Supplementary materials

Expansion on Methods and Analyses

We collected data from 2141 respondents through an online survey. They were mostly recruited by contacting respondents to previous surveys about infrastructure and maintenance for pedestrians and cyclists (those findings are published here: (Aasvik & Bjørnskau, 2021)). This approach had a response rate of approximately 20 % of the 8892 contacted. All respondents were contacted during the summer of 2022. While this is not a representative sample of Norwegians, it was thought adequate to the general and different themes of this current study. The survey contained some information about a realistic shared autonomous shuttle (SAV) service that may operate as a mobility as a service-concept in Oslo in the near future. The information was vetted by Ruter and read:

> *You will now receive information about a future bus service that may be common in Norway in a few years. The vehicles will look like small buses and be self-driving. You order and pay for the service through a smart-phone app. The bus will come and pick you up where you are or at a bus stop, and you may have to share it with others traveling in the same direction. This self-driving bus will only be available through order and will not necessarily follow usual bus stops.*

Data from this survey has been used in two other publications (Aasvik et al., 2024b, 2024a). These share the same contextual variables: socio demographic information and information about the SAV service. The two other papers do not look at valuations or willingness to pay. The first investigates the factor solutions that best explain intentions to use SAVs. The other paper looks at experimentally altered information and personality traits in predicting intentions to use SAVs. The anonymized raw data set is published on the Open Science Framework (Aasvik, 2022).

We included five relevant socio-demographic and contextual variables for this study. Gender, age (measured on eight ten-year intervals), binary measure of public transport use, socioeconomic indicator (highest completed education and household income), and tech-savviness. Tech-savviness was an index of five items measuring self-rated technological interest, knowledge of ongoing AV pilots, and use of advanced driver assistance systems (ADAS). Socioeconomic indicator and tech-savviness items were z-transformed prior to being averaged, as the items were measured on different scales.

We included a three-item measure of intention to use. These were measured on a Likert-scale where 1 equaled "totally disagree" and 5 "totally agree". The sixth option "not relevant/don't know" was recoded into the midpoint of the scale (3). The items were phrased "I would use such a bus when they become available", "I would try this bus service if it became available where I live", and "I would not use the bus service even if it became available (reverse-scored)". Controlling for this inclination gives our results a purer interpretation of willingness to pay for extra services.

The five items measuring valuations of extra services were phrased as "(translated from Norwegian) When I order travel with this bus service, I am willing to pay extra for (…)". The five items included "faster arrivals", "getting picked up outside my home", "riding alone", "having a safety host on-board", and "getting driven all the way to my destination". The answer categories were 1 = "Never", 2 = "Seldom", 3 = "Sometimes", 4 = "Often", 5 = "Always", and 6 = "Don't know/No answer". The sixth option was again recoded into the midpoint of the scale (3).

Of our gross sample, we discarded 236 (11 %) due to failed attention checks and 175 (9.2 %) due to extreme time use (less than five minutes or more than 60). After removing these and those who failed to complete the key survey items, we were left with 1723 participants carried forward for analyses. This is a large sample, which may allow us to detect small effects, although it may increase the risk of type 1 errors. There is also a total of 30 significance tests (six independent variables and five dependent). This issue was alleviated by applying a Bonferroni correction of p-values (0.05/30 = 0.002). This correction is often criticized for being overly conservative, so we will also consider the size of the odds ratios. We used R Studio with R version 4.4.0 for analysis and data curation. The R script used is posted alongside the data files (Aasvik, 2024).

We chose ordered logistic regression as this was the best fit for out single-item dependent variables measured on five-point scales. We also tested estimating the models as partial proportional odds model (PPOM) to see if the AIC-values would be lower. We also had some significant Brant tests. Item-specific tests suggests that these were mostly violated by the mean score of "intention to use" in our models. The effects of this predictor should therefore be interpreted with caution. The PPOMs did not lower the AIC-values and increased the difficulty of interpretation. We therefore chose to rely on the ordered logistic regressions.

Descriptive Statistics

The descriptive statistics for variables included in this paper are presented in table 1.

Table 1. Descriptive statistics for the study variables, n=1723.

	M	SD	Range	Skew
Gender (0=women) [a]	0.64	0.48	1	-0.59
Age	5.09	1.46	7	-0.25
Socioeconomic indicator [b]	0.00	0.79	3.2	-0.38
Public transport use [a]	0.49	0.50	1	0.02
Tech-savviness [b]	0.00	0.64	3.7	0.07
Intention to use	3.22	0.78	4	-0.52
Fast arrival	2.95	1.07	4	-0.15
Pick up at house	2.93	1.07	4	-0.06
Sit alone	2.18	1.08	4	0.67
Safety host on board	2.48	1.22	4	0.44
Driven to destination	3.22	1.01	4	-0.30

Note: [a] = binary variable, mean interpreted as portion. [b] = z-transformed variables.

