The Use of Ride-hailing Booking Technology by Older Adults in California

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(Standing Committee on Accessible Transportation and Mobility)

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Motivation: Ride-hailing can expand travel options for older adults

- US has a growing number of older adults

- Many older adults age "in place" in suburbs, at great risk of isolation once they cannot drive

- Ride-hailing can significantly benefit adults who don't drive at all or don't drive in certain situations (e.g., at night)

- Early research suggests that older adults are less likely to use ride-hailing than younger adults

Research questions

How do older adults who ride-hail access the service?

- Does owning connected devices (smartphones, computers, tablets), or comfort using online tools and financial services, correlate with attitudes towards technology?

- What socio-demographic and travel behavior characteristics correlate with any of these choices about how a trip is booked?
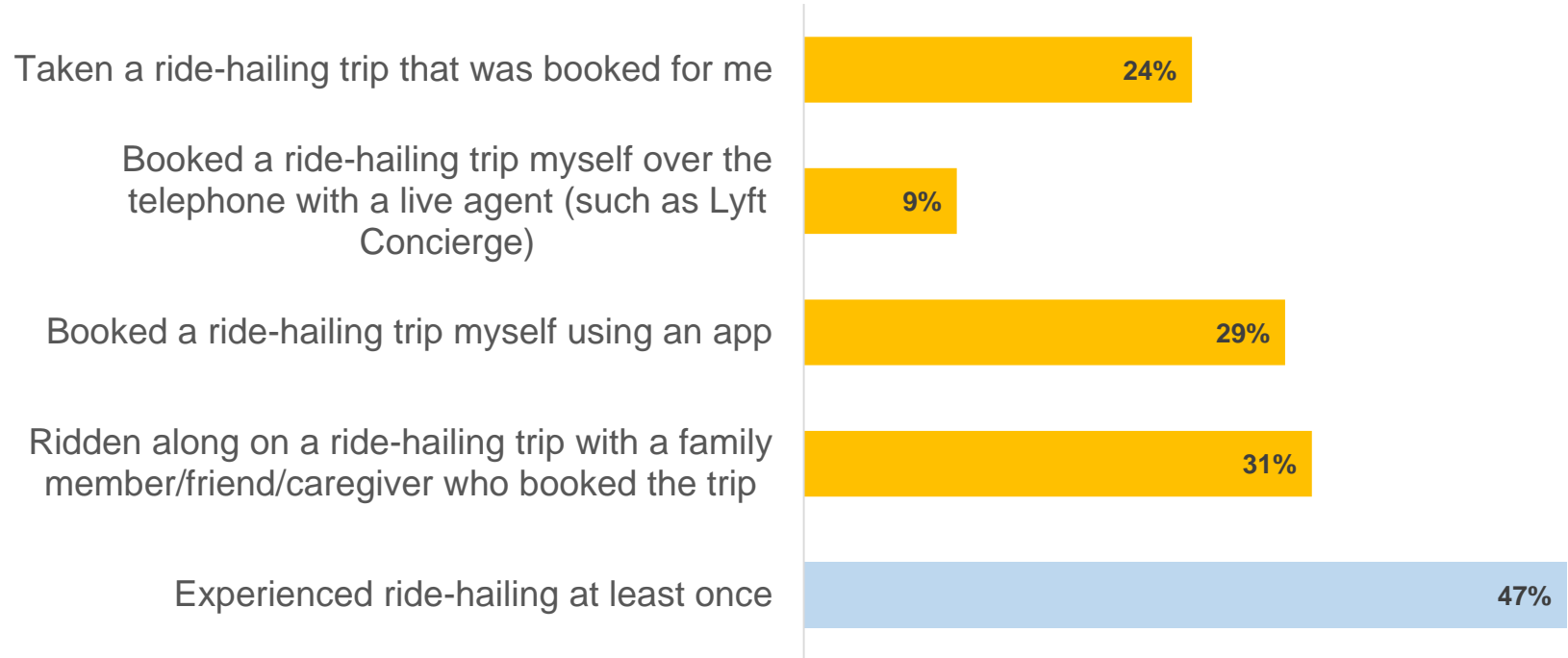
Method: online survey

- 2,917 California adults aged 55+

- Administered online survey with a Qualtrics respondent panel

- Questions included:

  - Ride-hailing experience

  - Attitudes to ride-hailing
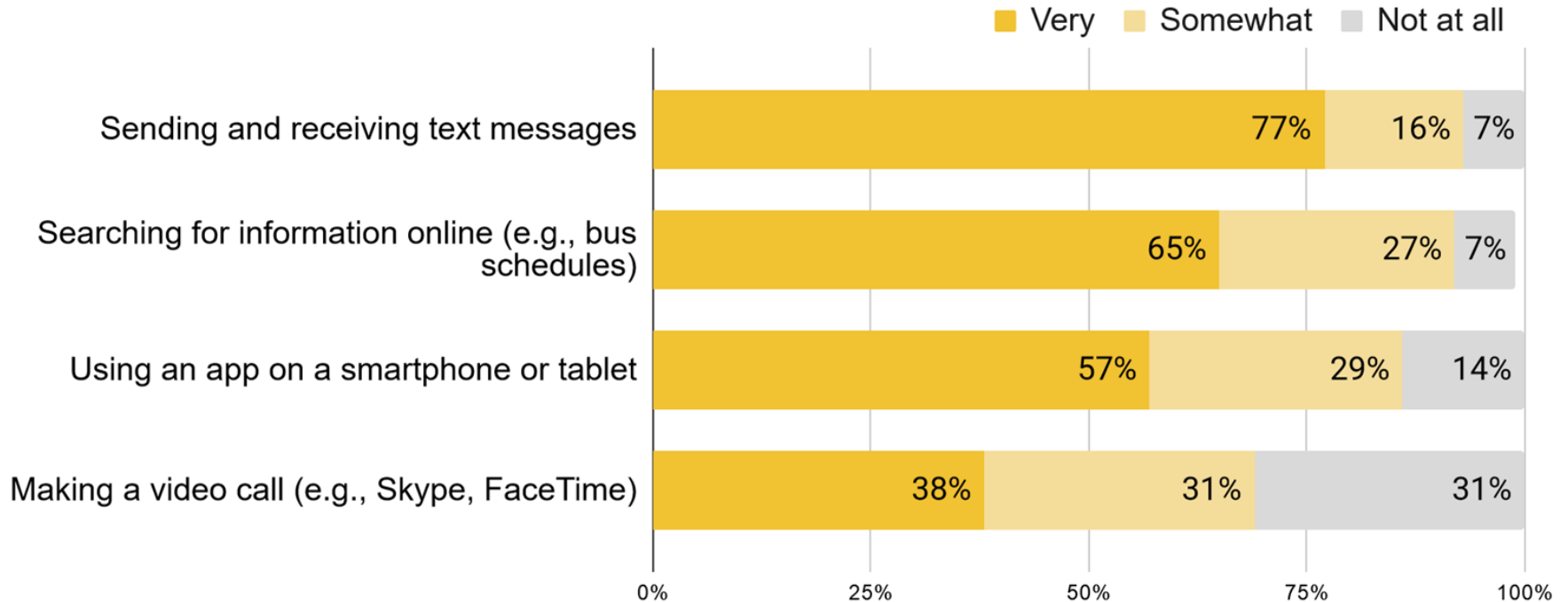
  - Interest in potential new service features

