




Payment Habits and Contactless Payments as a Result of COVID-19

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Intro

- Contactless payments are the newest addition to the financial technology.
 - They're seen as an alternative to traditional cash payments in terms of speed of transaction and convenience. (Trütsch, 2020)
- The COVID-19 pandemic has shifted payment patterns.
- This presentation looks at payment practices before and during the pandemic to assess how payment preferences will change after the pandemic.
- Two linear regressions are modeled using data from Understanding America Study's *Understanding Coronavirus in America* ("Covid") survey
- Unified theory of acceptance and use of technology (UTAUT)
 - 4 key constructs:
 - Performance expectancy
 - Effort expectancy
 - Social influence
 - Facilitating conditions

Hypothesis

- Hypotheses:
 - a. Those who regularly used tap and go payments or opted to do their banking online or via telephone prior to the pandemic have a smaller jump to contactless payments compared to those who did not use touch and go payments or do mobile banking.
 - b. Younger consumers and those those do regular shopping for their households are more likely to continue to use contactless payment options post-pandemic.
 - c. Those who are more educated or have higher salaries have a smaller jump to contactless payments.

Data

- Data collected by Understanding America Study (UAS)'s *Understanding Coronavirus in America* ("Covid") survey
- We merged 3 waves from the Covid survey using Stata
 - UAS 201: 2019 Survey of Consumer Payment Choice (Wave 0)
 - UAS 240: Coronavirus Tracking Survey - Long Form (Wave 3, May 2020)
 - UAS 256: Coronavirus Tracking Survey - Long Form (Wave 11, September 2020)
- Final sample had 2,823 respondents matched by unique IDs
 - Male: 1,233
 - Female: 1,590

| Variable | Mean | Min | Max |
|---------------------------------|--------|-----|-----|
| in_person_pay | 33.69% | 0 | 1 |
| avoid_cash | 25.91% | 0 | 1 |
| grocery_switch | 7.92% | 0 | 1 |
| rest_switch | 13.62% | 0 | 1 |
| hardware_switch | 5.16% | 0 | 1 |
| bigbox_switch | 12.42% | 0 | 1 |
| other_switch | 10.58% | 0 | 1 |
| conv_cash | 3.95 | 1 | 5 |
| conv_moneyorder | 2.31 | 1 | 5 |
| conv_prepaid | 3.56 | 1 | 5 |
| conv_debit | 4.36 | 1 | 5 |
| conv_credit | 4.42 | 1 | 5 |
| regular_shopper | 8.63% | 0 | 1 |
| mobile_banking | 80.30% | 0 | 1 |
| wave0 | 99.53% | 0 | 1 |
| wave3 | 99.93% | 0 | 1 |
| wave11 | 99.31% | 0 | 1 |
| white_only | 73.86% | 0 | 1 |
| black_only | 13.25% | 0 | 1 |
| mixed_asian_amerindian_hawaiian | 12.65% | 0 | 1 |
| male | 48.11% | 0 | 1 |
| female | 51.89% | 0 | 1 |

Results: COVID-19 In Person Payments Regression

| | | | |
|-----------------------------|---------------|---|--------|
| Probit regression | Number of obs | = | 2,805 |
| | LR chi2(52) | = | 203.81 |
| | Prob > chi2 | = | 0.0000 |
| Log likelihood = -1731.6221 | Pseudo R2 | = | 0.0556 |

