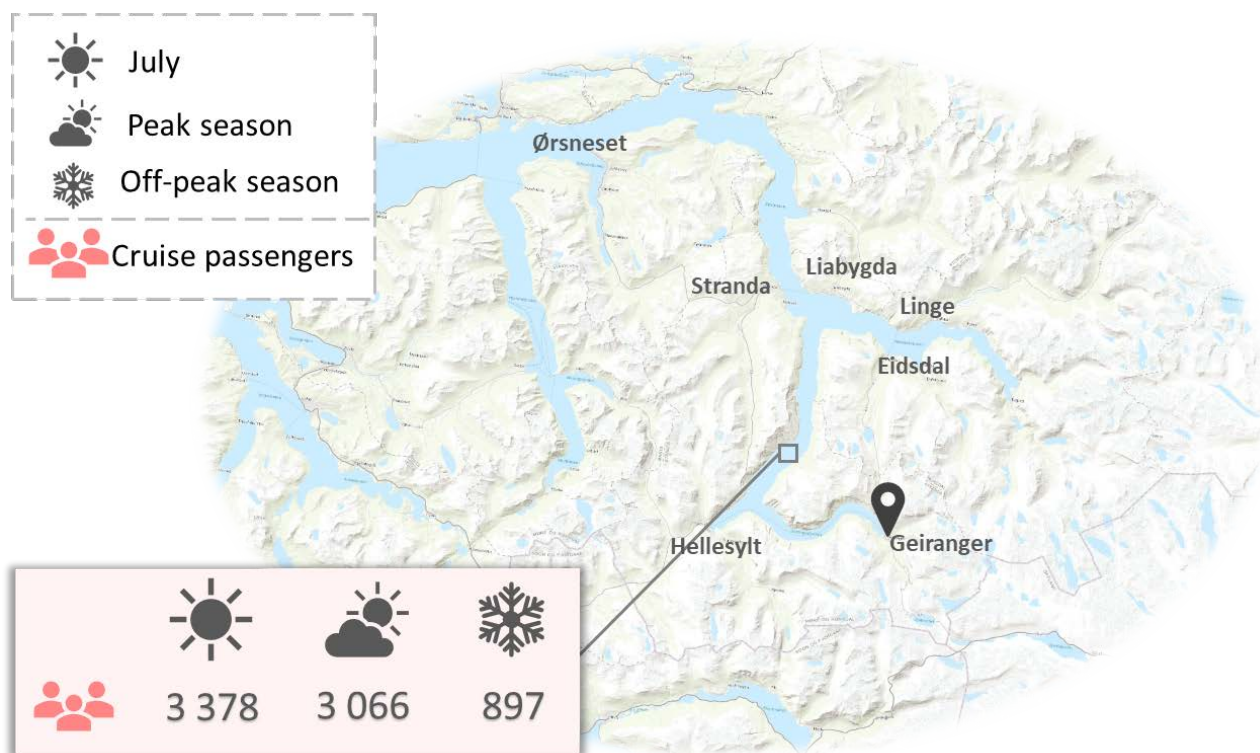


Figure 4: Average daily number of cruises passengers for July, peak season (June-August) and off-peak season (May, September, October) in 2018 arriving in Geiranger village

Previous studies show that almost 55% of cruise passengers book bus tours in advance (Svendsen, Bråthen, & Oterhals, 2014), while the rest have the possibility to book on site. These generate an extra traffic on the roads that may not be accounted in the values presented in Figure 3, as most of the tourist-generated bus tours do not pass the counting points marked in Figure 3. Although the buses operating as tourist-bus within Geiranger village get counted on their way to Geiranger village, these buses make several round tours not included in the values presented in Figure 3. Assuming a capacity of 45 passengers for a standard bus⁹, and that minimum 50%¹⁰ of passenger use it, it accounts for around 34 extra round tours with buses on the roads around Geiranger village in an average day within the peak season.

Moreover, there are also some tourists who arrived at Geiranger centre by Hurtigruten, a flexible cruise where people could go in or out at different quays. In the peak period the average number of tourists arriving via Hurtigruten was 65 per day, whilst in July it was 80 tourist per day (2018). Hurtigruten does not operate in Geiranger during off-peak period.

⁹ <https://www.tide.no/leie-turbuss/vaare-busser/>

¹⁰ Qualified estimate from Stranda Port Authority (Stranda Hamnevesen) about number of cruiseship passengers using a pre-booked bus tour

2 Designing and Implementing the survey

This section briefly explains the logic behind the design of the questionnaire and how the survey was implemented.

2.1 Survey design

The survey was designed as a questionnaire for self-completion, mainly to collect data about tourists' trip patterns. The questionnaire was divided into three main parts: (1) socioeconomic information about the respondents; (2) description of the trip to or from Geiranger area (see Figure 1), including origin or destination (accommodation), transport mode, route choice, and attraction points around Geiranger area; and (3) description of the mobility within Geiranger village, i.e., transport mode, length of stay and attraction points.

Given the amount of information needed, respondents were grouped in order to face shorter questionnaires maintaining the representativeness for all the questions. Three groups were identified depending on whether they were on the way to Geiranger village (group 1), in Geiranger village or recently been there (group 2), or on the way out of Geiranger village (group 3). This is shown in Figure 5.

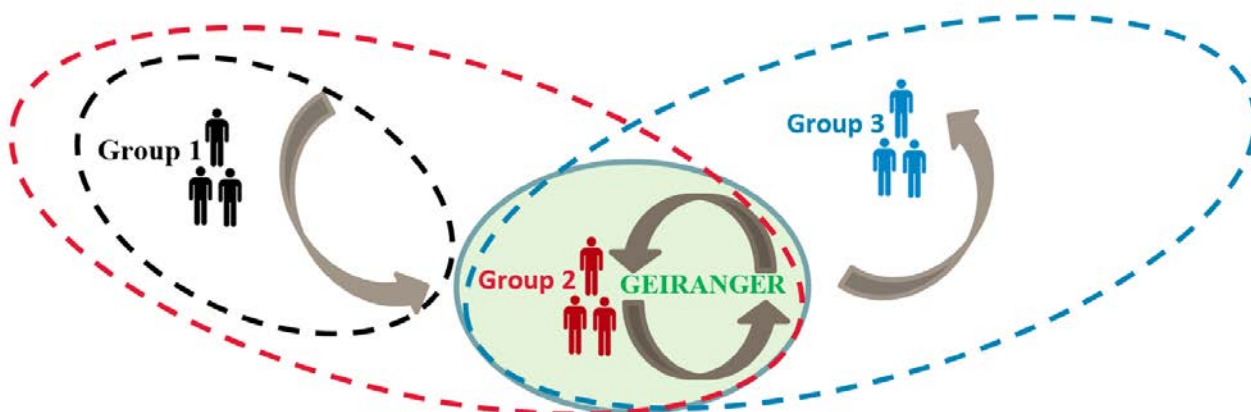


Figure 5: Grouped respondents according to where they were at the time of completing the questionnaire

All groups answered the socioeconomic information and questions about the attraction points. Groups 1 and Group 2 answered questions about their accommodation for the previous night before coming to Geiranger village and their arrival trip. Group 2 also provided information about the transportation mode within the site. Group 3 answered questions about their accommodation for the following night after leaving Geiranger, their departure trip, and the use of transportation mode(s) within the site.

In addition, some questions were only presented to specific groups, as for instance tourists travelling by their own vehicles (car, caravan, motorbike, bike) or walking were asked questions related to the route choice. The reason behind was to better understand the travel behaviour of different groups, as measures for improved sustainability might target different groups of tourists, leading to different changes in their travel patterns. As an example, introducing a new parking policy affects tourists who travel with their own vehicles while cruise ship tourists stay unaffected.

A paper version of the questionnaire is presented in attached to this report (Appendices (A)).

2.2 Data collection

Considering the relatively complicated structure of the questionnaire, running a paper version was not an option. Questions were coded in QuenchTec (QuenchTec, 2018) and tablets were used to collect data.

A pilot survey was conducted in May 2018 to detect potential mistakes in survey design. The questionnaire was made available to the respondents in several languages; Chinese, English, French, German, Norwegian and Spanish.

The main survey was conducted in July-August 2018. The questionnaire was distributed in seven locations in the area. Interviewers were present at the location to help tourists answering the questions. In addition, QR code to the online survey were distributed such that respondent could access and fill in the questionnaire later. The participation rate using the QR code turned out to be very low. A summary of survey dates and locations are presented in Table 1.

Table 1: Summary of dates and locations for distributing questionnaire

Date Location	2018.07.09	2018.07.10	2018.07.11	2018.07.12	2018.07.13	2018.07.16	2018.07.17	2018.07.18	2018.07.19	2018.07.20	2018.07.23	2018.07.24	2018.07.25	2018.07.26	2018.07.27	2018.07.30	2018.07.31	2018.08.01	2018.08.02	2018.08.03	Total number of days
<i>Eidsdal ferry quay</i>	x						x		x	x			x	x	x	x	x	x	x	x	12
<i>Linge ferry quay</i>	x												x	x	x	x	x	x	x	x	9
<i>Korsmyra</i>	x																				1
<i>Geiranger centre</i>		x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	18
<i>Flydalsjuvet</i>												x									1
<i>Dalsnibba</i>		x				x						x									3
<i>Geiranger - Hellesylt ferry</i>		x		x	x	x		x			x		x	x	x	x	x	x	x	x	14

The locations mentioned in Table 1 mainly cover areas in the north, west and centre of Geiranger. Considering these locations, there might be an underrepresentation of tourists travelling to/from south of Geiranger centre. However, tourists in the centre might have used south access to come in or out the area.

The questionnaires were handed out randomly, thus the distribution of respondents within the groups in Figure 5 could be assumed to be evenly distributed. Most of the respondents were in Geiranger centre close to the cruise quay, as the interviewers were 18 days at that location. People on the benches near the quay were more likely to participate in contrast to tourist already walking towards other locations. Similarly, the willingness to participate for those waiting for the ferries at Linge and Eidsdal quays was high, as well as onboard the Geiranger-Hellesylt ferry because they had time at these locations to answer the questionnaire. In contrast, Dalsnibba was the most difficult place to collect the data since the visitors often did not have time to fill in the questionnaire due to short stops at the location.

Respondents with a low level of English were less willing to participate, although the questionnaire was provided in several languages.

3 Results

This section presents the results in three parts. The first part presents general data about the respondents, including their demographic profile. The second part describes tourists' trip profile to/ from Geiranger area (see Figure 1). The last part of this section presents the travel behaviour of the tourists within Geiranger village.

The data are presented in percentages with respect to the total sample, for socioeconomic features. While for the rest of the results, the percentages were estimated with respect to the share of the sample that were presented with each specific question, excluding no-answers. Both, the percentage and the sample size are reported for each result.

3.1 General data about respondents

In total, 945 respondents completed the questionnaire, and of these, 915 were tourists which were our target group. The results presented in this section are based on tourists' answers, i.e. excluding the answers from non-tourist respondents.

Most respondents (58%) were travelling with their families/friends and had children in their travel group. 17% were traveling with their families/friends without children while 7% of respondents were travelling alone.

56% of the respondents were male and 43% were female, while 1% preferred not to specify their gender.

Figure 6 presents the distribution of age groups among respondents. Percentages shown in the figure are based on answers from all tourist respondents including no-answers (N=915).

