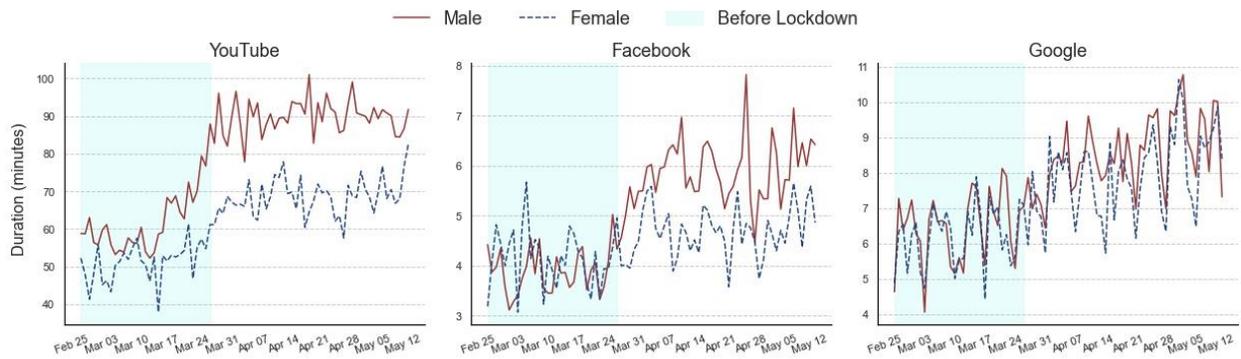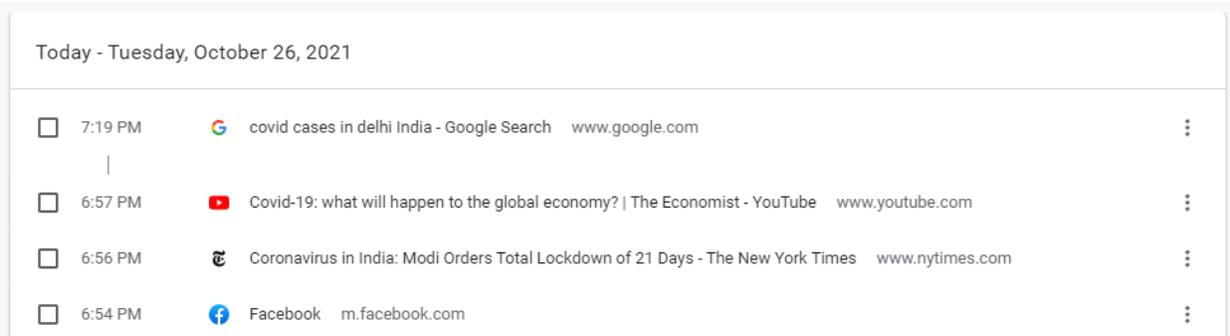# Online Appendix. Supplemental Figures and Tables

FIGURE A1. DAILY BROWSER TIME USE FOR MEN AND WOMEN BY YOUTUBE, FACEBOOK AND GOOGLE

Notes. The pale blue shaded region represents the period before the COVID-19 lockdown in India on 25 March, 2020.

FIGURE A2. SAMPLE BROWSER HISTORY

Notes. This figure presents an illustrative example of a web browser history. Each time a user visits a URL, the date-time information, website title and domain information are saved in the browser history. The title information conveys meaningful information about the website that has been visited (e.g., the google search phrase in the top panel). If a user is logged into the browser app on their mobile devices, web browser history includes the usage under the mobile browser app (e.g., Facebook at the bottom of the panel. The m.facebook.com is the mobile version of Facebook, which is specifically designed for mobile devices). Beyond what is available in the browser history, our dataset also includes the category information for each website domain and duration of each URL visit, provided by our industry partner PY Insights.

