Marketing Analytics Final Brief
MGT 6465: Marketing Analytics
Section 1: 8:00am-9:15am M/W
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Introduction

The United States began implementing quarantines in February 2020. With the goal of prevention

of the spread of this virus, quarantines were implemented across all of the United States, isolating and

restricting social interaction and human connection. This public health crisis forced both togetherness and

separation between close friends and families. Everybody had to adjust and adapt to the abrupt change

brought onto us. Careers, relationships, screen-time, mental health, and so much more were affected by

Covid-19. People began fully working from home where their screen time increased tremendously and the

importance of the internet was critical. The usage increase of the internet during the pandemic must have

some lingering effects. This is what we wanted to find out. How does the Covid-19 pandemic regulations

still affect relationships and technology usage after being lifted?

Pew Research Center for the People and the Press conducted a study in April of 2021 on the

internet's importance during the outbreak. This study was titled, "Pew Research Center: American Trends

Panel Wave 88". Performed through a web-based survey with adults living in the United States, the test

gathered responses from 4623 participants. Given this sample size, the margin of error stood at 2.2% at

95% confidence. The study contained 50 questions in which we chose 10 to be a part of our data

collection. By collecting data from this study and conducting crosstab and correlation analyses in SPSS,

we were able to explore just how much the Covid-19 pandemic regulations affected and still affect

relationships and technology usage. With the information gathered through each of our tests, we were able

to compile enough insights to then recommend marketing strategies and tactics for two companies, Apple

and Zoom, and two groups of hiring departments within the workforce, recruiters and human resource

departments.

Crosstabs Analysis
WFH * Cut Back from Internet Smartphone Usage

In this dataset, an analysis was conducted utilizing crosstabs to examine participants' behaviors

concerning their reduction in internet or smartphone usage in relation to their work-from-home frequency

during the Covid-19 pandemic. The results revealed that 40.63% of respondents reported a reduction in

their internet or smartphone usage when working from home full-time. Adjacently, 49.02% of individuals who worked from home most of the time, expressed that this decreases their phone and internet usage. For participants who never worked from home, 65.46% claimed that there was no reduction in their internet and smartphone usage. Participants who worked from home less frequently had little change in their internet and data usage, as the percentage rates decreased. As chi-square tests were conducted, our data proved to be statistically significant. These results suggest that individuals working from home may have decreased their internet and phone usage due to continuous engagement with these devices throughout the workday. Upon further data collection, it could be assumed that this decline in usage post-work-from-home is due to the blurring of boundaries between home and workplace environments.

WFH * Cut back on internet or smartphone Crosstabulation

Count

| | | Cut back on internet or smartphone | | | |
		Yes, have done this	No, have not done this	Refused	Total
WFH	All of the time	334	485	3	822
	Most of the time	126	130	1	257
	Some of the time	153	179	0	332
	Rarely	154	202	1	357
	Never	369	705	3	1077
	Refused	3	7	0	10
Total		1139	1708	8	2855

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	31.919[a]	10	<.001
Likelihood Ratio	32.861	10	<.001
Linear-by-Linear Association	.013	1	.909
N of Valid Cases	2855		

a. 7 cells (38.9%) have expected count less than 5. The minimum expected count is .03.

Personal Life Changes * Use Digital Differently

In this data set, a crosstabs test was run comparing participants' responses to personal life changes to use digital differently. We inferred these digital platforms to be those like Zoom. According to the

cross-tab test run, we understand that 59.03% of the participants have changed their personal lives in a major way by using digital software like Zoom. We can also understand that a large number of participants (72.3%) reported that their personal lives did not say the same after using digital platforms like Zoom differently during the pandemic. From these factors, we can assume that the majority of participants had their personal lives changed in some way or another during the pandemic as they started to use digital platforms differently.

Personal life change * Used digital differently Crosstabulation

Count

		Used digital differently			
		Yes, have done this	No, have not done this	Refused	Total
Personal life change	Changed in a major way	1068	720	21	1809
	Changed, but only a little bit	957	1196	8	2161
	Stayed about the same as it was before the outbreak	172	460	4	636
	Refused	7	8	2	17
Total		2204	2384	35	4623

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	254.415[a]	6	<.001
Likelihood Ratio	240.237	6	<.001
Linear-by-Linear Association	25.617	1	<.001
N of Valid Cases	4623		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is .13.