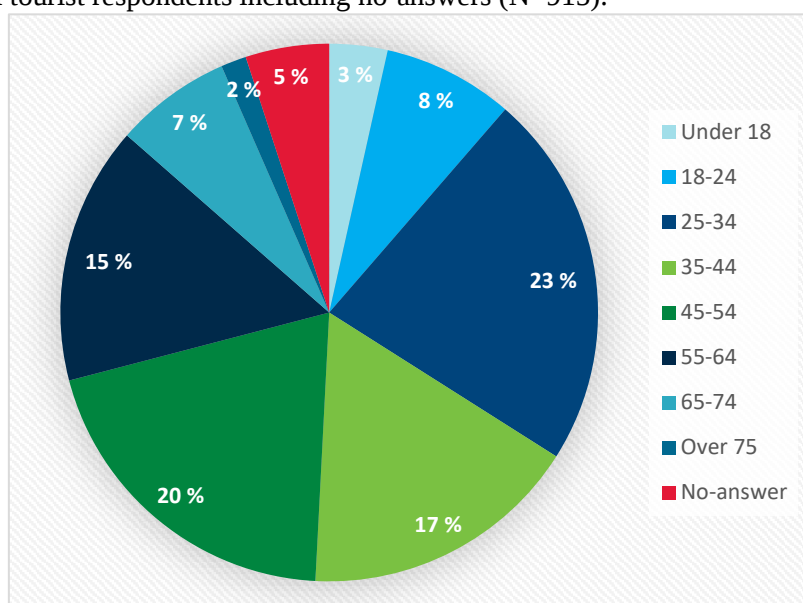


Figure 6: Age group distribution among respondents (N=915)

As it is observed from Figure 6, age groups between 25-65 years old were evenly distributed, while tourists over 75 years old were in minority with only 2%. Given that the questionnaire was conducted by using tablets and this age group may not be as used to this technology as younger persons are, they were assisted in filling in the questionnaire to ensure that the age group is not underrepresented.

Figure 7 shows education level and employment status of the respondents. Percentages shown in the figure were based on answers from all tourist respondents, including no-answers (N=915).

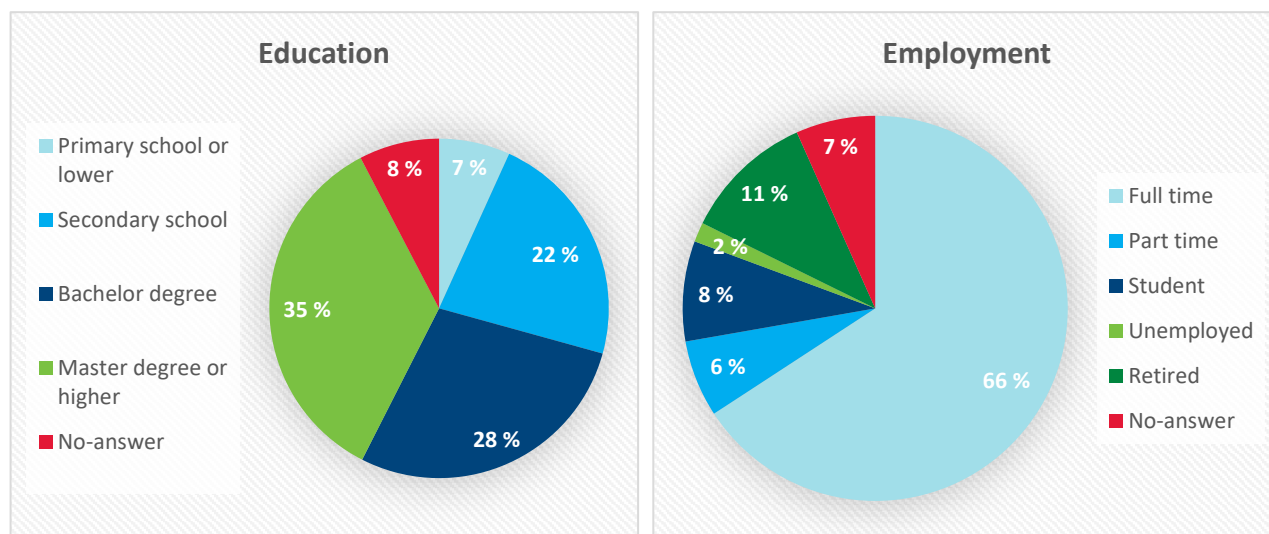


Figure 7: Education level and employment status among respondents (N=915)

It was observed that most of the respondents had full time jobs. Regarding education, the distribution was biased towards higher education.

Distribution of respondents according to their country of residence and the transport mode to reach Geiranger village (cruise ship or other transport mode) are presented in Figure 8. Countries with a frequency lower than 5 respondents ended up in the category other. Percentages shown in the figure were based on answers from all tourist respondents excluding no-answers (N=855).

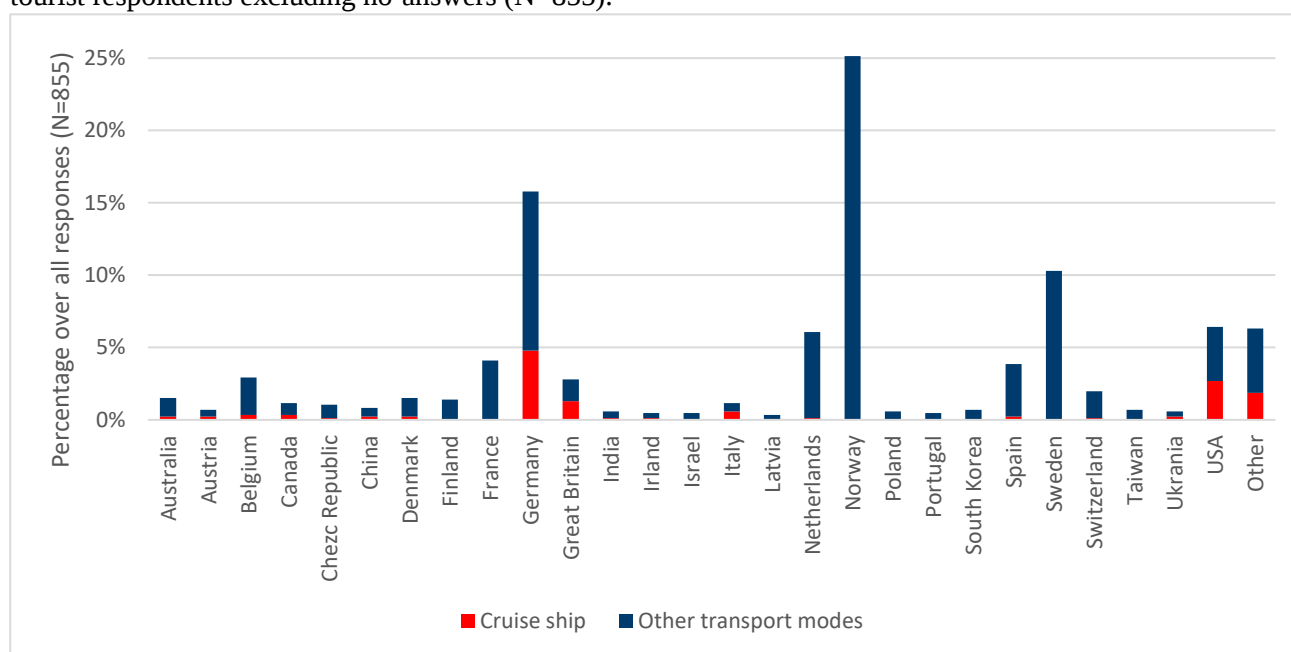


Figure 8: Country of residence among respondents

Respondents living in Norway accounted for 25% of all respondents, while 16% lived in Germany, 10% in Sweden, 6% in USA and 6% in the Netherlands. The majority of respondents lived in one of the abovementioned countries (62%).

The distribution of country of residence was similar to the results reported in Dybedal & Haukeland (2017) based on a survey done by Institute of Transport Economics (TØI) in 2015. In our sample, 37% of respondents

travelling with cruise ship lived in Germany, Switzerland or Austria, which was reported as 39.1% in the abovementioned report. In our sample, 29% of respondents travelling with a transport mode other than cruiseship reside in Norway, which was reported to be 26.2% in the report. However, there were some differences in distribution of respondents' country of residence in the two samples especially for respondents travelling with cruiseships. The differences could be due to different schedule of arriving cruiseship on the days that the two surveys were carried out.

3.2 Trips to/from Geiranger area

The questionnaire started with questions about respondents' trip profile to and from Geiranger area (see Figure 1). As mentioned in section 2.1, the different tourist groups answered one question set related to their trips to or from Geiranger area, but not both question sets. The most important information covered the location where they started their trip, where they headed after leaving, their travel mode, and their route choice.

3.2.1 Travel mode

Tourists used different transport modes to come into Geiranger village (see Figure 1). The chosen transport mode has an important role on environmental footprint a tourist would have in the area. The results are presented in Figure 9. Percentages shown in the figure were based on answers from all tourist respondents excluding no-answers (N=855).

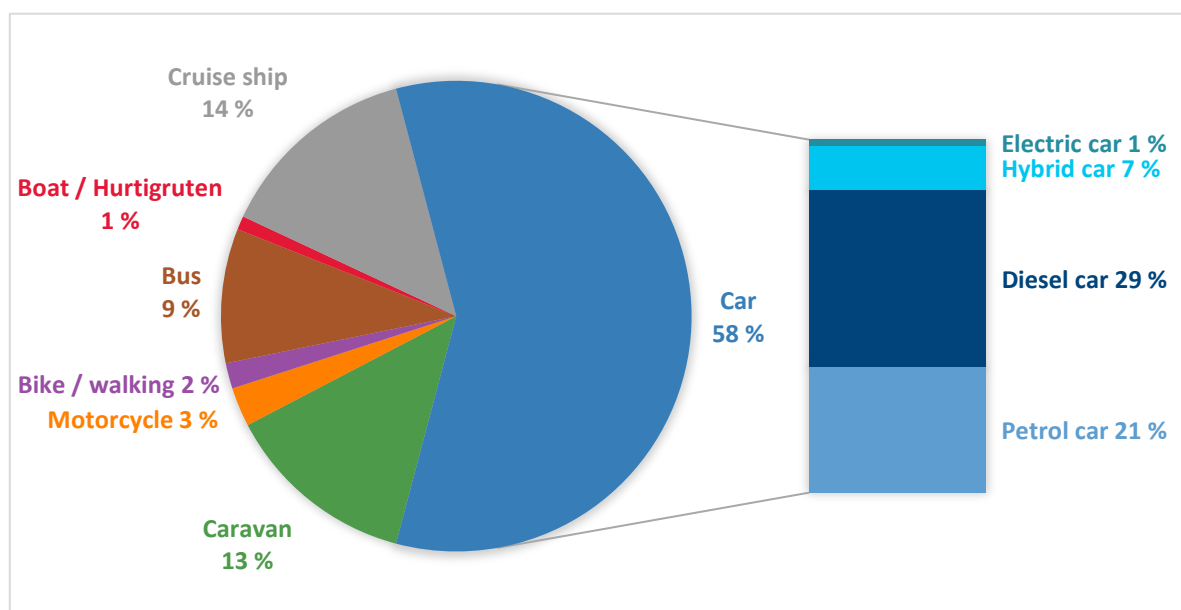


Figure 9: Distribution of transport mode among respondents (N=855)

Most of the respondents were travelling by car (58%), of which only 8% were electric or hybrid vehicles. Caravan was also a popular transport mode with a share of 13%. Respondents coming with bus (any type of bus) represented 9% of all respondents. Cruise ship passengers were 14% of our sample.

Since the main target group of this survey was tourists arriving to Geiranger by land-based transport, cruise-passengers were probably underrepresented, compared to other surveys. Halpern (2007) reported the share of cruise-passengers to be 25%, whereas Yttredal and Homlong (2019a) reported a slightly higher share of around 28%.

3.2.2 Origin/Destination

In order to map the trip profile of tourists, respondents were asked about where they overnighed the night before coming to Geiranger village, and where they would overnight after leaving Geiranger village (see Figure

1). The area's map and its boundaries shown in Figure 10 was presented to respondents who were asked to choose their accommodation place based on the categories/boundaries in the map. As the goal here was to link accommodation places with the preferences on route choice and not the economic aspects of tourists' accommodation, we did not follow the municipalities' border in the map. Instead, alternative borders were defined which would enable us to categorise the accommodation places and route choice in a meaningful way.