Respondents' ride-hailing accounts
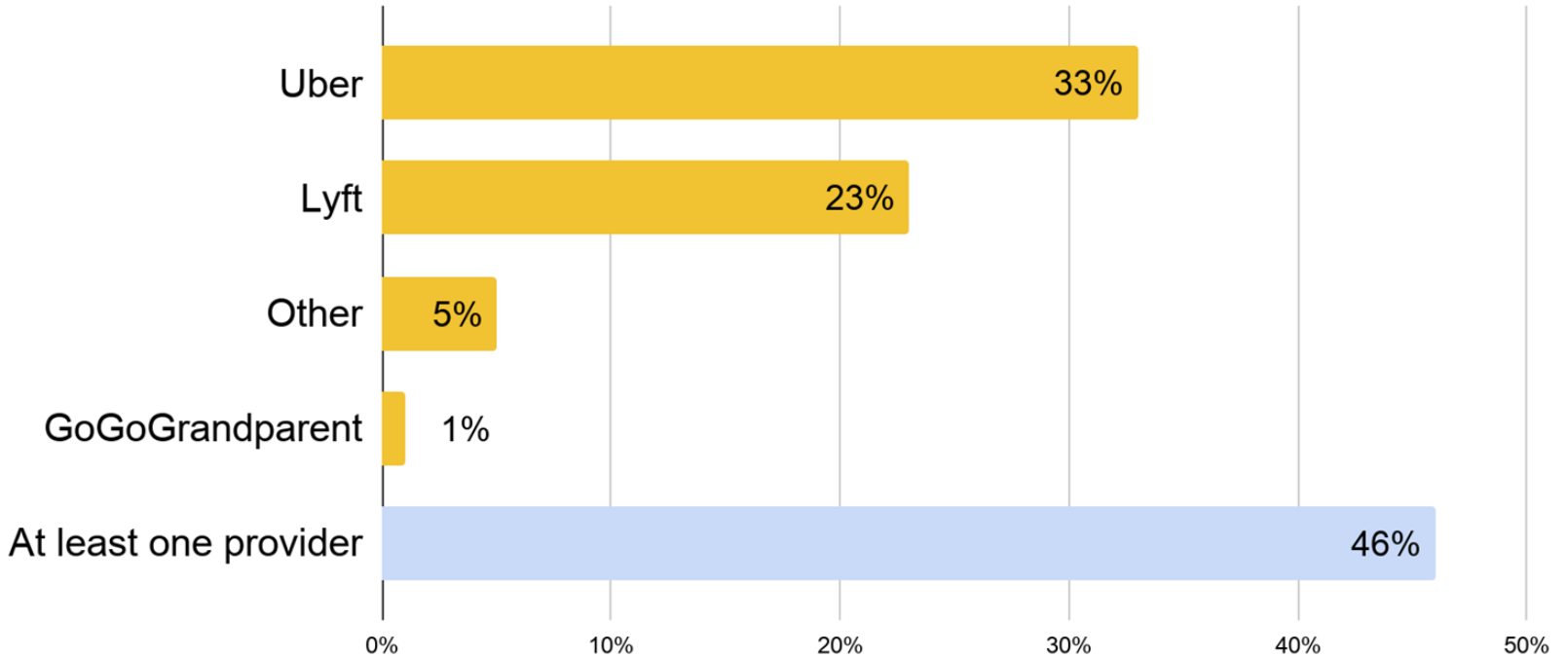
Expriencing ride-hailing

Level of comfort with online tasks

Level of comfort with online financial tools

Legend: Very, Somewhat, Not at all

Activity	Very	Somewhat	Not at all
Buying something at a store with a credit card	72%	22%	6%
Buying something online with a credit card	60%	28%	12%
Checking a bank balance online	66%	20%	14%
Paying bills online	62%	22%	15%
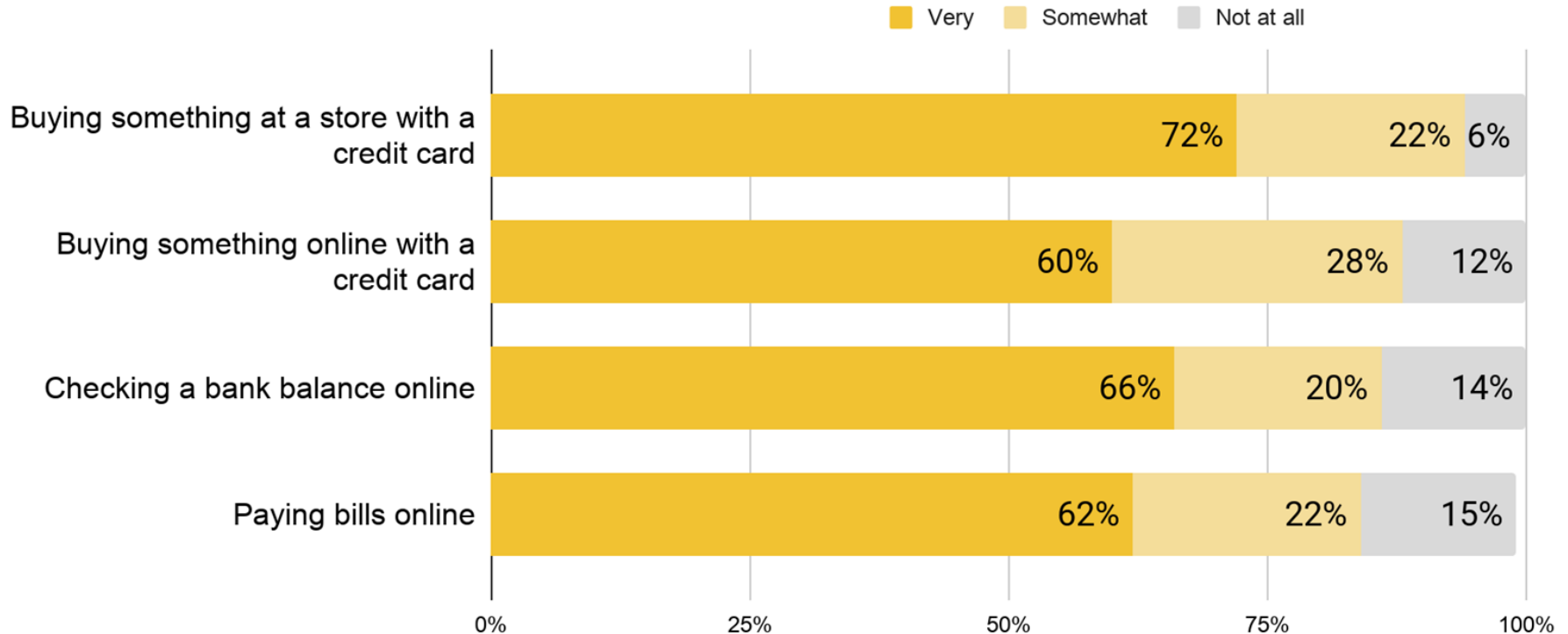
Confirmatory factor analysis
(30+ survey items used)

