

Public Opinion on Route 12

Interim report on the second survey on the pilot experiment of an automated bus service in Neuhausen am Rheinfall

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Executive Summary (English)

Due to the potential advantages of autonomous vehicles for individual travellers and to the transportation system as a whole, it is essential to monitor public perception on this particular technological development. The execution of test runs with autonomous vehicles offers a good opportunity to do so. Associated with the introduction of Route 12 in Neuhausen am Rheinfall on the 27th of March 2018, the Institute of Science, Technology and Policy (ISTP) at ETH Zurich carried out a panel survey on the public perception of the test run as well as autonomous driving in general. In general, the test lab in Neuhausen am Rheinfall provides an excellent opportunity to assess whether and how such trials affect public perception, specifically regarding doubts and fears from a scientific perspective. The current report describes the process of data collection and presents the results for the second of three planned surveys in the Canton of Schaffhausen that was carried out between November 2018 and January 2019 among 957 respondents recruited from the first survey (response rate 81.7%). The results can be summarized as follows:

- Awareness of the test run increased by approximately 20 percentage points to 80%.
- Public perception of Route 12 and autonomous driving in general remained stable on high levels.
- Both residents and passengers assess the project of Route 12 as worthwhile.
- The agreement with test runs, slightly but significantly, increased.
- A total of 20,251 passengers used the bus in 2018, which is an average of 72 passengers per day. Generally, significantly more passengers were registered on weekends and hotter days.
- Ride experience with Route 12 is vastly rated as positive, both among residents and general passengers.

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Zusammenfassung (Deutsch)

Da selbstfahrende Fahrzeuge eine Vielzahl von Vorteilen für das Verkehrssystem im Allgemeinen und für die Reisenden im Besonderen bieten können, ist es unerlässlich, die öffentliche Wahrnehmung dieser technologischen Entwicklung zu untersuchen. Die Durchführung von Testläufen mit autonomen Fahrzeugen bietet dafür eine gute Gelegenheit. Im Zusammenhang mit der Einführung der Linie 12 in Neuhausen am Rheinfall führt das Institute of Science, Technology and Policy (ISTP) der ETH Zürich eine Panelbefragung zur öffentlichen Wahrnehmung des Testlaufs sowie zum autonomen Fahren im Allgemeinen durch. Generell bietet der Testversuch in Neuhausen am Rheinfall aus wissenschaftlicher Sicht eine exzellente Möglichkeit, zu beurteilen, ob und wie sich solche Versuche auf die öffentliche Wahrnehmung speziell in Bezug auf Zweifel und Ängste auswirken. Der aktuelle Bericht beschreibt den Prozess der Datenerhebung und stellt die Ergebnisse dieser zweiten von drei geplanten Befragungen vor. Die zweite Befragung wurde zwischen November 2018 und Januar 2019 unter 957 Teilnehmenden, welche aus der ersten Umfrage rekrutiert wurden (Rücklaufquote 81.7%), durchgeführt. Die Ergebnisse lassen sich wie folgt zusammenfassen:

- Die Bekanntheit des Testlaufs stieg um ca. 20 Prozentpunkte auf 80%.
- Die öffentliche Wahrnehmung der Route 12 und des autonomen Fahrens im Allgemeinen blieb auf hohem Niveau stabil.
- Sowohl BewohnerInnen als auch Passagiere bewerten das Projekt der Linie 12 als sinnvoll.
- Die Zustimmung für Testläufe ist leicht, aber signifikant gestiegen.
- Im Jahr 2018 nutzten insgesamt 20.251 Passagiere den Bus der Linie 12, was durchschnittlich 72 Passagieren pro Tag entspricht. Im Allgemeinen wurden an Wochenenden und heisseren Tagen deutlich mehr Passagiere registriert.
- Das Fahrerlebnis mit der Linie 12 wird sowohl von BewohnerInnen und Tagespassagieren als sehr positiv bewertet.

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1 Introduction

Autonomous vehicles will substantially change traffic as we know it today. The respective transition thus offers a great potential regarding various advantages for the current transportation system in general and travellers in particular. Ushered by advances in sensing, computing power, and electronics, autonomous vehicles are etching closer towards our roads. Thus, as an uptake of autonomous vehicles will highly depend on population acceptance, it becomes essential to monitor public perception on this technological development. The execution of test runs with autonomous vehicles offers then a good opportunity to assess public opinion on this issue. Since March 27th 2018, a self-driving bus has operated daily for four hours in Neuhausen am Rheinfall, and in 2018, it transported over 20,251 passengers within the municipality of Neuhausen am Rheinfall. Altogether, the main focus of this test run has been to determine how an automated vehicle behaves in various traffic situations.

In order for autonomous vehicles to become a reality in public transport, their operation must exclude attending agents. Only by implementing solutions for the first and last mile using flexible small vehicles at low costs, do we maximise their benefits. Nevertheless, this requires adjustments to laws and regulations. In a democracy, such adjustments can only be made if the population desires these changes, and it is, therefore, clear that the public's acceptance of automated driving is of crucial importance.

In order to examine public acceptance with an objective criteria, the Institute for Science, Technology and Politics (ISTP) at ETH Zurich conducted a panel study on public perception of the local population and passengers alike. Randomly selected individuals in three municipalities of the Canton of Schaffhausen (Neuhausen am Rheinfall, Stein am Rhein and Thayngen) were invited to participate in a panel study before the project and two times throughout. Additionally, passengers of the Route 12 shuttle were invited to participate in a short questionnaire. The questions revolve around the project itself and autonomous driving in general.

Previous studies on autonomous driving have mainly focused on the technical optimisation of vehicles, while specific questions regarding the community's view on autonomous driving technologies remained mostly unanswered. Our research project thus concentrates on the public perception of autonomous driving and the introduction of an autonomous shuttle service. We investigate support, fears, and concerns regarding the introduction of an autonomous bus service in Neuhausen am Rheinfall, as well autonomous driving in general. Moreover, this report summarises the usage of the Line 12 in 2018 and investigates how individuals experienced driving with the autonomous bus.

This report is structured as follows: The second chapter will outline the execution of the second survey, as well as its responses. Second, results of the survey regarding public perception will be discussed in comparison to the first survey. The result section also provides an overview

on the usage of Route 12 in 2018, as well as results on passengers ride experience. Lastly, a conclusion rounds off the report.

2 Survey wave 2

This section describes the survey procedure for the second of our three survey waves. In November of 2018, we sent out an invitation to participate in one of two follow-up surveys to 1,142 residents of the three municipalities Neuhausen am Rheinfall, Stein am Rhein and Thayngen in the canton Schaffhausen who already participated in the first survey. The recipients were initially drawn randomly from the register of residents of the three municipalities Neuhausen am Rheinfall, Stein am Rhein, and Thayngen. All participants were aged 18 or older.

2.1 Survey procedure

At the end of the first survey (Wicki and Bernauer 2018), respondents were asked whether they wanted to participate in a second and third part, and were informed about the incentive of CHF 10 for these two parts. If the respondents indicated a willingness to partake in the survey, they either received a personal direct link to participate or an invitation letter with a web address and an individual access code for the online survey, which was conducted using a web script hosted by Qualtrics.

Individuals who requested a paper-and-pencil version in the first survey were again sent a paper version of the questionnaire. This approach allows subjects without access to a computer or an internet connection to participate (mainly people of old age). This approach is based on an internet penetration rate in Switzerland of 87% and thus a pure online questionnaire would exclude approximately 13% of the population of interest. Such an exclusion could lead to population coverage issues. Moreover, wanting computer skills may still hinder the ability to participate in the survey, even if individuals have access to internet. Therefore, to address this coverage bias, we employ a mixed mode survey, as suggested by Sterret et al. (2017).

2.2 Responses

Table 1 shows the response rate and number of responses for the online and paper and pencil versions, as well as the general number of respondents for the second survey (based on the number of individuals recruited from the first survey, $N=1142$). Unsurprisingly, as respondents were contacted for the second time, the contact rate (contact rate 3) was high with 99.5%. 0.4% of the contacted individuals actively refused the participation of the second survey (refusal rate 3), even though they initially agreed to after the first survey. The response rate for the second survey was 81.7% (response rate 1), or 83.6% when partial answers were included

(response rate 2). The cooperation rate was 82.1% (cooperation rate 1) and 84.2% (cooperation rate 2) respectively. In general, the response was slightly better for the paper and pencil versions. Overall, the turnout of the second survey was comparably higher, as one could expect based on similar approaches (Axhausen, Schmid, and Weis 2015).