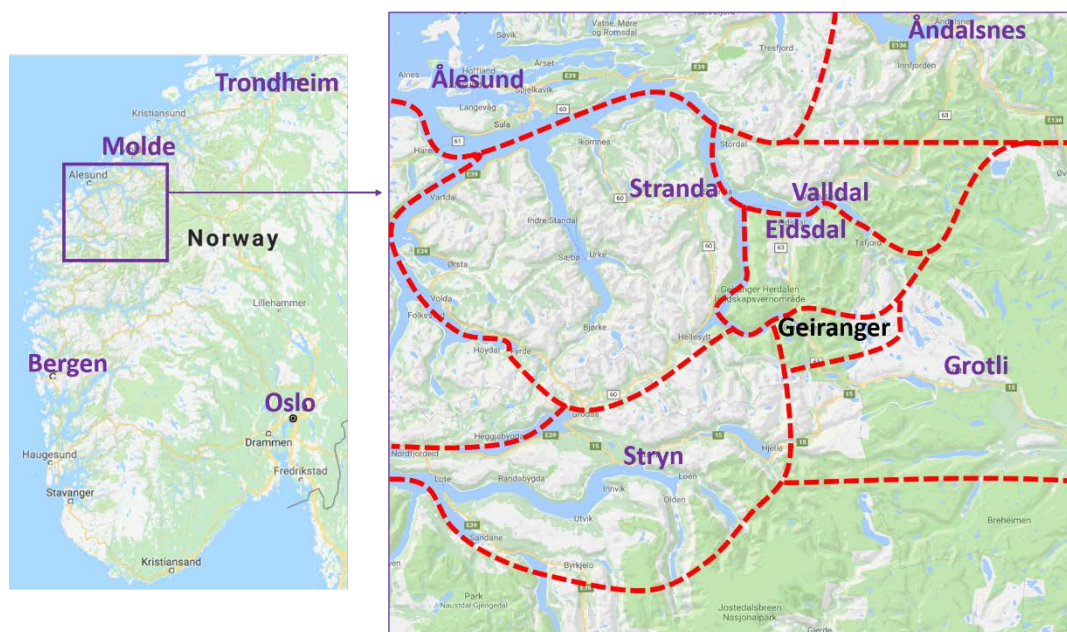


Figure 10: The map presented to respondents to spot their accommodation places within Møre region the night before and after being in Geiranger village

The distribution of the origin and destination places for tourists are presented in Figure 11 and Figure 12, respectively (excluding cruise passengers). Origins and destinations with less than 10 respondents were not presented in the figures. Percentages shown in Figure 11 were based on answers from land tourists who were in Geiranger village or on their way in, excluding no-answers (N=421). Percentages shown in Figure 12 were based on answers from land tourists who were on their way out of Geiranger village, excluding no-answers (N=169).

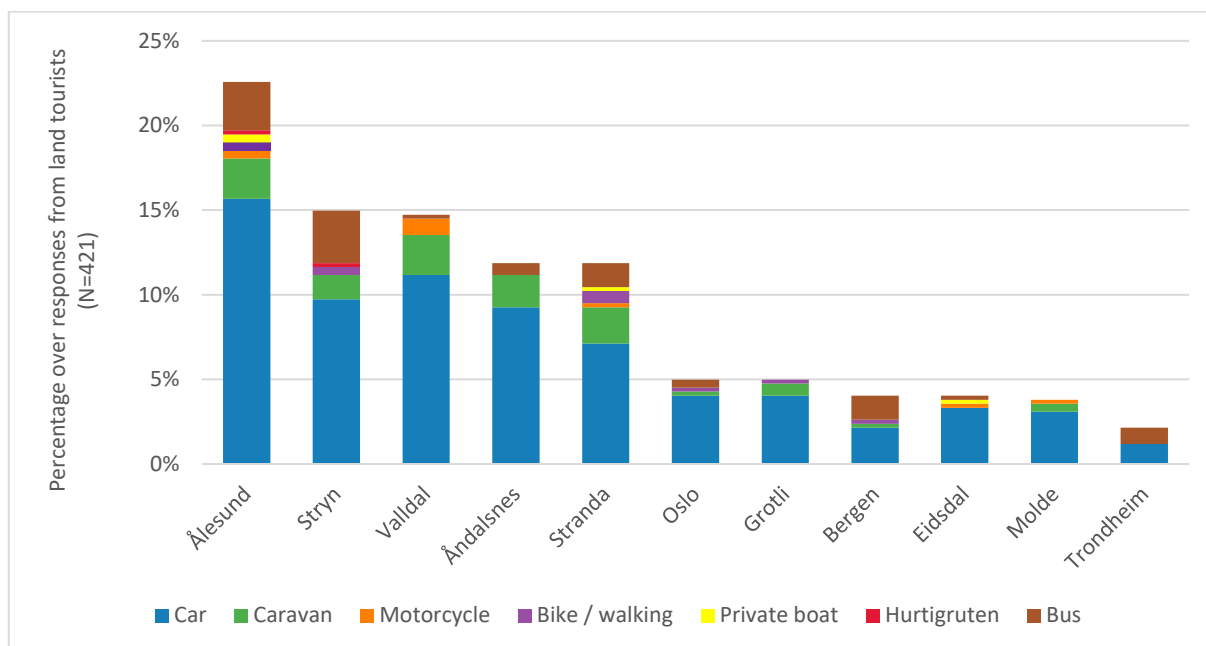


Figure 11: The most frequent places for accommodation (origins) the night before travelling to Geiranger village

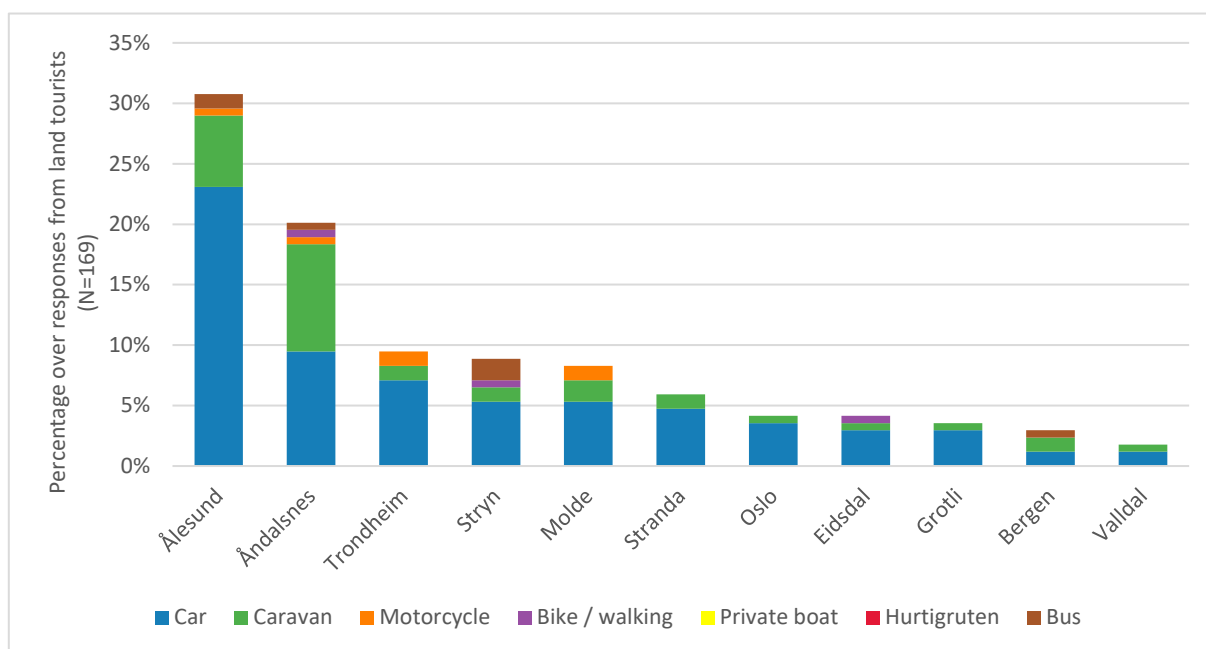


Figure 12: The most frequent places for accommodation (destinations) the night after being in Geiranger village

The results showed that Ålesund, Stryn, Valldal, Åndalsnes and Stranda were the most frequent same-day origins for tourists travelling towards Geiranger village with a car or caravan. On the way out of Geiranger village, Ålesund, Åndalsnes, Trondheim, Stryn and Molde were the most frequent same-day destinations for the onward journey. Tourists travelling by bus had mainly overnighted in Ålesund, Stryn, Stranda and Bergen before coming to Geiranger village, and in Stryn, Ålesund, Åndalsnes and Bergen after leaving Geiranger village.

Minor bias was expected from these results, as respondents that considered difficulties to identify the places on the map wrote the places manually. The distribution of the accommodation places was slightly different from the reported in Dybedal and Haukeland (2017). The reason behind might be the different borders used to differentiate the places.

3.2.3 Route choice

The route choice was only reported by those travelling by their own vehicles using road, i.e. land tourists travelling with car, caravan, motorbike, bike or walking, as they chose their routes freely. They were presented a map to select the route in or out the Geiranger area (see Figure 1), depending on the group they belonged to (see Figure 5). Moreover, they were asked for the motivation behind their route decision.

Figure 13 shows the percentage of tourists choosing among the available routes. The percentages were calculated based on answers from tourist respondents travelling with car/caravan/motorbike/ bike or walking and on their way into Geiranger area (N=439) or out of Geiranger area (N=210).

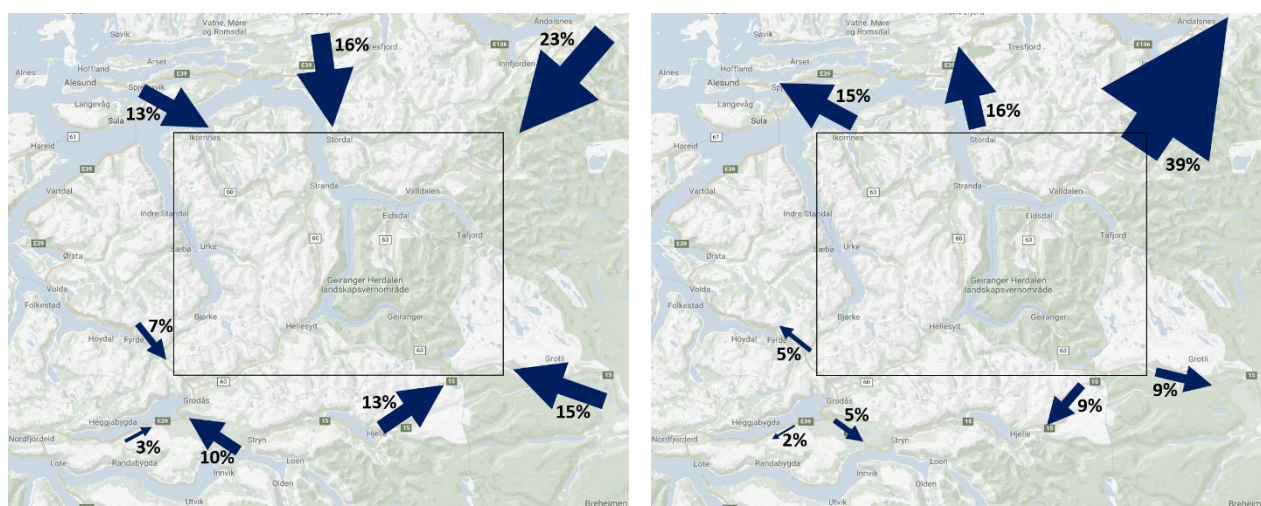


Figure 13: Route choice among land tourists on the way into (N=439) or out (N=210) of Geiranger area

As presented in the figure, Geiranger-Trollstigen route (north-east) was the most popular route among tourists, no matter whether they were on the way towards Geiranger area or on the way out. The least popular routes were the ones approaching the area from south-west.

