

Supplementary Materials

1- Section 3.1.2. Data collection method – Pearson’s chi-squared tests

H0: The observed distribution is not significantly different than the theoretical distribution

H1: The observed distribution is significantly different than the theoretical distribution.

Table A: Pearson’s chi-squared test for gender

	Observed frequency	Observed distribution	Theoretical distribution	Khi-squared value
Male	313	0.4672	0.48	0.23
Female	357	0.5328	0.52	0.21
Sum	670	1	1	0.44
Degree of freedom	1		$\chi^2(1)$	3.84

Conclusion: H0 is accepted for a significance level of 5%, then the observed gender distribution is not significantly different than the theoretical gender distribution. In others words, the respondent sample is representative of French population with respect to gender.

Table B: Pearson’s chi squared test for age

	Observed frequency	Observed distribution	Theoretical distribution	Khi-squared value
18-24	79	11.79	0.11	0.38
25-34	105	15.67	0.16	0.05
35-44	133	19.85	0.18	1.27
45-54	128	19.10	0.18	0.45
55-64	102	15.22	0.15	0.02
65 and more	123	18.36	0.22	4.04
Sum	670		1	6.22
Degree of freedom	5		$\chi^2(5)$	11.07

Conclusion: H0 is accepted for a significance level of 5%, then the observed age distribution is not significantly different than the theoretical age distribution. In others words, the respondent sample is representative of French population with respect to age distribution.

Table C: Pearson's chi squared test for income

	Observed frequency	Observed distribution	Theoretical distribution	Khi-squared value
€ 0-1000	62	0.0925	0.1	0.37
€ 1001-1500	61	0.0910	0.1	0.54
€ 1501-2500	201	0.30	0.3	0.00
€ 2501-3500	68	0.1015	0.1	0.01
€ 3501-5000	139	0.2075	0.2	0.19
€ 5001-6500	69	0.1030	0.1	0.06
€ 6501 and more	70	0.1045	0.1	0.13
Sum	670		1	1.31
Degree of freedom	6		$\chi^2(6)$	12.59

Conclusion: H0 is accepted for a significance level of 5%, then the observed income distribution is not significantly different than the theoretical income distribution. In others words, the respondent sample is representative of French population with respect to income distribution.

Table D: Pearson's chi-squared test for transportation mode

	Observed frequency	Observed distribution	Theoretical distribution	Khi-squared value
Car and motorbike	459	0.6851	0.72	1.14
Train	51	0.0761	0.04	21.85
Bus	49	0.0731	0.04	18.39
Tramway	28	0.0418	0.02	15.91
Biking	13	0.0194	0.06	18.4
Walk	57	0.0851	0.11	3.78
Subway	11	0.0164	0.09	40.31
Sum	670			119.78
Degree of freedom	6		$\chi^2(6)$	12.59

Conclusion: H0 is rejected for a significance level of 5%, then the observed transportation mode distribution is significantly different than the theoretical transportation mode distribution. In others words, the respondent sample is not representative of French population with respect to transportation mode distribution.

Table E: Sum up of Pearson's chi-squared test

Variable	DDL	Chi ² test statistic	Chi ² critical value	Decision
Age	5	6.22	11.07	Equal distribution
Gender	1	0.44	3.84	Equal distribution
Income	6	1.31	12.59	Equal distribution
Transportation mode	6	119.78	12.59	No equal distribution

2- Section 4.1 – Chi-square Tests and Descriptive Statistics

Table 1: Chi-squared Tests.

H0: No Association

H1: Association

Users' perception of punctuality indicators usefulness WITH				
Variable	DDL	Chi ² test statistic	p-value	Decision
Age	3	5.86	0.1184	No Association
Gender	1	2.52	0.1123	No Association
Family Situation	2	6.98	0.0305	Association
Income	6	20.14	0.0026	Association
Child	1	1.83	0.1893	No Association
Mode	2	6.22	0.0447	Association
Number of modes	2	52.60	<0.0001	Association
Travel Time	3	58.56	<0.0001	Association
Cost	3	34.76	<0.0001	Association
Safety margin	4	6.42	0.1702	No Association
Reliability attitude	2	23.19	<0.0001	Association
Delay frequency	4	33.36	<0.0001	Association
Connection time	3	2.78	0.4266	No Association
Frequency of use	5	88.37	<0.0001	Association
Connection missed	1	66.66	<0.0001	Association
Appointment missed	1	62.31	<0.0001	Association

Table 2: Contingency table between numbers of transportation modes used (NBM) and modes

Freq. Percent % line % column	NBM1 = 1 mode	NBM2 = 2 or 3 modes	NBM3 = 4 or 5 or 6 modes	Sum
Motorized vehicles	1444 53.88 78.31 79.87	368 13.73 19.96 48.17	32 1.19 1.74 29.63	1844 68.81
Collective transport	176 6.57 31.65 9.73	320 11.94 57.55 41.88	60 2.24 10.79 55.56	556 20.75
Soft mode	188 7.01 67.14 10.40	76 2.84 27.14 9.95	16 0.60 5.71 14.81	280 10.45
Sum	1808 67.46	764 28.51	108 4.03	2680 100.00

Table 3: Contingency table between indicator choice and number of transportation modes used (NBM)

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
NBM1 = 1 mode	670	322	449	70	297	1808
	25.00	12.01	16.75	2.61	11.08	67.46
	37.06	17.81	24.83	3.87	16.43	
	76.48	63.26	64.98	47.30	65.13	
NBM2 = 2 or 3 modes	190	156	205	75	138	764
	7.09	5.82	7.65	2.80	5.15	28.51
	24.87	20.42	26.83	9.82	18.06	
	21.69	30.65	29.67	50.68	30.26	
NBM3 = 4 or 5 or 6 modes	16	31	37	3	21	108
	0.60	1.16	1.38	0.11	0.78	4.03
	14.81	28.70	34.26	2.78	19.44	
	1.83	6.09	5.35	2.03	4.61	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00