TABLE A1. ALTERNATIVE SPECIFICATIONS

	Total (1)	Leisure (2)	Production (3)	YouTube (4)	Facebook (5)	Google Search (6)
Panel A. Extensive Margin						
Lockdown × Female	-0.0240	-0.0324**	-0.0316**	-0.0361**	-0.0463***	-0.0378**
	(0.0149)	(0.0165)	(0.0160)	(0.0156)	(0.0108)	(0.0172)
Sample Mean	0.814	0.625	0.783	0.411	0.202	0.584
Observations	81,462	81,462	81,462	81,462	81,462	81,462
Number of Individuals	1,094	1,094	1,094	1,094	1,094	1,094
Panel B. Intensive Margin: Daily Browser Time						
Lockdown × Female	-0.0889**	-0.130*	-0.114**	-0.149*	-0.0805	
	(0.0386)	(0.0688)	(0.0465)	(0.0845)	(0.0849)	
Observations	66,266	50,889	63,820	33,453	16,425	
Number of Individuals	1,094	1,084	1,094	1,032	934	
Panel C. Intensive Margin: Daily Website Visits						
Lockdown × Female	-0.186***	-0.231***	-0.173***	-0.157***		-0.0565
	(0.0570)	(0.0589)	(0.0570)	(0.0518)		(0.0369)
Observations	66,266	50,889	63,820	31,596		47,837
Number of Individuals	1,094	1,084	1,094	1,029		1,082
Panel D. Levels: Daily Browser Time						
Lockdown × Female	-25.49***	-11.29*	-8.062**	-10.66**	-1.359**	
	(8.414)	(6.360)	(3.748)	(4.882)	(0.593)	
Observations	81,462	81,462	81,462	81,462	81,462	
Number of Individuals	1,094	1,094	1,094	1,094	1,094	
Panel E. Levels: Daily Website Visits						
Lockdown × Female	-41.77*	-12.37***	-17.34	-2.026***		-0.509*
	(21.64)	(3.650)	(20.18)	(0.464)		(0.304)
Observations	81,462	81,462	81,462	81,462		81,462
Number of Individuals	1,094	1,094	1,094	1,094		1,094
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Date fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Panel A focuses on the extensive margin and the outcome is an indicator variable for if the person visited any pages within the category. The next two panels focus on the intensive margin and use log-transformed measures of usage (time in Panel B and visits in Panel C) that drop zero values from the sample. The next two panels estimate models in levels and include zero values for usage (time in Panel D and visits in Panel E). Standard errors are clustered at the individual level. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions include individual and date fixed effects.

TABLE A2. EFFECTS OF THE LOCKDOWN ON GENDER GAPS IN ONLINE LEARNING AND SKILL DEVELOPMENT

	Browser Time (1)	Any Browser Time (2)	High Frequency (3)	High Frequency (4)	Frequency Category (5)
Lockdown ×					
Female	-0.453	0.00424	0.0190	0.0518	0.0164
	(0.591)	(0.00921)	(0.0430)	(0.114)	(0.0966)
Lockdown			0.177***	0.460***	0.397***
			(0.0258)	(0.0684)	(0.0569)
Female			-0.0128	-0.0361	-0.0358
			(0.0292)	(0.0826)	(0.0678)
Sample Mean	2.76	0.123			
Observations	81,462	81,462	2,188	2,188	2,188
Number of Individuals	1,094	1,094	1,094	1,094	1,094
Individual fixed effects	Yes	Yes	No	No	No
Date fixed effects	Yes	Yes	No	No	No

Notes. Columns (1) and (2) present estimated gender differences in the effects of the lockdown on daily internet browser activity related to online learning websites using the person-day unit of observation and controlling for individual and day fixed effects. Browser time is measured continuously in minutes in column (1) and as an indicator for any time during the day in column (2). Columns (3), (4) and (5) examine changes in survey reports of frequency of "self-investment" activities (e.g., taking a course, teaching yourself a new skill, etc.) between the lockdown and period before the pandemic. The questions offered 4 options for response: almost never (16.7%), sometimes (42.8%), frequently (26.9%) and very frequently (13.7%). The outcome in columns (3) and (4) is a binary indicator for reporting high self-investment (frequently or very frequently), using a linear probability (3) or Probit (4) model. Column (5) reports estimates from an ordered Probit using all four categories. Robust standard errors reported in in parentheses in all columns, with clustering at the individual level in Columns (1) and (2). Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A3. EFFECTS OF THE LOCKDOWN ON GENDER GAPS: NO DEVICE SHARING SUB-SAMPLE