These numbers corresponded to the road traffic distribution presented in Figure 2, implying that tourists from all the access roads were well represented in the sample. However, there might have been a modest difference for tourists coming from the north, as in the real distribution, a minor share of tourists used the north west route.

The layout of the questionnaire did not allow to click directly on the arrows, but rather on boxes containing them. However, a few respondents selected boxes without arrows inside. These responses were assigned to the nearest box with a route, also considering the origin or destination of their trips. In order to control for potential bias when selecting the route, it was verified that the selected route included the places that respondents had visited around the area.

Tourists chose their route based on several criteria which were important to them. In order to shed light on these criteria, the respondents were asked to specify their route choice preferences. Results are illustrated in Figure 14. The percentages were calculated based on the 794 responses from 649 tourists travelling with car/

caravan/ motorbike/ bike or walking. The answers were divided between those on the way in (N=551) and out of Geiranger area (N=243). Note that the sum is more than 100%, as the question was multiple-choice

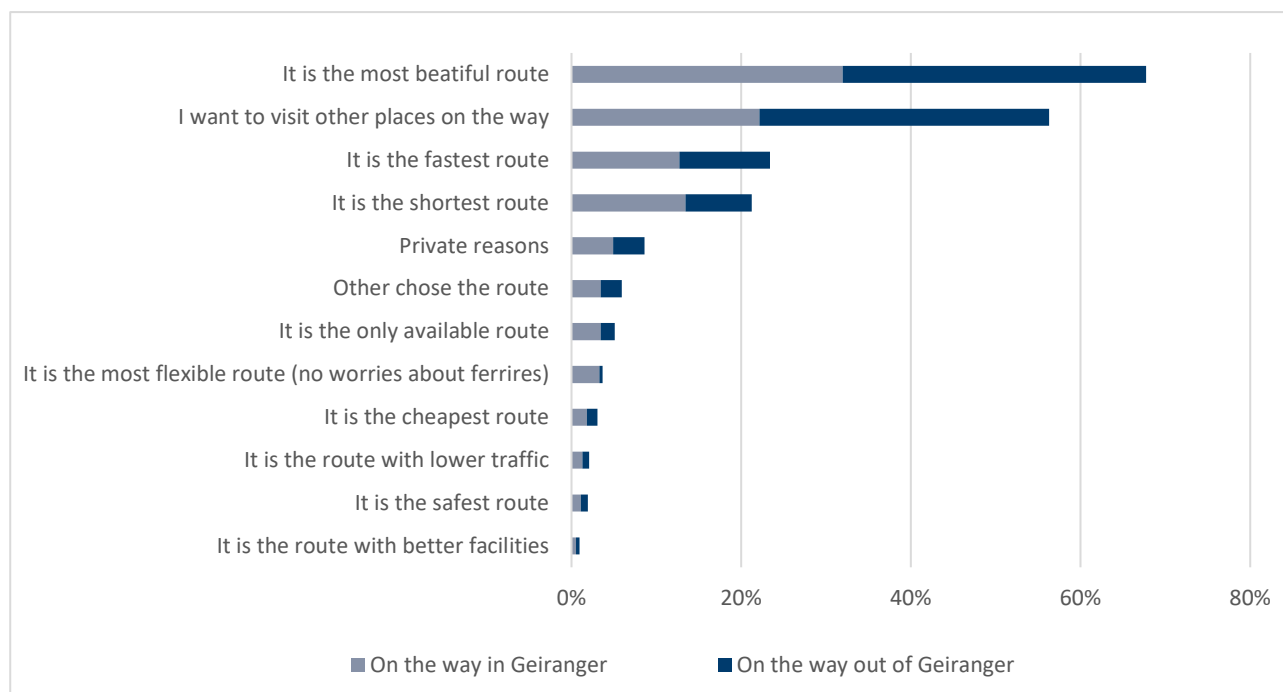


Figure 14: The most important criteria for route choice among tourists divided between those on the way in (N=551) and out of Geiranger area (N=243)

As presented in Figure 14, the tourists mainly planned their routes based on how attractive the route was, and if they could visit other attraction points on the way.

Criteria such as time and distance, which are the most important criteria in people's daily route choice, come in the third and fourth place. Further analysing the answers for the tourists who chose a route because it was the fastest or shortest route (N=157), it was observed that almost 70% of them (N=103) considered Geiranger as one of the main attractions for their trip. In addition, almost 70% of them overnighted in Møre area (see Figure 10). This might explain why tourists on their way towards Geiranger village put more value on time and distance criteria (Figure 14) as they wanted to arrive to their main destination sooner, visiting other places while overnighting there.

Tourists who selected more than one criterion in the route motivation (N=254), when one of the reasons was the most beautiful route (N=65), more than 80% selected the possibility to visit other places in the way. Whereas, when one of the reasons was the shortest route (N=26), more than 60% choose the fastest route also. Therefore, the criteria selected are related in most cases.

Routes with ferry connection

Inconvenience costs of ferries are associated with dependency on the service schedule, as in this case a ferry connection. This dependency might affect the travel behaviour, such as potential changes in route, mode, destination or even may suppress some trips. Effect of these inconveniences on travel behaviour has been the subject of a few studies. In particular, Díez-Gutiérrez & Tørset (2019) found that trip features and socioeconomic characteristics of the respondents affect how inconveniences are perceived. In this survey, the tourists' perception of ferry inconvenience is investigated, as it might differ from local daily ferry users.

The stated average waiting time was 11 minutes for the Linge-Eidsdal ferry, which had a headway of 15 minutes from 9:00 am to 18:00 pm. The stated waiting time was larger than half of the planned headway (value usually assumed as average waiting time), but this might be because only 13% of respondents in Geiranger village using the ferries to come in, planned their trip in advance according to the ferry schedule (N=61). In the case of the Hellesylt-Geiranger ferry, the stated average waiting time was 25 minutes while the headway was 90 minutes during the day.

Respondents that used any of the abovementioned ferries to access Geiranger centre were asked whether the ferry was an inconvenience or rather an attraction for their trip. Only 18% of the respondents (N=61) considered it as an inconvenience. This percentage was even lower for respondents residing in Norway, down to 10%.

This holds the hypothesis that tourist perception of ferry inconvenience differs from frequent ferry users. However, some respondents considered the possible answers as extreme, missing a neutral answer, since they neither considered the ferry to be an attraction nor an inconvenience. Nevertheless, the travel behaviour effects of potential frequency changes or replacements of car ferries need to be further studied with a higher number of tourists.

A hypothetical situation was presented to the respondents, where ferry Linge-Eidsdal would be replaced by a bridge. Tourists driving their own vehicles using Hellesylt-Geiranger ferry (N=29) were asked whether they would change their route to access Geiranger centre using the new bridge instead. 55% of respondents would change the route if the new bridge was free to cross, while 41% would change their route paying a toll for the new bridge. These results, although interesting, were hold by a small sample and should not be generalized. On the other hand, 75% of the tourists driving through the Linge-Eidsdal ferry (N=166) stated that they would use the bridge paying the same fee as the ferry ticket; 38% would even pay double for the permanent connection. However, 25% of the tourists driving through the Linge-Eidsdal ferry stated that they would not use the new bridge, indicating that the ferry was an important attraction for their trips, and they would consider changing their route to experience a ferry connection.

3.2.4 Attraction points around Geiranger area

There are several attraction points in the area which tourists usually visit. Studying these points and the percentage of tourists who visit them is important because visiting these attraction points contribute to the traffic around the area. Therefore, the respondents were asked which attraction points they visited as a part of their trip profile. However, some respondents who had visited the Geiranger area earlier, were confused whether the visited places were in relation to their current trip or in general. In order to overcome this potential bias, only responses from those who were in the area for the first time were analysed (N=577). The results are summarized in Figure 15.



Destination	Percentage visited
Ålesund	78%
Trollstigen	72%
Åndalsnes	47%
Jostedalsbreen	45%
Hellesylt	41%
Olden	31%
Valldal	31%
Bødalsbreen	18%
Gudbrandsjuvet	20%
Lovatnet	15%
Djupvatnet	12%

Figure 15: Attraction points within and around Geiranger area (N=577)

It was observed that over 70% of all respondents visited Ålesund and Trollstigen, while Dybedal & Haukeland (2017) reported that 83% of tourists visited Trollstigen. Less than half of the respondents visited Åndalsnes, Jostedalsbreen and Hellesylt. The least visited places were Djupvatnet, Lovatnet and Bødalsbreen with around 20% of respondents visiting them.

It is important to know what brings tourists to Geiranger area and other touristic destinations. By being aware of tourist preferences, the authorities can preserve the strong points of a touristic destination. Potential aspects were presented to the respondents who were asked to specify how important each aspect was, when it comes to choosing a destination. Figure 16 summarizes the most important aspects of a destinations for tourists in Geiranger area, based on the 874 responses for this question.



Figure 16: Motivation for choosing a tourist destination (N=874)

To analyse the results, a point from 1 to 4 was attributed to the alternatives "not important", "somewhat important", "quite important" and "very important". By taking the average of collected responses, it was observed that the three most important factors were nature, relaxation and safety. Similarly, Pedersen (2018) reported that more than 80% of land tourists and almost 65% of cruise passengers considered "nature experience" as one of their holiday activities, highlighting the importance of nature. This is especially important since it showed that nature and peacefulness of the area must be preserved in order to maintain its attractiveness to tourists.

Figure 17 illustrates which information channels tourists used in order to get information about Geiranger. Percentage were calculated over responses from tourists residing in Norway (N=214) or other countries (N=619). Respondents who did not choose any of the information channels were not considered in the percentage calculation. It is important to note that the question was a multiple-choice question. Thus, respondents could choose more than one choice and therefore the sum is more than 100%.

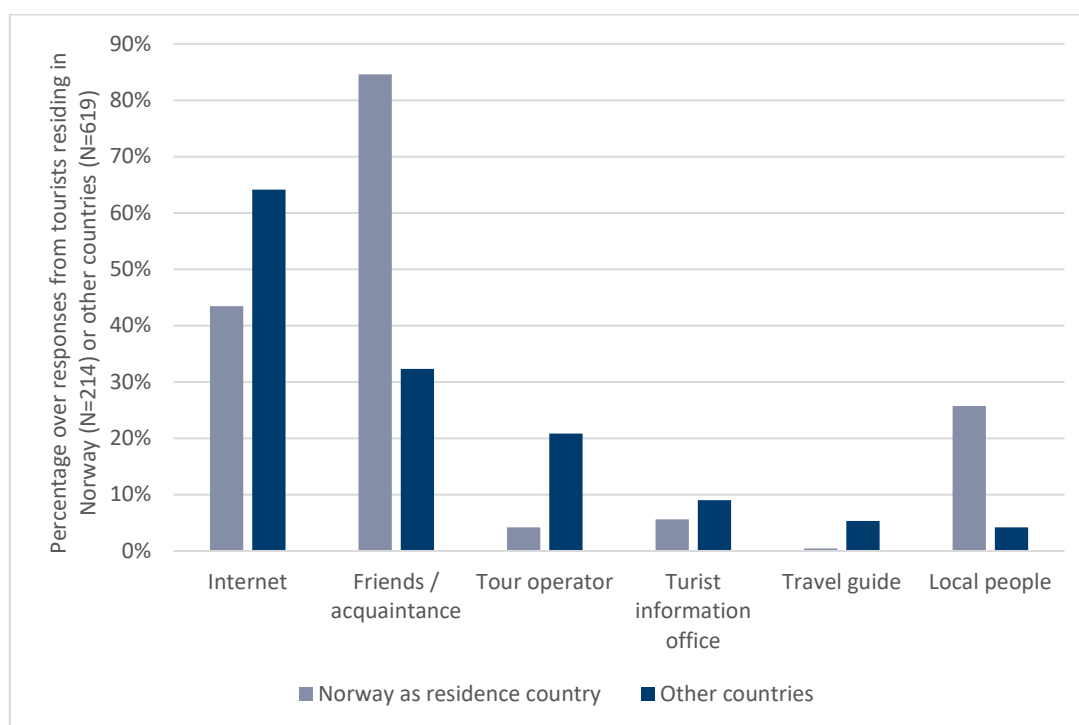


Figure 17: Information Channel among respondents

Most of the respondents living outside of Norway obtained information about Geiranger through internet, while for tourists living in Norway, friends/ acquaintance and general knowledge were the main information channels. Tour operators, tourist information offices and travel guides were not specifically important to tourists residing in Norway whereas some of the tourists residing outside of Norway obtained information through these channels. In contrast, local people were a good source of information for tourists residing in Norway.