Table 1: Responses, response rates and scope of random sample^a

	Second Survey		
	Online	Paper	Total
Complete responses {I}	879	54	933
Partial Responses {P}	24	0	24
Refusal and dropout {R}	5	0	5
Not contacted {NC}	6	0	6
Other {O}	166	8	174
Used sample {TS}	1080	62 ^b	1142
Response rate 1 $\{I/TS\}$	0.814	0.871	0.817
Response rate 2 $\{(I+P)/TS\}$	0.836	0.871	0.838
Cooperation rate 1 $\{I/(TS-NC)\}$	0.818	0.871	0.821
Cooperation rate 2 $\{(I+P)/(TS-NC)\}$	0.841	0.871	0.842
Cooperation rate 3 $\{I/(I+P+R)\}$	0.968	1.000	0.970
Cooperation rate 4 $\{(I+P)/(I+P+R)\}$	0.994	1.000	0.995
Refusal rate 3 $\{R/TS\}$	0.005	0.000	0.004
Contact rate 3 $\{(TS-NC)/TS\}$	0.994	1.000	0.995

^a The numbers correspond to a response rate, cooperation rate, refusal rate and contact quota defined by the American Association for Public Opinion Research (The American Association for Public Opinion Research 2016).

^b Corresponds to the number of people who requested and received a paper version of the survey.

Figure 1 shows the stages of the first survey. Initially, we contacted a sample of 1,142 residents of the three municipalities Neuhausen am Rheinfall, Stein am Rhein, and Thayngen in the Canton of Schaffhausen, recruited from the first survey wave (Wicki and Bernauer 2018). Of this originally contacted sample, 6 people were not contacted or were not available due to reasons such as illness. Of the remaining sample, 5 individuals contacted us to confirm that they were not taking part. Of the remaining people invited, 957 started the survey and 933 completed it. A total of 24 participants completed the survey partially, and overall, 174 people did not respond to the invitation, but will get contacted again for the third wave.

Figure 1: Survey stages and participation

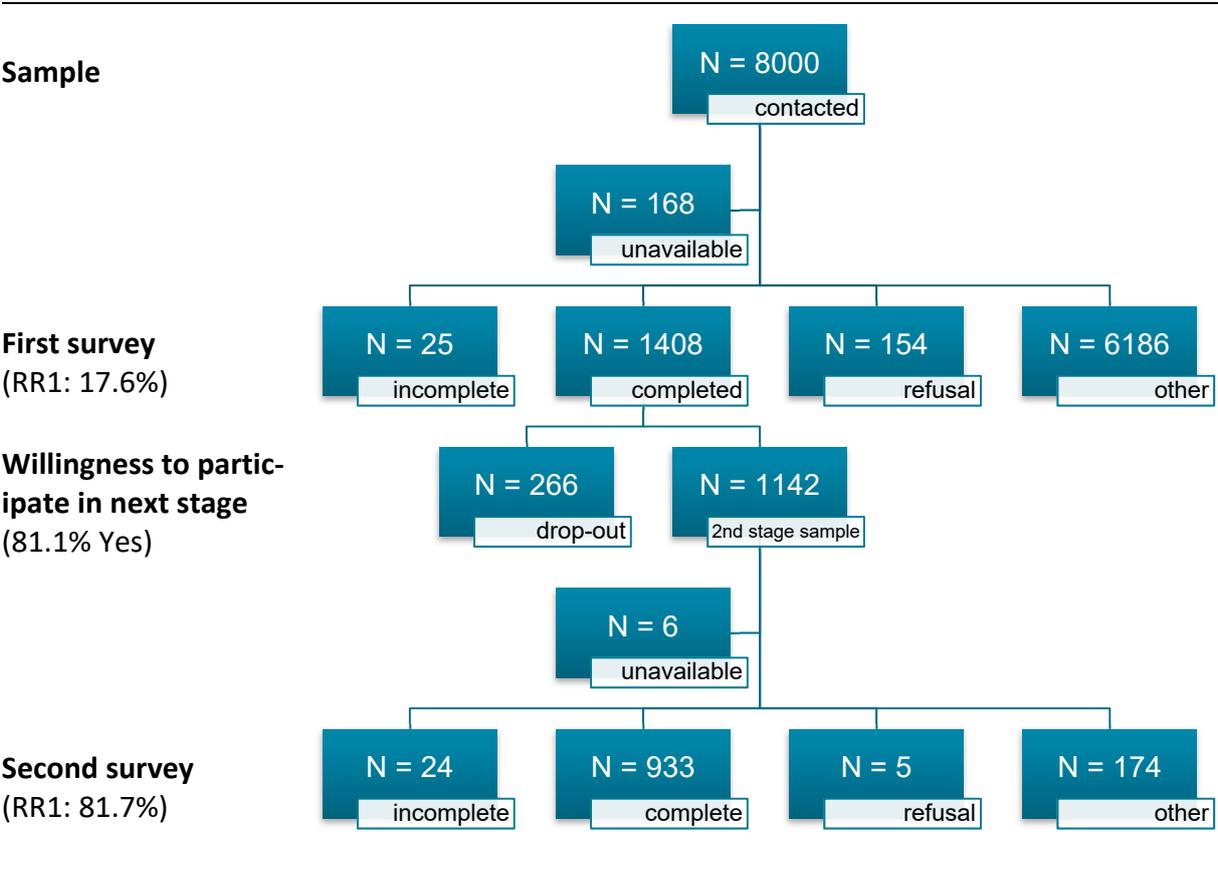
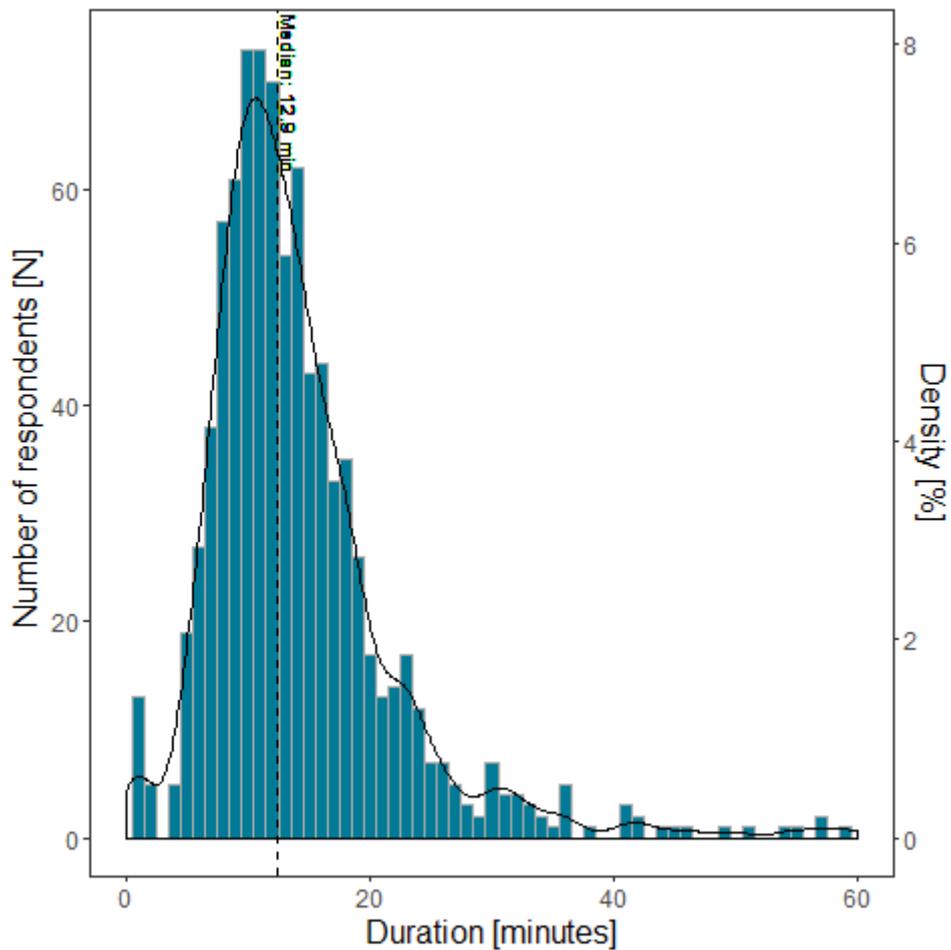


Figure 2 shows the distribution of response time in minutes. The median was 12.9 minutes. Partial responses and participants who did not consent on the consent form at the beginning of the survey are excluded. The graph only includes response times below 60 minutes. Compared to the first survey, the average response time was 4 minutes lower.

