Online Resource 1: Supplementary statistical results

Credit-reporting beliefs, affordability-related use and self-reported late payment among U.S. buy-now-pay-later users: a cross-sectional analysis of the 2025 SHED

Kaibo Tang

SN Business & Economics

School of Economics, The University of Osaka, Toyonaka, Osaka, Japan

Corresponding email: U300863g@ecs.osaka-u.ac.jp

All results use the public 2025 SHED and the BNPL-user analytical domain unless stated otherwise. The respondent is the independent unit. Tables are numbered to match the manuscript.

Supplementary Table S1. Complete analytical-domain profile

Characteristic	Category	Unweighted n	Weighted %	95% CI
Age	35-44	452	24.7	22.6–26.7
	18-24	209	12.8	11.1–14.5
	25-34	409	22.3	20.3–24.3
	45-54	331	15.6	13.9–17.2
	55-64	311	13.5	12.0–15.0
	65-74	226	8.5	7.4–9.7
	75+	66	2.5	1.9–3.2
Gender	Male	853	41.8	39.5–44.1
	Female	1151	58.2	55.9–60.5
Race and ethnicity	White, Non-Hispanic	977	42.0	39.8–44.3
	2+ Races, Non-Hispanic	56	2.2	1.6–2.9
	Black, Non-Hispanic	438	21.5	19.6–23.4
	Hispanic	444	28.9	26.6–31.2
	Other, Non-Hispanic	89	5.4	4.2–6.6
Education	Bachelor's degree	421	17.2	15.6–18.8
	High school graduate (high school diploma or the equivalent GED)	566	32.6	30.3–34.9
	Master’s degree or higher	230	9.7	8.5–11.0
	No high school diploma or GED	188	11.3	9.7–12.9
	Some college or Associate's degree	599	29.2	27.1–31.2
Annual household income	$50,000 to $74,999	351	17.4	15.7–19.2
	$10,000 to $24,999	204	8.4	7.2–9.6
	$100,000 to $149,999	387	19.9	18.0–21.8
	$150,000 or more	328	19.3	17.4–21.3
	$25,000 to $49,999	405	19.3	17.5–21.1
	$75,000 to $99,999	245	12.4	10.9–14.0
	Less than $10,000	84	3.2	2.5–4.0
Employment	Working full-time	1124	57.3	55.0–59.6
	Not working	554	26.3	24.2–28.3
	Working part-time	326	16.4	14.7–18.2
Credit-card payment pattern	Never carried a balance	372	18.2	16.4–20.0
	No credit card	413	21.9	19.9–23.8
	Carried a balance once	111	5.7	4.6–6.8
	Carried a balance some of the time	391	19.4	17.6–21.3
	Carried a balance most or all of the time	717	34.8	32.6–37.0

Note: Percentages use the supplied final weight. Reference levels used in the regression models are identified in Supplementary Table S3.

Supplementary Table S2a. Public-file imputation audit

Variable	Imputed n	Weighted %	95% CI
BNPL use eligibility (BNPL1)	7	0.257	0.062–0.452
Any late payment outcome (BNPL3)	8	0.299	0.088–0.511
Build-credit-history belief item (BNPL7_a)	11	0.486	0.171–0.800
On-time-payment belief item (BNPL7_b)	13	0.585	0.240–0.931
Either belief item	14	0.628	0.273–0.984
Any core BNPL item (BNPL1, BNPL3 or either belief item)	15	0.671	0.306–1.036
Any core BNPL item or financial management (B2)	18	0.790	0.399–1.180
Self-reported financial management (B2)	3	0.119	0.000–0.258
Affordability reason (BNPL4_e)	22	1.072	0.599–1.544
Any purchase-category item (BNPL6_a to BNPL6_g)	24	1.059	0.615–1.503

Note: Counts use official item-specific imputation flags. The main analysis retained the values supplied in the public file; restriction analyses are in Supplementary Table S5.

Supplementary Table S2b. Joint belief cells with late-payment events

Item A	Item B	n	Events	Weighted %	CI low	CI high
Disagree	Disagree	285	77	14.46	12.82	16.10
Not sure	Disagree	20	4	1.11	0.60	1.63
Agree	Disagree	15	9	0.70	0.32	1.08
Disagree	Not sure	55	17	2.57	1.86	3.29
Not sure	Not sure	530	120	27.71	25.58	29.83
Agree	Not sure	16	2	0.71	0.35	1.08
Disagree	Agree	102	28	4.91	3.92	5.90
Not sure	Agree	247	37	11.64	10.17	13.12
Agree	Agree	734	193	36.18	33.94	38.42

Note: Item A is ‘helps me build a credit history’; item B is ‘making payments on time helps my credit score.’ Confidence limits are percentages.