3.3 Mobility in Geiranger village

In this section, tourists' mobility inside Geiranger village (see Figure 1) is addressed; including the transport mode they used, the places they visited and how long they stayed in the area. In addition, we discuss to what extent Geiranger was one of the main destinations in tourists' travel plan.

3.3.1 Transport mode

In addition to transport mode to travel to/from Geiranger area, tourists stated how they travelled around within Geiranger village (see Figure 1). The results, presented in Figure 19, were based on 572 valid responses from 498 tourists who were on their way out of Geiranger village or those who were in Geiranger village at the time of completing the survey (see Section 2.1 and Figure 5 for the logic behind survey design). Note that the question was a multiple-choice question and therefore the sum is more than 100%.

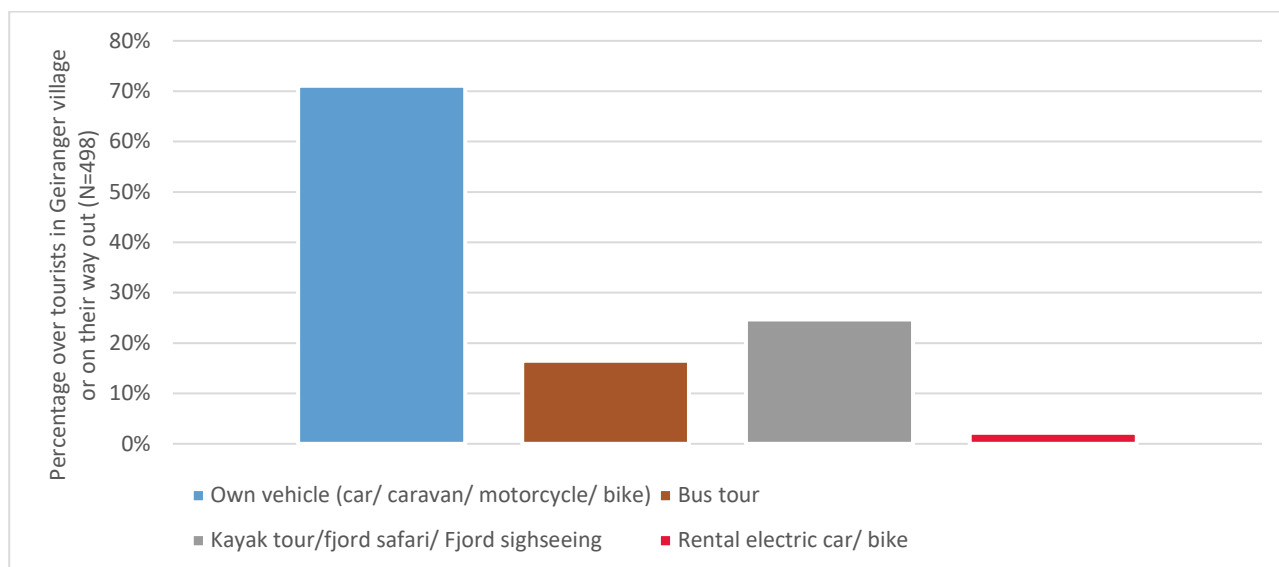


Figure 18: Transport mode inside Geiranger village

The majority of respondents used their own vehicle (car/ caravan/ motorcycle/ bike) as the transport mode within Geiranger village (71%). In addition, 16 % of respondents explored the area with a bus tour, and 25% used sea-based transportation services (kayak tour/ fjord safari/ fjord sightseeing). Only 2% used rental bike or rental electric vehicles.

Figure 19 illustrates the transportation modes used by tourists inside Geiranger village depending on their mode choice to/ from Geiranger.

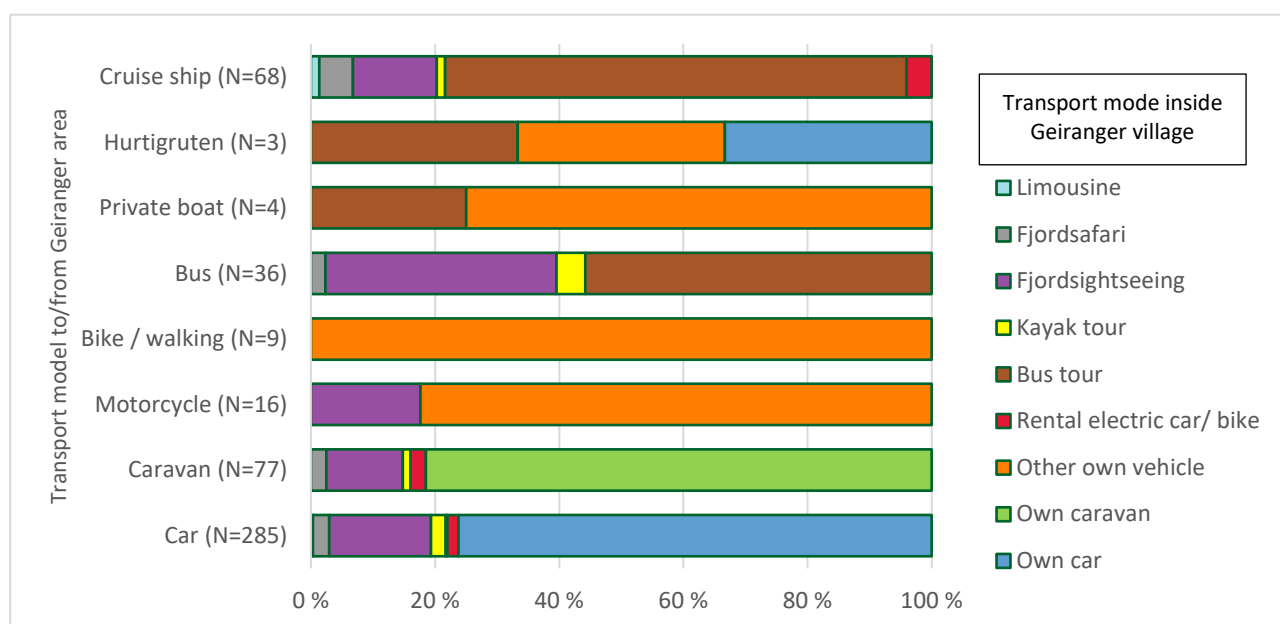


Figure 19: Transport mode inside Geiranger village depending on the mode to/from Geiranger area

Tourists coming with a private vehicle (car/ caravan/ motorcycle) mainly used their own vehicle, while 20% of them combined it with sea-based transportation service such as kayak tour, fjord safari or fjord sightseeing. Tourists coming with bike did not choose any other transportation mode than their own vehicle, although this might be because the sample included only a few respondents coming with a bike. Tourists coming with a bus,

either explored the area with bus or combined it mainly with a sea-based transportation service. 75% of cruise passenger stated that they used bus tours within Geiranger village, while less than 30% of tourists coming with private boat or Hurtigruten took a bus tour. It is important to note that the sample included only a few respondents coming with private boat or Hurtigruten and thus the results should not be generalized.

3.3.2 Length of stay

To map tourists' length of stay in Geiranger, they were asked one question about how long they stayed in Geiranger centre, and one question whether they overnighted in Geiranger area (see Figure 1). Figure 20 relates both questions for land tourists visiting Geiranger centre (N=488).

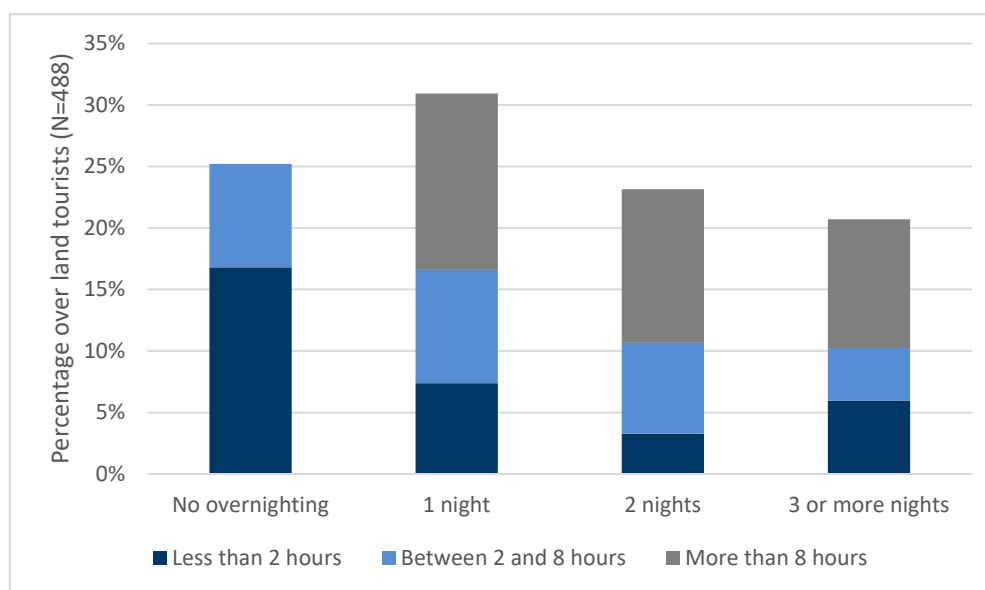


Figure 20: Overnighting in Geiranger area vs length of stay in Geiranger centre

25% of respondents stated that they did not overnight in the area, 31% of respondents stayed one night in the area, 23% two nights, and 21% three or more nights. The average stay was 1.46 nights which is in line with previous studies by Halpern (2007).

Analyses of the length of stay in Geiranger centre for day-visitors in the area (those who have not stayed overnight), showed similar results to the findings in Dybedal and Haukeland (2017), although they used different time intervals. 67% of the tourists (excluding cruise passengers), who did not overnight in the area, stayed in Geiranger centre for less than 2 hours, and the rest (33%) stayed between 2-8 hours. For respondents overnighting in the area, 22% stayed in Geiranger centre less than 2 hours, whilst almost 50% stayed more than 8 hours.

Figure 21 shows the relationship between the transport mode to or from Geiranger area and the number of nights spent in the Møre area (see Figure 10). Percentages were calculated over responses from land tourists (N=715).