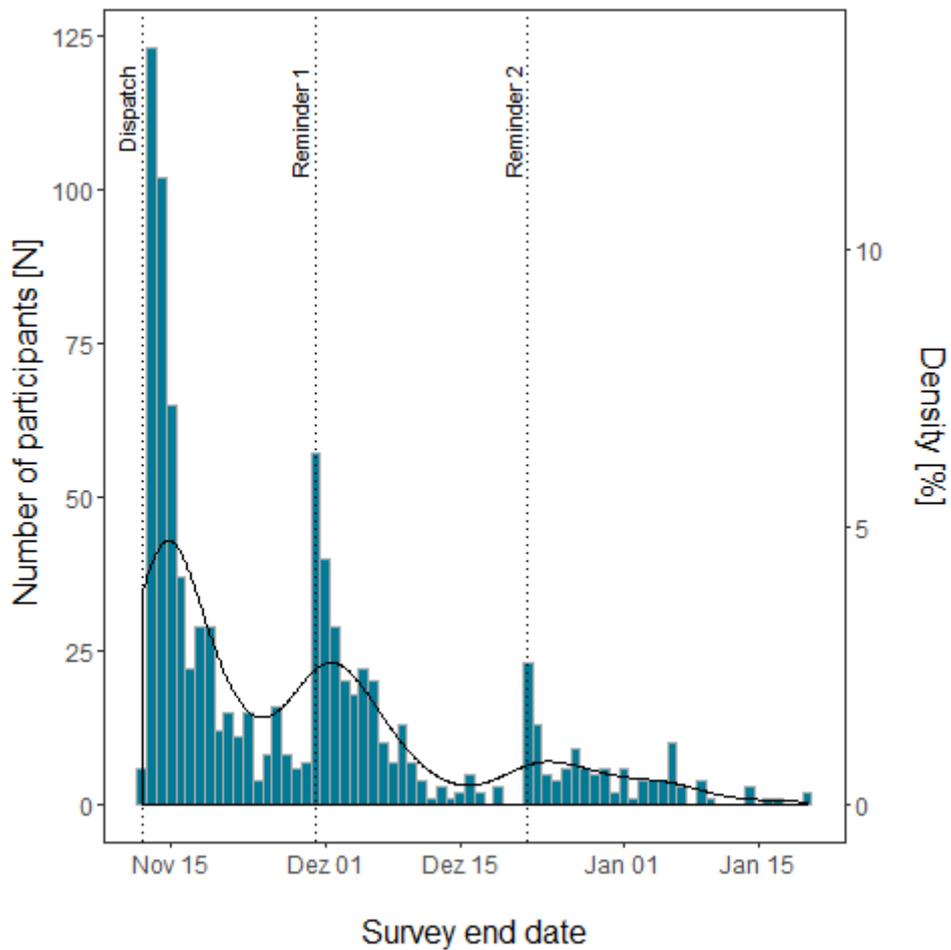
Figure 2: Distribution of response time in minutes



Note: The graph displays the distribution of response time in minutes excluding responses above 60 minutes.

Figure 3 provides an overview of the timeline of participants' response to the second part of the survey. The dashed lines show the dispatch of the invitation as well as reminder letters. The survey was dispatched by email (N=804), postal online survey invitation (N=277), and/or as a paper-and-pencil version (N=62) on November 12th 2018. Individuals to whom the email was undeliverable were contacted by postal letter one week later (N=47). Two and a half weeks later, on November 30th 2018, respondents who did not have completed the survey were sent a reminder letter (N=176) or a reminder email (N=412). A second reminder letter was sent on December 20th 2018, by postal letter only, to 316 individuals who had not participated by then, as some participants might have not been reached via email.

Figure 3: Distribution of survey completions by date



2.3 Sample

Table 2 shows the participation choice model of the full sample as well as the first survey sample for the second survey. It compares people who participated in the second survey with the rest of the total sample that did not participate (1) and with the respondents from the first survey (2). In order to do this, a binary logistic regression model was estimated to assess the impact of socioeconomic factors on actual participation behaviour. It can be observed that compared to the initial random sample – as it was the case in the first survey – females, younger individuals, and inhabitants of Neuhausen am Rheinfall were less likely to participate. Compared to the first survey, again, younger participants were less likely to participate in the second survey. Altogether, the participants in our survey are not completely representative of the general population and should be accounted in future analysis, for instance by controlling for sociodemographic factors.

Respondents often drop out of multi-part studies (Abrahamse et al. 2007; Wicki et al. 2018). Thus, to test whether the drop-out was systematic, we examined whether respondents who completed both surveys systematically differed from respondents who participated in the first

survey in terms of their socio-demographics and travel behaviour. We also controlled for political preferences but found no statistically significant effect. The results are shown in Table 3. Compared to respondents who participated only in the first survey, respondents who completed both questionnaires were younger and had a higher educational level. The result for age also explain crowding out of the indicator in Table 2. In addition, respondents who did not report their income in the first survey were less likely to participate in the second survey.

Table 2: Participation behaviour by sociodemographics

	<i>Dependent variable:</i>	
	Participation 2nd survey	
	Full sample (1)	First survey sample (2)
Male [dummy]	0.418*** (0.071)	0.052 (0.115)
Stein am Rhein ¹	0.377*** (0.088)	0.145 (0.144)
Thayngen ¹	0.146* (0.082)	-0.031 (0.132)
Age	0.104*** (0.012)	0.055*** (0.019)
Age*Age	-0.001*** (0.0001)	-0.001*** (0.0002)
Constant	-5.177*** (0.322)	-0.709 (0.474)
Observations	8,001	1,423
Log Likelihood	-2,834.581	-901.044
Akaike Inf. Crit.	5,681.162	1,814.088
<i>Note:</i>	* p<0.1; ** p<0.05; *** p<0.01	
<i>Reference category:</i>	¹ Neuhausen am Rheinfall	

2.4 On-bus survey

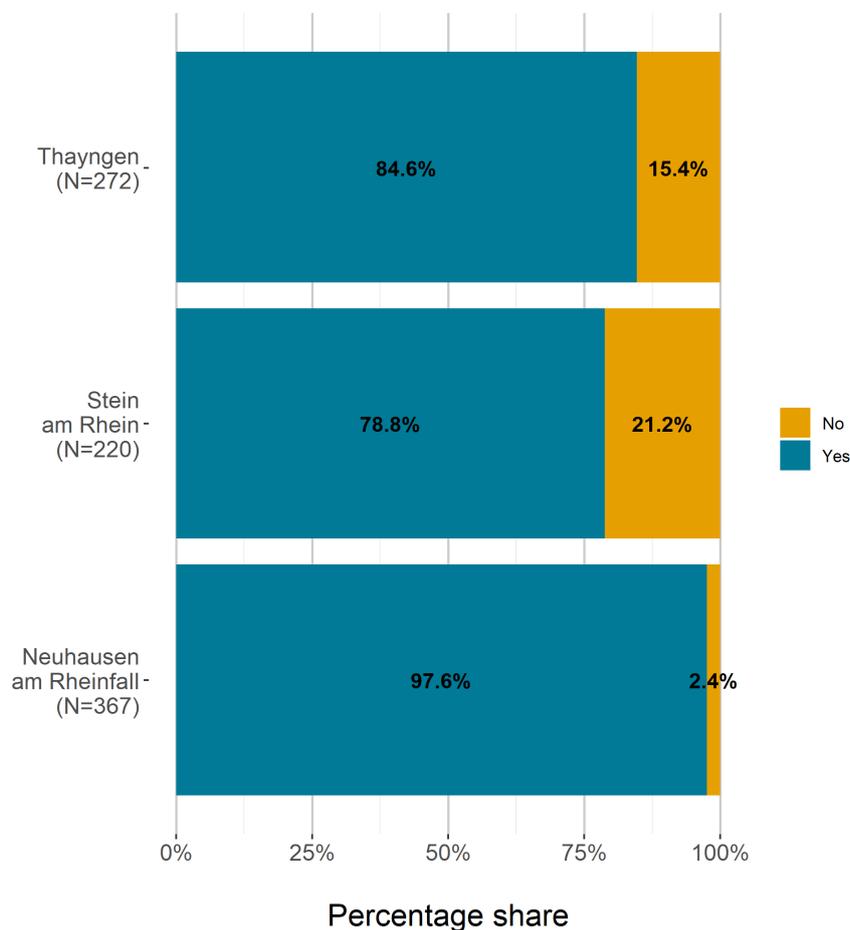
In Addition to the residential survey, we also provided passengers with the possibility to indicate their feedback on the ride with the Trapizio on Route 12. Passengers had the possibility to access a short 5 minute online survey with a short web link and a QR code. The survey consists of a total of 12 questions that are identical to the residential survey in order to allow for comparison. The survey is live and accessible since April 25th and received a total number of 251 complete responses within the first year. The sample is non-representative and consists of 25% female respondents. The respondents are on average 46 years old and 75% of them live in Switzerland. The survey is still ongoing and the results presented in this report are therefore only preliminary.