Supplementary Table S2c. Weighted correlations among resource-context indicators

Measure	Affordability motive	Groceries or medical use	Other-purpose breadth	Financial strain
Affordability motive	1.000	0.191	0.098	0.407
Groceries or medical use	0.191	1.000	-0.041	0.192
Other-purpose breadth	0.098	-0.041	1.000	0.023
Financial strain	0.407	0.192	0.023	1.000

Note: Entries are final-weighted Pearson correlations. For two binary variables they equal weighted phi correlations. Other-purpose breadth is the continuous count of five categories and excludes groceries or food delivery and medical or veterinary expenses.

Supplementary Table S2d. Adverse-payment consequence indicators

Indicator	Denominator	Denominator n	Events n	Weighted %	95% CI
Charged extra among users reporting a late payment	Users reporting a late payment	487	302	64.1	59.6–68.6
Late payment with an extra charge	All BNPL users	2004	302	16.5	14.7–18.3
BNPL-triggered overdraft or NSF fee	All BNPL users	2004	206	10.8	9.4–12.3

Note: Late payment with an extra charge requires both a late-payment report and an affirmative follow-up response. BNPL-triggered overdraft or non-sufficient-funds fee uses the questionnaire's routed item; users outside the route are structural zeros.

Supplementary Table S3. Complete coefficients from the principal, strain-conditioned and expanded models

Model	Predictor or contrast	Odds ratio	95% CI	p
Model 1: unadjusted	Belief category: uncertain	0.82	0.58–1.15	0.255
	Belief category: benchmark-discordant agreement	0.92	0.67–1.26	0.595
Model 2: principal belief model	Belief category: uncertain	0.79	0.55–1.13	0.191
	Belief category: benchmark-discordant agreement	0.95	0.68–1.33	0.768
	Age 18-24 versus 35–44	1.09	0.74–1.61	0.670
	Age 25-34 versus 35–44	1.04	0.75–1.45	0.793
	Age 45-54 versus 35–44	0.73	0.51–1.06	0.102
	Age 55-64 versus 35–44	0.48	0.32–0.73	< 0.001
	Age 65-74 versus 35–44	0.30	0.18–0.51	< 0.001
	Age 75+ versus 35–44	0.29	0.12–0.70	0.006
	Gender: Female versus male	1.21	0.96–1.54	0.111
	Race and ethnicity: 2+ Races, Non-Hispanic versus White, non-Hispanic	1.90	0.99–3.63	0.052
	Race and ethnicity: Black, Non-Hispanic versus White, non-Hispanic	1.55	1.17–2.06	0.003
	Race and ethnicity: Hispanic versus White, non-Hispanic	0.96	0.72–1.29	0.800
	Race and ethnicity: Other, Non-Hispanic versus White, non-Hispanic	1.65	0.91–2.97	0.097
	Education: High school graduate (high school diploma or the equivalent GED) versus bachelor's degree	2.25	1.53–3.31	< 0.001
	Education: Master’s degree or higher versus bachelor's degree	0.73	0.43–1.25	0.252
	Education: No high school diploma or GED versus bachelor's degree	3.55	2.18–5.77	< 0.001
	Education: Some college or Associate's degree versus bachelor's degree	2.06	1.43–2.95	< 0.001
	Household income: $10,000 to $24,999 versus USD 50,000–74,999	1.24	0.80–1.91	0.333
	Household income: $100,000 to $149,999 versus USD 50,000–74,999	0.70	0.46–1.05	0.083
	Household income: $150,000 or more versus USD 50,000–74,999	0.78	0.49–1.23	0.283
	Household income: $25,000 to $49,999 versus USD 50,000–74,999	1.35	0.95–1.92	0.093
	Household income: $75,000 to $99,999 versus USD 50,000–74,999	1.12	0.74–1.69	0.604
	Household income: Less than $10,000 versus USD 50,000–74,999	1.19	0.67–2.12	0.548
	Employment: Not working versus working full-time	1.09	0.80–1.47	0.594
	Employment: Working part-time versus working full-time	0.97	0.69–1.36	0.862
Model 3: strain-conditioned belief model	Belief category: uncertain	0.82	0.57–1.17	0.275
	Belief category: benchmark-discordant agreement	1.06	0.75–1.48	0.748
	Age 18-24 versus 35–44	1.12	0.75–1.66	0.590
	Age 25-34 versus 35–44	1.07	0.76–1.48	0.708
	Age 45-54 versus 35–44	0.69	0.47–1.00	0.049
	Age 55-64 versus 35–44	0.49	0.32–0.74	< 0.001
	Age 65-74 versus 35–44	0.30	0.18–0.51	< 0.001
	Age 75+ versus 35–44	0.33	0.14–0.80	0.014