| in_person_pay | Description | Coefficient | Std Error | z | P> z |
|-----------------------|---|-------------|-----------|-------|-------|
| avoid_cash | avoid using cash | -0.1066496 | 0.0615175 | -1.73 | 0.083 |
| grocery_switch | switch to online or phone payments at grocery store | 0.0919565 | 0.1360629 | 0.68 | 0.499 |
| rest_switch | switch to online or phone payments at restaurants and fast food places | 0.0881213 | 0.1147153 | 0.77 | 0.442 |
| hardware_switch | switch to online or phone payments at hardware stores | -0.326985 | 0.1672243 | -1.96 | 0.051 |
| bigbox_switch | switch to online or phone payments at general merchandise or "big box" stores | -0.1983025 | 0.1322359 | -1.5 | 0.134 |
| other_switch | switch to online or phone payments at other places of purchase | -0.0464642 | 0.1302 | -0.36 | 0.721 |
| conv_cash | convenience rating on using cash | 0.0670723 | 0.0240758 | 2.79 | 0.005 |
| conv_moneyorder | convenience rating on using money order | -0.0814763 | 0.0251924 | -3.23 | 0.001 |
| conv_prepaid | convenience rating on using prepaid card | 0.007881 | 0.0247376 | 0.32 | 0.75 |
| conv_debit | convenience rating on using debit card | 0.013717 | 0.0330783 | 0.41 | 0.678 |
| conv_credit | convenience rating on using credit card | -0.014861 | 0.0369792 | -0.4 | 0.688 |
| regular_shopper | does regular shopping for household (groceries, household supplies, pharmacy) | -0.1041414 | 0.1050196 | -0.99 | 0.321 |
| mobile_banking | does banking via telephone or online | -0.0157802 | 0.0699077 | -0.23 | 0.821 |
| wave0 | UAS 201 (2019 wave) | -0.2977845 | 0.4640077 | -0.64 | 0.521 |
| wave3 | UAS 240 (2020 wave) | 0 | (omitted) | | |
| wave11 | UAS 256 (2020 wave) | 0.2659392 | 0.3086352 | 0.86 | 0.389 |
| eighteen_twentyfour | age range 18-24 | 0.0439883 | 0.2133368 | 0.21 | 0.837 |
| twentyfive_thirtyfour | age range 25-34 | -0.0476787 | 0.1249637 | -0.38 | 0.703 |
| thirtyfive_fortyfour | age range 35-44 | -0.1967503 | 0.1112359 | -1.77 | 0.077 |
| fortyfive_fiftyfour | age range 45-53 | -0.2745908 | 0.1049715 | -2.62 | 0.009 |
| fiftyfive_sixtyfour | age range 55-63 | -0.1166007 | 0.085943 | -1.36 | 0.175 |
| sixtyfiveplus | age range 65+ | 0 | (omitted) | | |
| male | male | 0.1945318 | 0.0535861 | 3.63 | 0 |
| female | female | 0 | (omitted) | | |
| no_highschool | education: high school not completed | -0.7096841 | 0.1802444 | -3.94 | 0 |
| highschool | education: high school completed | -0.5169049 | 0.13801 | -3.75 | 0 |
| some_college | education: some college completed | -0.4655717 | 0.1334859 | -3.49 | 0 |
| assoc_degree | education: associate's degree earned | -0.3747384 | 0.1370439 | -2.73 | 0.006 |
| bachelors_degree | education: bachelor's degree earned | -0.2411513 | 0.1278794 | -1.89 | 0.059 |
| masters_degree | education: master's degree earned | -0.0616978 | 0.1344752 | -0.46 | 0.646 |
| prof_and_doctorate | education: professional or doctorate degree earned | 0 | (omitted) | | |
| employed_status | employment status: employed | 0.1643418 | 0.1032614 | 1.59 | 0.111 |
| unemployed_status | employment status: unemployed | 0.2429935 | 0.1364966 | 1.78 | 0.075 |
| retired_status | employment status: retired | 0.1645447 | 0.1121145 | 1.47 | 0.142 |
| disabled_status | employment status: disabled | 0.0197907 | 0.1183589 | 0.17 | 0.867 |
| other_status | employment status: other | 0.2029179 | 0.1203191 | 1.69 | 0.092 |

Results: COVID-19 Remote Payments Regression

| | | | |
|-----------------------------|---------------|---|--------|
| Probit regression | Number of obs | = | 2,809 |
| | LR chi2(53) | = | 379.47 |
| | Prob > chi2 | = | 0.0000 |
| Log likelihood = -1381.8511 | Pseudo R2 | = | 0.1207 |