3 Results

The following chapter details initial results from the second survey. To begin with, we discuss questions regarding public perception of Route 12 and autonomous driving in general, and afterwards, we discuss insights on the operation of the first nine months of pilot study for Route 12 in Neuhausen am Rheinflall regarding usage and ride experience.

3.1 Public Perception Route 12

Figure 4: Awareness about the Route 12 test run by municipality



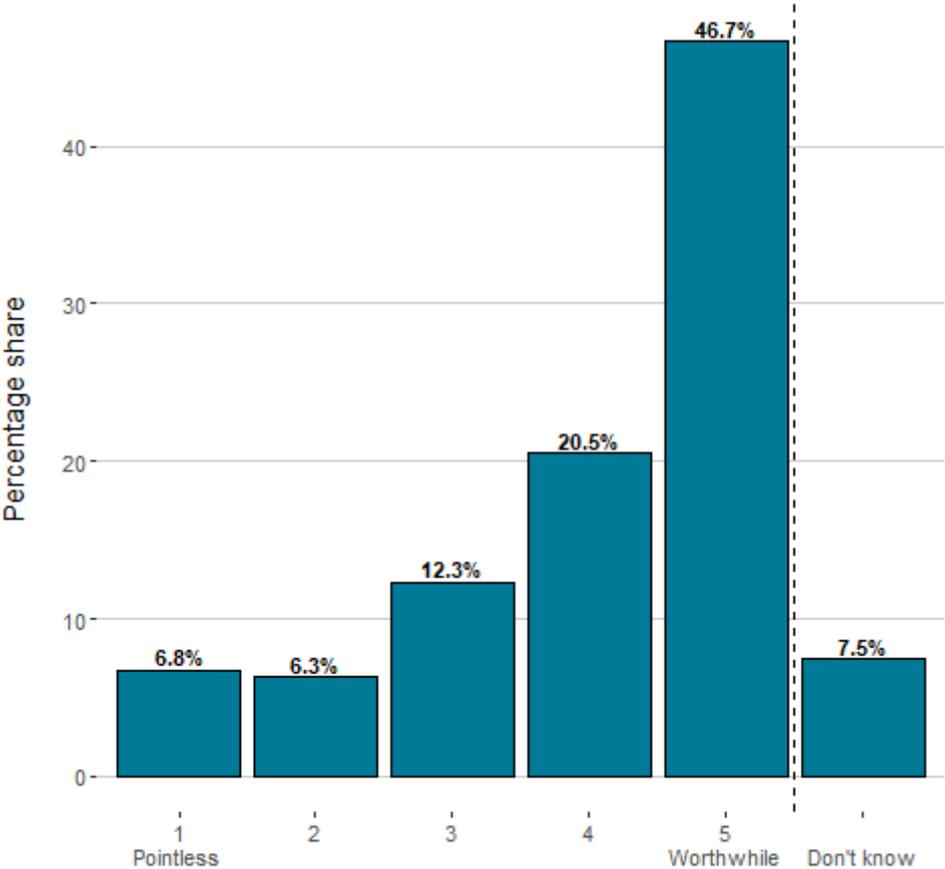
Note: Awareness about the test run was coded «yes» if the participants could answer both the question « Do you know whether tests with autonomous cars or buses are planned or already taking place in the Canton of Schaffhausen?» with “Yes”, as well as the question “In which municipality in the Canton of Schaffhausen do you think such tests with autonomous cars or buses are taking place?” with “Neuhausen am Rheinflall”. All other participants were coded as “No”.

As for the test trial in Neuhausen am Rheinflall, the awareness of residents about Route 12 departs from an interesting perspective. Figure 4 shows whether respondents among the

three municipalities are aware about the test run in Neuhausen am Rheinflall, and generally, knowledge about the test run is very high at almost 90%. Unsurprisingly, Neuhausen am Rheinflall residents have the highest knowledge at 97.6%, while people in Stein am Rhein are the least informed about the test (78.8%), a drop that could be explained given the geographical distance from the test trial of Route 12 among to the three municipalities. Compared to the first survey that was conducted before the launch of Route 12, knowledge about the test trial overall increased by approximately 20 percentage points.

A similar pattern is observable for the question of the project Route 12. Around 67% of participants who were aware of the project have chosen the two highest categories on a scale of “pointless” to “worthwhile”. Figure 5 summarises these results. Moreover, it can also be seen that not even 15% of participants chose the two lowest categories. Public support for Route 12 seems to thus be clearly given. Compared to the first survey, general assessment of Route 12 slightly increased with around four percentage points less in the lowest two categories and seven percentage points more in the two highest categories.

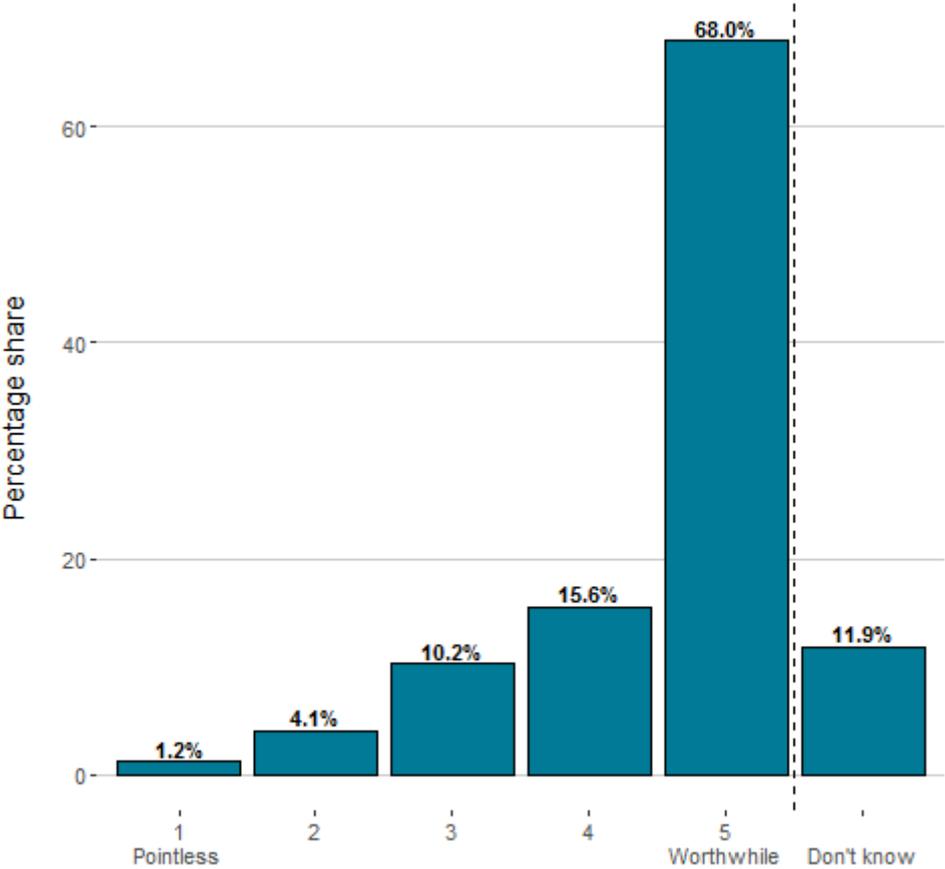
Figure 5: General assessment of Route 12 (residents, N=844)



Note: Answer to the question «How do you assess the autonomous bus project in Neuhausen am Rheinflall in general?»

This general assessment of the Route 12 project is even more positive for individuals who completed a small questionnaire after they used the bus (see Figure 6), and among 261 respondents, around two thirds, assess the project as worthwhile. Overall, less than six percent chose one of the two lowest categories stating that they do not see the point in the project.