	Total (1)	Leisure (2)	Production (3)	YouTube (4)	Facebook (5)	Google Search (6)
Panel A. Daily Browser Time						
Lockdown × Female	-0.513**	-0.529**	-0.435**	-0.645***	-0.298***	
	(0.204)	(0.212)	(0.190)	(0.192)	(0.109)	
Sample Mean	229.9	116.7	103.5	155.7	6.1	
Panel B. Daily Website Visits						
Lockdown × Female	-0.356***	-0.322***	-0.275**	-0.235***		-0.143***
	(0.122)	(0.0957)	(0.117)	(0.0585)		(0.0540)
Sample Mean	250.7	45.5	168.6	6.3		5.6
Observations	42,419	42,419	42,419	42,419	42,419	42,419
Number of Individuals	564	564	564	564	564	564
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Date fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the main estimates for daily internet browser time use and activity counts on the subsample of individuals who reported not sharing their devices (smartphone, tablet, computer) with others. Panel A presents the time use outcomes while Panel B presents the activity counts, measured as unique URLs. Dependent variables are the natural log transformation of 1 plus the outcome of interest (seconds or counts). Standard errors are clustered at the individual level. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A4. EXPLORATION OF YOUTUBE VIDEO CATEGORIES

	Leisure Time use (1)	Production Time use (2)	Leisure URL count (3)	Production URL count (4)
Panel A. Daily YouTube Time				
Lockdown × Female	-0.337***	-0.280***	-0.112***	-0.0931***
	(0.115)	(0.0919)	(0.0336)	(0.0237)
Sample Mean (minutes)	32.469	14.678	3.299	1.473
Panel B. YouTube-Purpose-Adjusted Daily Browser Time				
Lockdown × Female	-0.346**	-0.308**	-0.246***	-0.264***
	-0.143	-0.142	-0.0667	-0.086
Sample Mean (minutes)	70.251	95.458	38.526	168.674
Observations	81,462	81,462	81,462	81,462
Number of Individuals	1,094	1,094	1,094	1,094
Individual fixed effects	Yes	Yes	Yes	Yes
Date fixed effects	Yes	Yes	Yes	Yes

Notes. This table presents the estimates and summary statistics that use information on content categories for YouTube videos. Outcomes in Panel A measure viewing of YouTube videos. Leisure and Production categories are aggregated based on categories collected via the YouTube API. Leisure includes: Autos & Vehicles; Comedy; Entertainment; Film & Animation; Gaming; Movies; Music; People & Blogs; Pets & Animals; Sports; Trailers; and Travel & Events. Production includes: Education; How to & Style; News & Politics; and Science & Technology. Daily average YouTube time use in the pre-lockdown period is 62.3 minutes (Table 2), which includes time spent on non-video URLs such as the YouTube home and search pages. It also includes time spent on videos whose category could not be determined via the YouTube API. Panel B presents the main estimates after reclassifying YouTube production videos to the overall production category. Columns 1 and 2 use duration-based measures and columns 3 and 4 use URL counts. Dependent variables are the natural log transformation of 1 plus the outcome of interest (seconds or counts). Standard errors are clustered at the individual level. The sample mean is at the person-day level and reported in levels (minutes or counts). Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A5. BREAKDOWN INTO DETAILED YOUTUBE VIDEO CATEGORIES

	Leisure Usage						Production Usage		
	Movies	Music	Games	People & Blogs	Entertainment	Other Leisure	News & Media	Education	Other Production
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lockdown ×	-0.0525	-0.0933	-0.0295	-0.261***	-0.237***	-0.141*	-0.259***	-0.0814	-0.207***
						(0.0731			
Female	(0.0470)	(0.0668)	(0.0409)	(0.0696)	(0.0811)	)	(0.0688)	(0.058)	(0.0580)
Sample Mean (minutes)	3.372	7.550	2.663	5.937	9.582	9.399	6.329	3.840	4.510
Observations	81,462	81,462	81,462	81,462	81,462	81,462	81,462	81,462	81,462
Number of Individuals	1,094	1,094	1,094	1,094	1,094	1,094	1,094	1,094	1,094
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the estimates for YouTube category usage. We collect the category information of YouTube videos by feeding our URL data into the YouTube API. The Movies category consists of: Film & Animation; Movies; and Trailers. Other Leisure includes: Autos & Vehicles; Comedy; Pets & Animals; Sports; and Travel & Events. Other Production includes: How to & Style and Science & Technology. Dependent variables are the natural log transformation of the outcome of interest plus 1 second. All outcome variables are time-use measures. Standard errors are clustered at the individual level. The sample mean is at the person-day level and reported in levels (minutes). Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A6. INTERNET BROWSER USE BY GENDER AND PARENTAL OR EMPLOYMENT STATUS