WFH * Closeness to Friends

In this dataset, an analysis was conducted using a crosstabs test to examine the relationship between participants' perceived closeness to friends and their frequency of working from home during the pandemic. The results of the test revealed that 43.80% of individuals who worked from home full-time reported feeling less connected to their friends compared to pre-pandemic times. However, as the frequency from home varied from full-time to never, the test revealed that participants who never worked from home maintained the same level of closeness with their friends, as they had before the pandemic —

52.46% who never worked remotely stated this. As chi-square tests were conducted, our data proved to be statistically significant.

These results from our tests suggest a possible connection between work-from-home dynamics and interpersonal relationships. It can be assumed that factors such as reduced travel and the blurred boundaries between home and the workplace, caused participants to feel less connected to their friends. More data collection could help understand the correlation between the two, as the dynamics of socialization and communication drastically changed during the pandemic.

WFH * Closeness to friends Crosstabulation

Count

		Closeness to friends				Total
		More close than before	Less close than before	About as close as before	Refused	
WFH	All of the time	132	360	329	1	822
	Most of the time	47	106	104	0	257
	Some of the time	44	136	152	0	332
	Rarely	55	138	164	0	357
	Never	124	386	565	2	1077
	Refused	1	4	5	0	10
Total		403	1130	1319	3	2855

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	38.657[a]	15	<.001
Likelihood Ratio	39.538	15	<.001
Linear-by-Linear Association	.201	1	.654
N of Valid Cases	2855		

a. 9 cells (37.5%) have expected count less than 5. The minimum expected count is .01.

WFH * Closeness to Family Members

In this data set, a crosstabs test was run comparing participants' responses of closeness to family members to work-from-home status. Acknowledging the users that voted in the "about as close as before" column, we are viewing the users in the "more close" and "less close" columns as they amount to about the same amount of users in the "about as close as before column." Given this understanding, while viewing the percentage breakdown from the cross-tabs, we are able to conclude that those individuals who work from home all of the time (29.5%) and most of the time (28%), are more close with their family than before the pandemic.

WFH * Closeness to family members Crosstabulation

Count

| | | Closeness to family members | | | | |
		More close than before	Less close than before	About as close as before	Refused	Total
WFH	All of the time	243	198	380	1	822
	Most of the time	72	60	125	0	257
	Some of the time	78	100	154	0	332
	Rarely	76	96	183	2	357
	Never	219	275	580	3	1077
	Refused	3	1	6	0	10
Total		691	730	1428	6	2855

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	35.199[a]	15	.002
Likelihood Ratio	35.698	15	.002
Linear-by-Linear Association	.207	1	.649
N of Valid Cases	2855		

a. 8 cells (33.3%) have expected count less than 5. The minimum expected count is .02.

Frequency Report

The frequencies gathered from the data act as a summary as well as an organizational tool to see where the data of the sample falls categorically **(see table below)**. There were four specific frequencies that we want to highlight due to the significance in meaning and explanation of data. We took a look at the percentage of individuals whose personal lives changed due to Covid-19, the percentage of those who worked from home, the percentage of those who owned a smartphone, and the percentage of individuals

categorized into their employment status. We felt as though these frequencies in particular displayed comprehensive insights into the data we were working with.

We put individuals who experienced a personal life change from the pandemic into four different categorical responses. Individuals either responded with their lives changed in a major way due to Covid-19, changed a little a bit, stayed the same, or they refused to answer. 39.1% stated that they experienced a major life change due to the pandemic, 46.7% changed only a little bit, 13.8% of the individuals reported their lives stayed the same, and the remaining 13.8% refused to answer the question. The second frequency report we felt was significant were the individual responses surrounding working from home or not. 17.8% reported that they worked from home all of the time, 12.8% worked from home only some of the time, and 31% rarely or never worked from home. The remaining 0.2% of the sample refused to answer. The third frequency dove into the percentage of people that owned a smartphone. The sample identified 93.6% of the individuals owning a smartphone, 6.3% did not own a smartphone, and the last 0.1% refused to answer. Lastly, our final frequency touched on the employment status of the survey sample. 61.8% of the individuals within the sample were employed either full-time or part-time. 38.3% were not employed and 0.5% refused to answer the question. With the use of our frequency report, the large amount of data is more manageable. These reports allow us to identify patterns and facilitate a better understanding of the data and characteristics of the sample size that we were able to analyze further through crosstabs, as well as a correlation analysis.