Figure 6: General assessment of Route 12 (passengers, N=244)



Note: Answer to the question «How do you assess the autonomous bus project in Neuhausen am Rheinfall in general?»

Figure 7 summarises several aspects regarding project Route 12 public perception. The same question was asked in the first survey conducted in early 2018 (see Wicki and Bernauer 2018). Comparably, the general picture looks rather similar even though some findings can be stressed out. While there are even less doubts that the project does not cause a risk and why Route 12 is being tested in Neuhausen am Rheinfall is questioned even less, participants still seem to only be superficially informed about the project. An even larger majority of participants stated that they did not know whether the public’s consent was accounted or whether the public’s concerns are taken seriously. Additionally, most participants do not know whom

to contact regarding potential questions about the project. Altogether, it appears that improvements on availability of information and communication through the responsible authorities remains wanting.

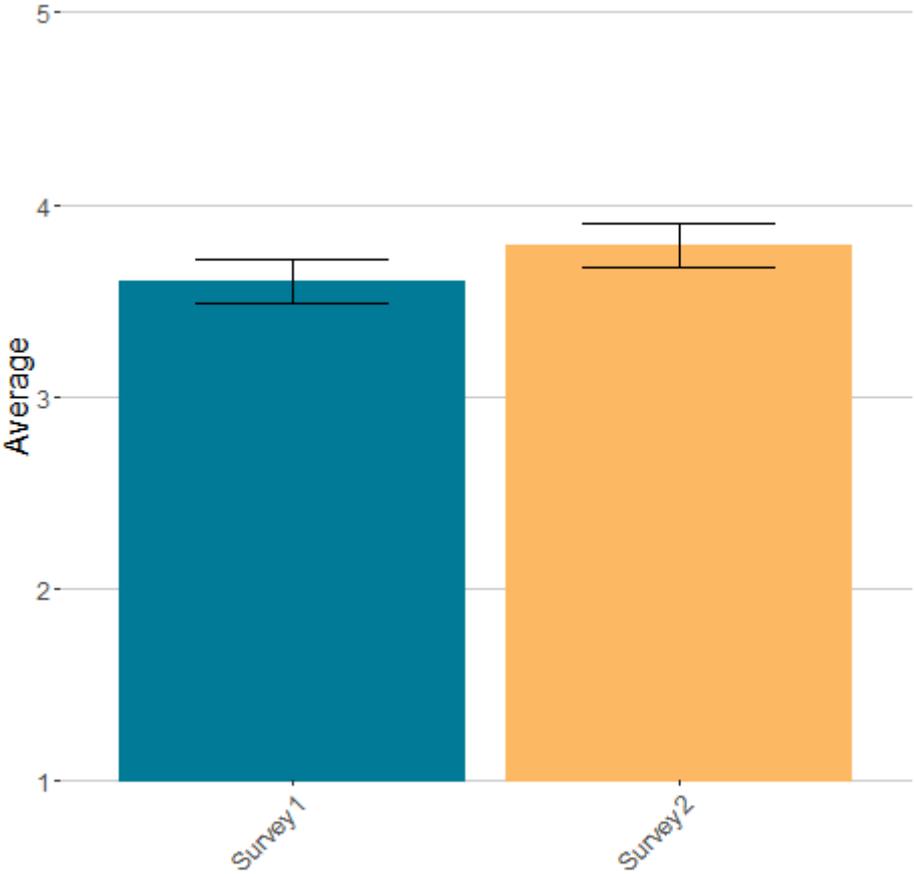
Figure 7: Public perception of Route 12 (residents, N=639)



Note: Responses to the question «How concerned or not concerned are you about the below listed statements regarding autonomous vehicles?».

In Switzerland, there have been several test trials with self-driving vehicles. Figure 8 shows whether the participants in the three municipalities agree with those. Generally it can be said that a majority agrees with such tests. Comparing the results from the first to the second survey, the support for such tests significantly increased, indicating that experiencing the Route 12 bus positively affected public perception.

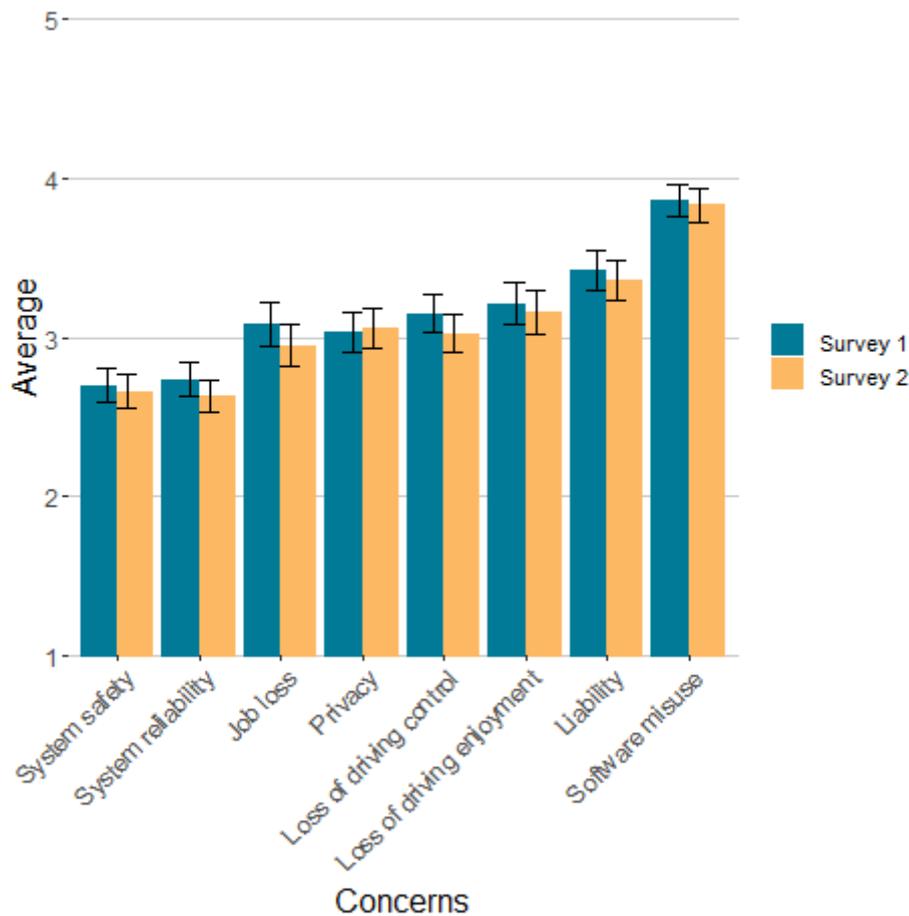
Figure 8: Agreement with test runs in Switzerland. Comparison of 1st and 2nd survey (N=955).



Note: Responses to the question «Autonomous cars and buses are currently being tested at various locations in Switzerland. In general: How much do you support or reject such attempts?» on a scale of 1 (totally reject) to 5 (fully support). The average represents the responses for the same individuals in both surveys. The ranges represent the 99% confidence intervals of the replies and thus the statistical margin of error.

Figure 9 shows the extent to which survey participants agreed or disagreed with the listed concerns regarding autonomous driving. The results are displayed for both, survey 2 and the responses by the same respondents in survey 1. In order to collect respondents concerns regarding autonomous driving, participants were asked to rate their concern about specific statements regarding the comprehensive introduction of autonomous cars and buses. Overall, no significant changes in general concerns of AVs can be observed. However, the average level for all concerns, despite privacy, was lower in the second survey compared to the first survey. This is in line with the higher average support of test runs displayed in Figure 8.

Figure 9: Concerns regarding autonomous driving. Comparison of 1st and 2nd survey (N=939).