Table 4: Contingency table between indicator choice and transportation mode

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
Motorized vehicles	628	357	468	85	306	1844
	23.43	13.32	17.46	3.17	11.42	68.81
	34.06	19.36	25.38	4.61	16.59	
	71.69	70.14	67.73	57.43	67.11	
Collective transport	158	104	151	47	96	556
	5.90	3.88	5.63	1.75	3.58	20.75
	28.42	18.71	27.16	8.45	17.27	
	18.04	20.43	21.85	31.76	21.05	
Soft mode	90	48	72	16	54	280
	3.36	1.79	2.69	0.60	2.01	10.45
	32.14	17.14	25.71	5.71	19.29	
	10.27	9.43	10.42	10.81	11.84	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00

Table 5: Contingency table between indicator choice and reliability-attitude

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
Prone	400	242	332	73	201	1248
	14.93	9.03	12.39	2.72	7.50	46.57
	32.05	19.39	26.60	5.85	16.11	
	45.66	47.54	48.05	49.32	44.08	
Neutral	283	131	167	29	114	724
	10.56	4.89	6.23	1.08	4.25	27.01
	39.09	18.09	23.07	4.01	15.75	
	32.31	25.74	24.17	19.59	25.00	
Averse	193	136	192	46	141	708
	7.20	5.07	7.16	1.72	5.26	26.42
	27.26	19.21	27.12	6.50	19.92	
	22.03	26.72	27.79	31.08	30.92	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00

Table 6: Contingency table between indicator choice and safety margin

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
SM1 ∈ [- 30 ; 0 [min	38	13	30	4	23	108
	1.42	0.49	1.12	0.15	0.86	4.03
	35.19	12.04	27.78	3.70	21.30	
	4.34	2.55	4.34	2.70	5.04	
SM2 = 0 min	259	176	221	43	133	832
	9.66	6.57	8.25	1.60	4.96	31.04
	31.13	21.15	26.56	5.17	15.99	
	29.57	34.58	31.98	29.05	29.17	
SM3 ∈ [1 ; 10 [min	138	79	92	19	60	388
	5.15	2.95	3.43	0.71	2.24	14.48
	35.57	20.36	23.71	4.90	15.46	
	15.75	15.52	13.31	12.84	13.16	
SM4 ∈ [10 ; 15] min	213	137	188	36	130	704
	7.95	5.11	7.01	1.34	4.85	26.27
	30.26	19.46	26.70	5.11	18.47	
	24.32	26.92	27.21	24.32	28.51	
SM5 ∈ [16 and +] min	228	104	160	46	110	648
	8.51	3.88	5.97	1.72	4.10	24.18
	35.19	16.05	24.69	7.10	16.98	
	26.03	20.43	23.15	31.08	24.12	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00

Table 7: Contingency table between indicator choice and frequency of use

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
Never	270 10.07 46.23 30.82	85 3.17 14.55 16.70	123 4.59 21.06 17.80	31 1.16 5.31 20.95	75 2.80 12.84 16.45	584 21.79
Yearly	237 8.84 33.66 27.05	155 5.78 22.02 30.45	177 6.60 25.14 25.62	24 0.90 3.41 16.22	111 4.14 15.77 24.34	704 26.27
Quarterly	152 5.67 30.89 17.35	71 2.65 14.43 13.95	161 6.01 32.72 23.30	29 1.08 5.89 19.59	79 2.95 16.06 17.32	492 18.36
Monthly	139 5.19 28.25 15.87	99 3.69 20.12 19.45	128 4.78 26.02 18.52	23 0.86 4.67 15.54	103 3.84 20.93 22.59	492 18.36
Weekly	29 1.08 20.14 3.31	31 1.16 21.53 6.09	35 1.31 24.31 5.07	16 0.60 11.11 10.81	33 1.23 22.92 7.24	144 5.37
Daily	49 1.83 18.56 5.59	68 2.54 25.76 13.36	67 2.50 25.38 9.70	25 0.93 9.47 16.89	55 2.05 20.83 12.06	264 9.85
Sum	876 32.69	509 18.99	691 25.78	148 5.52	456 17.01	2680 100.00

Table 8: Contingency table between indicator choice and missed connection

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	SUM
Missed connection : No	667	307	439	79	260	1752
	24.89	11.46	16.38	2.95	9.70	65.37
	38.07	17.52	25.06	4.51	14.84	
	76.14	60.31	63.53	53.38	57.02	
Missed connection : Yes	209	202	252	69	196	928
	7.80	7.54	9.40	2.57	7.31	34.63
	22.52	21.77	27.16	7.44	21.12	
	23.86	39.69	36.47	46.62	42.98	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00

Table 9: Contingency table between indicator choice and missed appointment

Freq. Percent % line % column	NONE	PERCENT	MEAN	MAX	DaR	Sum
Missed appointment : No	588	253	384	56	227	1508
	21.94	9.44	14.33	2.09	8.47	56.27
	38.99	16.78	25.46	3.71	15.05	
	67.12	49.71	55.57	37.84	49.78	
Missed appointment : Yes	288	256	307	92	229	1172
	10.75	9.55	11.46	3.43	8.54	43.73
	24.57	21.84	26.19	7.85	19.54	
	32.88	50.29	44.43	62.16	50.22	
Sum	876	509	691	148	456	2680
	32.69	18.99	25.78	5.52	17.01	100.00