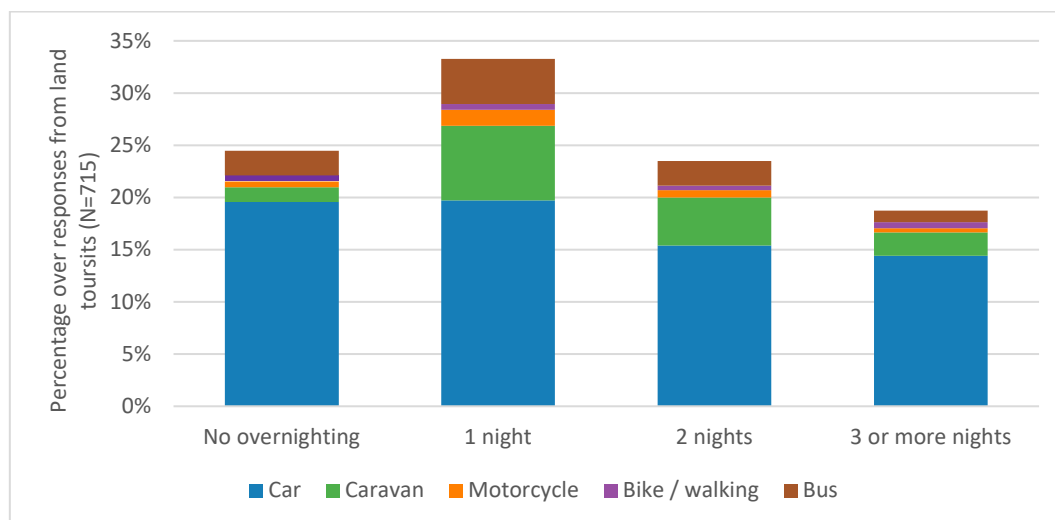


Figure 21: Overnighting in the area differentiated by transport mode to/from Geiranger area

Results showed that most tourists travelling with caravan, motorbike and bus overnighed in the area for one or two nights (72%). Whereas tourists travelling with car showed a uniform distribution when it comes to length of stay in the area. 28% of respondents with car did not overnigh in the area, 29% overnighed only for one night, 22% stayed for two nights, and 21% stayed longer.

3.3.3 Attraction points in Geiranger village

Visiting several attraction points within Geiranger village creates extra traffic which contributes to local congestion around attraction points. To specify the attraction points tourists mainly visited, a list of attraction points in the area was presented to the respondents and they were asked to choose the points that they visited as a part of their trip.

The results are shown in Figure 22 (N=760). It is important to note that the question was a multiple-choice question. Thus, respondents have chosen more than one choice and therefore the sum is more than 100%.

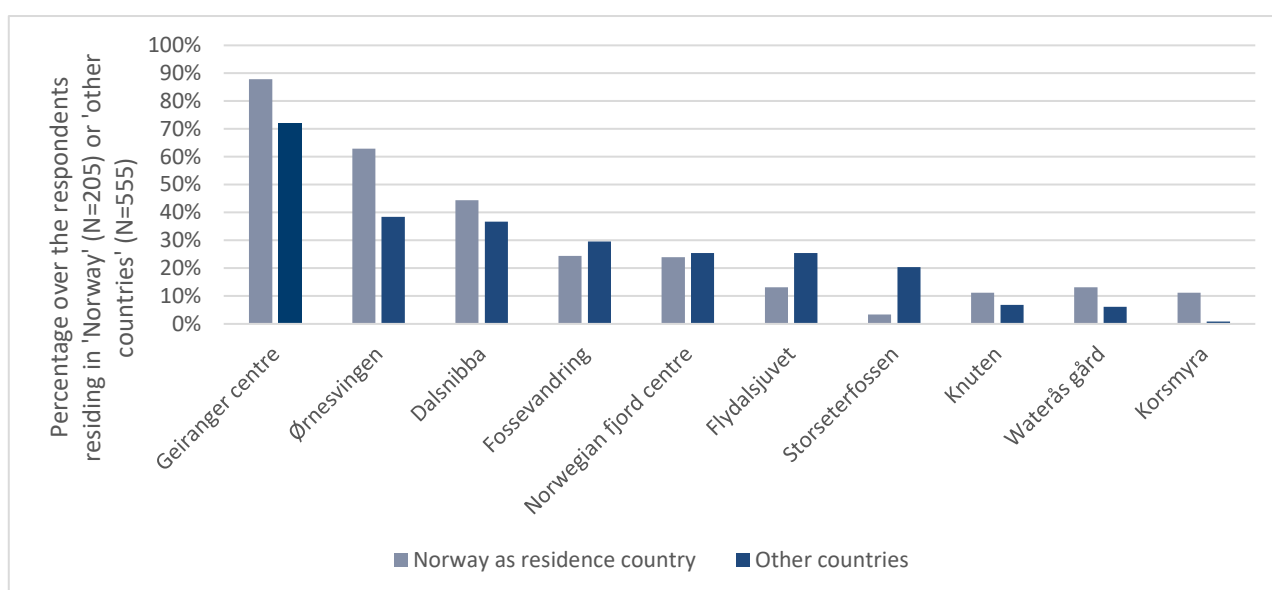


Figure 22: Visited Places in Geiranger village

Geiranger centre, Ørnesvingen and Dalsnibba were the most popular points both among tourists residing in Norway and in other countries. There were some significant differences between tourists residing in Norway and other countries, when it comes to less popular places such as Storseterfossen or Korsmyra.

Similarly, to the attraction points around Geiranger area, tourists might be unfamiliar with the names and thus, underreported some of the locations. This might explain the disparity between the percentage of tourists in Dalsnibba and Norwegian Fjord centre from our questionnaire (40% and 25% respectively) and from the previous study by Dybedal and Haukeland (2017) (55% and 32% respectively).

3.3.4 Geiranger as a main attraction point

In order to analyse tourists' behaviour to future changes in transport system, we need to understand how important Geiranger is in tourists' trip profile. To shed light on the importance of the area among today's tourists, respondents were asked to specify whether Geiranger was one of the main attractions. 65% of respondents answered yes to the question (of which only 14% residing in Norway) while 26% said no. 2% of the respondents chose the option I don't know. This is probably because they were not in charge of planning the trip. 63% of respondents stated that it was the first time being in Geiranger including no-answers.

In addition, respondents who reached the place by car or caravan (N=411) were presented with hypothetical situations where they would need to pay varying levels of road tolls to visit Geiranger. The amount of road toll was increased step by step, and for each level, they were asked whether they would still pay the amount and visit Geiranger or whether they would drop the whole trip. Figure 23 presents the results.

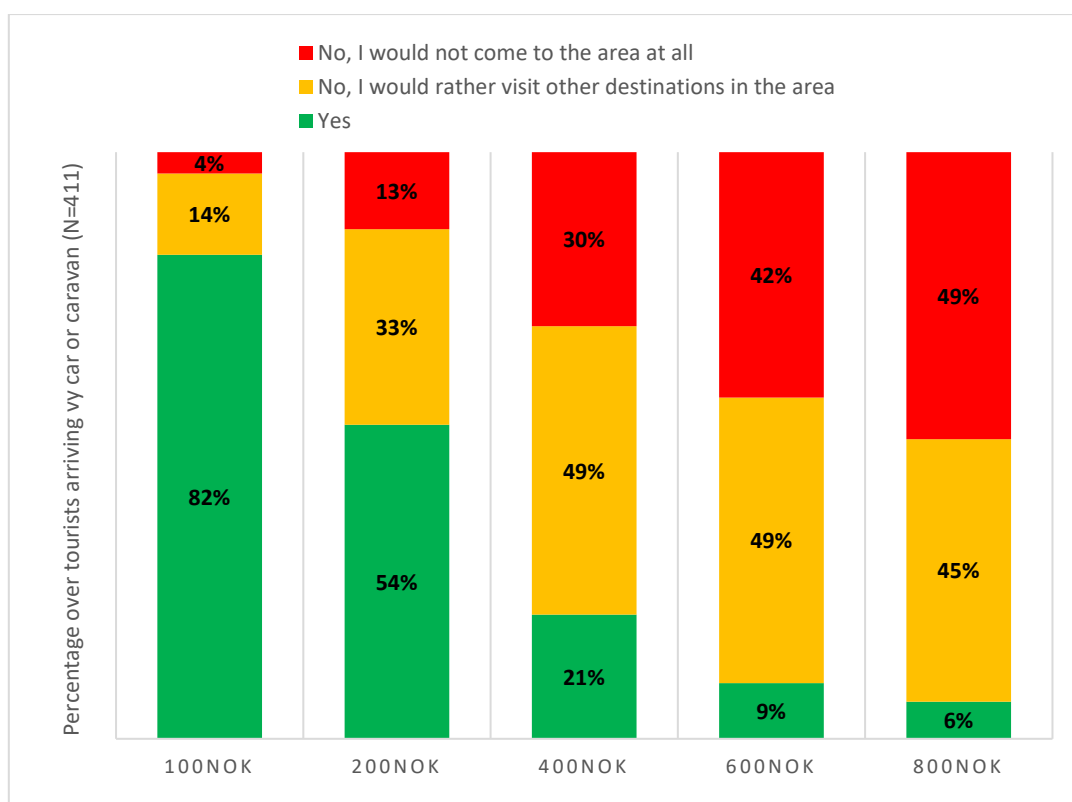


Figure 23: Tourists' responses to an extra road toll around Geiranger "Question: Would you still consider travelling to Geiranger if you had to pay ... road toll around Geiranger?" (1 euro ≈ 10 NOK)

For a fee of 100 NOK, 82% of tourist would still pay to visit the area, in contrast only 6% of them would pay 800 NOK. Car and caravan users had similar reactions to the hypothetical road toll, although for higher fees caravan users were less likely to pay, as for a fee of 800 NOK 54% of them would no longer visit Geiranger area, whilst for car users this share was 48%.

A potential bias for these results might yield in misunderstanding of the area that would be subject to the toll. It was apparently unclear to respondents where the toll would be, and which destinations would be outside of the toll. Therefore, using these data for modelling purposes should be done carefully.

4 Further use of the results

Transport models are a useful tool to simulate traffic on the roads for real or hypothetical scenarios. The results might serve to illustrate the traffic changes for different sustainable measures in order to provide more objective aspects into the decision-making process. The data survey described in this report will be used to design a basic transport model, which have been shown to provide good results in simple networks (Díez Gutiérrez, Tørset, Skjetne, & Odeck, 2017).

The model will be based on the four-step principles (Ortúzar & Willumsen, 2011). The firsts three steps assign the number of trips from an origin to a destination for different transport modes. The four step, route assignment, allocate the traffic from the different transport modes to the roads in the network. This last step is the main focus of our simple transport model.

Using the survey data, the input for the model will be trips with origin in the Møre region (see Figure 10) and Geiranger village as a destination, and trips with Geiranger village as origin and destination in the Møre region. These trips are already divided between transport modes as reported in Figure 9. The route assignment will be estimated following a logit model for selection of a route among the alternatives. The logit models are based on the principles of the Random Utility Theory, i.e. an individual associates an index of attractiveness, to each alternative and selects the one that maximises this index (Domencich & McFadden, 1975). The survey data will be used to detect the preferences of tourists within different route alternatives and build a mixed logit model to capture it.

The model will be validated with road counting stations as well as video-based traffic counts collected by SINTEF (Dahl & Meland, 2018), and further used to simulate different sustainable measures, such as road toll, or capacity limitations for some areas for example.

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Appendices (A): Questionnaire- English version

SUSTRANS survey SINTEF

Preview of version 1.0

Information

Bitte wählen Sie eine Sprache
Please select a language
Por favor, seleccione un idioma
Veuillez sélectionner une langue
Velg et språk
请选择一种语言

Deutsch (de)

English (en)

Español (es)

Français (fr)

Norsk (no)

简体字(ch-si)

Information

Your collaboration will help us enhance tourists' experience by improving the transportation system in Geiranger. This survey is part of a research project for Norwegian Research Council.

Answering the questions will take less than 10 minutes.

The collected data will be only used for research purposes and will not be shared with third parties. Participation is of course voluntary.