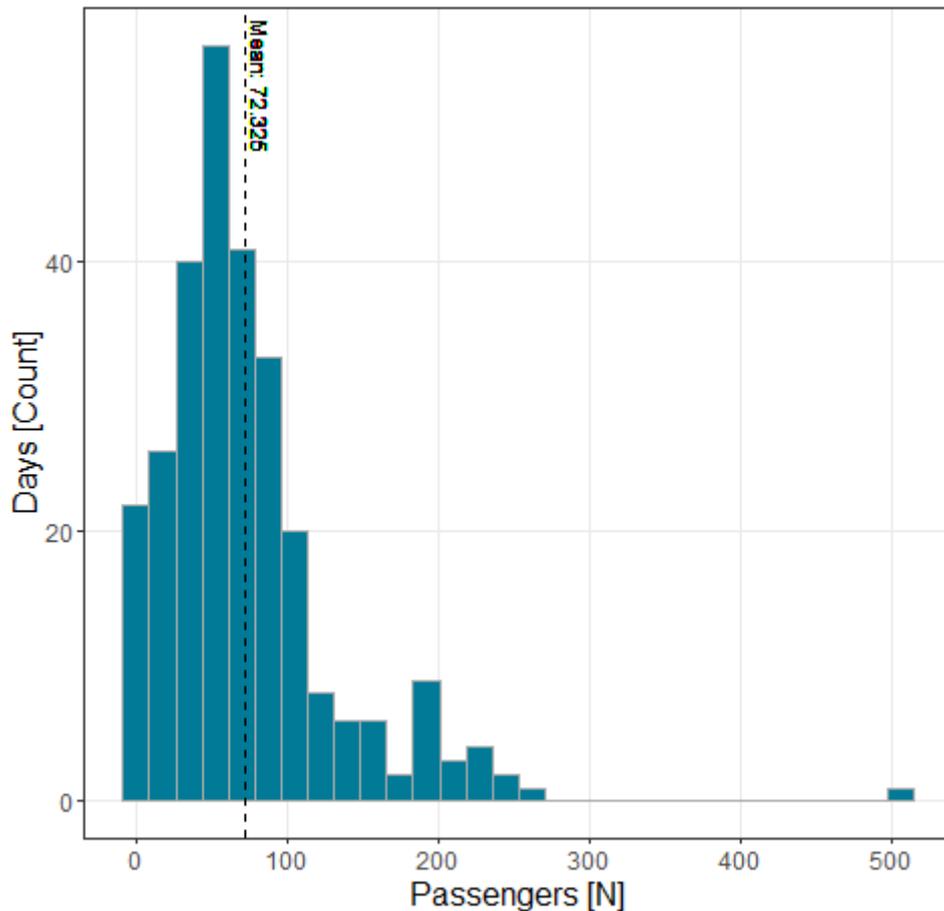


Note: Responses to the question «How much do you agree or disagree with the following statements? The idea that autonomous cars and buses will be introduced throughout the country worries me, because...» on a scale of 1 (strongly disagree) to 5 (strongly agree). The average represents the responses for the same individuals in both surveys. The ranges represent the 99% confidence intervals of the replies and thus the statistical margin of error. If the confidence intervals of two replies do not overlap, the means for those replies are statistically different.

3.2 Test Period

Route 12 has operated daily for four hours in Neuhausen am Rheinfall since March 27th 2018, and at the end of 2018, the bus had carried a total of 20,251 passengers on 280 days. This results in an average mean of approximately 72 passengers a day, as well as a median and mode of 60 passengers per day. Only in a handful of occasions did the number of passengers rose above 100 per day, with one notable exception, the opening hall of the SIG-Areal, which recorded 507 passengers on one single day. Below, Figure 10 displays a histogram of Route 12 passengers per day based on official passenger numbers for Route 12 provided by the Verkehrsbetriebe Schaffhausen (VBSH).

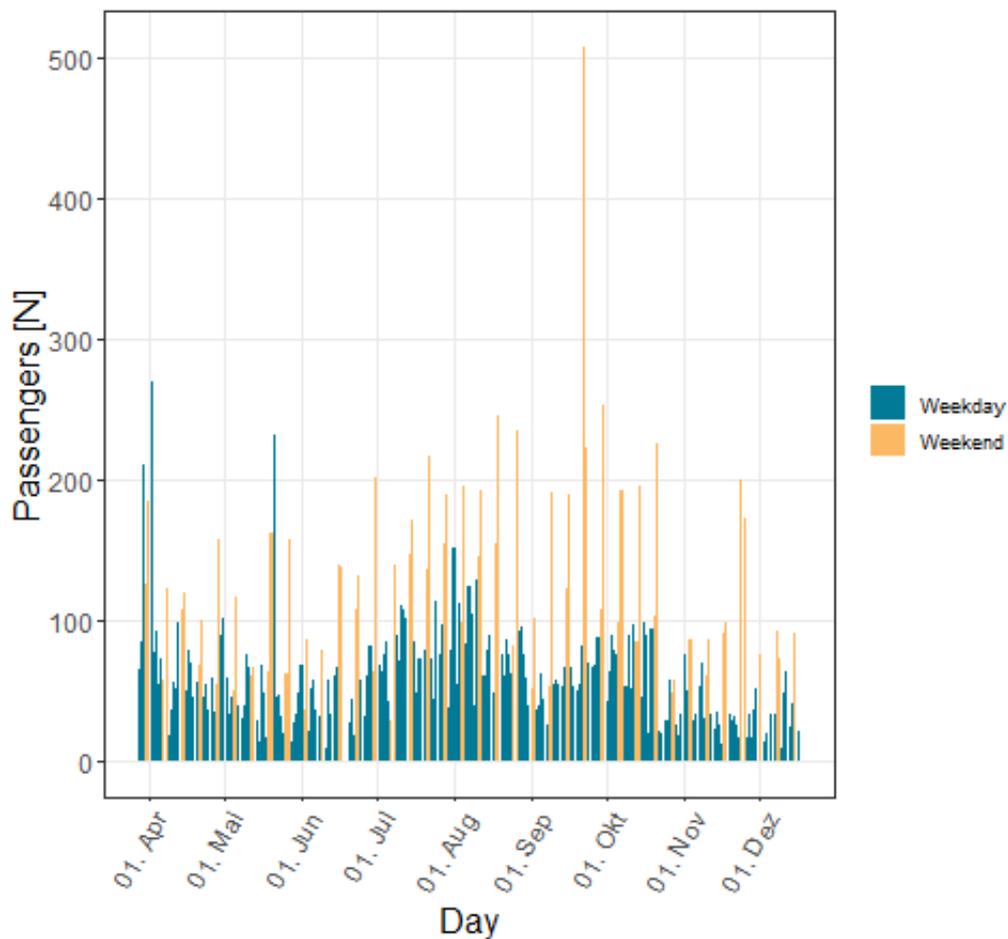
Figure 10: Histogram of Route 12 passengers per day in 2018



Note: The histogram displays the frequency distribution of daily passengers on Route 12. The heights of the bars display the frequency of days.

Figure 11 displays the number of passengers on a timeline. Overall, it appears that more passengers were registered on weekends. This is especially not surprising for Sundays, as over the summer months Route 12 operated during 8 hours on Sunday instead of the usual 4 hours for other weekdays. Additionally, some peak periods can be identified: At the beginning, when Route 12 was launched, in mid-May as well as around the first of August (holiday season).