Model	Predictor or contrast	Odds ratio	95% CI	p
	Gender: Female versus male	1.18	0.93–1.51	0.174
	Race and ethnicity: 2+ Races, Non-Hispanic versus White, non-Hispanic	1.90	0.99–3.65	0.052
	Race and ethnicity: Black, Non-Hispanic versus White, non-Hispanic	1.67	1.25–2.23	< 0.001
	Race and ethnicity: Hispanic versus White, non-Hispanic	1.00	0.74–1.35	0.999
	Race and ethnicity: Other, Non-Hispanic versus White, non-Hispanic	1.72	0.95–3.13	0.074
	Education: High school graduate (high school diploma or the equivalent GED) versus bachelor's degree	2.18	1.47–3.24	< 0.001
	Education: Master’s degree or higher versus bachelor's degree	0.72	0.42–1.24	0.239
	Education: No high school diploma or GED versus bachelor's degree	3.48	2.13–5.69	< 0.001
	Education: Some college or Associate's degree versus bachelor's degree	1.95	1.34–2.83	< 0.001
	Household income: $10,000 to $24,999 versus USD 50,000–74,999	1.09	0.70–1.70	0.709
	Household income: $100,000 to $149,999 versus USD 50,000–74,999	0.80	0.53–1.21	0.295
	Household income: $150,000 or more versus USD 50,000–74,999	1.00	0.63–1.60	0.994
	Household income: $25,000 to $49,999 versus USD 50,000–74,999	1.23	0.86–1.76	0.263
	Household income: $75,000 to $99,999 versus USD 50,000–74,999	1.20	0.79–1.82	0.395
	Household income: Less than $10,000 versus USD 50,000–74,999	1.15	0.64–2.09	0.639
	Employment: Not working versus working full-time	1.07	0.79–1.46	0.666
	Employment: Working part-time versus working full-time	0.90	0.64–1.27	0.547
	Financially strained	2.44	1.90–3.13	< 0.001
Expanded resource-use model	Belief category: uncertain	0.88	0.61–1.27	0.497
	Belief category: benchmark-discordant agreement	1.01	0.72–1.43	0.941
	Age 18-24 versus 35–44	1.04	0.69–1.57	0.859
	Age 25-34 versus 35–44	0.97	0.68–1.36	0.846
	Age 45-54 versus 35–44	0.71	0.49–1.05	0.088
	Age 55-64 versus 35–44	0.57	0.37–0.88	0.011
	Age 65-74 versus 35–44	0.37	0.22–0.65	< 0.001
	Age 75+ versus 35–44	0.37	0.15–0.92	0.032
	Gender: Female versus male	1.05	0.82–1.36	0.680
	Race and ethnicity: 2+ Races, Non-Hispanic versus White, non-Hispanic	1.95	1.04–3.66	0.038
	Race and ethnicity: Black, Non-Hispanic versus White, non-Hispanic	1.51	1.12–2.04	0.007
	Race and ethnicity: Hispanic versus White, non-Hispanic	0.91	0.67–1.24	0.561
	Race and ethnicity: Other, Non-Hispanic versus White, non-Hispanic	1.81	0.98–3.34	0.058
	Education: High school graduate (high school diploma or the equivalent GED) versus bachelor's degree	2.19	1.46–3.27	< 0.001
	Education: Master’s degree or higher versus bachelor's degree	0.82	0.47–1.43	0.478
	Education: No high school diploma or GED versus bachelor's degree	3.41	2.07–5.61	< 0.001
	Education: Some college or Associate's degree versus bachelor's degree	1.97	1.35–2.88	< 0.001
	Household income: $10,000 to $24,999 versus USD 50,000–74,999	1.09	0.69–1.72	0.724

Model	Predictor or contrast	Odds ratio	95% CI	p
	Household income: $100,000 to $149,999 versus USD 50,000–74,999	0.84	0.55–1.29	0.431
	Household income: $150,000 or more versus USD 50,000–74,999	1.16	0.71–1.89	0.556
	Household income: $25,000 to $49,999 versus USD 50,000–74,999	1.18	0.81–1.71	0.389
	Household income: $75,000 to $99,999 versus USD 50,000–74,999	1.24	0.81–1.89	0.322
	Household income: Less than $10,000 versus USD 50,000–74,999	1.13	0.61–2.11	0.697
	Employment: Not working versus working full-time	1.06	0.77–1.45	0.714
	Employment: Working part-time versus working full-time	0.97	0.68–1.38	0.864
	Two other-purpose categories	1.10	0.83–1.47	0.500
	Three or more other-purpose categories	1.70	1.20–2.42	0.003
	Only-way-to-afford motive selected	2.91	2.13–3.97	< 0.001
	Groceries-or-medical use	1.90	1.46–2.47	< 0.001
	Financially strained	1.66	1.26–2.18	< 0.001

Note: Odds ratios use the reference categories listed in the manuscript. Model 1 is unadjusted; Model 2 is the principal socioeconomic-adjusted belief model; Model 3 adds contemporaneous financial strain; the expanded model additionally includes other-purpose breadth, affordability motive and groceries-or-medical use.

