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He graduated with a bachelor’s degree in economics from Siena College and did post-graduate work in business and management at Rensselaer Polytechnic Institute and at the National Graduate Trust School of Northwestern University. He recently served as a board member for Regence BlueCross and BlueShield of Oregon, is the former Honorary Consul of the Republic of Poland in Oregon, and is honorary board chair for the Portland Chamber of Commerce (currently Portland Business Alliance).

His former community activities include the chairmanship of the Oregon Bankers Association, and membership in the Mayor’s Business Round Table, the Association for Portland Progress, the World Affairs Council of Oregon, and the United Cerebral Palsy. He currently serves on the Board of Regents, University of Portland and as past chair for six years.

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Emily Parks-Vernizzi, Siena College

Dr. Necip Doganaksoy, Siena College

ABSTRACT

Objectives

As a result of recent advances in data acquisition, digitization and storage technologies, many organizations are faced with the daunting task of managing voluminous amounts of unstructured text data. Ability to swiftly analyze and gain insights from text data dealing with customer feedback, field repair notes, financial reports, and economic forecasts is considered a competitive advantage. Natural Language Processing (NLP) provides a useful framework for automated analysis of such data. Moreover, the recent advances in modern data analytics software have equipped practitioners and professionals in liberal arts, humanities, and business fields with capability to apply NLP to their own research questions. The purpose of this study was to apply these very tools to the body of texts from all US Presidential State of the Union (SOTU) addresses from 1790–present day via sentiment and clustering analyses.

Data and Methods

The SOTU data set was downloaded from Kaggle (n=219). The variables are president, year, title, and the (unstructured) text of the SOTU. The data pool was comprised of 219 SOTUs beginning with George Washington's 1790 address at the Senate Chamber of Federal Hall in New York City to the most recent SOTU in 2020. The data set was processed using the JMP-Pro software. A Latent Class Analysis linked to Topic Analysis was conducted to identify trends not readily apparent in such a large body of unstructured text.

Results

Topic analysis revealed the evolution of major themes that persisted in the SOTU's by different presidents over time: navy and foreign policy; education, families and domestic policy; agriculture; and industry, immigration and foreign relations. A Latent Semantic Analysis was conducted by clustering by four and led to similar themes dealing with jobs and employment, finance, naval activities, and domestic policy. Potential next steps for this topic include but are not limited to conducting an analysis of opposition responses to compare messages and predict political party affiliation.

TEXT PROCESSING AND EXPLORATION

Madeline Cartwright, Siena College

Dr. Necip Doganaksoy, Siena College

GOALS & PRACTICAL IMPLICATIONS

The digital age has defined much of how business is conducted, and continues to influence brands and how they are perceived by consumers. Many companies have learned that offering their products via e-commerce sites is beneficial because of the nature of reaching a wider range of customers and the potential growth opportunities. Beginning in 2020, the world experienced the Coronavirus pandemic which prevented many physical forms of shopping and led to challenging times for businesses due to lack of sales and customer reach. For those with an online presence, times may or may not have been easier, but consumers relying on online shopping at a greater rate than before the onset of the pandemic was an emerging trend, and will likely continue post-pandemic. Understanding digital user behaviors and sentiments is exceptionally important as shopping habits continue to shift to online platforms, and companies should expect to invest time and resources into enhancing their digital presence to appease their clientele.

This study focuses on text processing and exploration to understand consumer input influencing positive and negative product ratings. The goal is to determine trends within text reviews to find which topics most influence negative outcomes, so that the retailer has actionable information to make internal changes to better satisfy their customer base. Within the study, topic segmentation and exploratory analysis will provide an indication on how many customers are currently satisfied, and how many would benefit from the recommendations offered to enhance business performance. The data used in this study was collected in 2018, however the customer reviews are likely comparable to the type of feedback received by online retailers today (Nicapotato, 2018). As such, these data mining techniques should be considered as business opportunities to better understand clientele, and encourage insights into the attitudes of an audience which directly impacts behavior. Direct insight presents companies with the opportunity to better align themselves and their practices with their customers, leading to better rates of return and business success.

RELEVANT WORK

Many other pieces of relevant work in the field can be found online. A paper published in 2017 by Zhi-Ping Fan, Yu-Jie Che, and Zhen-Yu Chen discusses the use of product sales and online reviews for forecasting purposes within the automotive industry (Fan, et. al, 2017). This particular study exhibits the important role text exploration can play in predictive settings. A second example where a business uses text processing can be seen with companies like Brandwatch. The institution conducts sentiment analyses for clients, focusing on retrieving data from consumers on social media platforms relating to their client. The data collected can then be used to inform potential opportunities and threats for brands (Brandwatch, 2018). Retrieving real, online, text formatted data is often the best way to understand how a brand is perceived, and text analysis and processing can enable informed decisions.

APPROACH

The data set used in this study was retrieved from Kaggle.com, which provides real-world data based on company collected metrics. The study follows a text processing application with JMP-Pro to analyze data as it is associated with the outcome variable “Rating.” This is a numeric value, 1 being a

very low rating and 5 being the best rating available. The "Review Text" column is processed first to determine the terms and phrases most associated with positive and negative ratings. This column includes long reviews, often set in a paragraph format. A series of tactics and exploration – including topic and cluster analysis – is used to determine overall sentiments towards the products offered by this retailer. To gain further insight and more distinctive conclusions, the process is repeated with the "Title" column which includes shorter phrases that are more direct and therefore lead to definitive outcomes influencing the recommendations provided at the end of the study. The tangible information supported through the data is used to construct calculated inferences on where the company can improve, and which practices are already successful.

DATA

As previously stated, the dataset comes from Kaggle.com and focuses on women's e-commerce clothing reviews. A snapshot of the first few rows of the data set is displayed below.

Clothing ID	Age	Title	Review Text	Rating	Recommend	Positive Feed	Division Nam	Department	Class Name
1077	60	Some major design flaws	I had such high hopes for this dress and really wanted it to work for me. i initially ordered the petite small (my usual size) but i found this to be outrageously small. so small in fact that i could not zip it up! i reordered it in petite medium, which was just ok. overall, the top half was comfortable and fit nicely, but the bottom half had a very tight under layer and several somewhat cheap (net) over layers. imo, a major design flaw was the net over layer sewn directly into the zipper - it c	3	0	0	General	Dresses	Dresses
1049	50	My favorite buy!	I love, love, love this jumpsuit. it's fun, flirty, and fabulous! every time i wear it, i get nothing but great compliments!	5	1	0	General Peti	Bottoms	Pants
847	47	Flattering shirt	This shirt is very flattering to all due to the adjustable front tie. it is the perfect length to wear with leggings and it is sleeveless so it pairs well with any cardigan. love this shirt!!!	5	1	6	General	Tops	Blouses
1080	49	Not for the very petite	I love tracy reese dresses, but this one is not for the very petite. i am just under 5 feet tall and usually wear a 0p in this brand. this dress was very pretty out of the package but its a lot of dress. the skirt is long and very full so it overwhelmed my small frame. not a stranger to alterations, shortening and narrowing the skirt would take away from the embellishment of the garment. i love the color and the idea of the style but it just did not work on me. i returned this dress.	2	0	4	General	Dresses	Dresses

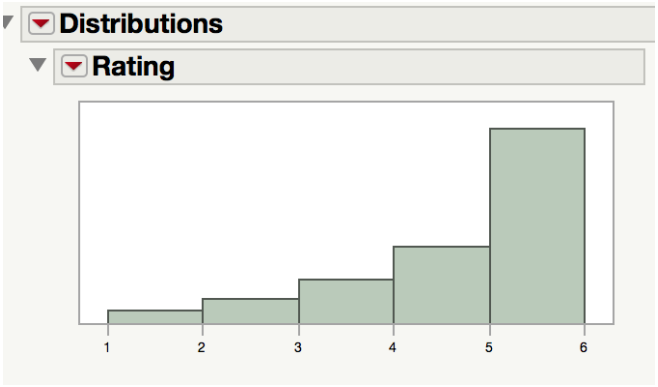
Because the data is real commercial data, the information had been anonymized, and any references to the company within the review text had been replaced with "retailer." The dataset contains 23,486 rows (reviews) of data with 10 variables. The variables include:

- Clothing ID: Integer Categorical variable that refers to the specific piece being reviewed.
- Age: Positive Integer variable of the reviewers age.
- Title: String variable for the title of the review.
- Review Text: String variable for the review body.
- Rating: Positive Ordinal Integer variable for the product score granted by the customer from 1 Worst, to 5 Best.
- Recommended IND: Binary variable stating where the customer recommends the product where 1 is recommended, 0 is not recommended.
- Positive Feedback Count: Positive Integer documenting the number of other customers who found this review positive.
- Division Name: Categorical name of the product high level division.
- Department Name: Categorical name of the product department name.

- Class Name: Categorical name of the product class name.

EXPLORATORY ANALYSIS OF THE DATA

To begin the study, the document was loaded into JMP-Pro and an exploratory analysis (EDA) was conducted on the outcome variable "Rating" to get a general idea of how many customers had a positive versus negative experience with the online retailer. It was found that a majority of ratings were skewed towards positive sentiments, indicating that much of the information following the EDA would include positive feedback.



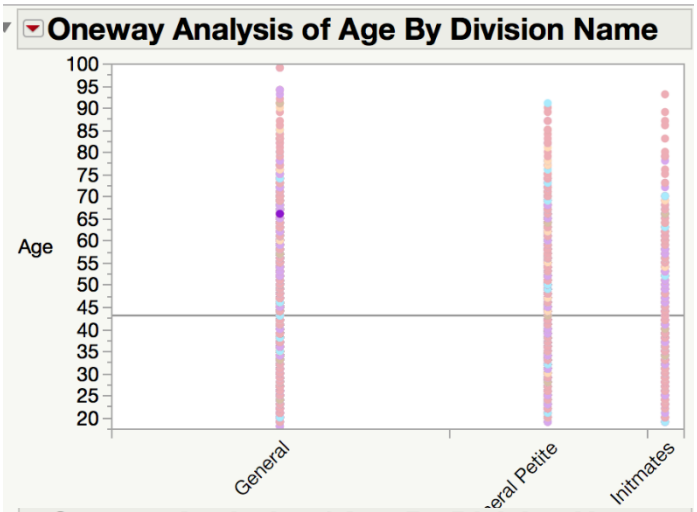
Age and Recommended IND were plotted against Rating, and it was found that the majority of customers fall between 20 and 60 years old, and there was a relatively even distribution of age groups at each rating level. However, there does appear to be a slightly heavier weight of level 5 ratings from older age groups, which is noted in the red rectangle on the first graph below. Recommend IND – 1 being the customer recommends the product, 0 being the customer does not recommend the product – showed that the majority of customers recommended the product, including those who provided a low rating. This supports the conclusion that perhaps the product was appreciated and of good quality, but did not work for some particular customers for varying reasons other than distaste in the item.

The "Rating" column was then color coded and graphed with "Age" by "Division Name" to determine if any patterns on division departments received a particular level of ratings. If a pattern were

to emerge from this tactic, it would be insightful for the company to understand where they might focus their time and money to improve a select division whose products need the extra attention. However, when graphing all the ratings, there appeared to be a relatively even distribution of positive and negative reviews across the three divisions. To narrow the scope of this analysis, the rating level "5" was excluded because the majority of ratings fell into this top category. Removing level "5" ratings would potentially expose more obvious distributions of ratings by "Age" and "Division Name." However, there was still an even distribution of level "4" and below ratings across all division categories, and no conclusive outcomes could be found in determining one type of product being inferior to others based on age.

Including "5" Rating

5 = red
4 = purple
3= blue
2 = orange
1 = brown



Excluding "5" Rating

4 = purple
3= blue
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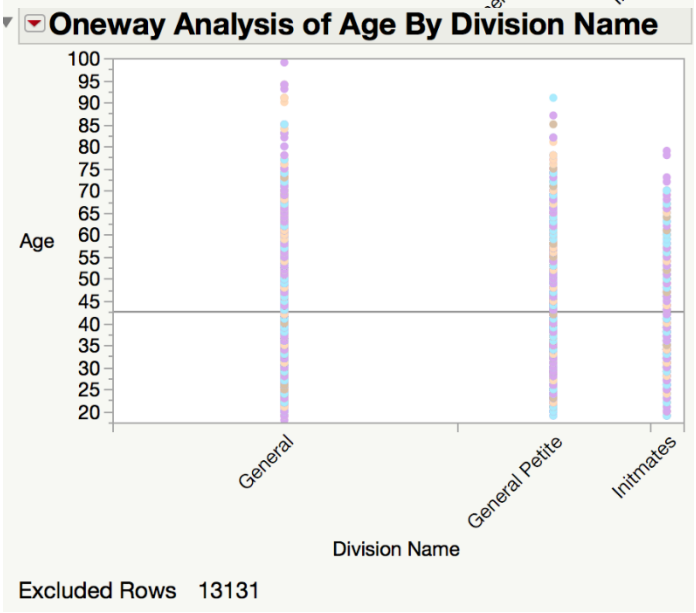
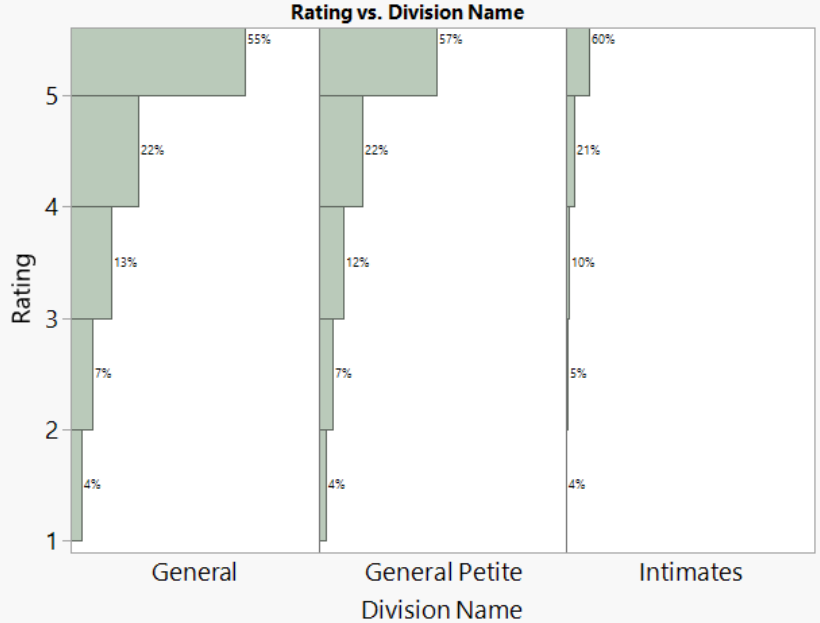
1 = brown