- Access to communication devices (landline phone, smartphone, tablet, etc.)
- Comfort using technology (using smartphone, paying bills online, etc.)
- Frequency of ride-hailing use (when at home, when traveling, at night)
- Valuing ride-hailing features (booking a trip with a live agent, helpline, etc.)
- Comfort using ride-hailing, credit cards, etc.
- Benefits of ride-hailing (independence, help with bags, etc.)
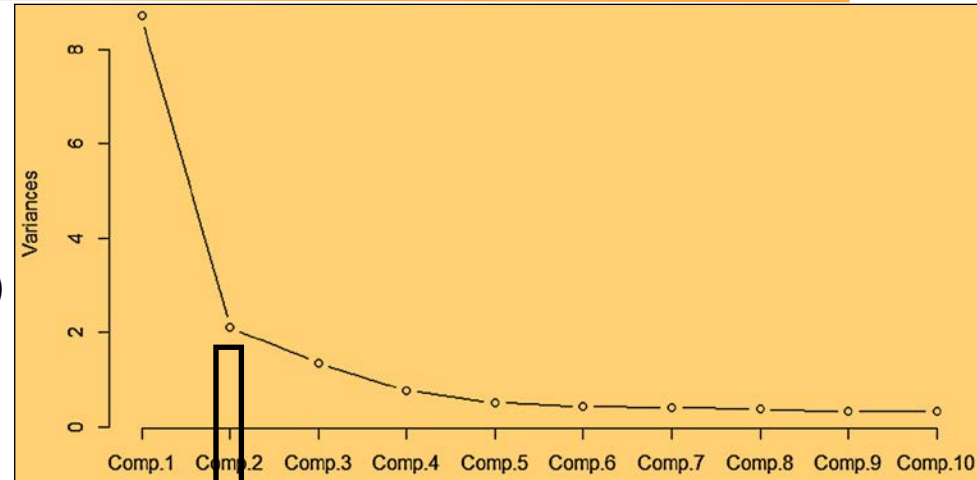
26% variation captured using two-factor solution

More logically consistent with group identification

Two latent constructs (via Factor Analysis)

Confident: comfort with the latest technologies and ride-hailing services, which indicate a high-tech, pro-technology adoption attitude.

Cautious: a lack of comfort using technologies in financial transactions and a greater valuing of additional features of ride-hailing services such as paper bills and booking with agents.