Frequency Table

Employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed full–time	2342	50.7	50.7	50.7
	Employed part–time	513	11.1	11.1	61.8
	Retired	903	19.5	19.5	81.3
	Furloughed or temporarily laid off	110	2.4	2.4	83.7
	Not employed	734	15.9	15.9	99.5
	Refused	21	.5	.5	100.0
	Total	4623	100.0	100.0	

WFH

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	All of the time	822	17.8	28.8	28.8
	Most of the time	257	5.6	9.0	37.8
	Some of the time	332	7.2	11.6	49.4
	Rarely	357	7.7	12.5	61.9
	Never	1077	23.3	37.7	99.6
	Refused	10	.2	.4	100.0
	Total	2855	61.8	100.0	
Missing	System	1768	38.2		
Total		4623	100.0		

Personal life change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Changed in a major way	1809	39.1	39.1	39.1
	Changed, but only a little bit	2161	46.7	46.7	85.9
	Stayed about the same as it was before the outbreak	636	13.8	13.8	99.6
	Refused	17	.4	.4	100.0
	Total	4623	100.0	100.0	

Do you own a smartphone?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I have a smartphone	4325	93.6	93.6	93.6
	No, I do not have a smartphone	292	6.3	6.3	99.9
	Refused	6	.1	.1	100.0
	Total	4623	100.0	100.0	

Correlation Analysis

When conducting a correlation analysis of the full data set in SPSS we were able to determine relationships between many of the factors within the data. There were 19 significant correlations with positive relationships within the data set **(see table below)**, but we chose to focus on 9 major correlations that we felt described the data most efficiently. The relevant correlations are as follows: Internet importance & employment, internet importance & closeness to friends, video call frequency & work from home, employment & personal life change, employment & use digital differently, cutback on internet/ smartphone & closeness to friends, cutback on internet/ smartphone & video call frequency, cutback on internet/ smartphone & use digital differently, personal life change & use digital differently. Through the correlations shown in this data, we are able to recognize a shift that potentially didn't exist prior to the pandemic. There were many positive and significant relationships between factors that were related to technology, internet use, and relationships. In our generation, social media and the internet have become large factors in staying connected and the pandemic brought us to a time where we had no other option. Relying on our technology for human connection, employment, etc. has led to an even larger reliance on technology post pandemic. This was not the case for every correlation, but we explore the other

possibilities within our recommendations section, as we take a deeper dive into the data and how it could be interpreted managerially.

Correlations

		Internet importance	Employment	WFH	Personal life change	Closeness to family members	Closeness to friends	Closeness to casual acquaintances	Do you own a smartphone?	Used digital differently	Ofteness of video call	Cut back on internet or smartphone
Internet importance	Pearson Correlation	1	.090**	.033	.010	.010	.120**	.009	.006	.009	.038*	.078**
	Sig. (2-tailed)		<.001	.075	.483	.500	<.001	.563	.702	.529	.010	<.001
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Employment	Pearson Correlation	.090**	1	.028	.050**	-.003	.003	.000	.095**	.110**	.030*	.003
	Sig. (2-tailed)	<.001		.135	<.001	.862	.844	.992	<.001	<.001	.040	.838
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
WFH	Pearson Correlation	.033	.028	1	.004	.009	.008	.007	.002	.002	.088**	-.002
	Sig. (2-tailed)	.075	.135		.845	.649	.654	.693	.905	.905	<.001	.909
	N	2855	2855	2855	2855	2855	2855	2855	2855	2855	2855	2855
Personal life change	Pearson Correlation	.010	.050**	.004	1	-.001	.002	.004	.002	.074**	.018	.046**
	Sig. (2-tailed)	.483	<.001	.845		.920	.909	.774	.913	<.001	.213	.002
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Closeness to family members	Pearson Correlation	.010	-.003	.009	-.001	1	.111**	.120**	.000	-.006	.021	-.002
	Sig. (2-tailed)	.500	.862	.649	.920		<.001	<.001	.990	.704	.149	.874
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Closeness to friends	Pearson Correlation	.120**	.003	.008	.002	.111**	1	.226**	-.001	-.006	.017	.060**
	Sig. (2-tailed)	<.001	.844	.654	.909	<.001		<.001	.958	.672	.251	<.001
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Closeness to casual acquaintances	Pearson Correlation	.009	.000	.007	.004	.120**	.226**	1	.000	-.006	.022	-.003
	Sig. (2-tailed)	.563	.992	.693	.774	<.001	<.001		.987	.707	.129	.851
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Do you own a smartphone?	Pearson Correlation	.006	.095**	.002	.002	.000	-.001	.000	1	.069**	.166**	.080**
	Sig. (2-tailed)	.702	<.001	.905	.913	.990	.958	.987		<.001	<.001	<.001
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Used digital differently	Pearson Correlation	.009	.110**	.002	.074**	-.006	-.006	-.006	.069**	1	.201**	.197**
	Sig. (2-tailed)	.529	<.001	.905	<.001	.704	.672	.707	<.001		<.001	<.001
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Ofteness of video call	Pearson Correlation	.038*	.030*	.088**	.018	.021	.017	.022	.166**	.201**	1	.221**
	Sig. (2-tailed)	.010	.040	<.001	.213	.149	.251	.129	<.001	<.001		<.001
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623
Cut back on internet or smartphone	Pearson Correlation	.078**	.003	-.002	.046**	-.002	.060**	-.003	.080**	.197**	.221**	1
	Sig. (2-tailed)	<.001	.838	.909	.002	.874	<.001	.851	<.001	<.001	<.001	
	N	4623	4623	2855	4623	4623	4623	4623	4623	4623	4623	4623