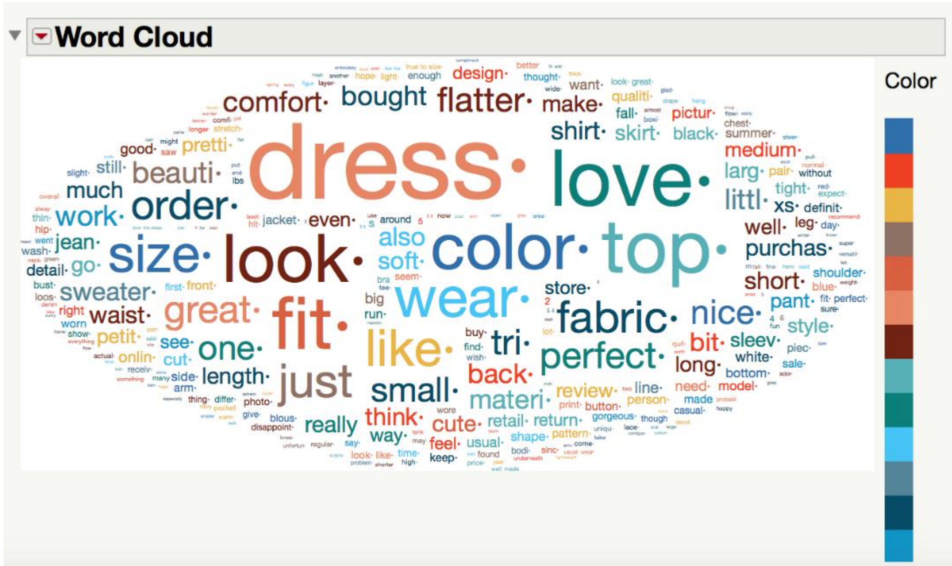
The data was further examined to display "Rating" versus "Division Name," disregarding "Age," to support the conclusion that there are no apparent relationships between ratings and division.



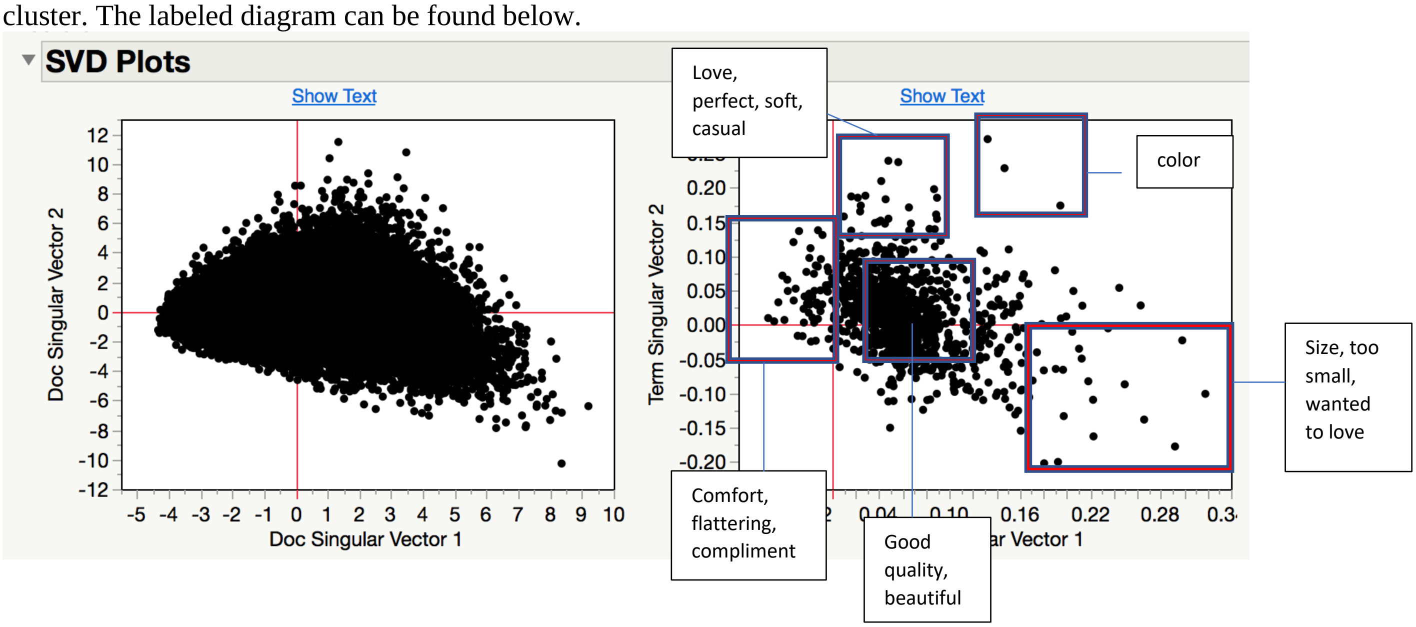
TEXT ANALYSIS

With the conclusion of the EDA, text processing and exploration was implemented to further analyze the data set. The "Review Text" column was fitted to the text explorer in JMP-Pro first, and used Stemming set to "Stem for Combining." Phrases which were used 100 times or more were added to the analysis, and terms used less than 100 times were excluded. Since most of the terms were qualitative and descriptive, best practices suggest to retain phrases used multiple times and remove those only used a handful of times throughout the data set. This step helped narrow down the terms and phrases associated with each type of rating, which allows for a more accurate representation of customer input .This particular exclusion decreased included terms from 10,161 items to 1,017. Though this seems like a large decrease in the number of terms analyzed, the terms included are those which are most frequently found within the reviews, and the majority of terms removed were only found a handful of times (i.e. under 20 times).

Beginning the text analysis, a word cloud was created to understand the top phrases found within these 23,486 reviews. The graph can be found below and displays top words including "dress," "love," "color," "fit," and "top." This indicates that the data revolves around clothing – which was obvious based on the content of the dataset – but descriptive words like "color," "fit" and "love" indicate that the majority of customers had a positive experience with the clothing available. A word cloud is a good place to begin, and is similar to an EDA, where a general understanding of the type of information that will be uncovered throughout this process is easily understood.

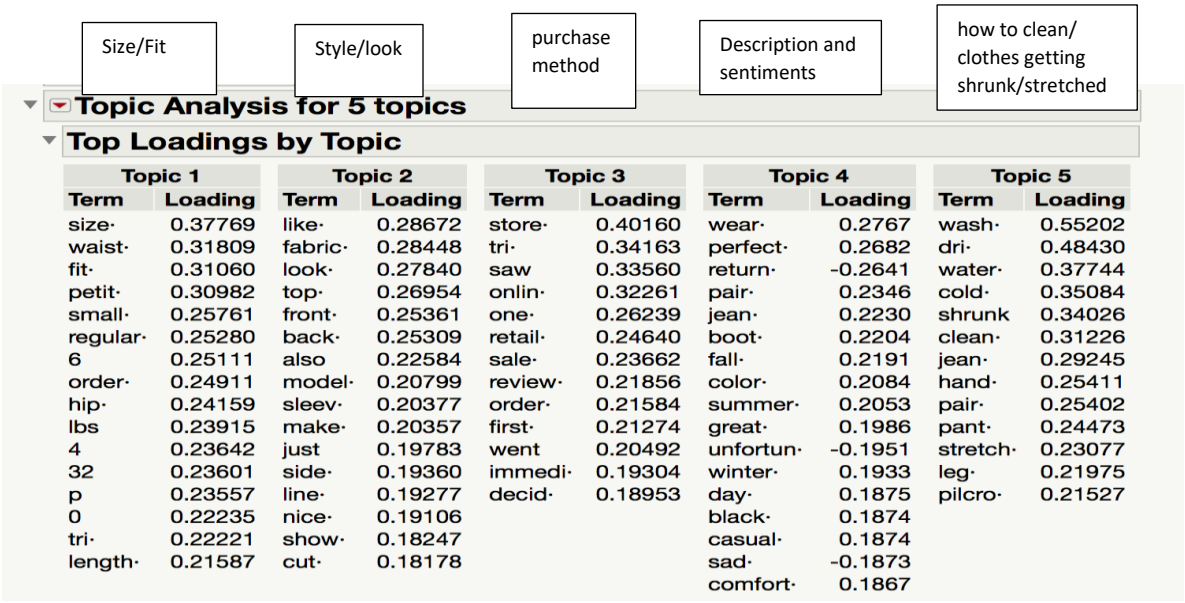


To further understand the data, Latent Semantic Analysis was used to uncover main topics found within the reviews. The defaults were accepted, and the below graphs were generated. No obvious clusters were found in this initial step, though that was to be expected. Because the dataset is so large, and the “Review Text” column which includes paragraphs of customer reviews was used, there was expected overlap between the different topics found. However, using the “show text” function tool helped expose and identify any differences in topics along the outskirts and middle sections of the cluster. Analyzing the paragraph phrases found in the first cluster did not prove to be helpful, as so many rows of data with large paragraph customer reviews made it difficult to draw on any major conclusions. Focusing on the singular terms from the second graph proved much more efficient in determining different topics within the larger cluster. The labeled diagram can be found below.



Following Latent Semantic Analysis and determining multiple topics within the cluster, a topic analysis run by JMP-Pro was used to uncover any potential patterns missed during the manual analysis. The topic analysis rotated SVD was initially ran against 15 topics, however, overlap in the topics produced was quickly found, and therefore was paired down to 5 topics in total. While this is helpful to

better understand the topics available within the reviews, and which are most likely to occur, a cluster analysis is needed for further insight on any potential problem areas.



Topic Analysis for 5 topics

Top Loadings by Topic

Topic 1		Topic 2		Topic 3		Topic 4		Topic 5	
Term	Loading	Term	Loading	Term	Loading	Term	Loading	Term	Loading
size·	0.37769	like·	0.28672	store·	0.40160	wear·	0.2767	wash·	0.55202
waist·	0.31809	fabric·	0.28448	tri·	0.34163	perfect·	0.2682	dri·	0.48430
fit·	0.31060	look·	0.27840	saw	0.33560	return·	-0.2641	water·	0.37744
petit·	0.30982	top·	0.26954	onlin·	0.32261	pair·	0.2346	cold·	0.35084
small·	0.25761	front·	0.25361	one·	0.26239	jean·	0.2230	shrunk	0.34026
regular·	0.25280	back·	0.25309	retail·	0.24640	boot·	0.2204	clean·	0.31226
6	0.25111	also	0.22584	sale·	0.23662	fall·	0.2191	jean·	0.29245
order·	0.24911	model·	0.20799	review·	0.21856	color·	0.2084	hand·	0.25411
hip·	0.24159	sleev·	0.20377	order·	0.21584	summer·	0.2053	pair·	0.25402
lbs	0.23915	make·	0.20357	first·	0.21274	great·	0.1986	pant·	0.24473
4	0.23642	just	0.19783	went	0.20492	unfortun·	-0.1951	stretch·	0.23077
32	0.23601	side·	0.19360	immedi·	0.19304	winter·	0.1933	leg·	0.21975
p	0.23557	line·	0.19277	decid·	0.18953	day·	0.1875	pilcro·	0.21527
0	0.22235	nice·	0.19106			black·	0.1874		
tri·	0.22221	show·	0.18247			casual·	0.1874		
length·	0.21587	cut·	0.18178			sad·	-0.1873		
						comfort·	0.1867		

Using Latent Class Analysis, 5 clusters were finalized for a better understanding of each topic by cluster. The mixture probability indicates that terms associated with cluster 1 and 2 were most prevalent in the reviews, with 29% and 26%, and terms in cluster 5 were least prevalent at 14%.

Cluster Mixture Probabilities

Cluster	Mixture Probability
Cluster1	0.29233
Cluster2	0.26054
Cluster3	0.16154
Cluster4	0.15022
Cluster5	0.13538

Top Terms by Cluster

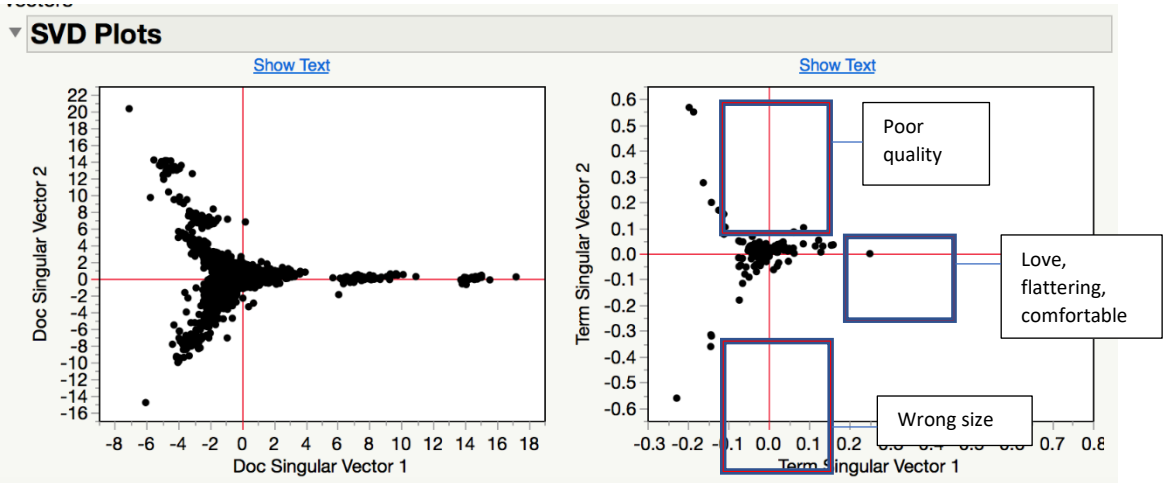
Cluster1		Cluster2		Cluster3		Cluster4		Cluster5	
Term	Score	Term	Score	Term	Score	Term	Score	Term	Score
love· this top·	0.3204	fit·	5.3615	wear·	4.8145	color·	3.8822	return·	2.7948
comfi·	0.2397	size·	5.2539	dress·	4.6538	size·	3.5176	look·	2.6133
great· fit·	0.1932	dress·	4.1752	perfect·	3.7529	fit·	3.3464	one·	2.4861
super cute·	0.1885	small·	3.9278	great·	2.8151	jean·	3.3338	back·	2.2991
great· qualiti·	0.1649	top·	3.6009	comfort·	2.4793	love·	3.0205	fabric·	2.1783
love· this shirt·	0.1358	order·	3.5764	love·	2.475	order·	3.0131	just	2.138
lot· of compliment·	0.1137	tri·	3.1637	flatter·	2.3824	bought	2.9872	disappoint·	1.9053
great· color·	0.1031	waist·	3.0306	fall·	2.0407	wear·	2.8288	onlin·	1.8816
love· this sweater·	0.0922	just	2.7478	summer·	2.0261	pant·	2.5937	like·	1.8567
super comfort·	0.0786	like·	2.6189	nice·	1.945	pair·	2.3549	qualiti·	1.8129

Clusters 1 and 3 contain positive reviews on fit, comfort levels, quality and if the piece was flattering. This is useful in determining that the majority of the products purchased are considered comfortable and flattering, indicating the company products resonate well among most consumers. Clusters 2 and 4 contain similar reviews on the fit, size and type of product. Cluster 5 is the smallest, indicating there are fewer reviews containing these terms. This cluster contains negative reviews on topics

like returning the piece and being disappointed. The cluster mixture probability sizes are comparable to what was found through exploratory analysis where the majority of ratings were skewed towards positive reviews. This further suggests that only a small subset of customers actually rated the products negatively. Latent Semantic Analysis also showed that many of the topics found in the single large cluster were positive, further supporting initial findings.