Supplementary Table S4a. Focal coefficients from alternative belief encodings

Model	Predictor or contrast	Odds ratio	95% CI	p
Binary: rejected both vs all others	Any non-benchmark response versus both statements rejected	0.96	0.70–1.32	0.795
Counts of accepted and uncertain items	Number of accepted statements	0.99	0.84–1.17	0.903
	Number of uncertain responses	0.81	0.68–0.97	0.020
Item A responses	Item A: Agree versus Disagree	1.00	0.74–1.36	0.984
	Item A: Not sure versus Disagree	0.65	0.48–0.88	0.006
Item B responses	Item B: Agree versus Disagree	0.98	0.71–1.35	0.882
	Item B: Not sure versus Disagree	0.77	0.55–1.10	0.151

Note: This panel retains only the focal coefficients from alternative encodings conditioned on socioeconomic covariates and contemporaneous financial strain. These p values are exploratory and are not part of the four-test family in Supplementary Table S4b.

Supplementary Table S4b. Socioeconomic-adjusted item-level absolute and relative results

Survey item	Contrast	OR (95% CI)	Coefficient p	BH q	Reference probability	Comparison probability	RD (95% CI)	RD p
Item A: helps build a credit history	Agree versus Disagree	0.93 (0.68–1.26)	0.620	0.620	29.4%	28.0%	-1.4 pp (-7.1 to +4.2)	0.621
	Not sure versus Disagree	0.64 (0.47–0.87)	0.005	0.018	29.4%	21.7%	-7.7 pp (-13.1 to -2.3)	0.005
Item B: on-time payment helps credit score	Agree versus Disagree	0.90 (0.65–1.25)	0.543	0.620	28.2%	26.4%	-1.8 pp (-7.7 to +4.1)	0.547
	Not sure versus Disagree	0.76 (0.54–1.08)	0.126	0.252	28.2%	23.5%	-4.7 pp (-10.9 to +1.4)	0.132

Note: Disagree is the reference. The BH q values adjust the four non-reference item-coefficient p values across item A and item B as one Benjamini–Hochberg family. Risk-difference p values and 95% confidence intervals are unadjusted; all probabilities and risk differences are standardized over the observed final-weight distribution.

Supplementary Table S4c. Robustness of the item-A ‘Not sure’ contrast

Specification	n	Events	OR (95% CI)	Coefficient p	Disagree probability	Not-sure probability	RD (95% CI)	RD p
Principal socioeconomic-adjusted model	2004	487	0.64 (0.47–0.87)	0.005	29.4%	21.7%	-7.7 pp (-13.1 to -2.3)	0.005
Expanded resource-use model	2004	487	0.66 (0.48–0.91)	0.011	29.0%	22.4%	-6.6 pp (-11.8 to -1.5)	0.012
Unweighted socioeconomic-adjusted model	2004	487	0.66 (0.50–0.88)	0.005	27.9%	21.0%	-6.9 pp (-11.8 to -2.0)	0.006
Exclude imputed BNPL eligibility, outcome and item A records	1992	482	0.66 (0.48–0.90)	0.008	29.0%	21.8%	-7.2 pp (-12.6 to -1.7)	0.010
Socioeconomic and credit-card-adjusted model	2004	487	0.62 (0.45–0.85)	0.003	29.4%	21.4%	-8.0 pp (-13.4 to -2.6)	0.004

Note: The principal, expanded, non-imputed and credit-card-adjusted specifications use the supplied final weight; the unweighted specification uses equal weights. The non-imputed specification excludes records flagged as imputed for BNPL eligibility, the late-payment outcome or item A. These secondary sensitivity contrasts were not multiplicity adjusted.