Figure 11: Passengers of Route 12 by day in 2018

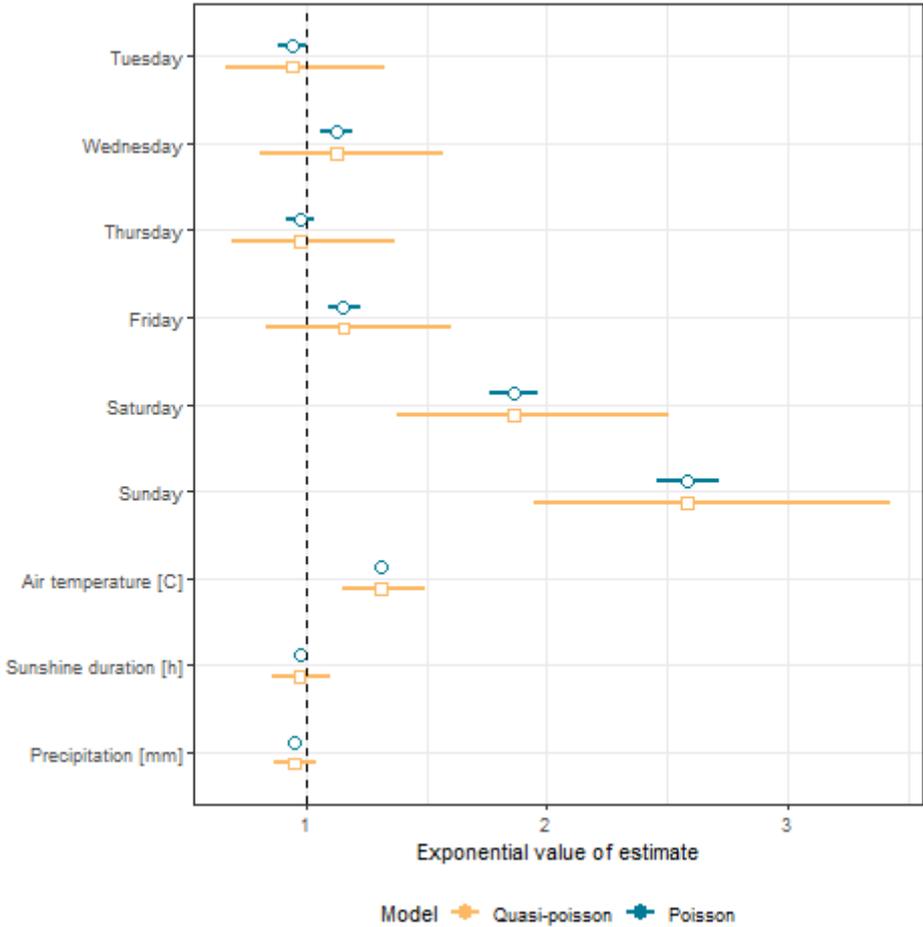


Poisson distribution is most commonly used to find the probability of events occurring within a given time interval. Since the amount of passengers per day displays count data with a Poisson distribution, the dependent variable must be 0 or higher. A Poisson Regression model is a Generalized Linear Model (GLM) that is used to model such count data. The output Y (count) is a value that follows the Poisson distribution. Clearly, the present data is not in the form of a bell curve like in a normal distribution as is displayed in Figure 10. For the Poisson model, the Residual Deviance is greater than the degrees of freedom, which means that over-dispersion exists. This means that the estimates are correct, but the standard errors (standard deviation) are wrong and unaccounted for by the model. Quasi-Poisson controls for such an over-dispersion that only affects the standard errors.

Figure 12 summarizes the results of the two Poisson models. For the weather data, we used ground station data for Schaffhausen provided by the Federal Office of Meteorology and Climatology MeteoSwiss (2018). Overall, the two models indicate robust results regarding the

amount of passengers on weekends (Saturday and Sunday), as well as on days with comparably higher air temperature. Among other weekdays, no robust difference can be observed. The same appears for daily sunshine duration and precipitation in mm. Thus, passengers appear to have used the Route 12 more often on weekends, as well as on days with an on average higher temperature.

Figure 12: Passengers of Route 12 by day



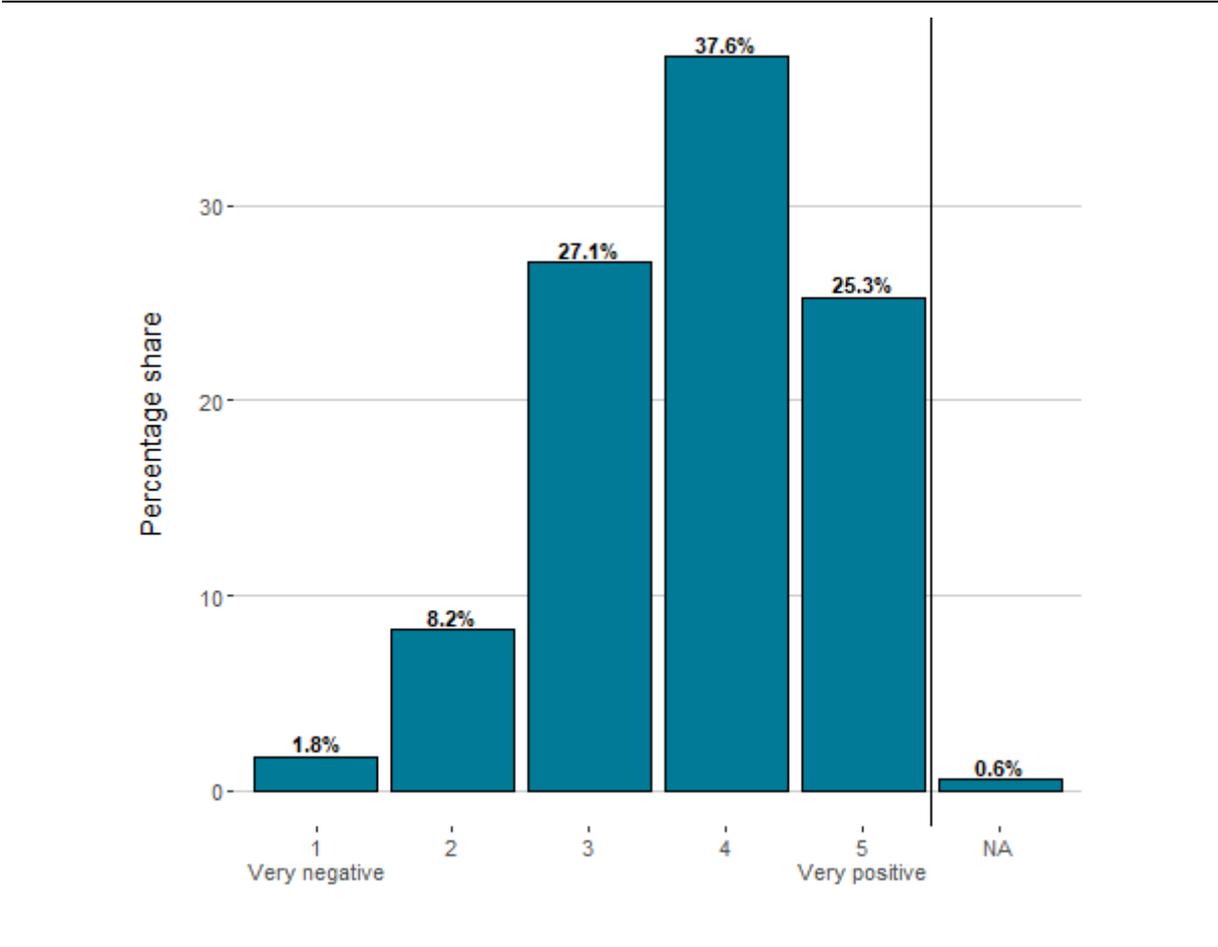
Note: The Baseline for weekdays is Monday. The full Poisson regression models can be found in Table A1 in the Appendix. Results can be interpreted as follows: For a one unit change in the predictor variable, the difference in the expected counts is expected to change by the respective regression coefficient, given the other predictor variables in the model are held constant.

3.3 Ride Experience

Ride experience is likely to highly affect the perception of autonomous vehicles in general and Route 12 specifically. Therefore, we included questions for respondents who indicated to have tried out the autonomous bus on route 12 already. Figure 13 summarizes responses on the

general perception of the trip as rated by the residential sample. Overall, a vast majority of around 63% of the respondents that had already used Route 12 rated their experience as rather or very positive, whereas only 10% of the respondents indicated the experience as negative.