As previously mentioned, this analysis focused on the "Text Review" column, which included paragraphs of input from customer reviews. To narrow down the analysis and uncover more direct problem areas leading to disappointed customers returning their pieces – as associated with cluster 5 – the "Title" column was analyzed next. This column is essentially a shorter review written by each customers to label their comments. This column is more succinct and to the point, and can lead to more direct clusters with very clear insights in customer sentiments. Following the same steps outlined above, the new analysis is as follows:

Note: Phrases used 100+ times were included, and terms used fewer than 100 times were removed.



Topic Analysis

Topic Analysis for 10 topics

Top Loadings by Topic

Topic 1		Topic 2		Topic 3		Topic 4		Topic 5	
Term	Loading	Term	Loading	Term	Loading	Term	Loading	Term	Loading
new	0.87621	run·	0.81529	well	0.86827	quality	0.7279	better	0.7617
favorit·	0.87024	big	0.50986	made	0.86542	poor·	0.7007	person·	0.7393
jean·	0.25628	large	0.48650	fit·	0.14631	good·	0.3012	much	0.3123
go·	0.14207	small	0.46535			design·	0.2979	look·	0.2076
		way·	0.24083			love·	-0.2097	expect·	0.1894
		size·	0.15504			cute·	0.1668	love·	-0.1766
						fit·	0.1460	love· love·	-0.1275
						fabric·	0.1432		

Topic 6		Topic 7		Topic 8		Topic 9		Topic 10	
Term	Loading	Term	Loading	Term	Loading	Term	Loading	Term	Loading
great·	0.59497	super	0.5075	beauti·	0.4541	easy	0.6401	like·	0.4762
summer·	0.40740	soft·	0.4435	color·	0.4190	wear·	0.5831	look·	0.4479
fall·	0.32419	comfy	0.4083	fabric·	0.3992	dress·	0.3026	pictur·	0.2813
staple	0.31366	comfort·	0.3964	design·	0.3046	love·	-0.2958	wear·	0.2712
piec·	0.27782	stylish	0.3177	detail·	0.2403	love· love·	-0.2100	just	0.2600
perfect·	0.27445	flatter·	0.2932	cute·	-0.2285	perfect·	0.1952	top·	-0.2328
basic·	0.23176	love·	-0.2509	nice·	0.2150	summer· dress·	0.1790	beauti·	-0.2191
casual	0.21144	cute·	0.2320	much	0.2045	fun	0.1603	gorgeous·	-0.2092
shirt·	0.18555	cozy	0.1981	perfect·	-0.1962	eleg·	0.1459	dress·	-0.1808
pant·	0.18462	perfect·	-0.1743	great·	0.1907			great·	0.1729
tank·	0.18178			fit·	0.1581			love·	0.1632
tee·	0.17719							perfect·	-0.1576

Cluster Analysis

Cluster Mixture Probabilities

Cluster	Mixture Probability
Cluster1	0.34968
Cluster2	0.30375
Cluster3	0.17653
Cluster4	0.09124
Cluster5	0.07880

Top Terms by Cluster

Cluster1		Cluster2		Cluster3		Cluster4		Cluster5	
Term	Score	Term	Score	Term	Score	Term	Score	Term	Score
cute·	1.6012	run·	0.471	great·	4.0959	beauti·	2.4859	love·	14.114
beauti·	1.1521	size·	0.454	perfect·	2.3288	fit·	1.9819	top·	0.8196
comfort·	0.861	big	0.448	summer·	0.9222	great·	1.8324	love· love·	0.6509
dress·	0.8586	like·	0.4137	dress·	0.9158	quality	1.6854	sweater·	0.3714
flatter·	0.8302	just	0.3908	fall·	0.718	fabric·	1.4642	pant·	0.3521
comfy	0.7343	disappoint·	0.3721	pant·	0.6788	color·	1.4539	shirt·	0.2832
soft·	0.6989	small	0.346	favorit·	0.6534	nice·	1.3788	skirt·	0.1937
pretti·	0.6397	beauti· dress·	0.3103	jean·	0.6493	design·	1.187	jean·	0.1825
gorgeous·	0.6222	great· dress·	0.273	shirt·	0.6096	poor·	1.0107	blous·	0.176
top·	0.5406	person·	0.2685	piec·	0.5178	pretti·	0.7377	tunic·	0.0916

FINAL OUTCOMES AND FINDINGS

As expected, most topics included positive sentiments, however topic 2 and 4 were where problematic pieces of information was introduced. Topic 2 included customers receiving pieces which were either too big or too small, and topic 4 showed customer feelings approving of the clothing designs, but not of the quality of the piece.

Similarly, most clusters also displayed positive sentiments. However, cluster 2 shows problems regarding the size being incorrect – running either too big or small. Customer reviews in this cluster are disappointed, as it appears many found the product to be "beautiful." This analysis can be used to inform the company that customers appreciate their designs, styles and comfort levels of the products produced, but misinformation, or lack of information on sizing is the biggest culprit to unhappy customer reviews and product returns. Because of this, it is recommended that the company adds a sizing chart to their website if they don't already have one, or update to more accurate information if this type of chart is present. Following sizing issues, it appears that poor quality is a mild influencer in poor customer reviews, indicating the company should consider stepping up their quality control. Providing customers with as much information about the piece upfront, and ensuring each piece is created with equal quality can help decrease sizing issues and potential returns.

CONCLUSIONS

This study shows that the retailer does a good job at satisfying most of their customers. The majority of consumers believe the clothing available is comfortable and stylish. However, some found the quality to be poor and the sizing to be off, which can lead to returns and lack of brand loyalty. Recommendations to create an accurate sizing chart for the website have been made, and additionally, increasing quality control standards could lead to decreased reviews regarding poor quality. Text analysis is important for online businesses who have their customer's best interest in mind, and also know the importance of satisfying their customers so the business can continue to do well. This study uncovered topics that potentially lead to lower ratings, indicating the key areas the company should focus on to improve overall satisfaction levels. Many companies could benefit from receiving intelligence like this, as text mining can lead directly to the source of any issues experienced. In this case, the company is lucky that only a small portion of their customer base found issues with their clothing. However, just because it was a small portion of the audience that found issues does not mean this information should go unnoticed. Taking action in advance of bigger issues arising is how companies maintain a healthy customer base, and can ensure success in the future.

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DECLINING PRIME-AGE MALE LABOR FORCE PARTICIPATION RATE

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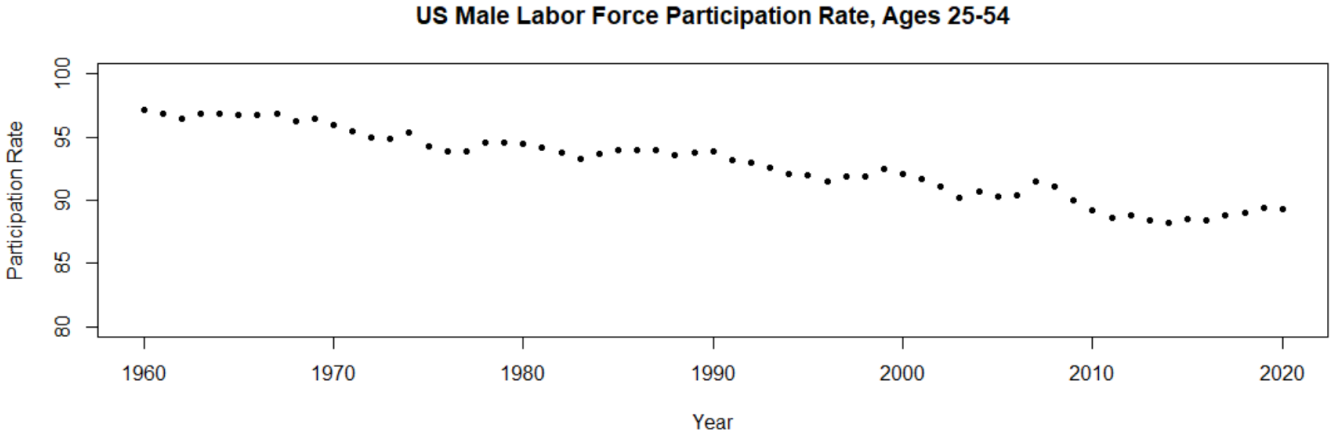
ABSTRACT

The US labor force participation rate among prime-age men has been declining for decades and shows no sign of returning to historical levels. A plethora of researchers have undertaken the task of explaining this phenomenon, focusing their causal factors upon the shifting of either supply or demand of labor. Most of the research on this topic notes the many changes undergone in the United States from the 1960s to today, so this paper lays out some of the most prominent arguments, and notes that men leave the labor force at a higher rate during recessions, particularly during more recent ones.

INTRODUCTION

The labor force participation rate measures the percentage of people in a country who are employed or unemployed. A person who is employed has a job while an unemployed person is someone who does not have a job but has actively looked for one at some point in the past 4 weeks. Anyone not included in either of these two categories is not considered part of the labor force. In the American economy, the demographic with the highest participation rate—both historically and presently—is prime-age men. Prime-age workers are those in the most productive period of their lives, ages 25-54. Concerningly, the prime-age male labor force participation rate has been declining for decades. Federal Reserve Chairman Jerome Powell cites this as one of the two major long-term issues facing the US economy ("The Latest: Jerome Powell" 2019). In 1960, the participation rate hovered around 97 percent. As of January 1st, 2020, that number rests at 89.3 percent—slightly higher than any month in 2016 but lower than any month in 2008. To provide the reader with some perspective, Figure 1 uses data from the Bureau of Labor Statistics (BLS) to graph this trend (BLS 2020).

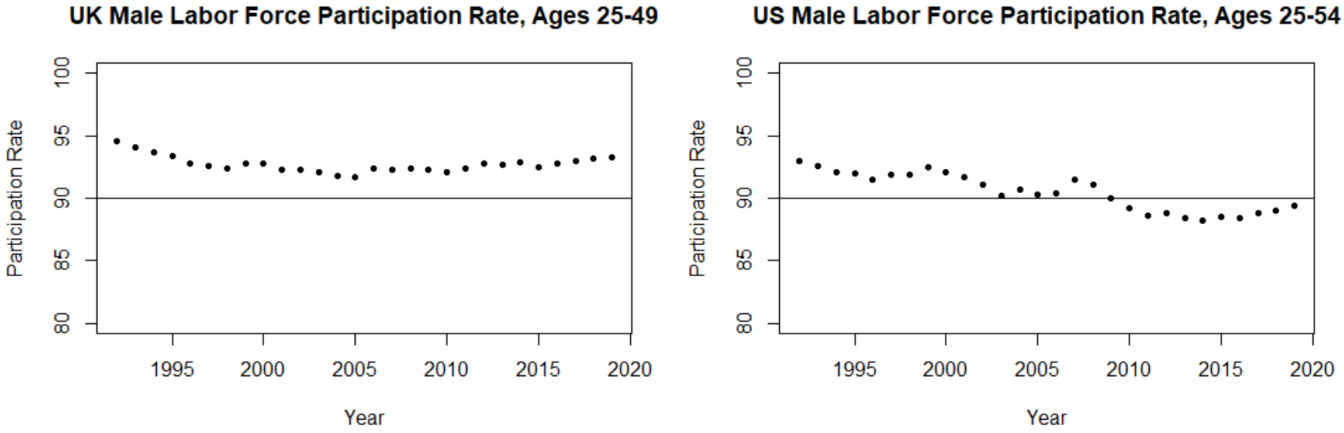
Figure 1: Long-Term Decline in Labor Force Participation



Source: CPS data.

When observing domestic economic trends, it is always good to put America's situation in relation with other countries. Although typically having a lower overall unemployment rate, the United States has the third lowest prime-age male labor force participation rate among all countries in The Organization for Economic Co-operation and Development (Council of Economic Advisors 2016). For example, the United Kingdom—chosen as a developed economy hit especially hard by the Global Financial Crisis which could serve as a proxy for an economy similar to that of the United States—has a considerably higher proportion of its prime-age male population in the labor force. Figure 2 plots available data for an approximation of the UK's prime-age male labor force participation rate next to that of the US with a line indicating 90% participation for ease of reading (BLS 2020; Leaker 2020a; Leaker 2020b; Leaker 2020c; Leaker 2020d). The age groups for men in the UK and US do not match up perfectly due to restrictions in data, but they are close enough to fairly compare the two countries. The difference between the UK and US prime-age male participation rates is stark considering each percent accounts for hundreds of thousands of potential workers. This is an important comparison to make because it emphasizes that although participation rates trended downward throughout the developed world, the decline's extent establishes this as a uniquely American problem.