WhoRU

6 Are you a tourist or visitor to the Geiranger area?

♦ range:*

Yes

☐ 1

No

☐ 2

WhereRU	7 Are you currently ...
♦ filter:\WhoRU.a=1	
♦ range:*	
On your way to Geiranger?	☐ 1
On your way from Geiranger?	☐ 2
In Geiranger?	☐ 3
Not in Geiranger, but visited there recently?	☐ 4
♦ skip:exit	
None of these	☐ 5

Accommodation_In	8 Where did you stay last night?
♦ filter:\WhereRU.a=1	
♦ range:*	
Oslo	☐ 1
Bergen	☐ 2
Trondheim	☐ 3
Molde	☐ 4
Ålesund	☐ 5
Åndalsnes	☐ 6
Valldal	☐ 7
Stranda	☐ 8
Eidsdal / Norddal	☐ 9
Stryn	☐ 10
Grotli	☐ 11
On boat / cruise ship / hurtigruten	☐ 12
Other? If possible, please specify	Open
Don't know/Don't remember	☐ 13

Accommodation_Out	9 Where will you stay tonight?
♦ filter:\WhereRU.a=2	
♦ range:*	
Oslo	☐ 1

Accommodation_Out	9 Where will you stay tonight?
Bergen	☐ 2
Trondheim	☐ 3
Molde	☐ 4
Ålesund	☐ 5
Åndalsnes	☐ 6
Valldal	☐ 7
Stranda	☐ 8
Eidsdal / Norddal	☐ 9
Stryn	☐ 10
Grotli	☐ 11
On boat / cruise / hurtigruten	☐ 12
Other? If possible, please specify	Open
Don't know/Don't remember	☐ 13

Accommodation_G	10 Where did you stay the night before coming to Geiranger?
♦ filter: \WhereRU.a=3;4 ♦ range: *	
Oslo	☐ 1
Bergen	☐ 2
Trondheim	☐ 3
Molde	☐ 4
Ålesund	☐ 5
Åndalsnes	☐ 6
Valldal	☐ 7
Stranda	☐ 8
Eidsdal / Norddal	☐ 9
Stryn	☐ 10
Grotli	☐ 11
On boat / cruise / hurtigruten	☐ 12
Other? If possible, please specify	Open
Don't know/Don't remember	☐ 13

ID:Mode_of_Transport

Mode_In_Out	11 Which mode of transport are you using for this part of your trip? (besides ferry, should the trip include any)
♦ filter: \WhereRU.a=1;2 ♦ range: *	
Passenger car	☐ 1
Caravan/motorhome	☐ 2
Motorbike	☐ 3
Bicycle or on foot	☐ 4
Bus tour organised by Hurtigruten	☐ 5
Bus tour organised by other cruise ship	☐ 6
Other tourist bus	☐ 7
Regional bus	☐ 8
Private boat	☐ 9
Hurtigruten	☐ 10
Cruise ship	☐ 11
Other?	Open

Mode_G	12 Which mode of transport did you use for your trip to Geiranger? (besides ferry, should the trip include any)
♦ filter: \WhereRU.a=3;4 ♦ range: *	
Passenger car	☐ 1
Caravan/motorhome	☐ 2
Motorbike	☐ 3
Bicycle or on foot	☐ 4
Bus tour arranged by Hurtigruten	☐ 5
Bus tour arranged by other cruise ship	☐ 6
Other tourist bus	☐ 7
Regional bus	☐ 8
Private boat	☐ 9
Hurtigruten	☐ 10

Mode_G	12 Which mode of transport did you use for your trip to Geiranger? (besides ferry, should the trip include any)
Cruiseship	☐ 11
Other?	Open

operator_bus	13 Which bus operator do you travel with?
♦ filter:\Mode_In_Out.a=7 \Mode_G.a=7	
Name of operator	Open
Don't know/Don't remember	☐ 1

operator_Cruise	14 Which cruise company do you travel with?
♦ filter:\Mode_In_Out.a=6;11 \Mode_G.a=6;11	
AIDA Cruises	☐ 1
Azamara Club Cruises	☐ 2
Celebrity Cruises	☐ 3
Chrystal Cruises	☐ 4
CMV (Cruise & Maritime Voyages)	☐ 5
Costa Cruises	☐ 6
Cunard	☐ 7
Disney Cruise Line	☐ 8
Fred. Olsen Cruise Lines	☐ 9
FTI Cruises	☐ 10
Hapag-Lloyd Cruises	☐ 11
Holland America Line	☐ 12
Majestic International Cruises	☐ 13
Marella Cruises	☐ 14
MSC Cruises	☐ 15
Noble Caledonia	☐ 16
Norwegian Cruise Line	☐ 17
Oceania Cruises	☐ 18
P&O Cruises	☐ 19
Phoenix Cruises	☐ 20

operator_Cruise	14 Which cruise company do you travel with?
Plantours Cruises	☐ 21
Polar Cruises	☐ 22
Ponant	☐ 23
Princess Cruises	☐ 24
Pullmantur Cruises	☐ 25
Regent Seven Seas Cruises	☐ 26
Royal Caribbean	☐ 27
Seabourn	☐ 28
Silversea	☐ 29
Star Clippers	☐ 30
TUI Cruises	☐ 31
Viking Cruises	☐ 32
VTa (Voyages to Antiquity)	☐ 33
Windstar Cruises	☐ 34
Other. If possible, please specify	Open
Don't know/Don't remember	☐ 35

TypVeh	15 What type of vehicle is your car?
♦ filter:\Mode_In_Out.a=1 \Mode_G.a=1 ♦ range:*	
Electric car	☐ 1
Hybrid car	☐ 2
Diesel car	☐ 3
Petrol car	☐ 4
Don't know	☐ 5

ID:Route

Map1_route_In	16 Which route are you taking to go to Geiranger? (Click on one of the red arrows in the map below to indicate the general direction of your current trip)
---------------	--

♦ filter:\WhereRU.a=1&\Mode_In_Out.a=1;2;3;4

Map2_route_Out	17 Which route are you taking to go out of Geiranger? (Click on one of the red arrows in the map below to indicate the general direction of your current trip)
----------------	--

♦ filter:\WhereRU.a=2&\Mode_In_Out.a=1;2;3;4

Map1_route_G	18 Which route did you take to come to Geiranger? (Click on one of the red arrows in the map below to indicate the general direction of your trip to Geiranger)
--------------	---

♦ filter:\WhereRU.a=3;4&\Mode_G.a=1;2;3;4

RouteChoice	19 Why did you choose this route? (You can choose more than one option)
-------------	---

♦ filter:\Map1_route_In.a=*\Map2_route_Out.a=*\Map1_route_G.a=*

♦ range:*

- | | |
|---|-----------------------------|
| ♦ rot:r
I want to visit other places on the way | ☐ 1 |
| It is the only available route | ☐ 2 |
| It is the shortest route | ☐ 3 |
| It is the fastest route | ☐ 4 |
| It is the cheapest route | ☐ 5 |
| It is the safest route | ☐ 6 |
| It is a scenic route | ☐ 7 |
| It is most flexible (no worries about ferry time/ services) | ☐ 8 |
| There is less traffic | ☐ 9 |
| There are better facilities/ accommodations/ restaurants | ☐ 10 |
| ♦ exclusive:yes
♦ rot:n
Private reasons/ no specific reason | ☐ 11 |
| ♦ exclusive:yes
Someone else decided | ☐ 12 |

ID:Geir_Ferry

FerryIncon_EL	20 The Linge-Eidsdal ferry service is part of this route. How did you experience this?	
♦ filter: \Map1_route_G.a=2;3;4 ♦ range: *		
The ferry was an inconvenience for my trip		☐ 1
The ferry was an attraction for my trip		☐ 2
I did not take this ferry on my way to Geiranger		☐ 3

FerryIncon_HG	21 The Hellesylt-Geiranger ferry service is part of this route. How did you experience this?	
♦ filter: \Map1_route_G.a=9;13;14 ♦ range: *		
The ferry was an inconvenience for my trip		☐ 1
The ferry was an attraction for my trip		☐ 2
I did not take this ferry on my way to Geiranger		☐ 3

WaitingTime	22 How long did you wait for the ferry in the quay?	
♦ filter: \FerryIncon_EL.a=1;2 \FerryIncon_HG.a=1;2 Approximate minutes		
		1

TripPlan_nord	23 Did you plan your trip according to the ferry schedule?	
♦ filter: \FerryIncon_EL.a=1;2 \FerryIncon_HG.a=1;2 ♦ range: *		
Yes		☐ 1
No		☐ 2
Don't know		☐ 3

ID:SP_ferry

SPferry1_cars	24 Please now imagine that the ferry Linge-Eidsdal is replaced by a bridge. 25 Now, you have the possibility to choose that route instead, and not have to wait for a ferry. But you would have to pay 8€ (NOK 80) to pass the bridge. 26 Would you choose to change your route, and use the new bridge?
♦ filter:(\WhereRU.a=3&(\Mode_G.a=1&(\Map1_route_G.a=9;13;14&!\FerryIncon_HG.a=3)))(\WhereRU.a=2&(\Mode_In_Out.a=1&\Map2_route_Out.a=9;13;14)) ♦ range:* Yes, I would change my itinerary to use the bridge Linge-Eidsdal ☐ 1 No, I would keep using the route that includes the ferry Hellesylt-Geiranger ☐ 2 No, the route does not fit my itinerary ☐ 3	

SPferry1_caravan	27 Please now imagine that the ferry Linge-Eidsdal is replaced by a bridge. 28 Now, you have the possibility to choose that route instead, and not have to wait for a ferry. But you would have to pay 20€ (NOK 200) to pass the bridge. 29 Would you choose to change your route, and use the new bridge?
♦ filter:(\WhereRU.a=3&(\Mode_G.a=2&\Map1_route_G.a=9;13;14&!\FerryIncon_HG.a=3))(\WhereRU.a=2&(\Mode_In_Out.a=2&\Map2_route_Out.a=9;13;14)) ♦ range:* Yes, I would change my itinerary to use the bridge Linge-Eidsdal ☐ 1 No, I would keep using the route that includes the ferry Hellesylt-Geiranger ☐ 2 No, the route does not fit my itinerary ☐ 3	

SPferry1_motor	30 Please now imagine that the ferry Linge-Eidsdal is replaced by a bridge. 31 Now, you have the possibility to choose that route instead, and not have to wait for a ferry. In addition, it is free to cross the bridge. 32 Would you choose to change your route, and use the new bridge?
♦ filter:(\WhereRU.a=3&(\Mode_G.a=3&\Map1_route_G.a=9;13;14&!\FerryIncon_HG.a=3))(\WhereRU.a=2&(\Mode_In_Out.a=3&\Map2_route_Out.a=9;13;14)) ♦ range:* Yes, I would change my itinerary to use the bridge Linge-Eidsdal ☐ 1 No, I would keep using the route that includes the ferry Hellesylt-Geiranger ☐ 2 No, the route does not fit my itinerary ☐ 3	

SPFerry3	33 What if it was free to cross the bridge?
♦ filter:\SPferry1_cars.a=2 \SPferry1_caravan.a=2	

SPFerry3	33 What if it was free to cross the bridge?
♦ range:*	
Yes, then I would change my itinerary to use the bridge Linge-Eidsdal	☐ 1
No, I would keep using the route that includes the ferry Hellesylt-Geiranger	☐ 2

SPferry2_cars	34 Please now imagine that the ferry Linge - Eidsdal is replaced by a bridge. 35 Now, you don't have to wait for the ferry and the crossing time is lower. But you would have to pay 16€ (NOK 160) to pass the bridge (double the ferry ticket). 36 Would you use the new bridge?
♦	
filter: (\WhereRU.a=3&(\Mode_G.a=1&\Map1_route_G.a=2;3;4&!\FerryIncon_EL.a=3))(\WhereRU.a=2&(\Mode_In_Out.a=1&\Map2_route_Out.a=2;3;4))	
♦ range:*	
Yes, I would pay and use the bridge	☐ 1
No, I would rather change my itinerary	☐ 2
No, that route does not fit my itinerary anyway	☐ 3