| | Parental Status | | | | Employment Status | | | |
| | One Child or More | | No Children | | Employed Full Time | | Not Full-Time Employed | |
	Female	Male	Female	Male	Female	Male	Female	Male
Total Time	198.0	220.3	208.7	249.5	192.9	231.7	219.9	231.7
	(214.9)	(229.2)	(229.2)	(246.3)	(212.3)	(238.0)	(235.1)	(231.1)
Leisure Time	94.49	99.81	119.2	138.3	89.19	109.1	133.3	134.1
	(167.7)	(175.0)	(194.7)	(205.3)	(159.3)	(185.4)	(209.4)	(196.7)
Production Time	77.74	90.67	64.86	77.22	77.50	91.19	62.99	66.11
	(103.7)	(110.3)	(86.01)	(96.78)	(105.1)	(110.3)	(79.18)	(84.55)
Observations	16,878	32,001	12,075	20,508	18,708	40,432	10,245	12,077

Notes: Unit of observation is a person-day. Browser time use measured in minutes per day. Standard deviations in parentheses.

TABLE A7. ACCOUNTING FOR JOB LOSS AND WORKING FROM HOME

	Browser: Total Time use (1)	Browser: Leisure Time use (2)	Browser: Production Time use (3)	Survey: Childcare Time use (4)
Panel A. Exclude Job Loss				
Lockdown × Female	-0.293*	-0.357**	-0.324**	-0.762**
	(0.150)	(0.153)	(0.142)	(0.305)
Observations	78,233	78,233	78,233	1,104
Number of Individuals	1,050	1,050	1,050	552
Panel B. Controlling for Job Loss and Work from Home				
Lockdown × Female	-0.257*	-0.301**	-0.307**	-0.796***
	(0.150)	(0.153)	(0.141)	(0.308)
Lockdown × Job Loss	-0.617	-0.349	-0.381	-0.180
	(0.453)	(0.436)	(0.381)	(0.646)
Lockdown × Work from Home	0.124	-0.0510	0.158	-0.401
	(0.153)	(0.159)	(0.142)	(0.302)
Lockdown × Partner Job Loss	-0.0216	0.447	0.109	-0.502
	(0.440)	(0.362)	(0.452)	(0.751)
Lockdown × Partner Work from Home	-0.386**	-0.230	-0.294*	0.102
	(0.180)	(0.183)	(0.170)	(0.311)
Observations	81,462	81,462	81,462	1,146
Number of Individuals	1,094	1,094	1,094	573
Individual fixed effects	Yes	Yes	Yes	No
Date fixed effects	Yes	Yes	Yes	No

Notes. This table presents the results on daily internet browser time use and self-reported childcare time. Browser time is log-transformed adding 1 second, as described in Table 3. Childcare time is in hours, as described in Table 7. Childcare time is only for married individuals with children. The regression model also includes un-interacted indicators for Female and Lockdown. Panel A reports estimates on a subsample that excludes people who reported losing a job in the prior 90 days. Panel B uses the full sample and adds separate controls for own and spousal job loss and starting to work from home in the past 90 days, interacted with the Lockdown indicator. Standard errors clustered at the individual level (for browser data) and robust standard errors (for survey data) are in parentheses. Significance at *** p<0.01, ** p<0.05, * p<0.1.