Figure 2*:* UK & US Participation Rates



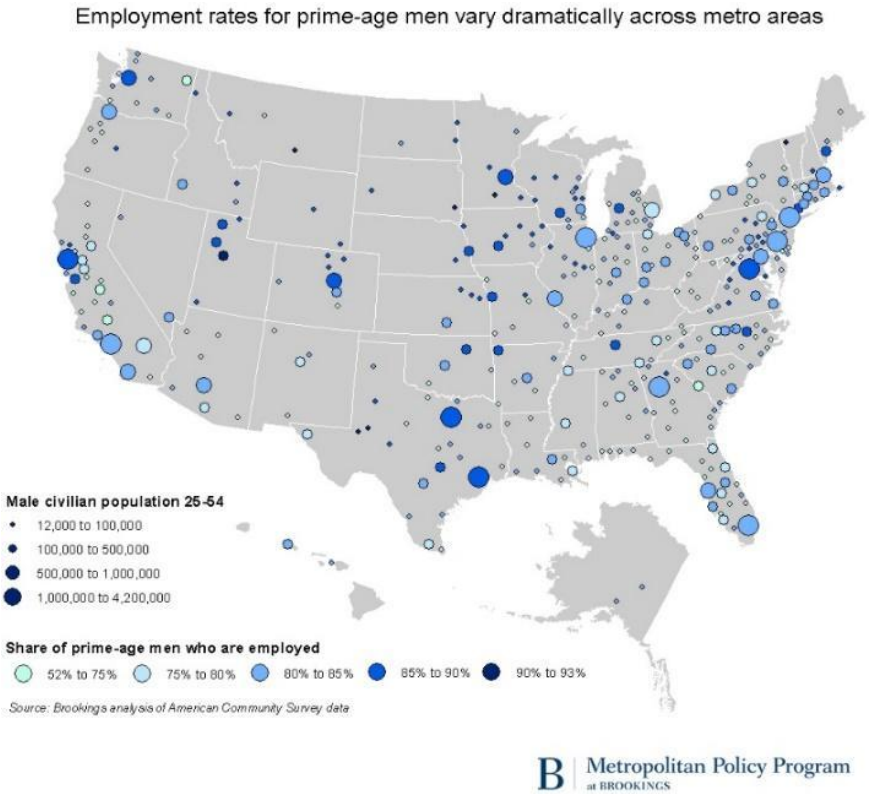
Source: CPS data.

The next section provides a description of inactive prime-age men. An overview of the data used in this paper is found after the characteristics section. A literature review falls after the methodology, detailing the arguments contained in research related to this topic. The conclusion will summarize the findings of this paper and consider the weaknesses of the current body of literature.

CHARACTERISTICS OF INACTIVE PRIME-AGE MEN

Inactive prime-age men often find themselves in lamentable circumstances. A report conducted by the US Congress Joint Economic Committee (JEC) has analyzed data from an under-utilized dataset—the "National Epidemiological Survey on Alcohol and Related Conditions-III," or NESARC-III—and found many otherwise unavailable statistics about this group of people. In 2013, "roughly 45 percent of them [inactive prime-age men] indicate their current situation involves illness or disability" (JEC 2018). More promisingly, the report also mentions that somewhere around 15% of inactive men are in school, 5-10% are retired, and another 5-10% take care of domestic duties such as childcare. Twenty-five percent of this demographic do not fit into any of the aforementioned categories (JEC 2018).

Social ties appear weaker among inactive prime-age men. Compared to employed prime-age men, inactive prime-age men are less happy, have more adversity to overcome from childhood, and are more socially isolated (JEC 2018). One-third of prime-age inactive men report being incarcerated at some point in their lives (JEC 2018). Inactive men are twice as likely to say they do not get invited to engage with others and that it would be difficult to find someone to help them move. Also relevant to this discussion is where inactive men live. Prime-age men are not leaving the labor force uniformly across the US. Figure 3 shows a map taken from a 2016 article from the Brookings Institute indicating the concentrations of employed men in metropolitan areas across the United States (Berube 2016). Although this only shows employment rates, one would suspect that participation rates to follow a similar trajectory. Most of these



men live in the South, specifically the Southeast, in rural areas (JEC 2018). Areas in the South have far lower employment rates than areas with more robust agricultural or service-based economies such as those found in New England or the west coast. This is consistent with demand-side arguments (which will be discussed in the literature review) that participation rates have fallen most for those with lower levels of education.

Figure 3: Concentration of Employed Prime-Age Men

For the economy, the most disheartening statistic of all for this group is that they are disinterested in working. The JEC (2018) report notes that, "only 12 percent of able-bodied prime-age inactive men indicate in household surveys that they want a job or are open to taking one." People in this country with much to offer go through some of their most productive years of life without going to work. What makes matters worse from the standpoint of a macroeconomic policymaker is that they do not even want to.

METHODOLOGY

The main tool used to analyze datasets in this paper is the programming language R.[1] Graphs in this paper were created in R using numbers pulled directly from the data's originator. The rest of this section details the construction of Figures 1-3.

To create Figure 1, numbers taken from Federal Reserve Economic Data (FRED) were plotted (BLS 2020). Only the values for January of the year the point represents is depicted by the graph.

The US data in Figure 2 was plotted using the same method as in Figure 1, except the values begin with data from January 1992. The UK data in Figure 2 was calculated with data of the annual average for the economic inactivity rate of men in the age groups 25-34 and 35-49, beginning in 1992. The UK Office for National Statistics defines Economic Inactivity as: "People not in employment who have not been seeking work within the last 4 weeks and/or are unable to start work within the next 2 weeks" (Leaker 2020a). Finding the data compatible for comparison, it was then translated from an inactivity rate to a participation rate by subtracting the annual values from 100. To combine the 25-34 and 35-49 age groups, the total inactive male population in the age group of 25-49 was divided into the population of inactive men ages 25-34. The total inactive male population for men ages 25-49 was also divided into the population for inactive men ages 35-49. Doing so calculates the weight of both age groups. Then, the weighted inactivity rate for men ages 25-34 was added to the weighted inactivity rate for men ages 35-49. A key limitation of this graph is not only the lack of data for British men ages 50-54 but also that each point on the US graph represents the labor force participation rate for one month out of the year while the UK data is an average for the entire year. Year-to-year fluctuations in labor force participation rates are quite low, so the actual value of this disparity should be close to the displayed data and therefore not impact the present author's analysis.

Figure 3, the map of the United States showing the prime-age male employment rate by metropolitan area, was taken directly from a paper by the Brookings Institute (Berube 2016).

The data in Figure 4 was pulled from the Bureau of Labor Statistics' CPS database. The data contains numbers for men ages 25-54 of all men, black men (starting in January 1972), Hispanic men (starting in November 1994), and white men (starting in January 1954). Data for Asian men was available starting in 2010, but was excluded because the data only cluttered the charts and made them harder to interpret. The simple average was taken for each period indicated on the x-axis and plotted. Note that the data for expansions include the first and last month of recessions, which are typically not included in graphs portraying economic expansions. They were added because it seemed more appropriate to include these months because the business cycle does not reach a trough on the last day of the month—the recovery 'actually' begins sometime in the middle of the month, not at the start of the next one. Regardless, the inclusion of these two months likely makes a negligible difference in the bar heights of the graphs. Data for 2020 only goes through August, but it was included to provide the reader with some perspective as to how different this recession is to the ones in the past.

The charts in Figure 5 were also calculated using the same data from Figure 4, only an index with a base of 100 was used at the beginning of each period to better show the changes in the labor force participation rate over time. The base month of each index is indicated on the y-axis of each chart.

LITERATURE REVIEW

A respectable collection of literature on declining male labor force participation rates has accumulated over the years, with each new study containing partial answers proving conflicting arguments. Research on this subject has centered around causes that can be boiled down to supply- and demand-side arguments. Reference to supply- and demand-side arguments do not, in this paper, refer to the political persuasion of the researcher but rather to the variables that shift the participation rate of prime-age men. All explanations have noteworthy shortcomings—meaning a decisive answer to this phenomenon does not exist—which will be discussed in the conclusion.

DECLINE

Reference to demand-side explanations of the decline in prime-age male labor force participation usually boil down to the notion that fewer job opportunities exist for men, some of whom found themselves unable to find work and dropped out of the labor force in response. For example, if employers are not looking for the skills that job applicants have, certain applicants may eventually quit looking for a job out of frustration from rejections. Employers do not demand workers who lack certain skills and the worker drops out of the labor force altogether—thereby lowering the labor force participation rate.

Arguments proposing a demand-side shift tend to focus on structural changes in the composition of the jobs landscape in the United States. Federal Reserve Bank of Kansas City economist Didem Tüzemen (2018) contends that reduced demand for middle-skill jobs from job polarization due to technological change and globalization is a key contributor to the decline in participation. She finds, "that from 1996 to 2016, the nonparticipation rate increased most for men with only a high school degree, some college, or an associate's degree and for men on the younger end of the prime-age range (25-34)" (Tüzemen 2018, pp. 5-6). She rejects supply-side arguments claiming more men are living off alternative income sources such as welfare or partner income. She specifically states that, "While the share of prime-age men receiving SSDI [Social Security Disability Insurance] increased from 1 to 3 percent from 1967 to 2014, the labor force participation rate among prime-age men declined by 7.5 percentage points over the same period" (Tüzemen 2018, pp. 16). Since SSDI recipients have increased little with respect to prime-age men, Tüzemen reasons, benefits can explain relatively little of the increase in inactivity.

A paper from economists at the National Bureau of Economic Research contains similar findings to Tüzemen, explaining that the share of employment in middle-wage jobs has declined, while employment in both high – and low-skill jobs has increased since the mid-1990s (Cortes and others 2014). They claim, "This 'hollowing out' of the middle of the wage distribution has been linked to the declining share of employment in occupations with a high content of *routine tasks*—those activities that can be performed by following a well-defined set of procedures" (Cortes and others 2014, pp. 1). Routine occupations disproportionately employ middle-skill workers (high school graduates and those with some college education), particularly men. As middle-skill men are pushed out of their jobs, they are forced to find new ones either find new ones or remain unemployed. Some men who did not find work gave up their search entirely, so they no longer appear in unemployment statistics (Cortes and others 2014).

SUPPLY

Supply-side explanations of the decline in prime-age male labor force participation have greater variation in explanations than do those of the demand-side. The essence of supply-side explanations of shifts in the participation rate, however, is described concisely by Black et al. (2016) when they explain that supply-side arguments are "characterized by prime-age men choosing to reduce their labor supply for a given set of labour market conditions." An example of a supply-side hypothesis for declining participation rates is that more men retire early than in the past. Retirees do not want to work. Accordingly, they do not look for jobs—they are out of the labor force.

Arguments that propose a supply-side shift of workers can be divided further into one of two groups: those who believe men are no longer interested in working and those who believe men are unable to work because they are unhealthy, either mentally or physically. Princeton University economist Alan Krueger believes the decline in labor force participation has occurred because men deal with daily pain which creates a barrier to entry to the labor force. Using a survey of prime-age men he conducted online, Krueger finds men holding very poor measures of subjective wellbeing and little meaning in their lives. In addition, he claims that just shy of half inactive prime-age men take pain medication daily—with nearly two-thirds of them taking prescribed medication (Krueger 2016). A key criticism of Krueger's approach is that the causality of the pain is hard to identify. Are men in poor health because they are out of the

labor force, or are they out of the labor force because they have poor health (Tüzemen 2018)? Another important criticism of this study is that the survey only has data for one point in time, so it is not possible to compare men's subjective pain levels to those in the past (Winship 2017). Men very well could have worked under high levels of pain in the past, but—for one reason or another—are able to get by without working today. Regardless, Krueger recommends increasing social healthcare spending and pain management interventions to improve men's health, which should assist them with reentry to the labor force (Krueger 2016). A follow-up study the next year also found inactivity to rise more in areas with higher rates of opioid prescriptions (Krueger 2017).

John Coglianese, an economist at the Federal Reserve Board of Governors, offers evidence that the labor force is not as dismal as Krueger and the demand-side arguments seem to suggest. He writes about the rise of what he calls "in-and-outs" in the labor force. In-and-outs are people who take, "infrequent breaks out of the labor force in between jobs, but . . . are otherwise continuously attached to the labor force" (Coglianese 2018, pp. 2). These men make up somewhere between 20-40% of the composition of inactive prime-age men (Coglianese 2018). They presumably fund these breaks using savings and alternate income sources. Additionally, Coglianese provides evidence to suggest that the rise of in-and-outs is not a result of labor market demand for prime-age men. He notes that although offshoring and automation have driven some men from their jobs, average real incomes have still risen since 1977—meaning men do not have less of an incentive to work than in the past with respect to pay, at least in an absolute sense (Coglianese 2018). Further, in-and-outs have sprouted up in all industries and occupations, making the hypothesis that men are taking breaks in particular occupations unlikely (Coglianese 2018). In-and-outs differ significantly in spending habits from other types of unemployed people. Unlike the traditionally unemployed, in-and-outs do not sharply reduce spending; they have similar spending habits to retired people (Coglianese 2018). Moreover, in-and-outs do not suffer losses in income that are typically associated with long-term unemployment, possibly because they are more educated than inactive prime-age men overall (Coglianese 2018).

Scott Winship, in a working paper for George Mason University's Mercatus Center, argues the rise in prime-age inactivity is a direct result of easier access to welfare benefits—particularly Social Security Disability Insurance—that make men disinterested in working. He provides harsh criticism to a report that researchers such as Tüzemen and Kreuger cite heavily in their papers, and, in the process, counters many demand-side arguments and a few supply-side arguments too. Winship disputes a claim from a 2016 Council of Economic Advisors report stating that men have not left the labor force because of availability of other earners in the household. The CEA report reasons that because there has been a declining likelihood of inactive prime-age men living with another earner, the availability of other earners is an unlikely cause for rising inactivity (CEA 2016). He counters that, "even if the number of inactive prime-age men without other earners grew at an even faster rate, the continued availability of other earners may be an important cause of rising inactivity" (Winship 2017, pp. 10). Even though the proportion of inactive prime-age men without another earner has increased, a large portion of this demographic still has other earners in their households. Winship concludes this point writing, "The continued availability of other earners may be an important cause of rising inactivity" (Winship 2017, pp. 10).