Peter Kindersley @ ageingbetter

Confident compared to Cautious technology attitude
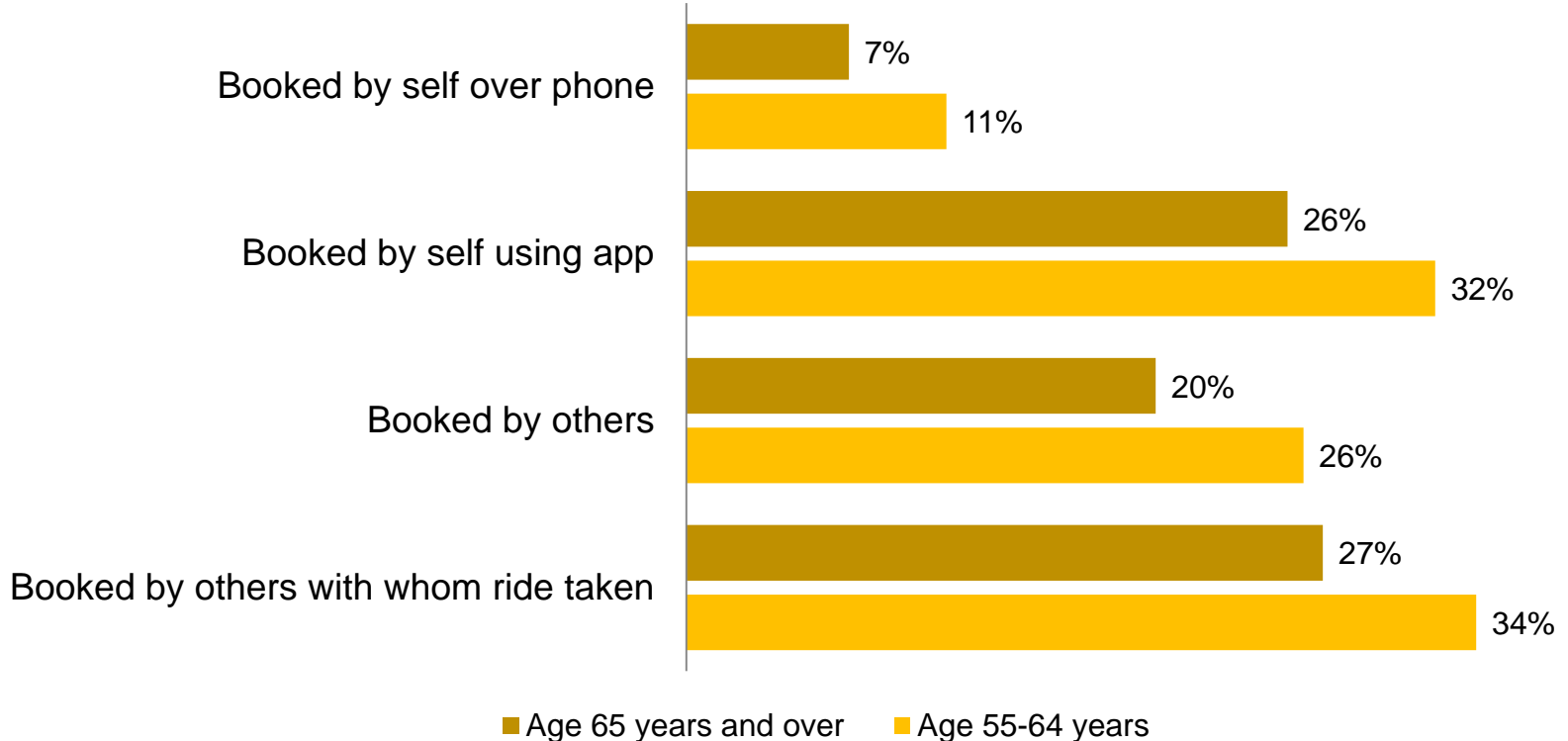
Confident

- Male
- <u>55-64 year old</u>
- White (race)
- Higher household income
- Hispanic (ethnicity)

Cautious

- Female
- <u>55-64 year old</u>
- Persons of color (race)
- Without college degree
- Lower household income

Everyone has some measure of both these attitudes toward technology.