Supplementary Table S5a. Vulnerability, weighting, imputation and resource-use sensitivity analyses

Model	Predictor or contrast	Odds ratio	95% CI	p
Four-level financial management	Belief category: uncertain	0.82	0.57–1.18	0.290
Four-level financial management	Belief category: benchmark-discordant agreement	1.08	0.77–1.52	0.652
Four-level financial management	Doing okay versus living comfortably	1.05	0.67–1.63	0.835
Four-level financial management	Just getting by versus living comfortably	2.06	1.32–3.20	0.001
Four-level financial management	Finding it difficult to get by versus living comfortably	4.03	2.52–6.47	< 0.001
Unweighted full model	Belief category: uncertain	0.81	0.57–1.14	0.222
Unweighted full model	Belief category: benchmark-discordant agreement	0.98	0.72–1.36	0.920
Unweighted full model	Financially strained	2.31	1.83–2.93	< 0.001
Alternative vulnerability: no emergency fund	Belief category: uncertain	0.82	0.57–1.18	0.288
Alternative vulnerability: no emergency fund	Belief category: benchmark-discordant agreement	1.04	0.74–1.46	0.829
Alternative vulnerability: no emergency fund	No three-month emergency fund	1.96	1.49–2.59	< 0.001
Alternative vulnerability: unable to cover $400	Belief category: uncertain	0.77	0.54–1.11	0.166
Alternative vulnerability: unable to cover $400	Belief category: benchmark-discordant agreement	1.00	0.71–1.41	0.985
Alternative vulnerability: unable to cover $400	Unable to cover a USD 400 emergency immediately	2.42	1.84–3.18	< 0.001
Extended adjustment: credit-card behavior	Belief category: uncertain	0.79	0.55–1.14	0.211
Extended adjustment: credit-card behavior	Belief category: benchmark-discordant agreement	1.07	0.77–1.50	0.683
Extended adjustment: credit-card behavior	Financially strained	2.38	1.84–3.08	< 0.001
Exclude imputed focal BNPL items	Belief category: uncertain	0.81	0.57–1.17	0.266
Exclude imputed focal BNPL items	Belief category: benchmark-discordant agreement	1.03	0.74–1.45	0.845
Exclude imputed focal BNPL items	Financially strained	2.46	1.91–3.16	< 0.001
Exclude imputed focal BNPL items and financial strain	Belief category: uncertain	0.82	0.57–1.17	0.267
Exclude imputed focal BNPL items and financial strain	Belief category: benchmark-discordant agreement	1.03	0.74–1.45	0.844
Exclude imputed focal BNPL items and financial strain	Financially strained	2.45	1.90–3.15	< 0.001
Exposure opportunity: breadth of BNPL purchase categories	Belief category: uncertain	0.85	0.59–1.23	0.392
Exposure opportunity: breadth of BNPL purchase categories	Belief category: benchmark-discordant agreement	1.02	0.73–1.44	0.901
Exposure opportunity: breadth of BNPL purchase categories	Financially strained	2.28	1.77–2.94	< 0.001
Exposure opportunity: breadth of BNPL purchase categories	Per additional purchase-purpose category	1.43	1.27–1.61	< 0.001
Purchase motive: only way I could afford it	Belief category: uncertain	0.83	0.57–1.19	0.303
Purchase motive: only way I could afford it	Belief category: benchmark-discordant agreement	1.02	0.73–1.44	0.899
Purchase motive: only way I could afford it	Financially strained	1.76	1.35–2.30	< 0.001
Purchase motive: only way I could afford it	Only-way-to-afford motive selected	3.08	2.27–4.18	< 0.001
Exposure opportunity and affordability-motive adjustment	Belief category: uncertain	0.86	0.59–1.24	0.415
Exposure opportunity and affordability-motive adjustment	Belief category: benchmark-discordant agreement	1.00	0.71–1.41	0.989
Exposure opportunity and affordability-motive adjustment	Financially strained	1.70	1.29–2.22	< 0.001
Exposure opportunity and affordability-motive adjustment	Per additional purchase-purpose category	1.37	1.22–1.55	< 0.001
Exposure opportunity and affordability-motive adjustment	Only-way-to-afford motive selected	2.89	2.12–3.94	< 0.001
Most-important affordability reason sensitivity	Belief category: uncertain	0.88	0.61–1.28	0.505
Most-important affordability reason sensitivity	Belief category: benchmark-discordant agreement	1.07	0.76–1.52	0.689

Model	Predictor or contrast	Odds ratio	95% CI	p
Most-important affordability reason sensitivity	Two other-purpose categories	1.17	0.88–1.57	0.276
Most-important affordability reason sensitivity	Three or more other-purpose categories	1.79	1.26–2.54	0.001
Most-important affordability reason sensitivity	Only-way-to-afford motive was the most important reason	1.90	1.46–2.49	< 0.001
Most-important affordability reason sensitivity	Groceries-or-medical use	1.95	1.51–2.54	< 0.001
Most-important affordability reason sensitivity	Financially strained	1.86	1.42–2.44	< 0.001

Note: Odds ratios are conditional associations. Alternative-vulnerability specifications replace the binary strain indicator with the named measure. The continuous seven-category breadth sensitivity is distinct from the main five-category other-purpose breadth measure; neither is transaction frequency. These sensitivity p values were not multiplicity adjusted.