TABLE A8. ROBUSTNESS CHECK: DROPPING THE PERIOD FROM THE WHO'S PANDEMIC DECLARATION TO THE INITIAL INDIAN LOCKDOWN

	Total (1)	Leisure (2)	Production (3)	YouTube (4)	Facebook (5)	Google Search (6)
Panel A. Daily Browser Time						
Lockdown × Female	-0.360**	-0.370**	-0.357**	-0.433***	-0.334***	
	(0.178)	(0.182)	(0.166)	(0.163)	(0.0828)	
Panel B. Daily Website Visits						
Lockdown × Female	-0.303***	-0.263***	-0.275***	-0.191***		-0.0938**
	(0.107)	(0.0813)	(0.102)	(0.0496)		(0.0460)
Observations	67,128	67,128	67,128	67,128	67,128	67,128
Number of Individuals	1,094	1,094	1,094	1,094	1,094	1,094
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Date fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the robustness checks on the main estimates in Table 3 for daily internet browser time use and activity counts. We dropped the period from 11 March, when the WHO declared COVID-19 as a pandemic, to 24 March, the date before the initial Indian lockdown. Panel A presents results for browser time use outcomes, and Panel B presents the activity counts, measured as unique URLs generated. Column (1) shows total browser use while subsequent columns are for categories: leisure (2), production (3), YouTube videos (4), Facebook (5; URLs not examined because extensive activity occurs within the main URL), and Google searches (6; time on search pages not examined because people typically follow links to results quickly). Standard errors are clustered at the individual level. Dependent variables are the natural log transformation of 1 plus the outcome of interest. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A9. ROBUSTNESS CHECK: ALTERNATIVE STANDARD ERROR CLUSTERING

	Total (1)	Leisure (2)	Production (3)	YouTube (4)	Facebook (5)	Google Search (6)
Panel A. Daily Browser Time						
Lockdown × Female	-0.292**	-0.326**	-0.337**	-0.344**	-0.295***	
	(0.147)	(0.150)	(0.139)	(0.137)	(0.0718)	
Panel B. Daily Website Visits						
Lockdown × Female	-0.280***	-0.254***	-0.265***	-0.160***		-0.0846**
	(0.0892)	(0.0677)	(0.0858)	(0.0419)		(0.0390)
Observations	81,462	81,462	81,462	81,462	81,462	81,462
Number of Individuals	1,094	1,094	1,094	1,094	1,094	1,094
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Date fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the main estimates for daily internet browser time use and activity counts. Two-way standard errors are clustered at the participant and date level. Column (1) shows total browser use while subsequent columns are for categories: leisure (2), production (3), YouTube videos (4), Facebook (5; URLs not examined because extensive activity occurs within the main URL), and Google searches (6; time on search pages not examined because people typically follow links to results quickly). Dependent variables are the natural log transformation of 1 plus the outcome of interest. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A10. TEST OF GENDER DIFFERENCES IN BROWSING TRENDS BEFORE THE LOCKDOWN

	Total Duration	Leisure Duration	Production Duration	Total Count	Leisure Count	Production Count
	(1)	(2)	(3)	(4)	(5)	(6)
Date × Female	-0.0118	-0.00838	-0.00540	-0.00468	-0.00216	-0.00335
	(0.00764)	(0.00770)	(0.00658)	-0.00425	(0.00331)	(0.00388)
Observations	30,240	30,240	30,240	30,240	30,240	30,240
Number of Individuals	1,067	1,067	1,067	1,067	1,067	1,067
Date FEs	Yes	Yes	Yes	Yes	Yes	Yes
Individual FEs	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the test for pre-lockdown time trends for total, leisure, and production time use and counts. For each outcome variable, we examine the pre-trends over the pre-lockdown period. We estimate the following regression models using only data from before the Indian lockdown announcement period: $Y_{it} = \alpha_i + \lambda_t + \beta Female_i \times T + \varepsilon_{it}$. Dependent variables, Y_{it}, are the natural log transformation of 1 plus the outcome of interest. $Female_i$ is a binary variable equal to 1 if individual i is female, T is the date in linear form, α_i and λ_t are individual and a date fixed effects, respectively. Our coefficient of interest, β, captures information on whether the trends are different for men and women in the pre-lockdown period. Standard errors are clustered at the individual level. Significance at *** p<0.01, ** p<0.05, * p<0.1