Winship believes the CEA report understates the extent people can avoid working by accepting social expenditures. The CEA report finds that from 1967 to 2014 there was a 7.5-point increase in inactivity but only a 2-point increase in the share of prime-age men receiving SSDI benefits (CEA 2016). The CEA made an inappropriate comparison, Winship argues, because the 7.5-point increase should be compared to the growth of the share of prime-age men who are inactive and receiving SSDI—of which there was a 3.3-point increase (Winship 2017). To clarify, the difference is that the CEA's comparison was between the 7.5-point increase in prime-age male inactivity rate and the share of *all* prime-age men—both active and inactive—receiving SSDI benefits, while Winship's comparison was between the 7.5-point increase and the share of *inactive* prime-age men receiving SSDI. Using his computation, approximately 40% of the rise in prime-age male inactivity is explained by receipt of federal and state disability benefits

(Winship 2017). The CEA report goes on to claim that men have little incentive to get on disability because the poverty rate is high and increasing for inactive prime-age men (CEA 2016). One interpretation is that this claim is meant to counter supply-side arguments by insinuating that supply-side explanations implicitly assume inactive prime-age men are not pragmatic people who—by not participating in the labor force—effectively choose to live in poverty. The official poverty rate was 28% in 1968 and rose to 36% by 2014 (Winship 2017). Winship notes that the poverty rate is flawed for a variety of reasons—among them is the fact that nonwage benefits are not included its calculation. Winship creates his own measure of poverty and finds that, "using a measure of income that includes nonhealthy, noncash benefits, takes taxes into account, and pools the incomes of cohabitating partners, and using the best measure of inflation to update the poverty line over time, the poverty rate for inactive men was 24% in 2013, down from 32% in 1969" (Winship 2017, pp. 13-14). More inactive men escape poverty today than in the 1960s.

Replying directly to Krueger, Winship finds that improvements in technology have made prime-age men far healthier today than in the past. The problem, Winship argues, with Krueger's hypothesis that declining levels of men's health account for the decline in prime-age labor force participation is that Krueger's survey is not consistent with national figures on *objective* health measures—at least since the 1990s for which there is data (Winship 2017). It is also important to note that objective measurements of health have declined for middle-age non-Hispanic white men, but they have mostly been offset by improvements in the conditions of Hispanic white men and nonwhites—so aggregate statistics for inactive prime-age men should not be affected by these changes (Winship 2017). Finally, Winship finds that the average person on SSDI makes about what a full-time minimum wage worker makes after taxes—even when ignoring Medicare benefits—which makes the opportunity cost of working too high for many people. Claimants' attorneys also have an incentive to keep people on welfare because—if successful—they can be paid from the retroactive benefits they win for their clients (Winship 2017).

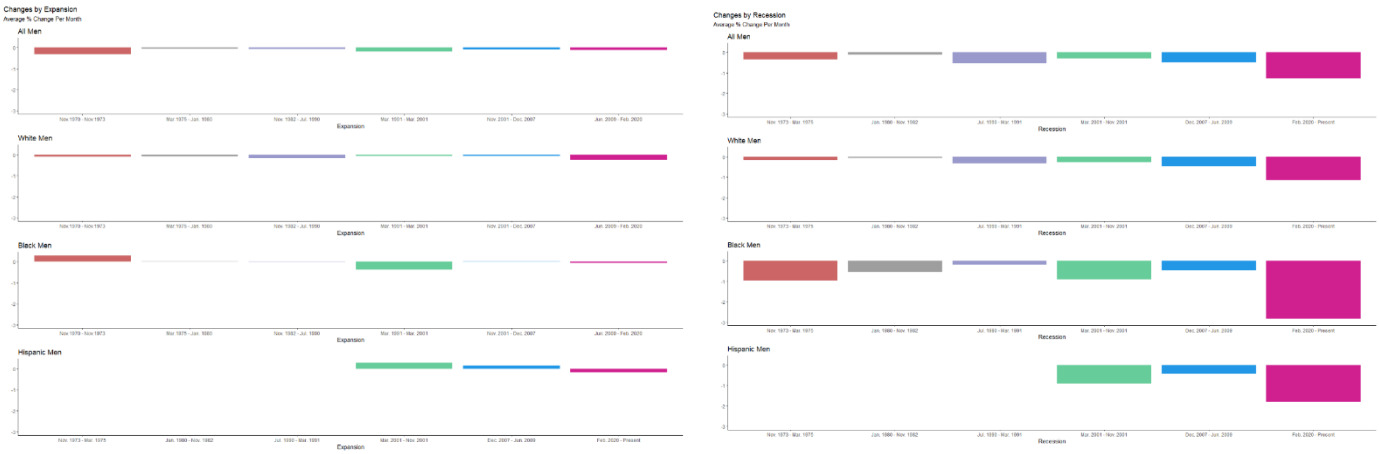
GRAPHICAL ANALYSIS

This builds upon the demand-side literature by finding that the rate at which men leave the labor force is augmented during recessions. Labor force participation data suggests that more recent recessions have had a greater effect on the rate at which prime-age men leave the labor force; men leave the labor force at a faster pace during recessions than during expansions. The CPS data from which this conclusion was reached disputes the notion that financial hardship brought on by economic downturns cause men to re-enter the labor force and earn any income available to them. For readers searching for reasons why more recent recessions might have a greater effect on prime-age men, I refer the reader to research on the changing composition of the US economy, such as work from Olney and Pacitti[2] or the demand-oriented claims outlined in the previous section. Do note, however, that explanations for prime-age men being affected more by recessions or being less responsive to recoveries are beyond the scope of this paper.

Figure 4 below shows the average percent change from a year ago of prime-age male labor force participation rates per month of all National Bureau of Economic Research-defined recessions and expansions. What is interesting to point out in this figure is the striking similarity in changes of the labor force participation rate between all races and white men. Granted, white men make up the majority of respondents in this statistic--especially the further back in time one goes--but the decline in white men's participation rate is smaller than that for all races. Indeed, there is sharp contrast between changes in white men's participation and those of black men, particularly with the recession beginning in February of 2020. Due to lockdowns and other radical changes in economic activity, however, the sharp disparity between declines in inactivity of black and white prime-age men is likely attributable to differences in the kinds of occupations black and white men are typically employed. Regardless, the disparity between black and white men is stark when observing recessions further into the past, indicating recessions do not affect all demographics evenly. Do note that data for Hispanic men is unavailable until November of

1994, which is why there are no changes for these men until the March 2001 Recession. While reading these charts, it is also important to remember that the length of the expansions and recessions are not uniform. The labor force participation rate gains for black men during expansion from November 1973 to November 1973 appears as if it cancels out the losses during the expansion from March 1991 to March 2001, but the latter expansion saw far more men leave the labor force than the former expansion saw return. This is because the expansion beginning in March 1991 lasted many more months than the expansion beginning in November 1970.

Figure 4: Average Percent Change per Month by Expansion and Recession (1970 – 2020)

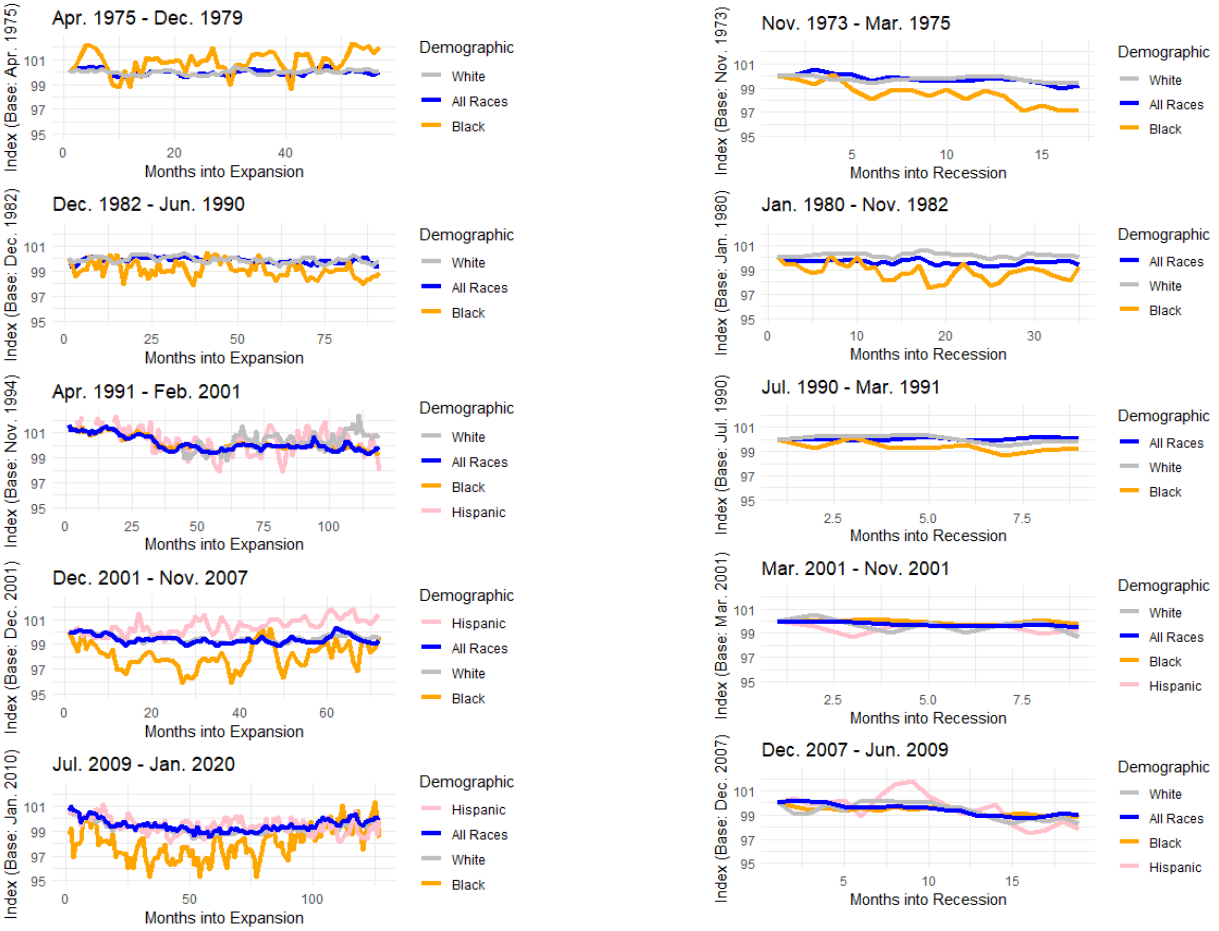


Source: author's calculations of CPS data.

As the expansion graphs of Figure 4 show, there is little to note during expansions other than the fact that the average percent change per month is very small, though consistently negative—with the understanding that these graphs are not weighted for the length of the expansion/recession—for most demographics. The recession graphs of Figure 4 paint a much different picture. It appears that men leave the labor force at a higher rate during economic downturns, particularly during the more recent ones. This is consistent with the findings of Cortez et. al., Tüzemen, and others claiming the decline of middle skill jobs drives men out of the labor force.

The following charts in Figure 5 contain indices of the labor force participation rate of men during each expansion and recession dating back to 1973. White men's labor force participation rate is far less volatile than that of black or Hispanic men. Bear in mind that, as with Figure 4, the y-axis scales are uniform, but x-axis scales are not the same across graphs. Further, it is important to state that the labor force participation rate for all men is seasonally adjusted, while none of the other demographics are seasonally adjusted. This is important because it would be misleading to compare the volatility of all men to another demographic. It is included to provide the general trend for where the labor force participation rate is headed during each period.

Figure 5: LFPR Indices by Expansion and Recession (1973 – 2020)



Source: author's calculations of CPS data.

To assist with interpretation of these results, Figure 5 should be thought of in tandem with Figure 4. The recession graphs of Figure 5 are difficult to understand, as it appears as if there is only a miniscule change during each recession. The time taken to produce the extent to which men have left the labor force during a recession is only a fraction of the time needed for the same change to occur during an expansion. Another trend worth noting is that the labor force participation rates for black and Hispanic men are quite volatile when compared to those of white men. This could be due to a variety of causes and would make an excellent follow-up study.

ENDNOTES

1. Datasets and code available on GitHub.
2. See "The Rise of Services, Deindustrialization, and the Length of Economic Recovery", by Olney and Pacitti (2017), for example.

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EQUITY PRICES, WEALTH INEQUALITY, AND QUANTITAIVE EASING: THE ROLE OF THE FEDERAL RESERVE & LARGE-SCALE ASSET PURCHASES

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INTRODUCTION

The Federal Reserve began lowering the federal funds rate in mid-2007, well ahead of the onset of the Great Recession. Months before the onset of the recession, the Federal Open Market Committee's monthly statements acknowledged the growing credit shortage in financial markets which was related to the housing correction. By the start of the Great Recession, unemployment was already elevated, and economic growth was already declining. Initially central banks, including the Federal Reserve, were utilizing qualitative easing policies, under which they restructured their balance sheets. The Fed increased its purchases of shorter-term risky assets to provide liquidity and improve credit in the financial system, while selling longer term assets to keep the overall size of the balance sheet unchanged. This type of policy was not new, and it was accompanied by several successive cuts to the Fed's benchmark interest rate, the Federal Funds Rate. The fall of Lehman Brothers in September of 2008 intensified the crisis and brought about one of the largest experiments in the history of monetary economics.

The crisis demanded that the Fed and other central banks begin implementing large-scale asset purchasing policies, otherwise known as quantitative easing (QE). Rather than simply restructuring the balance sheet with a somewhat different mix of assets, the Fed acquired new assets and rapidly expanded the overall size of its balance sheet. The Fed implemented three large-scale asset purchasing programs to combat the Great Recession and the financial crisis. The first round, QE1, began in November 2008, was expanded in March 2009, and ultimately completed in early 2010. QE2 was the most limited of the purchasing programs; it began in November 2010 and was completed in mid-2011. QE 3 began in September 2012 and was conceived as an open-ended program where the Fed would purchase up to $40 billion each month for an unspecified amount of time. The program was later expanded to as high as $85 billion each month before tapering out in mid-2014. In total, the Fed purchased over $3.5 trillion worth of Treasuries, mortgage-backed securities, and other agency-backed debt. In a speech reflecting on the monetary policy response by the Fed, the former-Chairman of the Federal Reserve, Ben Bernanke, explained, "Imperfect substitutability of assets implies that changes in the supplies of various assets available to private investors may affect the prices and yields of those assets. [...] Declining yields and rising asset prices ease overall financial conditions and stimulate economic activity through channels similar to those for conventional monetary policy," (Aug. 2012). Investors are often limited in which types of investments they can make either by regulatory restrictions or by transactional and information costs, so when investors rebalance their portfolios after selling securities to the Fed, there should be a trickle out effect where prices are pushed up and yields down on other debt securities as well. Additionally, many consumer and commercial interest rates are pinned to the yields on long term ten- or thirty-year treasury bills. All of this worked to depress long term interest rates while short term rates were held at the zero-lower bound. This can have a further positive impact on the real economy because it signals that the Fed intends to maintain an accommodative policy stance, thus lowering the expectations of consumers and investors for the future level of the federal funds rate. When businesses and consumers expect debt to be cheap, they are more likely to take out loans and drive-up aggregate demand.