Outcome variables: Method of booking

Binary Probit Models

	Booked by Self Over Phone				Booked by Self Using App				Booked by Others				Booked by Others with Whom Ride Taken			
	Coef.	Sig.	Std. Err.	Odds Ratio	Coef.	Sig.	Std. Err.	Odds Ratio	Coef.	Sig.	Std. Err.	Odds Ratio	Coef.	Sig.	Std. Err.	Odds Ratio
Intercept	-1.31	**	0.407	0.27	0.53		0.397	1.70	-0.76	*	0.345	0.47	-0.41		0.353	0.66
"Confident" attitude towards technology	0.10		0.082	1.11	0.86	***	0.085	2.36	0.00		0.068	1.00	0.01		0.068	1.01
"Cautious" attitude towards technology	0.42	***	0.077	1.51	0.16	*	0.075	1.18	0.36	***	0.065	1.43	0.04		0.066	1.04
Urban	0.15		0.245	1.16	0.26		0.218	1.30	-0.02		0.198	0.98	-0.34		0.216	0.71
Suburban	0.24		0.234	1.27	0.45	*	0.207	1.56	0.11		0.188	1.12	-0.31		0.207	0.73
Number of days commuting per week	0.04		0.044	1.04	-0.07		0.043	0.94	0.03		0.037	1.03	0.02		0.037	1.02
Can drive alone	0.00		0.217	1.00	-0.02		0.226	0.98	0.02		0.199	1.02	0.30		0.197	1.34
Gets a ride from family	-0.22		0.179	0.80	-0.02		0.181	0.98	0.23		0.154	1.26	0.33	*	0.150	1.39
Gets a ride from friends/neighbors	-0.23		0.165	0.79	-0.31	.	0.166	0.73	0.36	*	0.142	1.43	0.68	***	0.143	1.97
Has disability	0.06		0.264	1.06	0.18		0.277	1.20	0.35		0.252	1.41	-0.17		0.251	0.84
Has physical health issues	0.05		0.296	1.06	0.62	.	0.364	1.86	0.09		0.286	1.09	-0.32		0.280	0.73
Female	0.12		0.132	1.12	-0.13		0.129	0.88	0.07		0.112	1.07	0.34	**	0.117	1.40
Senior (65 years and over)	-0.09		0.148	0.91	-0.12		0.142	0.88	0.08		0.126	1.09	-0.09		0.129	0.91
White	0.29	*	0.139	1.34	-0.11		0.135	0.90	0.23	*	0.119	1.26	0.00		0.122	1.00
College educated	-0.01		0.149	0.99	0.29	*	0.143	1.34	0.06		0.130	1.06	0.23	.	0.132	1.26
Household income (in $10k)	0.00		0.010	1.00	0.01		0.009	1.01	0.00		0.008	1.00	0.01		0.009	1.01
Hispanic	0.05		0.170	1.05	-0.30	.	0.170	0.74	0.16		0.151	1.18	0.30	.	0.160	1.34
Number of observations	583				599				579				592			
LL(0)	-639.3				-924.1				-985.3				-924.2			
LL(ρ)	-256.8				-270.4				-371.0				-343.1			
Mcfadden's $\rho2$	0.60				0.71				0.62				0.63			

Key Findings

- Higher attitude of confidence with technology → more likely to self-book with app or on phone
- Urbanites more likely to self-book with app or on phone
- Individuals with health issues or physical disability <u>more likely to use app</u> to book (or rely on others)
- Females, Hispanic individuals, college educated more likely to ride-hail with others when ride is booked by others
- Hispanic individuals less likely to book via app
- College educated individuals more likely to book on app
- White individuals more likely to book on phone

Photo Peter Kindersley @ ageingbetter

Discussion

- If the ride-hailing industry persists, promising mode to expand out-of-home mobility for those 55+ currently
- Given our research, "success" is about ease of accessing a ride →creating options for app and phone booking + helpline
- Regulations to create incentives for ride-hailing providers to introduce features for older adults (e.g., help carrying bags) and PWDs (e.g., space for mobility devices)
- Many markets (e.g., Asia) are more tech savvy than North America. Older adults there could benefit from similar options for ease of booking

Photo by Peter Patch on Unsplash

Conclusions

1. Contrary to popular belief, many over 65 years ride-hail, often self-booking rides
2. Older adults who are more comfortable with technology book via the app
3. Those who are less comfortable with technology rely on others or use phone booking
4. Those with health issues and disabilities are *more* likely to book trips using an app
5. Ride-hailing can include more seniors if booking services is made easy for everyone

Photo by SGH Singapore on Unsplash

Questions?

Full report at: https://transweb.sjsu.edu/research/1815

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