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Recommendations

Based on our crosstab analysis and correlation, we created marketing recommendations that specific companies can utilize in order to appeal to their target consumers more efficiently. Since our crosstab analysis and correlation of people who work from home and how close their relationship is to their family members is significant, we created a recommendation for job recruiters and how they could advertise remote roles. In order to appeal to consumers, we believe recruiters should advertise the job as a way for employees to keep a close relationship with their family, while also being a full time employer. They could also take a DEI stand point as a way for employees to continue their job if they have to stay home with their family for medical reasons, such as age related conditions or pregnancy.

Another recommendation we suggest is based on the significant crosstab analysis of people who work from home and their relationship with their friends. We have found that employers who are remote no longer feel as close with their friends as they did before Covid. Therefore, we recommend for Zoom to create a marketing campaign on the different ways consumers can use their site, outside of work meetings

and calls. Zoom can advertise themselves as a way to chat with your friends and strengthen long-distance friendships. This advertisement can entice more consumers to use Zoom and purchase their premium subscription.

Based on the crosstab analysis comparing how many people work from home and cutting back on internet use, we have found that because of Covid, more people think it is important to limit the amount of time we spend using technology. However, since it is clear that technology will not be going away, we believe this significant crosstab could be the baseline for a marketing recommendation we have created for Apple. Because Apple is a huge company with loyal consumers and money to spare, we propose that the company creates a, "Do Not Disturb" campaign. Within this campaign, we can see consumers using their iPhone and then clicking the Do Not Disturb button, putting their phone down, and joining the people around them in a different activity. This campaign would target what consumers prioritize in their lives while also creating more brand awareness for Apple and providing the opportunity for the brand to connect more with their consumers. There was an additional part of data analysis that would help prove the potential successfulness of this campaign as well. Based on the correlation and crosstab analysis of how much consumer's personal lives have changed and how they use digital technology differently, we have found a direct relationship between the two. Since Covid, more people have had to change their daily routine and have been forced to use technology in a way they are not accustomed to. Therefore, as a part of Apple's "Do Not Disturb" campaign, they can show consumers that they realize the world is changing, so they are changing with us. They can do so by implementing more features to their products that would make our daily tasks easier so we can escape technology faster, and click do not disturb.

Our last recommendation is centered around the correlation and crosstab analysis comparing employment to using technology differently. Because we saw a significant relationship between the two, we created a managerial recommendation for HR departments. We believe it would be beneficial for all companies around the world to implement a "Lunch and Learn." Within these meetings, employees can learn new ways to use technology within their work and daily lives. The significant correlation between employment and using technology differently suggests that some people may be struggling with the

change of pace. The "Lunch and Learn" could be beneficial for both the employee and the company, as their work would improve.

Conclusion

In conclusion, the implementation of both crosstabs and correlation tests provided the insights needed to gather an in-depth understanding of how Covid-19 still affects the relationships of individuals as well as the usage of technology. With the data used and analyses conducted, the recommendations are tailored to new consumer emotions and thought processes in regard to relationships and technology with the aftermath of the pandemic in mind. With this new landscape shaped by remote work and technological advancements, it is crucial to understand the minds of consumers in order to optimize marketing practices. Thus, performing tests from datasets and evaluating results help marketers like us to integrate marketing strategies into our careers effectively.

Data Citation