| mobilepay | Description | Coef. | Std. Error | z | P> z |
|---------------------------------|---|-------------|------------|-------|-------|
| avoid_cash | avoid using cash | 0.0394041 | 0.0657966 | 0.6 | 0.549 |
| grocery_switch | switch to online or phone payments at grocery store | 0.0377653 | 0.1388407 | 0.27 | 0.786 |
| rest_switch | switch to online or phone payments at restaurants and fast food places | 0.1837008 | 0.1164273 | 1.58 | 0.115 |
| hardware_switch | switch to online or phone payments at hardware stores | 0.0757642 | 0.1615807 | 0.47 | 0.639 |
| bigbox_switch | switch to online or phone payments at general merchandise or "big box" stores | -0.0853894 | 0.1352117 | -0.63 | 0.528 |
| other_switch | switch to online or phone payments at other places of purchase | 0.1677258 | 0.1300876 | 1.29 | 0.197 |
| conv_cash | convenience rating on using cash | -0.0497025 | 0.0260806 | -1.91 | 0.057 |
| conv_moneyorder | convenience rating on using money order | -0.0331613 | 0.0278262 | -1.19 | 0.233 |
| conv_prepaid | convenience rating on using prepaid card | 0.0107814 | 0.0271785 | 0.4 | 0.692 |
| conv_debit | convenience rating on using debit card | 0.0725777 | 0.0384288 | 1.89 | 0.059 |
| conv_credit | convenience rating on using credit card | -0.0417062 | 0.0415435 | -1 | 0.315 |
| regular_shopper | does regular shopping for household (groceries, household supplies, pharmacy) | -0.2177779 | 0.1225658 | -1.78 | 0.076 |
| mobile_banking | does banking via telephone or online | 0.4507701 | 0.0880933 | 5.12 | 0 |
| wave0 | UAS 201 (2019 wave) | 0.625656 | 0.5174354 | 1.21 | 0.227 |
| wave3 | UAS 240 (2020 wave) | -0.5006525 | 0.7070692 | -0.71 | 0.479 |
| wave11 | UAS 256 (2020 wave) | -0.3594051 | 0.3096998 | -1.16 | 0.246 |
| eighteen_twentyfour | age range 18-24 | 1.147152 | 0.2244457 | 5.11 | 0 |
| twentyfive_thirtyfour | age range 25-34 | 0.8006974 | 0.1376576 | 5.82 | 0 |
| thirtyfive_fortyfour | age range 35-44 | 0.5516459 | 0.1248862 | 4.42 | 0 |
| fortyfive_fiftyfour | age range 45-53 | 0.3868768 | 0.1183979 | 3.27 | 0.001 |
| fiftyfive_sixtyfour | age range 55-63 | 0.1353073 | 0.1029639 | 1.31 | 0.189 |
| sixtyfiveplus | age range 65+ | 0 (omitted) | | | |
| white_only | race: white only | 5.062398 | 113.6604 | 0.04 | 0.964 |
| black_only | race: black only | 5.199475 | 113.6605 | 0.05 | 0.964 |
| mixed_asian_amerindian_hawaiian | race: asian, american indian, hawaiian | 5.251172 | 113.6605 | 0.05 | 0.963 |
| male | male | -0.0217616 | 0.0595631 | -0.37 | 0.715 |
| female | female | 0 (omitted) | | | |
| no_highschool | education: high school not completed | -0.0583339 | 0.2002437 | -0.29 | 0.771 |
| highschool | education: high school completed | -0.2127949 | 0.1541931 | -1.38 | 0.168 |
| some_college | education: some college completed | 0.0592945 | 0.1472771 | 0.4 | 0.687 |
| assoc_degree | education: associate's degree earned | -0.037613 | 0.1509072 | -0.25 | 0.803 |
| bachelors_degree | education: bachelor's degree earned | 0.0798549 | 0.1403715 | 0.57 | 0.569 |
| masters_degree | education: master's degree earned | 0.082384 | 0.1472211 | 0.56 | 0.576 |
| prof_and_doctorate | education: professional or doctorate degree earned | 0 (omitted) | | | |
| employed_status | employment status: employed | 0.0397018 | 0.1201278 | 0.33 | 0.741 |
| unemployed_status | employment status: unemployed | 0.3044407 | 0.150117 | 2.03 | 0.043 |
| retired_status | employment status: retired | -0.0762547 | 0.1336528 | -0.57 | 0.568 |
| disabled_status | employment status: disabled | 0.091147 | 0.1376258 | 0.66 | 0.508 |
| other_status | employment status: other | -0.1175059 | 0.1380644 | -0.85 | 0.395 |

Conclusions

- The convenience ratings for cash and money orders, which are non-electronic, are significant for in-person payments, while banking via telephone or online are significant for remote payments.
- 18-54 year-olds are more likely to use remote payment options compared to people over 54
- Can help vendors plan payment options based on target demographic, type of store, and prior consumer payment preferences
- Can help consumers understand how their payment preferences compare to those with similar demographic qualities
- Future studies can look at the payment divide and continuous use of remote payments post-pandemic
- Policymakers and consumer advocates should address the digital/payment divide that may leave others behind as payment technologies modernize

References

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