In the same speech, Bernanke noted, "[large scale asset purchases] LSAPs also appear to have boosted stock prices, presumably both by lowering discount rates and by improving the economic outlook; it is probably not a coincidence that the sustained recovery in U.S. equity prices began in March 2009, shortly after the FOMC's decision to greatly expand securities purchases." According to the NY Times interpretation of Federal Reserve data the top 1% of families in the US own around 51% of all stock wealth; the top 10% of families own more than 90%.

The research throughout this paper will deal with the effects of quantitative easing on stock prices in the United States and thus indirectly wealth inequality. By regressing the scale of the Federal Reserve's balance sheet against stock prices we can come to better understand quantitative easing's effect on inequality. The analysis will involve the Great Recession, but it should be noted that any results obtained are valuable in predicting the long-run effects of current Fed policy combatting the covid recession due to the similarity in policy measures.

Milton Friedman, the father of monetary economics, asserted that "inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output" (1970). I agree with Friedman's assertion, despite the apparent lack of inflation. I will show over the coming pages that despite the lack of goods and services inflation over the past decade, there has been economically significant growth in the prices of stocks and the levels of the indices that track them.

LITERATURE REVIEW

The literature on this topic is somewhat limited due to its novelty. The Fed only began engaging in QE a little over twelve years ago, and its long-run effects are only beginning to appear. It is also possible economists possess a hesitancy to challenge the Fed. Last, it is unclear whether economic growth would have recovered faster or more robustly had the Fed not engaged in large scale asset purchases when it did. Nonetheless, I believe this to be an important conversation going forward because quantitative easing is likely to be one of the Fed's primary tools for several crises to come. These policies have led to higher wealth inequality in the past and therefore it is worth investigating, particularly due to the growing interest by economists, government, and the public in what the causes of inequality are.

Most of the analysis which has been conducted in the past was event based, such as that by Gagnon et al. (2010), who affirmed the effectiveness of large-scale asset purchases in lowering a variety of long-term interest rates. Krishnamurthy and Vissing-Jorgensen (2011), of Northwestern University, conducted similar research and found that the types of securities purchased by the Fed had a notable impact on which types of bonds experienced the most dramatic yield and price adjustments. QE2, which only involved the purchase of treasury bonds, was less effective than QE1 had been in lowering long term interest rates. QE1 involved the purchase of mortgage-backed securities and agency debt in addition to treasuries. Thus, the prices and yields on corporate debt were not affected to the same extent in the second round as they were in the former. Building off the portfolio-balance channel outlined by Bernanke (2012) and the assumption that investors are more likely to see equities as a substitute for corporate bonds than for treasuries. It is likely that QE1 had a more dramatic impact on stock valuations as well than QE2 had. This research predated the maturity extension program and QE3, but it is likely that research similar to that of Krishnamurthy and Vissing-Jorgensen informed the FOMC's decision to purchase only mortgage-backed securities for the duration of QE3.

Gertler and Karadi (2013) produced a unified New-Keynesian model to analyze the effects of large-scale asset purchases. After testing the model, they concluded: "while the details of transmission differ, as with conventional monetary policy, LSAPs stimulate the economy by reducing credit costs. Thus, as we have shown, the transmission to real output and inflation is very similar to that occurring under conventional policy. " This begs the question: where was the inflation for the past decade? From December 2008 through December 2015 the Fed maintained its 0-0.25% target range for the federal funds rate and for most of that

period conducted large scale asset purchases. This sparked a vibrant debate among economists about the *health* of the Phillips curve which only intensified as unemployment declined following the crisis.

Gordon (2013), Ball & Mazumder (2014), Coibion & Gorodnichenko (2015), have each contributed to the modern conversation about the Phillips curve. Much of their investigations dealt with the missing deflation during the crisis. Traditional Phillips curve models from before the crisis indicated that there should have been severe deflation based on the level of unemployment experienced between 2009 and 2013. They each proposed slight modifications to the Phillips curve model in order to improve its predictive power. The most important metric that all three groups of authors identified was the anchoring of inflation expectations by the Fed. Del Negro et al. (2020), were curious about how unemployment and inflation might interact at different points throughout the business. Utilizing several VAR and DSGE models they estimated various Phillips curves. Their findings ruled out the explanation that unemployment has become less relevant as an indicator of wage and price pressures, either the Phillips curve has flattened, or policy is better able and/or willing to stabilize inflation. Del Negro et al. were also analyzing much more current economic data, particularly the low unemployment rates reached toward the end of the (2009-2020) recovery period.

By 2017 economic indicators had improved markedly: the unemployment rate in January 2017 was 4.7% down from its high of 10%, the economy was growing at a rate of about 2%, but core-PCE inflation remained practically unchanged at around 1.8%. However, the S&P 500 over this period the S&P 500 nearly quadrupled in value as well as many other stock market indicators. Balatti et al. (2017) conducted research very similar to my own looking into the effects quantitative easing had on both the US and UK equity markets using a VAR model. They regressed the central bank balance sheets, consumer price indices, stock market liquidity indices, and industrial production levels against the S&P 500 in the US and the FTSE in the UK. They found quantitative easing to have "a strong and significant impact" on stock prices. They also noted an initial negative relationship between QE announcements and stock prices which seems to resolve itself quickly. Ultimately, their model provided strong evidence that, "QE acted on equity markets through time and promoted their growth on an economically meaningful scale," (page 11). The Fed had a difficult trade off during the financial crisis: stimulate the economy via QE while increasing inequality or allow credit markets to fail. Now, that the decision was made and we have had time to analyze the effects of three, now four programs, it is valuable to look at not only what worked and what didn't—what worked for who.

Much of the other extant literature dealing with quantitative easing and stock prices deals with the United Kingdom rather than the US. Joyce et al. (2011) found similar channels in the UK which led to lower corporate bond yields and could lead investors to move their money out of corporate bonds and into stocks.

My research will explain to what extent the Fed's large scale asset purchases have led investors to move their money into stocks, thus driving up equity prices and making the holders of equities wealthier. This will help economists better understand an aspect of quantitative easing which I believe has been under appreciated throughout the 2010's recovery period. The results of this analysis will be important in crafting monetary policy to combat the covid recession, as well as future recessions whenever the zero lower bound is reached.

DATA & METHODOLOGY

Throughout this paper I primarily used data provided by the Federal Reserve Economic Database (FRED), which is managed by the Federal Reserve Bank of St. Louis, but for certain sets of data I had to look elsewhere. My data spans the entirety of the QE period beginning in 2008 and going all the way into late-2020. I used monthly data, and where monthly data was not available, such as in the case of corporate profits I averaged between quarters to estimate monthly observations. It should also be noted, this paper is looking into inflation (or in other words non-value-driven price fluctuations) so nominal data was used throughout.

I used the percent changes in the personal consumption expenditures index (PCE) and the consumer price index (CPI) to measure goods and services inflation. I also used both of their core- variants which exclude food and energy price fluctuations which can be highly seasonal and are often impacted heavily by supply-side forces. These are all popular measures of goods and services inflation which utilize large baskets of highly diverse goods and services. All four of these indices are reported monthly.

I used the Fed's publication of the nominal balance of its assets to quantify the effects of QE on the balance sheet. This follows Balatti et al. who also used the amount of securities held by the Fed. This data is shared weekly on Wednesday's, I averaged to attain monthly observations.

Controls for aggregate demand were required in all models, for which I used the unemployment rate, reported by the US Bureau of Labor Statistics and the index of industrial production reported by the Board of Governors of the Federal Reserve System. Although results are not reported here, I also used nominal gross domestic product, which is reported by the US Bureau of Economic Analysis. The unemployment rate and index of industrial production are reported monthly; GDP figures are reported quarterly, I averaged between quarters to estimate monthly observations.

A variety of bond yields and interest rates were also utilized throughout this paper. I used the 10-year constant maturity rate and 30-year constant maturity rate, reported daily by the Board of Governors of the Federal Reserve System. I averaged to attain monthly observations. I also used the 10-year constant maturity minus the 2-year constant maturity rate which is calculated and reported by the Federal Reserve Bank of St. Louis daily; I averaged to attain monthly data. Last, I used the average 30-year fixed mortgage rate, reported by Freddie Mac weekly; I averaged to attain monthly observations.

To control for market conditions, I included the Chicago Board of Options Exchange Volatility Index (VIX) and an Index of Corporate Profits after-taxes reported by the US Bureau of Economic Analysis. The VIX is reported daily, I average to attain quarterly observations. The corporate profits index I used is reported quarterly, I averaged between quarters to estimate monthly observations.

Finally, I used Standard and Poor's Index of 500 large-cap corporations (S&P 500) as a proxy for stock prices. This also follows the work of Balatti et al. The S&P 500 is one of the most popular indices used by economist as well as professionals in the finance world. I used monthly average closing-prices. These prices are nominal.

I ran augmented Dickey-Fuller tests on all the data listed above and determined most data are non-stationary. Therefore, this analysis was conducted with first differences of all variables, except where noted otherwise. Ordinary least squares (OLS) will be the technique used throughout to estimate parameters.

SECTION I

Many researchers have attempted to explain the apparent lack of inflation following quantitative easing. I will argue throughout this paper that inflation was present—just not in the prices of goods and services but rather in the prices of assets, particularly stocks. Goods and services inflation is important for a variety of reasons and it is the type of inflation economists and non-economists, alike, are most accustomed to discussing. Goods and services inflation refers to the general rise in the prices of goods and services throughout the economy over time. Typically, the Fed targets an annual two-percentage point level of inflation which acts as buffer against deflation. Most often inflation is estimated with the use of Phillips curves which regress the change in the unemployment rate against the change in inflation. Theoretically, as more people become unemployed aggregate demand declines leading to slower increases in prices over time; higher unemployment is also related to lower bargaining power for workers which leads to slower wage inflation.

The Phillips curves estimated below utilized the size of the Federal Reserve's balance sheet and a one-month lag for inflation as controls; an additional four regressions utilized industrial production as a control rather than unemployment. Among goods and services inflation metrics I chose to look at the index of personal consumption expenditures (PCE) and the consumer price index (CPI) because of their

popularity and accessibility. PCE inflation is the Fed's preferred metric. I also looked at their core levels, which exclude food and energy. The models were such that:

$$\Delta inf_{G/S,t} = \alpha + \beta(\Delta inf_{G/S,t-1}) + \gamma(\Delta BS) + \delta(\Delta AD) + e.$$

Here ΔAD references either the annual change in the unemployment rate or the annual change in industrial production.

One of the great challenges for the Fed throughout the 2009-2020 recovery period was to keep inflation high enough to maintain its deflationary buffer. This was surprising to many economists given the increase in the size of the balance sheet over the period. Balance sheet increases are seen as increases in the supply of money. If monetarism is to hold, we should have expected inflation to rise; the only way for monetarism to survive this crisis would be if inflation were discovered somewhere other than in the price's goods and services. Table 1 shows the results of eight regressions; the first four are modified Phillips curves. The most important parameters for this research are the ones attached to the balance sheet variable.

Table 1. Goods and Service Inflation Estimates, 2008-2020

	PCE [1]	Core PCE [1]	CPI [1]	Core CPI [1]	PCE [2]	Core PCE [2]	CPI [2]	Core CPI [2]
Constant	-0.100174 0.148988	-0.005820 0.018402	0.030710 0.071614	0.000811 0.017590	-0.127215 0.142973	-0.006526 0.018299	-0.001240 0.070776	0.004653 0.017715
Dependent Variable (-1)	0.759208*** 0.056573	0.893519*** 0.034505	0.906687*** 0.032968	0.905666*** 0.030261	0.639183*** 0.065176	0.872364*** 0.038099	0.873320*** 0.036822	0.917403*** 0.030017
Balance Sheet	3.54E-08 2.09E-07	1.22E-08 2.63E-08	-1.40E-07 9.84E-08	-8.61E-09 2.44E-08	-1.72E-07 1.80E-07	1.96E-09 2.22E-08	-6.01E-08 8.31E-08	-2.96E-08 2.17E-08
Unemployment Rate	-0.299222*** 0.105052	-0.019350* 0.011173	0.009694 0.042553	-0.025530** 0.010492				
Industrial Production					0.173364*** 0.038699	0.007715* 0.003928	0.025690* 0.015483	0.005376 0.003328
Adjusted R-squared	0.782465	0.843856	0.850174	0.883932	0.797493	0.844716	0.852774	0.881462
F Statistic	188.0424	280.2248	296.0692	397.0116	205.7812	282.0564	302.1989	387.6765

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

The results above are consistent with other findings in the literature. Inflation expectations are captured by the lagged change in inflation parameter; unsurprisingly, the lagged dependent variables are

highly significant predictors of current inflation for every model. The changes in the unemployment rate and in industrial production had some variability in their significance across models, but what is most interesting—and most important for this analysis—the growth in the balance sheet had no significant impact on goods and services inflation in any model. On a surface level, this would imply a strong contradiction to the monetarist view of inflation: that increases to the money supply should lead to higher inflation. However, as I will show in subsequent models, the inflation can be found, just not in the pricing of goods and services. Highly similar results to the ones shown in table 1 can be obtained when using the nominal change in economic growth as an aggregate demand proxy.

These models indicate that the credit introduced into financial markets by quantitative easing never made it out of the financial sector and into the real economy. The correlation between wages and goods and services inflation would further imply that wages were unaffected by QE. Seeing as QE's effects on the real economy were so limited, an analysis of its effects on bond yields seems reasonable.

SECTION II

The primary channel through which quantitative easing is works is through bond yields. Theoretically, when a central bank engages in a large-scale asset purchasing program it dramatically increases the demand for long term bonds, which should drive up the prices of bonds. Bond prices are inversely related to bond yields; thus, yields should fall. Many consumer and business interest rates are tied to bond yields, so this process is believed to lower long-term interest rates throughout the economy. I estimated parameters for a model of QE's effect on bond yields. The included parameters control for changes in aggregate demand and market volatility in addition to changes in the size of the Fed's balance sheet. The model I used can be expressed as:

$$\Delta Yield_t = \alpha + \beta(\Delta Yield_{t-1}) + \gamma(\Delta BS) + \delta(\Delta AD) + \varepsilon(\Delta VIX) + e.$$

Where ΔAD will either represent the change in the unemployment rate or the change in industrial production. The ΔVIX variable represents the Chicago Board Options Exchange's Volatility Index (VIX) which is a common metric used to measure stock market volatility.