Supplementary Table S5b. Simultaneous split-purpose sensitivity model

Purpose	n	Weighted prevalence (95% CI)	OR (95% CI)	Coefficient p	No-use probability	Use probability	RD (95% CI)	RD p
Groceries or food delivery	375	20.2% (18.3–22.1)	1.84 (1.39–2.44)	< 0.001	23.2%	33.6%	+10.4 pp (+5.4 to +15.5)	< 0.001
Medical or veterinary expenses	157	7.9% (6.6–9.1)	1.66 (1.08–2.55)	0.020	25.1%	33.6%	+8.6 pp (+1.0 to +16.2)	0.027

Note: The expanded sensitivity model simultaneously replaces the combined groceries-or-medical indicator with two binary indicators. The categories are not mutually exclusive. The questionnaire combines groceries with food delivery and medical with veterinary expenses. Tests are exploratory and unadjusted.

Supplementary Table S5c. Difference between split-purpose risk differences

Contrast	Grocery/food-delivery RD	Medical/veterinary RD	Difference	SE	95% CI	p
Groceries-or-food-delivery RD minus medical-or-veterinary RD	+10.4 pp	+8.6 pp	+1.9 pp	4.9 pp	-7.7 to +11.4 pp	0.703

Note: The risk-difference comparison uses the difference between delta-method gradients and the full covariance matrix from the same split-purpose model. Units are percentage points; the test is exploratory and unadjusted.

Supplementary Table S5d. Resource-context risk differences minus the benchmark-discordant-agreement risk difference

Resource contrast	Resource RD	Belief RD	Difference	SE	95% CI	p	BH q
Two versus zero or one other-purpose categories	+1.6 pp	+0.2 pp	+1.3 pp	3.6 pp	-5.8 to +8.5 pp	0.711	0.711
Three or more versus zero or one other-purpose categories	+8.9 pp	+0.2 pp	+8.7 pp	4.3 pp	+0.3 to +17.1 pp	0.043	0.054
Only-way-to-afford motive selected	+16.5 pp	+0.2 pp	+16.2 pp	3.6 pp	+9.1 to +23.4 pp	< 0.001	< 0.001
Any groceries-or-medical use	+10.9 pp	+0.2 pp	+10.7 pp	3.6 pp	+3.6 to +17.8 pp	0.003	0.007
Financially strained	+8.1 pp	+0.2 pp	+7.9 pp	3.5 pp	+1.0 to +14.8 pp	0.025	0.041

Note: The common comparator is benchmark-discordant agreement versus both statements rejected in the expanded model. Standard errors use gradient differences and the full within-model covariance matrix. The five p values form one Benjamini–Hochberg family; confidence intervals are unadjusted. Comparisons are model dependent and not causal-effect contrasts.

Supplementary Table S5e. Single-resource and mutually adjusted resource specifications

Model	Resource contrast	OR (95% CI)	Coefficient p	Reference probability	Comparison probability	RD (95% CI)	RD p
E1: Belief and socioeconomic covariates plus affordability motive	Affordability motive: Only way I could afford it versus Other reason	3.72 (2.78–4.97)	< 0.001	12.7%	33.4%	+20.6 pp (+16.6 to +24.7)	< 0.001
E2: Belief and socioeconomic covariates plus groceries-or-medical use	Groceries-or-medical use: Groceries or medical use versus Other purchase purposes	2.27 (1.76–2.93)	< 0.001	21.6%	36.8%	+15.2 pp (+10.2 to +20.3)	< 0.001
E3: Belief and socioeconomic covariates plus other-purpose breadth	Other-purpose breadth: 2 other categories versus 0-1 other categories	1.29 (0.98–1.69)	0.067	23.3%	27.7%	+4.4 pp (-0.4 to +9.1)	0.072
E3: Belief and socioeconomic covariates plus other-purpose breadth	Other-purpose breadth: 3 or more other categories versus 0-1 other categories	1.90 (1.34–2.70)	< 0.001	23.3%	35.2%	+11.9 pp (+5.0 to +18.7)	< 0.001
E4: Belief and socioeconomic covariates plus financial strain	Financial strain: Financially strained versus Not financially strained	2.44 (1.90–3.13)	< 0.001	18.1%	33.4%	+15.3 pp (+11.1 to +19.6)	< 0.001
E5: Common expanded model with all four resource indicators	Affordability motive: Only way I could afford it versus Other reason	2.91 (2.13–3.97)	< 0.001	14.9%	31.3%	+16.5 pp (+12.0 to +20.9)	< 0.001
E5: Common expanded model with all four resource indicators	Groceries-or-medical use: Groceries or medical use versus Other purchase purposes	1.90 (1.46–2.47)	< 0.001	22.6%	33.5%	+10.9 pp (+6.2 to +15.6)	< 0.001
E5: Common expanded model with all four resource indicators	Other-purpose breadth: 2 other categories versus 0-1 other categories	1.10 (0.83–1.47)	0.500	24.3%	25.8%	+1.6 pp (-3.0 to +6.1)	0.503
E5: Common expanded model with all four resource indicators	Other-purpose breadth: 3 or more other categories versus 0-1 other categories	1.70 (1.20–2.42)	0.003	24.3%	33.2%	+8.9 pp (+2.8 to +15.1)	0.005
E5: Common expanded model with all four resource indicators	Financial strain: Financially strained versus Not financially strained	1.66 (1.26–2.18)	< 0.001	21.3%	29.4%	+8.1 pp (+3.7 to +12.5)	< 0.001