SPFerry2_cars 2	37 Would you still use the new bridge if you would have to pay 24€ (NOK 240)?
♦ filter: \SPferry2_cars.a=1	
♦ range:*	
Yes, I would probably still pay and use the bridge	☐ 1
No, I would rather change my itinerary	☐ 2

SPferry2_caravan	38 Please now imagine that the ferry Linge - Eidsdal is replaced by a bridge. 39 Now, you don't have to wait for the ferry and the crossing time is lower. But you would have to pay 40€ (NOK 400) to pass the bridge (double the ferry ticket). 40 Would you use the new bridge?
♦	
filter: (\WhereRU.a=3&(\Mode_G.a=2&\Map1_route_G.a=2;3;4&!\FerryIncon_EL.a=3))(\WhereRU.a=2&(\Mode_In_Out.a=2&\Map2_route_Out.a=2;3;4))	
♦ range:*	
Yes, I would pay and use the bridge	☐ 1
No, I would rather change my itinerary	☐ 2
No, that route does not fit my itinerary anyway	☐ 3

SPFerry2_caravan2	41 Would you still use the new bridge if you would have to pay 60€ (NOK 600)?
♦ filter: \SPferry2_caravan.a=1	

SPFerry2_cara van2	41 Would you still use the new bridge if you would have to pay 60€ (NOK 600)?	
♦ range:*		
Yes, I would probably still pay and use the bridge		☐ 1
No, I would rather change my itinerary		☐ 2

SPferry2_moto r	42 Please now imagine that the ferry Linge - Eidsdal is replaced by a bridge. 43 Now, you don't have to wait for the ferry and the crossing time is lower. In addition, it is free to cross the bridge. 44 Would you use the new bridge?	
♦		
filter:(\WhereRU.a=3&(\Mode_G.a=3&\Map1_route_G.a=2;3;4&\FerryIncon_EL.a=3))(\WhereRU.a=2&(\Mode_In_Out.a=3&\Map2_route_Out.a=2;3;4))		
♦ range:*		
Yes, I would use the bridge		☐ 1
No, I would rather change my itinerary		☐ 2
No, that route does not fit my itinerary anyway		☐ 3

TransService_ G	45 What type of transportation service are you using while staying in the Geiranger area? (You can choose more than one option)
♦ filter: \WhereRU.a=3 ♦ range: *	
My own vehicle	☐ 1
Fjord safari, by RIB	☐ 2
Fjord sightseeing, by boat	☐ 3
Kayak tours	☐ 4
Bus tours	☐ 5
Rental bicycle	☐ 6
Rental El-car	☐ 7
Rental Limousins	☐ 8
Helicopter tour	☐ 9
♦ exclusive: yes None of these	☐ 10

TransService_ out	46 What type of transportation service did you use while staying in Geiranger? (You can choose more than one option)
♦ filter: \WhereRU.a=2;4 ♦ range: *	
My own vehicle	☐ 1
Fjord safari, by RIB	☐ 2
Fjord sightseeing, by boat	☐ 3
Kayak tours	☐ 4
Bus tours	☐ 5
Rental bicycle	☐ 6
Rental El-car	☐ 7
Rental Limousins	☐ 8
Helicopter tour	☐ 9
♦ exclusive: yes None of these	☐ 10

ID:Destinations

filter:\WhoRU.a=1

DestChoice_G	47 Which places have you visited / will you visit? (You can choose more than one option)
♦ range:*	
Geiranger centre	☐ 1
Ørnesvingen (Eagle road)	☐ 2
Dalsnibba	☐ 3
Flydalsjuvet	☐ 4
Fossevandring (Waterfall walk)	☐ 5
Storseterfossen (Waterfall)	☐ 6
Korsmyra - Hiking track	☐ 7
Knuten	☐ 8
Westerås Farm	☐ 9
Norwegian Fjord Centre	☐ 10
♦ exclusive:yes None of these	☐ 11
♦ exclusive:yes Don't know	☐ 12

LengthStayG	48 How long have you stayed / do you expect to stay (on shore) in Geiranger centre in total?
♦ filter:\DestChoice_G.a=1 ♦ range:*	
Less than 2 hours	☐ 1
From 2 to 8 hours	☐ 2
More than 8 hours	☐ 3

ChoiceSet	49 Which of these destinations indicated on the map have you heard about? (You can choose more than one option)
Ålesund	☐ 1
1. Åndalsnes	☐ 2
2. Trollstigen	☐ 3
3. Gudbrandsjuvet	☐ 4

ChoiceSet	49 Which of these destinations indicated on the map have you heard about? (You can choose more than one option)
4. Valldal	☐ 5
5. Hellesylt	☐ 6
6. Djupvatnet	☐ 7
7. Olden	☐ 8
8. Lovatnet	☐ 9
9. Bødalsbreen (glacier)	☐ 10
10. Jostedalsbreen (glacier)	☐ 11
♦ skip:MainAtt ♦ exclusive:yes None of these	☐ 12

CoiceSet_chan nel	50 Where did you hear about the destinations? (You can choose more than one option)
♦ range:*	
On the internet	☐ 1
From tour operator	☐ 2
From tourist info centres	☐ 3
From friends / someone I know	☐ 4
From locals	☐ 5
other?	Open
I don't know	☐ 6

DestChoice	51 Which places have you visited / will you visit? (You can choose more than one option)
♦ range:(\ChoiceSet.a) (12)	
Ålesund	☐ 1
Åndalsnes	☐ 2
Trollstigen	☐ 3
Gudbrandsjuvet	☐ 4
Valldal	☐ 5
Hellesylt	☐ 6
Djupvatnet	☐ 7

DestChoice	51 Which places have you visited / will you visit? (You can choose more than one option)	
Olden	☐	8
Lovatnet	☐	9
Bødalsbreen (glacier)	☐	10
Jostedalsbreen (glacier)	☐	11
♦ exclusive: yes None of these	☐	12

ID:Diverse

filter:\DestChoice_G.a=1;2;3;4;5;6;7;8\DestChoice.a=1;2;3;4;5;6;7;8;9;10;11

MainAtt	52 Would you describe Geirangerfjord area as one of the main attractions of your trip in Norway?
♦ range:*	
Yes	☐ 1
No	☐ 2
I don't know	☐ 3

FirstTime	53 Is it your first time in the Geirangerfjord area?
♦ range:*	
Yes	☐ 1
No	☐ 2

NightStay	54 How many nights have you stayed / do you expect to stay in the Geirangerfjord area in total?
♦ range:0:100	
Nights	1

AccessFee	55 Would you still consider travelling to Geiranger if:			
♦ filter:\DestChoice_G.a=1&(\Mode_In_Out.a=1;2\Mode_G.a=1;2)				
♦ range:*				
	Yes	No, I would rather visit other destinations in the area	No, I would not come to the area at all	
	1	2	3	
you had to pay 10€ (NOK 100) road toll around Geiranger?	☐	☐	☐	1
you had to pay 20€ (NOK 200) road toll around Geiranger?	☐	☐	☐	2
you had to pay 40€ (NOK 400) road toll around Geiranger?	☐	☐	☐	3
you had to pay 60€ (NOK 600) road toll around Geiranger?	☐	☐	☐	4
you had to pay 80€ (NOK 800) road toll around Geiranger?	☐	☐	☐	5

ID:Socioeconomics

Motiv	56 How important are the following aspects for you when choosing your destination?				
♦ filter:\WhoRU.a=1 ♦ range:*					
	Not important	Somewhat important	Quite important	Very important	
	1	2	3	4	
Nature	☐	☐	☐	☐	1
Outdoor activities	☐	☐	☐	☐	2
Cultural attractions	☐	☐	☐	☐	3
Local food	☐	☐	☐	☐	4
Safety	☐	☐	☐	☐	5
Quality of service/ accommodation	☐	☐	☐	☐	6
Relaxing	☐	☐	☐	☐	7
Extreme sports	☐	☐	☐	☐	8

Travelparty	57 Please describe your travel company. Are you travelling ...	
♦ filter:\WhoRU.a=1 ♦ range:*		
<i>As part of a tourist group</i>		
with family or friends, no children	☐	1
with family or friends, including children	☐	2
individually	☐	3
<i>Not part of a tourist group</i>		
with family or friends, no children	☐	4
with family or friends, including children	☐	5
individually	☐	6

Age	58 How old are you?	
♦ filter:\WhoRU.a=1 ♦ range:*		
under 18 years old	☐	1
18-24 years old	☐	2

Age	58 How old are you?
25-34 years old	☐ 3
35-44 years old	☐ 4
45-54 years old	☐ 5
55-64 years old	☐ 6
65-74 years old	☐ 7
75 years old or more	☐ 8
Prefer not to answer	☐ 9

Gender	59 What is your gender?
♦ filter:\WhoRU.a=1 ♦ range:*	
Male	☐ 1
Female	☐ 2
Prefer not to answer	☐ 3

Edu_Level	60 What is your highest completed level of education?
♦ filter:\WhoRU.a=1 ♦ range:*	
Lower than high school	☐ 1
High school	☐ 2
Bachelor degree	☐ 3
Master degree or higher	☐ 4
Prefer not to answer	☐ 5

EmployStat	61 What is your main status of employment?
♦ filter:\WhoRU.a=1 ♦ range:*	
Full-time employed	☐ 1
Part-time employed	☐ 2
Student	☐ 3
Unemployed	☐ 4

EmployStat	61 What is your main status of employment?
Retired	☐ 5
Prefer not to answer	☐ 6

Nationality	62 What is your country of residence?
	The list below is not exhaustive. Please specify other countries as appropriate at the bottom of the list.
♦ filter:\WhoRU.a=1	
AT - Austria	☐ 1
AU - Australia	☐ 2
BE - Belgium	☐ 3
CA - Canada	☐ 4
CH - Switzerland	☐ 5
CN - China	☐ 6
CZ - Czechia	☐ 7
DE - Germany	☐ 8
DK - Denmark	☐ 9
EE - Estonia	☐ 10
ES - Spain	☐ 11
FI - Finland	☐ 12
FR - France	☐ 13
GB - Great Britain	☐ 14
GR - Greece	☐ 15
IE - Ireland	☐ 16
IL - Israel	☐ 17
IS - Iceland	☐ 18
IT - Italy	☐ 19
LT - Lithuania	☐ 20
LV - Latvia	☐ 21
NL - Netherlands	☐ 22

Nationality	62 What is your country of residence?
	The list below is not exhaustive. Please specify other countries as appropriate at the bottom of the list.
NO - Norway	☐ 23
PL - Poland	☐ 24
PT - Portugal	☐ 25
RU - Russia	☐ 26
SE - Sweden	☐ 27
SK - Slovakia	☐ 28
US - USA	☐ 29
Other country of residence? Please specify	Open

County	63 In which part of the country are you residing?
♦ filter:\WhoRU.a=1&\Nationality.a=23	
Akershus	☐ 1
Aust-Agder	☐ 2
Buskerud	☐ 3
Finnmark	☐ 4
Hedmark	☐ 5
Hordaland	☐ 6
Møre og Romsdal	☐ 7
Nordland	☐ 8
Oppland	☐ 9
Oslo	☐ 10
Rogaland	☐ 11
Sogn og Fjordane	☐ 12
Svalbard	☐ 13
Telemark	☐ 14
Troms	☐ 15
Trøndelag	☐ 16

County	63 In which part of the country are you residing?
Vestfold	☐ 17
Vest-Agder	☐ 18
Østfold	☐ 19

Comments	64 If you have any comments about the questionnaire or the project, please write it below:
♦ filter: \WhoRU.a=1	Open

Information
♦ exit: yes ♦ filter: \WhoRU.a=1 ♦ status: COMPLETE Thank you for your participation!

Information
♦ exit: yes ♦ filter: \WhoRU.a=2 ♦ status: COMPLETE Thank you for your interest in the project. Unfortunately, you are not in the target group for this survey!



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