Quantitative easing is designed to drive yields down, so if conventional wisdom holds, a negative parameter should be expected for the balance sheet variable. Declines in the unemployment rate should lead to higher bond yields. A positive change in US industrial production on the other hand should be correlated with a positive change in Treasury yields since Treasuries are essentially an investment in the US. If corporations are more successful tax revenue would be expected to increase. A higher VIX should drive investors away from stocks and toward bonds which would lead to a negative correlation between the VIX and treasury yields. Table 2 shows the results from four regressions.

Table 2. Bond Yield Estimates, 2008-2020

	10 Year Treasury Yield [1]	10Y-2Y Treasury Yield [1]	10 Year Treasury Yield [2]	10Y-2Y Treasury Yield [2]
Constant	-0.035375 0.025356	-0.005620 0.020514	-0.024974 0.024821	-0.004050 0.020195
Dependent Variable (-1)	0.902619*** 0.030986	0.923446*** 0.027999	0.918487*** 0.030893	0.919653*** 0.027686
Balance Sheet	3.84E-08 3.37E-08	1.83E-09 2.89E-08	2.88E-08 2.81E-08	7.62E-09 2.47E-08
Unemployment Rate	0.010336 0.014741	0.018306 0.012264		
			-0.010524**	-0.008877**

Industrial Production			0.004864	0.004014
CBOE Volatility Index	-0.009754*** 0.001925	-0.001898 0.001597	-0.010590*** 0.001938	-0.002708 0.001641
Adjusted R-squared	0.880620	0.898391	0.883812	0.900115
F Statistic	288.6885	345.8227	297.6623	352.4494

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

The lagged dependent variables were highly significant in all models. The coefficients for the change in unemployment and the change in industrial production did not have their expected signs. In the case of unemployment, the coefficients are considered insignificant, but in the case of industrial production this is quite unexpected. The most likely explanation is that increasing industrial production attracts investors to switch out of bonds and into stocks which may see higher returns in a recovering market. Higher stock market volatility is correlated with lower bond yields according to this model, most likely because investors flee the stock market when volatility becomes high increasing the demand for bonds.

The primary takeaway from these models is that the balance sheet is not significant in predicting the yields on Treasury bills. Not only is it insignificant in every model, but its sign is the opposite of what was expected in all four models. According to these models as the Fed entered the market for Treasuries the prices for long-term Treasuries either dropped or stayed about the same. This implies that the demand for bonds was not increased by quantitative easing. It is likely that the Fed crowded out investors when it made its bond purchases forcing them into alternative securities.

To further explore the effects of quantitative easing on long term bond yields and commercial interest rates table 3 shows models similar to those in table 2. This time the models are predicting the changes in the yield on the thirty-year Treasury bond and the average thirty-year mortgage rate. QE was designed to decrease yields on long-term bonds and therefore long-term interest rates. These models help round out our understanding of QE's effects.

Table 3. Longer Term Interest Rate Estimates, 2008-2020

	30 Year Treasury Yield [1]	30 Year Treasury Yield [2]	30 Year Mortgage Rate [1]	30 Year Mortgage Rate [2]
Constant	-0.036107 0.024127	-0.028492 0.023625	-0.015766 0.020793	-0.016922 0.020700
Dependent Variable (-1)	0.875243*** 0.032349	0.888226*** 0.032256	0.937573*** 0.031805	0.935336*** 0.032657
Balance Sheet	2.62E-08 3.23E-08	2.53E-08 2.69E-08	4.49E-09 2.73E-08	6.21E-09 2.31E-08
Unemployment Rate	0.019744 0.013683		0.000483 0.012277	
Industrial Production		-0.012312*** 0.004516		0.000514 0.004172
CBOE Volatility Index	-0.010795*** 0.001876	-0.011762*** 0.001882	-0.003870** 0.001533	-0.003795** 0.001615
Adjusted R-squared	0.863269	0.867857	0.874353	0.874364
F Statistic	247.2311	257.1359	272.3934	272.4213

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

As in table 2, the growth of the balance sheet is insignificant across all models. The theory that industrial production is negatively related to bond yields caught more weight after running these regressions when a highly significant negative coefficient was achieved. Similar results can be attained when controlling for the change in the nominal economic growth rate.

SECTION III

This section and the succeeding sections serve to resurrect the monetarist theory of inflation. Over the remainder of the paper, I will show inflation can be found in the prices of stocks. In my view nothing of the monetarist view requires inflation to be found in goods and services, so long as I can present compelling evidence of its existence anywhere in the economy, I will have saved the theory.

If investors were not purchasing bonds during large-scale asset purchasing programs, perhaps they were buying stocks or other equity securities. To test this hypothesis, I regressed the change in the size of the Fed's balance sheet against the change in the level of the S&P 500 Index. I chose Standard & Poor's index of 500 large-cap US corporations because of its popularity and because these 500 corporations are some of the most heavily bought and sold corporations on the market. Their collective volume makes them a representative pool of corporations. I also carried several of the controls over from earlier models but added in an additional control for corporate profits as, theoretically, this should have a significant impact on the prices of stocks. My model was such that:

$$\Delta S\&P_t = \alpha + \beta(\Delta S\&P_{t-1}) + \gamma(\Delta BS) + \delta(\Delta AD) + \varepsilon(\Delta VIX) + \zeta(\Delta Yield_{T-bill}) + \eta(\Delta Profits) + e.$$

I ran eight permutations of this model, controlling for different metrics of aggregate demand: unemployment and industrial production, as well as various treasury and interest rate controls. Together these eight sets of parameters allow for a well-rounded understanding of QE's effects on stock prices. Table 4 displays the results.

Table 4. Standard & Poor 500 Index Estimates, 2008-2020

	S&P 500 [1]	S&P 500 [2]	S&P 500 [3]	S&P 500 [4]	S&P 500 [5]	S&P 500 [6]	S&P 500 [7]	S&P 500 [8]
Constant	9.479878 9.997016	12.42836 9.044477	7.402482 9.651795	14.82031 10.31913	9.227952 10.15110	12.34356 9.332460	7.698702 9.863499	13.39446 10.33265
S&P 500 (-1)	0.866816*** 0.037445	0.845549*** 0.036359	0.869205*** 0.036628	0.853565*** 0.038613	0.835687*** 0.047868	0.810401*** 0.047165	0.834538*** 0.046997	0.826599*** 0.047826
Balance Sheet	2.63E-05* 1.49E-05	3.30E-05** 1.49E-05	2.56E-05* 1.48E-05	2.60E-05* 1.49E-05	4.12E-05*** 1.44E-05	5.09E-05*** 1.48E-05	4.15E-05*** 1.43E-05	4.14E-05*** 1.44E-05
CBOE Volatility Index	-4.408103*** 0.957716	-4.833521*** 0.943680	-4.761292*** 0.984904	-4.315944*** 0.936692	-4.668299*** 0.998297	-5.015742*** 0.988503	-5.015274*** 1.028275	-4.501896*** 0.977254
Corporate Profits	0.015115	-0.013335	0.007886	0.020568	0.008337	-0.013675	0.000926	0.015050

	0.048924	0.049416	0.048925	0.049251	0.052846	0.053132	0.052866	0.054047
Unemployment Rate	6.050431 5.717457	8.786972 5.630158	6.393217 5.631664	7.269110 5.784290				
Industrial Production					0.993065 2.468557	0.708353 2.427867	1.053050 2.452431	0.664747 2.547063
10 Year Treasury Yield	-6.934274 11.15647				-8.828063 11.11665			
10Y-2Y Treasury Yield		-29.15748** 11.72698				-26.11036 11.67072		
30 Year Treasury Yield			-17.95643 12.15339				-18.45498 12.21418	
30 Year Mortgage Rate				9.068979 14.31697				4.492494 14.54948
Adjusted R-squared	0.874296	0.879083	0.875820	0.874309	0.873472	0.877137	0.874882	0.873008
F Statistic	177.1980	185.1769	179.6714	177.2185	175.8856	181.8591	178.1418	175.1547

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

These models present a strong positive relationship between the size of the Fed's balance sheet and the level of the S&P 500 Index, particularly when controlling for industrial production. Further strengthening my argument, corporate profits are insignificant at the 0.1 level across every model tested. If stock prices were driven by their true underlying values, we would have expected corporate profits to be highly significant in predicting the prices of stocks, but this was not the case in any model tested. Volatility behaved as expected; it had a strong negative correlation with the change in the S&P 500. Of course, the previous change in the S&P 500 was also significant. Adding further to my argument, for the most part across these models changes in unemployment, industrial production, and yields are insignificant in predicting the level of the index. The only parameters with consistently high levels of significance are the inertia variable, volatility, and the balance sheet.

Now that compelling evidence has been presented that the balance sheet puts significant upward pressure on stock prices, a counterfactual analysis seems appropriate to better ascertain to what extent the growing balance sheet impacted stock prices. Between 2003 and 2008 the balance sheet was growing at a

rate of approximately 4% annually. Using this rate, I projected the balance sheet would have grown to a level of approximately $1.49 trillion by late-2020 in the absence of QE. I then re-ran my regressions using the raw data (and still the observed balance sheet data) as shown below in table 5a. I also omitted a lagged dependent variable for this set of regressions.

Table 5a. Standard & Poor 500 Index Estimates, 2008-2020

	S&P 500 [1]	S&P 500 [2]	S&P 500 [3]	S&P 500 [4]	S&P 500 [5]	S&P 500 [6]	S&P 500 [7]	S&P 500 [8]
Constant	18.15638 480.8331	1382.981*** 241.8056	1376.133*** 527.4113	-1322.755** 574.5072	-6096.926*** 575.7382	-1357.922*** 547.0731	-4784.416*** 728.1519	-6414.367*** 574.4702
Balance Sheet	0.000323*** 3.52E-05	0.000282*** 2.29E-05	0.000256*** 3.87E-05	0.000355*** 3.36E-05	0.000351*** 3.24E-05	0.000295*** 2.19E-05	0.000284*** 3.61E-05	0.000366*** 3.17E-05
CBOE Volatility Index	9.122312** 4.155555	-2.089730 2.937425	3.088700 4.419587	7.805999** 3.753138	5.311305 3.809591	-2.125866 2.674371	-0.730165 3.943906	3.981206 3.498544
Corporate Profits	0.674077*** 0.219007	0.201535 0.152893	0.403108* 0.219287	0.918651*** 0.218014	-0.018994 0.213418	-0.059021 0.147702	-0.290337 0.204287	0.192716 0.226390
Unemployment Rate	-127.3811*** 11.84254	-40.20432*** 11.49649	-128.9412*** 12.06567	-112.9324*** 11.99267				
Industrial Production					63.62904*** 5.054172	27.78239*** 4.979786	64.09671*** 5.070172	57.98545*** 5.427469
10 Year Treasury Yield	106.0440** 48.06850				93.91020** 44.75365			
10Y-2Y Treasury Yield		-357.9252*** 29.79993				-322.8550*** 28.15940		

30 Year Treasury Yield			-80.69714 58.80934				-93.08808* 53.91138	
30 Year Mortgage Rate				235.3625*** 53.56843				172.3831*** 52.88750
Adjusted R-squared	0.804510	0.894072	0.800906	0.820251	0.830778	0.904545	0.829302	0.836948
F Statistic	136.8065	279.5333	133.7512	151.5890	163.0106	313.7127	161.3241	170.3894

Note: All variables are at their raw levels
Significance levels: ***=1%, **=5%, *=10%

Table 5b. Estimated Levels for the S&P 500

Table 5b.1	Estimated S&P 500 [1]	S&P 500 [2]	S&P 500 [3]	S&P 500 [4]	S&P 500 [5]	S&P 500 [6]	S&P 500 [7]	S&P 500 [8]
Jan-08	972.92	1081.30	1104.32	922.88	1072.33	1127.05	1204.40	1037.35
Oct-20	3200.39	3247.42	3117.43	3241.68	3206.56	3240.54	3126.56	3226.46
Change	2227.47	2166.12	2013.11	2318.80	2134.23	2113.49	1922.17	2189.11

Table 5b.2	Estimated S&P 500 [1]	S&P 500 [2]	S&P 500 [3]	S&P 500 [4]	S&P 500 [5]	S&P 500 [6]	S&P 500 [7]	S&P 500 [8]
Jan-08	972.92	1081.30	1104.32	922.88	1072.33	1127.05	1204.40	1037.35
Oct-20	1376.01	1654.62	1671.48	1236.56	1224.02	1574.31	1522.46	1159.20
Change	403.09	573.31	567.16	313.68	151.69	447.26	318.07	121.85

Note: The actual level of the S&P 500 in January 2008 was 1,281.47 and the actual level in October 2020 was 3,548.99. This works out to a change of 2267.52 points.

Table 5b shows the estimates for the level of the S&P 500 in January 2008 and October 2020. Table 5b.1 shows those estimates with the observed balance sheet data; some violated regression assumptions aside, they do a good job estimating the level of the S&P 500 in both 2008 and 2020. Table 5b.2 uses counterfactual data which assumed that the Fed only grew its balance sheet at an annualized rate of approximately 4%. In the absence of a profound expansion of the balance sheet the estimated growth of the S&P 500 was severely diminished. According to these models, which each present a similar story, the majority of the growth in the S&P 500 since 2008 is attributable to the growth of the balance sheet.

SECTION IV

There was some variability in how each of the rounds of quantitative were implemented. Such as which types of securities were purchased and in what quantities over what amount of time. QE1 was the most experimental and involved the widest variety of securities. QE2 only involved treasuries and was the

smallest of the large-scale asset purchasing programs. QE3 had the longest duration (at the time of writing) and had a broader scope of assets than QE2, but not quite as varied as QE1. The inclusion mortgage-backed securities (MBS) should have a significant impact on QE1's correlation to the S&P500 due to their similar risk profiles relative to treasuries. QE3 likewise because of its duration and scale should have a more notable correlation to the S&P 500.