Note: E1–E4 each include the belief category, socioeconomic covariates and one resource indicator. E5 is the common expanded model containing all four resource indicators. All models used n = 2,004 respondents and 487 events. Comparisons across specifications describe attenuation and do not decompose mediation; p values are unadjusted.

Supplementary Table S6a. Belief-by-strain interaction coefficients

Model	Predictor or contrast	Odds ratio	95% CI	p
Model 4: belief by financial strain	Belief category: uncertain	0.93	0.49–1.76	0.828
	Belief category: benchmark-discordant agreement	1.41	0.79–2.50	0.240
	Financially strained	3.34	1.76–6.34	< 0.001
	Age 18-24 versus 35–44	1.11	0.75–1.66	0.598
	Age 25-34 versus 35–44	1.07	0.77–1.49	0.696
	Age 45-54 versus 35–44	0.68	0.47–0.98	0.041
	Age 55-64 versus 35–44	0.48	0.32–0.74	< 0.001
	Age 65-74 versus 35–44	0.30	0.18–0.51	< 0.001
	Age 75+ versus 35–44	0.33	0.14–0.79	0.013
	Gender: Female versus male	1.18	0.93–1.50	0.180
	Race and ethnicity: 2+ Races, Non-Hispanic versus White, non-Hispanic	1.92	0.99–3.72	0.053
	Race and ethnicity: Black, Non-Hispanic versus White, non-Hispanic	1.68	1.26–2.25	< 0.001
	Race and ethnicity: Hispanic versus White, non-Hispanic	1.00	0.74–1.35	0.998
	Race and ethnicity: Other, Non-Hispanic versus White, non-Hispanic	1.72	0.95–3.12	0.072
	Education: High school graduate (high school diploma or the equivalent GED) versus bachelor's degree	2.18	1.46–3.24	< 0.001
	Education: Master’s degree or higher versus bachelor's degree	0.72	0.42–1.24	0.242
	Education: No high school diploma or GED versus bachelor's degree	3.49	2.13–5.70	< 0.001
	Education: Some college or Associate's degree versus bachelor's degree	1.95	1.34–2.83	< 0.001
	Household income: $10,000 to $24,999 versus USD 50,000–74,999	1.08	0.69–1.69	0.721
	Household income: $100,000 to $149,999 versus USD 50,000–74,999	0.80	0.53–1.21	0.297
	Household income: $150,000 or more versus USD 50,000–74,999	1.01	0.63–1.62	0.972
	Household income: $25,000 to $49,999 versus USD 50,000–74,999	1.22	0.85–1.75	0.278
	Household income: $75,000 to $99,999 versus USD 50,000–74,999	1.19	0.79–1.81	0.403
	Household income: Less than $10,000 versus USD 50,000–74,999	1.15	0.64–2.07	0.644
	Employment: Not working versus working full-time	1.07	0.78–1.46	0.671
	Employment: Working part-time versus working full-time	0.90	0.64–1.28	0.565
	Uncertain × financially strained	0.83	0.38–1.81	0.635
	Benchmark-discordant agreement × financially strained	0.64	0.31–1.29	0.209

Note: The global two-degree-of-freedom interaction test was $F(2, 1975) = 1.00$, $p = 0.368$.

Supplementary Table S6b. Standardized interaction-model probabilities

Belief category	Financial strain	Probability	SE	CI low	CI high
Both statements rejected	Not financially strained	15.7%	3.3%	9.2%	22.2%
Uncertain	Not financially strained	14.8%	2.2%	10.5%	19.2%
At least one statement accepted	Not financially strained	20.5%	1.9%	16.8%	24.1%
Both statements rejected	Financially strained	36.2%	4.0%	28.5%	44.0%
Uncertain	Financially strained	31.0%	2.6%	25.9%	36.1%
At least one statement accepted	Financially strained	33.9%	2.3%	29.4%	38.5%

Note: Probabilities, standard errors and confidence limits are percentages and are standardized over the observed final-weight distribution.