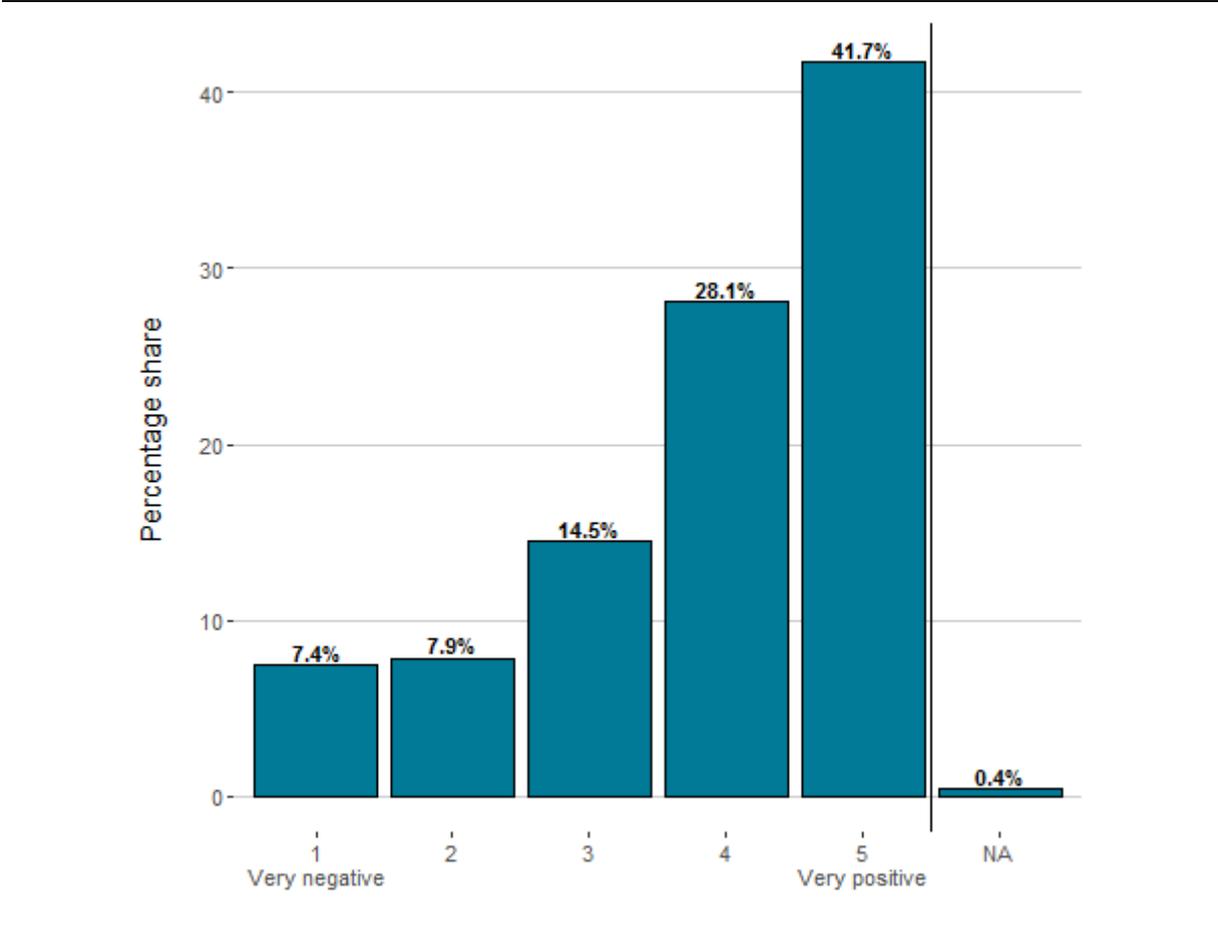
Figure 13: Ride experience (residents, N=170)



Note: Responses to the question «How did you experience the trip with the autonomous bus in general?». NA displays respondents who skipped the question without answering.

Compared to the results from the non-random sample of passengers, the ratings by residents are slightly lower. Figure 14 summarizes responses on the general perception of the trip rated by respondents from the passenger sample. Overall, an even higher majority of almost 70% of the respondents that had already used Route 12 rated their experience as rather or very positive. Still, compared to the resident sample, the negative experiences are higher too with 15% of the respondents indicating the experience as negative.

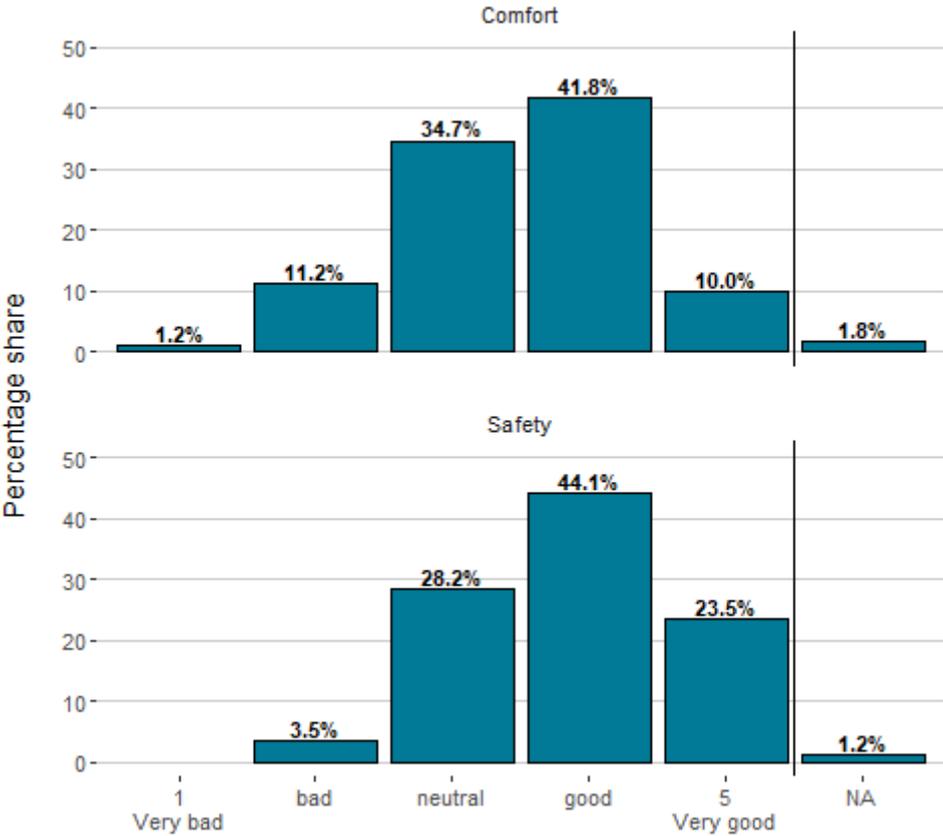
Figure 14: Ride experience (passengers, N=242)



Note: Responses to the question «How did you experience the trip with the autonomous bus in general?». NA displays respondents who skipped the question without answering.

Figure 15 summarizes the responses to the question rating the specific aspects of comfort and safety experience during the ride. Even though a majority rated comfort as good or very good, the average rating appears to be lower compared to the overall experience. This is in line with responses in the open text fields describing sudden breaking of the autonomous car and/or critical traffic situations with other road users. However, this seems to have not affected the feeling of safety during the trip, which can be explained by the comparably rather low speed at which the bus operates. Overall, two-thirds of the respondents rated safety as good or very good, whereas only 3.5% indicated a bad safety feeling when riding the bus.

Figure 15: Ride experience (residents, N=170)



Note: Responses to the matrix question «You have indicated that you were on the autonomous bus. How do you rate the following aspects of the trip?» for «Comfort» and «Safety». NA displays respondents who skipped the question without answering.

4 Conclusion

The report at hand describes the process of data collection and presents the results for this second of three planned surveys that was carried out between November 2018 and January 2019 among 957 respondents recruited from the first survey, which resulted in a rather high response rate of 81.7%.

Overall, compared to the first survey, the results of the second one turned out to be rather stable. Both, public perception of Route 12 as well as concerns and views regarding autonomous driving in general, only slightly, but not significantly improved. However, the agreement with test runs in Switzerland significantly increased.

Between the start of Route 12 on 27th of March 2018 and December 2018, a total of 20,251 passengers used the bus. This results in a mean of 72 and a median of 60 passengers per day. On average, the amount of passengers was significantly higher on weekends and hotter days.

Regarding the ride experience, both, the general experience as well as comfort and safety of the ride, were rated very positive. However, specific events such as sudden braking or critical situations with other road users were frequently mentioned by respondents of both the in-bus survey and the resident survey in the open box question. These issues were subsequently identified as having potential for development.

The further analysis on how attitudes will change over time, and whether the test trial in Neuhausen am Rheinfall will have positive or negative consequences for the public's opinion on autonomous driving will be part of the final report after the third survey, which will be conducted in summer 2019.

Appendix

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A1 Poisson regression model

Table A1: Predictors of daily passengers (Poisson regression model)

	<i>Dependent variable:</i>	
	Day passengers [N]	
	Poisson (1)	Quasi-Poisson (2)
Tuesday ¹	-0.062* (0.031)	-0.062 (0.177)
Wednesday ¹	0.116*** (0.030)	0.116 (0.170)
Thursday ¹	-0.030 (0.031)	-0.030 (0.175)
Friday ¹	0.143*** (0.030)	0.143 (0.168)
Saturday ¹	0.620*** (0.027)	0.620*** (0.153)
Sunday ¹	0.948*** (0.026)	0.948*** (0.145)
Air temperature [C]	0.031*** (0.001)	0.031*** (0.008)
Sunshine duration [h]	-0.007** (0.003)	-0.007 (0.014)
Precipitation [mm]	-0.009*** (0.002)	-0.009 (0.008)
Intercept	3.392*** (0.030)	3.392*** (0.167)
Observations	280	280
Log Likelihood	-4,660.461	
Akaike Inf. Crit.	9,340.922	

Note:

Table entries are maximum-likelihood estimates with estimated standard errors in parantheses. ***p < 0.001, **p < 0.01, *p < 0.05.
1: Baseline Monday

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