There were more men than women in the sample. The sample has a skew towards older participants, with 50-59 and 60-69 being the most frequent age groups. The averaged intention to use was about the middle of the scale. The highest WTP was found for being driven all the way to one's destination. The lowest was for sitting alone, which was averaged to just above the second scale point "Seldom", suggesting that this is least desired of the included items.

Detailed ordered regression results

The tables below present all statistical information about the five ordered logistic regression models predicting valuations of different extra services using background factors, n=1723.

Fast arrival	Odds Ratios	CI (95%)	p
1|2	0.38	0.20 – 0.72	0.003
2|3	1.11	0.58 – 2.12	0.748
3|4	8.47	4.41 – 16.28	<0.001
4|5	45.93	23.46 – 89.93	<0.001
Gender (0=women)	1.24	0.64 – 2.39	0.525
Age	0.85	0.77 – 0.94	0.002
Socioeconomic indicator	1.17	1.05 – 1.31	0.006
Public transport use	1.08	0.91 – 1.29	0.393
Tech-savviness	1.15	0.99 – 1.33	0.059
Intention to use	1.80	1.60 – 2.04	<0.001
Gender * Age	0.95	0.84 – 1.08	0.449
R2 Nagelkerke	0.11		
AIC	4750.85		

Pick up at house	Odds Ratios	CI (95%)	p
1|2	0.65	0.34 – 1.24	0.188
2|3	2.16	1.13 – 4.10	0.019
3|4	16.01	8.32 – 30.80	<0.001
4|5	71.10	36.29 – 139.32	<0.001
Gender (0=women)	0.76	0.40 – 1.46	0.412
Age	0.94	0.85 – 1.04	0.253
Socioeconomic indicator	1.00	0.89 – 1.12	0.997
Public transport use	0.96	0.81 – 1.15	0.671
Tech-savviness	1.19	1.03 – 1.38	0.017
Intention to use	1.93	1.71 – 2.18	<0.001
Gender * Age	1.01	0.90 – 1.15	0.824
R2 Nagelkerke	0.09		
AIC	4814.90		

Sit alone	Odds Ratios	CI (95%)	p
1|2	0.28	0.15 – 0.54	<0.001
2|3	1.09	0.57 – 2.08	0.788
3|4	5.17	2.70 – 9.91	<0.001
4|5	17.65	8.93 – 34.90	<0.001
Gender (0=women)	1.86	0.97 – 3.59	0.063
Age	0.86	0.78 – 0.96	0.005

Socioeconomic indicator	0.97	0.87 – 1.09	0.620
Public transport use	1.04	0.87 – 1.23	0.683
Tech-savviness	1.25	1.09 – 1.45	0.002
Intention to use	1.04	0.93 – 1.18	0.473
Gender * Age	0.91	0.80 – 1.03	0.144
R2 Nagelkerke	0.04		
AIC	4737.84		

Safety host onboard	Odds Ratios	CI (95%)	p
1|2	0.16	0.08 – 0.30	<0.001
2|3	0.48	0.25 – 0.92	0.026
3|4	2.19	1.16 – 4.15	0.016
4|5	5.80	3.04 – 11.09	<0.001
Gender (0=women)	0.23	0.12 – 0.43	<0.001
Age	1.00	0.90 – 1.10	0.952
Socioeconomic indicator	0.78	0.70 – 0.87	<0.001
Public transport use	1.28	1.08 – 1.52	0.005
Tech-savviness	1.00	0.87 – 1.15	0.998
Intention to use	0.92	0.81 – 1.03	0.154
Gender * Age	1.11	0.98 – 1.25	0.101
R2 Nagelkerke	0.09		
AIC	5042.11		

Driven to destination	Odds Ratios	CI (95%)	p
1|2	0.48	0.25 – 0.92	0.027
2|3	1.29	0.68 – 2.46	0.432
3|4	12.09	6.28 – 23.26	<0.001
4|5	65.68	33.52 – 128.69	<0.001
Gender (0=women)	1.08	0.56 – 2.08	0.814
Age	0.99	0.89 – 1.09	0.804
Socioeconomic indicator	1.10	0.98 – 1.24	0.090
Public transport use	1.01	0.85 – 1.21	0.914
Tech-savviness	1.08	0.93 – 1.25	0.321
Intention to use	1.92	1.70 – 2.18	<0.001
Gender * Age	0.94	0.83 – 1.06	0.328
R2 Nagelkerke	0.08		
AIC	4586.91		

References

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