Supplementary Table S6c. Within-stratum belief risk differences

Contrast	Financial strain	Risk difference	SE	CI low	CI high	p
Uncertain minus Both statements rejected	Not financially strained	-0.9	4.0	-8.7	7.0	0.829
At least one statement accepted minus Both statements rejected	Not financially strained	4.8	3.8	-2.7	12.2	0.211
Uncertain minus Both statements rejected	Financially strained	-5.3	4.7	-14.5	4.0	0.265
At least one statement accepted minus Both statements rejected	Financially strained	-2.3	4.5	-11.1	6.5	0.611

Note: Risk differences, standard errors and confidence limits are percentage points. Uncertainty uses the delta method.

Supplementary Table S6d. Differences between within-stratum risk differences

Contrast	RD not strained	RD strained	Difference in RDs	SE	95% CI	p
Uncertain versus Both statements rejected	-0.9	-5.3	-4.4	6.2	-16.5 to 7.7	0.478
At least one statement accepted versus Both statements rejected	4.8	-2.3	-7.0	5.8	-18.5 to 4.4	0.228

Note: All risk-scale quantities are percentage points. These exploratory contrasts do not identify causal effect modification.

Supplementary Table S6e. Internal cross-validation metrics

Model	AUC	Brier	Log loss	Delta AUC	Delta Brier	Delta log loss	Folds	Seed
Socioeconomic covariates	0.6659	0.1801	0.5411	0.0000	0.0000	0.0000	10	20260719
Socioeconomic covariates plus belief category	0.6649	0.1804	0.5418	-0.0010	0.0003	0.0007	10	20260719
Socioeconomic covariates plus financial strain	0.6955	0.1751	0.5273	0.0295	-0.0050	-0.0138	10	20260719
Socioeconomic covariates plus belief category and financial strain	0.6961	0.1751	0.5274	0.0302	-0.0049	-0.0137	10	20260719
Expanded resource-use model	0.7375	0.1668	0.5032	0.0716	-0.0133	-0.0379	10	20260719

Note: Outcome-stratified ten-fold cross-validation used one fixed partition. Metrics are weighted and have no uncertainty intervals; they assess incremental descriptive information, not deployable prediction.

Supplementary Table S6f. Model diagnostics

Model	n	Events	Coefficients	Rank	Converged	Min fitted	Max fitted	Max |coefficient|	Max SE	Design df	Kish effective n
Reference model: socioeconomic covariates	2004	487	24	24	TRUE	0.028	0.636	1.731	0.462	2003	1757.477
Model 1: unadjusted	2004	487	3	3	TRUE	0.241	0.279	0.950	0.175	2003	1757.477
Model 2: principal belief model	2004	487	26	26	TRUE	0.024	0.655	1.652	0.459	2003	1757.477
Model 3: strain-conditioned belief model	2004	487	27	27	TRUE	0.016	0.730	2.214	0.447	2003	1757.477
Resource model: socioeconomic covariates and strain	2004	487	25	25	TRUE	0.019	0.708	2.215	0.453	2003	1757.477
Expanded resource-use model	2004	487	31	31	TRUE	0.012	0.816	2.965	0.461	2003	1757.477
Expanded item A model	2004	487	31	31	TRUE	0.011	0.828	2.811	0.464	2003	1757.477
Expanded split-purpose model	2004	487	32	32	TRUE	0.012	0.864	2.972	0.452	2003	1757.477
Item model A: build credit history	2004	487	26	26	TRUE	0.023	0.673	1.564	0.458	2003	1757.477
Item model B: on-time payment improves credit score	2004	487	26	26	TRUE	0.025	0.663	1.619	0.459	2003	1757.477
Model 4: belief by financial strain	2004	487	29	29	TRUE	0.015	0.719	2.422	0.449	2003	1757.477

Note: All reported model matrices were full rank and all models converged. The Kish effective n is calculated from the final weights in the BNPL-user domain.

Supplementary Table S6g. Survey-weight diagnostics

Metric	Value
Unscaled final-weight sum	2132.7017000000023
Unscaled final-weight mean	1.0642224051896207
Unscaled final-weight minimum	0.3319
Unscaled final-weight maximum	3.4882
Normalization factor to analytic n	0.9396532107607912
Normalized-weight sum	2003.9999999999984
Normalized-weight minimum	0.3118709006515066
Normalized-weight maximum	3.277698329775792

Note: The public file supplies a final cross-sectional weight but no primary-sampling-unit, stratum or replicate-weight variables.

Supplementary Table S6h. Software environment

Component	Version
R	4.5.3
survey	4.5
dplyr	1.2.1
readr	2.2.0
tidyr	1.3.2
broom	1.0.12
ggplot2	4.0.2
svglite	2.2.2
ragg	1.5.2

Note: The complete R session information is included in Online Resource 2.