TABLE A11. ROBUSTNESS: SYNTHETIC DIFFERENCE-IN-DIFFERENCES ESTIMATES

	Total Duration	Total Duration	Total Duration	Total Count	Total Count	Total Count
	Full Sample TWFE	*Balanced Sample* TWFE	*Balanced Sample* SDID	*Full Sample* TWFE	*Balanced Sample* TWFE	*Balanced Sample* SDID
	(1)	(2)	(3)	(4)	(5)	(6)
Lockdown × Female	-0.360**	-0.343*	-0.334*	-0.303***	-0.289**	-0.315**
	(0.178)	(0.199)	(0.198)	(0.107)	(0.120)	(0.144)
Observations	67,128	50,635	50,635	67,128	50,635	50,635
Number of Individuals	1,094	779	779	1,094	779	779
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table presents the results on daily total internet browser time use and clicks. Dependent variables are log-transformed adding 1 second or click. Columns 1 and 4 presents the estimates of the two-way fixed effect model of our full sample, as described in Table 3. Columns 2 and 5 presents the estimates from the same model, with the sample restricted to individuals whom we start observing on 22 February. We examine this subsample of individuals to create a balanced sample that will serve as a comparison benchmark for the synthetic differences-in-differences (SDID) estimates we present in columns 3 and 6 (Arkhangelsky et al. 2021). Standard errors are clustered at the individual level. Significance at *** p<0.01, ** p<0.05, * p<0.1.

TABLE A12. ACCOUNTING FOR FAMILY AT HOME AND DOMESTIC HELP

	Browser: Total Time use	Browser: Leisure Time use	Browser: Production Time use	Survey: Childcare Time use
	(1)	(2)	(3)	(4)
Panel A. Controlling for Family at Home				
Lockdown × Female	-0.295**	-0.336**	-0.339**	-0.763**
	(0.148)	(0.151)	(0.140)	(0.297)
Lockdown × Family at	-0.0758	-0.228	-0.0503	-0.269
Home	(0.142)	(0.147)	(0.132)	(0.272)
Panel B. Controlling for Paid Help Pre Lockdown				
Lockdown × Female	-0.307**	-0.332**	-0.346**	-0.753**
	(0.149)	(0.150)	(0.140)	(0.300)
	0.222	0.0904	0.150	-0.138
Lockdown × Paid Help	(0.142)	(0.146)	(0.132)	(0.276)
Panel C. Controlling for Paid Help During the Lockdown				
Lockdown × Female	-0.299**	-0.337**	-0.342**	-0.788***
	(0.148)	(0.151)	(0.140)	(0.295)
Lockdown × Paid Help	-0.212	-0.359**	-0.177	-0.348
	(0.156)	(0.152)	(0.145)	(0.289)
Observations	81,462	81,462	81,462	1,146
Number of Individuals	1,094	1,094	1,094	573
Individual fixed effects	Yes	Yes	Yes	No
Date fixed effects	Yes	Yes	Yes	No

Notes. This table presents the results on daily internet browser time use and self-reported childcare time. Browser time is log-transformed adding 1 second, as described in Table 3. Childcare time is in hours, as described in Table 7. Childcare time is only for married individuals with children. The regression model in column 4 also includes un-interacted indicators for Female and Lockdown. Panel A adds a separate control for having other members of household (other than spouse and kids) at home, interacted with the Lockdown indicator. Panel B and C separately adds controls interacted with the Lockdown indicator for getting paid help pre and during the lockdown, respectively. Standard errors clustered at the individual level (for browser data) and robust standard errors (for survey data) are in parentheses. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

TABLE A13. CORRELATION BETWEEN NON-BROWSER AND BROWSER SMARTPHONE APP CLICKS

	Other App Clicks (1)	Other App Clicks (2)	Other App Clicks (3)	Other App Clicks (4)	Other App Clicks (5)	Other App Clicks (6)
Browser Clicks	4.617***	4.3570***	4.023***	3.771***	3.725***	3.261***
	(0.667)	(0.677)	(0.569)	(0.555)	(0.496)	(0.551)
Female		-19.227**		-18.473**		
		(8.189)		(7.706)		
Browser Click × Female		1.758		1.691		2.411
		(1.978)		(1.892)		(1.916)
Constant	50.66***	53.567***				
	(4.754)	(5.372)				
Observations	35,782	35,782	35,782	35,782	35,782	35,782
Number of Individuals	118	118	118	118	118	118
Individual fixed effects					Yes	Yes
Date fixed effects			Yes	Yes	Yes	Yes

Notes. This table presents the correlation estimates for smartphone non-browser app clicks. In all columns, dependent variables are the daily number of clicks into a non-browser app. The unit of analysis is an individual day. Errors are clustered at the individual level. Significance at *** $p<0.01$, ** $p<0.05$, * $p<0.1$.