Tables 6-9 show the results when regressing the models from Section III (seen in table 4) over various time periods. Table 6 utilizes a sample period from September 2008, when the Fed began making purchases ahead of the formal announcement of QE, to October 2010 when the program was suspended. Table 7 shows the results for the period of QE 2 (November 2010-August 2011). Table 8 shows the results for the period of QE 3 (September 2012-October 2014). Last table 9, looks at all three rounds, but ignores the "boring period" between late-2014 and early-2020 and all of QE4. No specific time was taken in this section to look at QE4 in isolation due to a lack of available data at the time of writing.

Table 6. Standard & Poor 500 Index Estimates, 09/2008-10/2010

	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500
Constant	9.403446 18.80666	-27.59708** 12.57453	-13.08541 15.29810	-3.579560 16.99823	-52.98237** 20.07980	-59.28256*** 13.75269	-58.53770*** 16.13668	-50.53718** 20.24025
S&P 500 (-1)	0.414323*** 0.067041	0.520578*** 0.053788	0.479608*** 0.059994	0.469618*** 0.057252	0.375224*** 0.096969	0.400727*** 0.078500	0.402025*** 0.084680	0.378784*** 0.078526
Balance Sheet	0.000120*** 3.11E-05	0.000144*** 3.36E-05	0.000142*** 3.09E-05	0.000129*** 3.17E-05	0.000103** 4.06E-05	0.000111** 3.87E-05	0.000112*** 3.70E-05	0.000102** 3.83E-05
CBOE Volatility Index	-8.271210*** 0.789899	-8.705491*** 0.867757	-8.377216*** 0.866528	-8.479591*** 0.809841	-9.117504*** 1.067693	-9.237948*** 1.045674	-9.236436*** 1.095285	-9.052848*** 1.067365
Corporate Profits	0.084744** 0.037870	0.066641 0.046130	0.065149 0.039106	0.099062** 0.045652	-0.061618 0.049051	-0.064764 0.052893	-0.067055 0.048905	-0.045212 0.060714
Unemployment Rate	-74.15431*** 8.173806	-65.36912*** 8.240105	-68.46640*** 8.093184	-61.85813*** 6.443671				
Industrial Production					15.45226*** 2.415621	15.05655*** 2.325874	14.99826*** 2.297939	14.89056*** 2.036060

10 Year Treasury Yield	35.78942** 13.44244				6.762887 15.37607			
10Y-2Y Treasury Yield		15.16473 12.08383				2.056866 13.20142		
30 Year Treasury Yield			24.56035* 13.18002				1.573064 14.48431	
30 Year Mortgage Rate				37.55222** 17.03291				12.39280 20.83093
Adjusted R-squared	0.997221	0.996476	0.996773	0.996961	0.995301	0.995259	0.995256	0.995340
F Statistic	1495.939	1179.118	1288.154	1367.923	883.5172	875.7018	875.1252	890.9310

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

Table 7. Standard & Poor 500 Index Estimates, 11/2010-08/2011

	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500
Constant	198.7013* 79.86021	92.98256 101.8624	101.6811* 40.35139	198.3012* 83.24101	376.0350** 116.8147	359.7655 283.6035	388.6365* 139.7368	258.5521 148.0471
S&P 500 (-1)	0.247177 0.356783	0.371377 0.535536	0.168281 0.290540	0.248517 0.367582	0.124091 0.260973	0.202847 0.511048	0.174722 0.297004	0.187012 0.372863
Balance Sheet	-6.13E-05 0.000105	-6.02E-05 0.000171	-2.61E-05 8.33E-05	-8.00E-05 0.000109	-0.000218 0.000116	-0.000325 0.000299	-0.000343 0.000152	-0.000145 0.000164
CBOE Volatility Index	-3.984252 2.085150	-5.731984 3.555245	-3.064647 1.803653	-6.105411** 1.722135	-2.220973 1.785844	-2.009673 4.875501	-0.843471 2.448940	-5.434136* 2.043444
Corporate Profits	0.004510 0.369513	-0.338131 0.608908	0.053264 0.293025	-0.097746 0.351669	0.117991 0.267548	-0.020400 0.645476	-0.201371 0.241273	-0.082490 0.350320

Unemployment Rate	8.255688 43.17607	-14.37932 63.72610	-81.21111 39.40000	37.25505 51.37106				
Industrial Production					-26.78809 15.40025	-34.25186 36.68999	-38.89589 19.66257	-16.16530 21.32484
10 Year Treasury Yield	207.4580 102.3180				238.1884** 72.18571			
10Y-2Y Treasury Yield		84.96881 261.9380				279.5140 298.2931		
30 Year Treasury Yield			282.1874* 99.04271				266.5836* 97.76450	
30 Year Mortgage Rate				222.5910 115.5971				182.3935 94.91370
Adjusted R-squared	0.764987	0.461811	0.849681	0.750859	0.881569	0.575885	0.842388	0.754254
F Statistic	5.882625	2.287127	9.478760	5.520693	12.16560	3.036774	9.017060	5.603857

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

Table 8. Standard & Poor 500 Index Estimates, 09/2012-10/2014

	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500
Constant	-8.953947 45.32163	-11.89410 45.29632	-8.846334 45.36976	-30.24477 46.25548	37.59948 67.77991	39.93611 66.89122	39.78742 67.85003	32.71665 63.36818
S&P 500 (-1)	0.319643* 0.172224	0.316294* 0.168849	0.331473* 0.175957	0.359992** 0.166947	0.259423* 0.149546	0.243812 0.147496	0.252452 0.149674	0.285824* 0.140518
Balance Sheet	0.000265***	0.000271***	0.000262***	0.000281***	0.000268***	0.000275***	0.000261***	0.000290***

	5.15E-05	5.25E-05	5.01E-05	4.85E-05	4.98E-05	5.06E-05	4.77E-05	4.66E-05
CBOE Volatility Index	-12.22665*** 2.615281	-12.65346*** 2.719253	-12.73520*** 2.854299	-12.06762*** 2.282230	-10.87958*** 2.924466	-11.22562*** 2.932709	-11.31455*** 3.025955	-10.04404*** 2.628919
Corporate Profits	-0.294939** 0.138631	-0.318944** 0.143969	-0.319033** 0.147940	-0.297719** 0.127053	-0.198816 0.174619	-0.217496 0.174364	-0.226901 0.179369	-0.155045 0.160283
Unemployment Rate	8.019109 32.29795	10.08548 32.34263	13.87154 34.42476	9.975596 30.03664				
Industrial Production					-14.83819 16.26690	-16.87943 16.36555	-15.26074 16.45425	-21.92988 15.75287
10 Year Treasury Yield	-28.34179 21.33424				-33.31795 20.59147			
10Y-2Y Treasury Yield		-31.37589 21.97741				-37.62703* 21.31142		
30 Year Treasury Yield			-28.68001 21.71104				-31.53448 19.88695	
30 Year Mortgage Rate				-38.33956* 20.21974				-48.82513** 20.32189
Adjusted R-squared	0.804448	0.806988	0.804261	0.820290	0.812044	0.816287	0.811139	0.835977
F Statistic	18.14050	18.42099	18.12017	20.01886	19.00167	19.51358	18.89536	22.23631

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

Table 9. Standard & Poor 500 Index Estimates, 09/2008-10/2014

	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500
Constant	6.726751 14.93268	-22.05737** 9.625873	2.226443 12.66606	-5.212736 14.38530	-50.23551*** 13.84922	-52.23644*** 9.035031	-57.38581*** 11.20287	-37.83486** 15.51506
S&P 500 (-1)	0.476520*** 0.056712	0.564802*** 0.047874	0.459930*** 0.057620	0.535620*** 0.048520	0.527072*** 0.061649	0.548963*** 0.049586	0.554322*** 0.054904	0.491359*** 0.058719
Balance Sheet	7.25E-05*** 1.78E-05	9.64E-05*** 1.62E-05	8.09E-05*** 1.51E-05	8.51E-05*** 1.72E-05	0.000157*** 2.04E-05	0.000170*** 1.79E-05	0.000164*** 1.85E-05	0.000144*** 2.18E-05
CBOE Volatility Index	-7.144128*** 0.638478	-7.792102*** 0.606590	-6.926538*** 0.655812	-7.847224*** 0.586754	-9.147392*** 0.787398	-9.431293*** 0.707936	-9.643329*** 0.794042	-8.945261*** 0.735268
Corporate Profits	0.062140** 0.028924	0.037887 0.032285	0.078409** 0.031228	0.043456 0.028076	-0.105482*** 0.030606	-0.124931*** 0.029036	-0.119502*** 0.030372	-0.092574*** 0.033112
Unemployment Rate	-52.88378*** 6.539382	-47.52975*** 7.888993	-58.07321*** 7.466343	-42.96109*** 5.142670				
Industrial Production					15.13833*** 2.309201	13.33962*** 2.179046	14.28253*** 2.211661	15.59503*** 2.148432
10 Year Treasury Yield	34.18455*** 12.80801				-6.066376 11.43032			
10Y-2Y Treasury Yield		12.66049 12.46877				-24.90795 8.704031		
30 Year Treasury Yield			38.08768***				-18.12449*	

			12.93139				9.680722	
30 Year Mortgage Rate				25.84318* 14.04608				8.133717 14.82996
Adjusted R-squared	0.985501	0.984202	0.985798	0.984731	0.982544	0.984380	0.983343	0.982549
F Statistic	827.9493	758.9784	845.5146	785.6290	685.8410	767.7581	719.2355	686.0393

Note: All variables are first differences.
Significance levels: ***=1%, **=5%, *=10%

As expected QE1 and QE3 had a much greater effect on the level of the S&P 500 than QE2 due to the inclusion of MBS in the program. It should, however, also be noted the results shown here for QE2 are weakened by a short sample period of only 10 months. An analysis at a higher frequency could possibly show stronger results.

Table 9 attempts to sum-up the story for the Fed's QE response to the financial crisis and related recession. After removing the "boring period" it should be noted that the models' ability to explain the variation in the S&P 500 jumps from explaining approximately 80% of the variation to in excess of 98%. The balance sheet is significant at the 0.01 level in all eight models and with higher coefficients in every model than those which were estimated in table 4. It should be noted that corporate profits gained significance in these models, but often with a negative coefficient. This further strengthens the hypothesis that the rise in stock prices over the past decade is attributable to some form of inflation rather than to any form of real value.

CONCLUSION

In this research, I set out to affirm the monetarist view of inflation, but with a twist. I hypothesized that QE had an inflationary side effect in the pricing of assets, particularly equities. Table 1 affirmed what has been discussed throughout the literature—QE had no economically significant effect on goods and services inflation. Tables 4 and 9 show where the inflation occurred, in stock prices. This means the implementation of QE directly led to higher stock prices which were not correlated with real valuations, we know this because in the same models corporate profits were insignificant predictors of stock prices.

It is true, the Fed's options were limited after the federal funds rate hit the zero-lower-bound in 2008 and it first implemented QE, and those options were limited again in 2020. With the knowledge that QE has a meaningful impact on stock prices, and therefore inequality, policymakers have a few options. Many of these policy proposals belong to our fiscal powers. Fiscal stimulus can be targeted more equitably in many cases than is possible with QE, while alleviated much of the need for QE. During future crises if congress is quicker to act and strives for larger stimulus bills it is possible the gains from inflation could be more equitable. A second alternative, also fiscal in nature, would be to implement higher capital gains taxes to directly counteract the effects of stock price inflation. If prices are rising faster than real values, a greater tax on gains could draw prices closer to their real values.

Future analysis could investigate the effects of government spending on stock prices. The American Recovery and Reinvestment Act (ARRA) of 2009, was substantial but <economists> have suggested that it was not large enough in scale. The covid recession of 2020-21 on the other hand was met with a series of at least 4 major stimulus bills. It could be greatly beneficial for future policymakers to understand the impacts of wide-spread stimulus checks, augmented unemployment, and corporate and small business loans. Analyses should also investigate the wage inflation brought about by covid relief packages.

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FEDERAL RESERVE CHALLENGE 2020

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INTRODUCTION

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This presentation was given to the Federal Reserve in Fall of 2020. Looking back to the fall we were in the middle of one of the greatest crises our nation has ever faced, and every institution has a role to play, especially the Federal Reserve.

Our monetary policy recommendations are to keep rates constant at the current target rate of 0.0-0.25%, continue engaging in large-scale asset purchases to create accommodative conditions, and continue loans to businesses. Additionally, the Fed should be prepared to engage in large-scale asset purchases to keep financial markets functioning in the event of another COVID-19 wave. Labor market indicators show weakness, as job losses continue and unemployment remains above the natural rate. With inflation well below the target average of 2%, and unemployment at 8.4%, the Fed needs to continue pursuing expansionary policy to keep these indicators in check.

The Fed should keep interest rates at the zero lower bound until 2023, or until inflation begins to rise above the target of an average of 2% for an extended period of time. In the event that we see indicators of more sustained growth, the Fed should still wait to raise interest rates until expansion poses a threat to stability.

REAL GDP VS. POTENTIAL

Kathleen Callery, Siena College

Exhibit 1 shows that the US has experienced a sharp drop in GDP since the beginning of 2020. The GDP is around 10 percentage points below where the economy was before the recession. The steep nature of the GDP drop shows just how damaging and immediate this recession is. This drop is especially worrisome since the change in GDP in the 2008 recession was not nearly as large as this one. Thus, the Fed should remain accommodative for the foreseeable future, to hopefully facilitate rapid growth in the US economy.

CORE PCE AND HEADLINE PCE

James Ardito, Siena College

Exhibit 2 shows that both Headline and Core PCE inflation have consistently remained below the Fed's 2% inflation target since the Great Recession. With the economy still in a weak state, there are no indications that the rate of inflation will rise above 2% in the near future. Regardless, the Fed should continue to use an inflation-targeting framework to maintain its price stability mandate and fight off any future spikes or drops in inflation.

UNEMPLOYMENT VS. THE NATURAL RATE

Christina Geddes, Siena College

Looking at Exhibit 3, we see that the unemployment rate has been running far above its natural rate since around March of 2020. The natural rate of unemployment is roughly equivalent to the NAIRU, or the Non Accelerating Inflation Rate of Unemployment, which is a theoretical level of unemployment at which we could expect the current level of inflation to remain constant. But, given that unemployment is currently well above its natural rate, we can expect to see a contraction in wage growth and inflation rates.

FORECASTS: INFLATION (CORE PCE)

Jonathan Burns, Siena College

Exhibit 12 presents two forecasts of inflation, measured by core PCE, over the next two years. The blue line is from the Philadelphia Fed's Survey of Professional Forecasters (SPF) and the red line is from the FOMC's Summary of Economic Projections (SEP). As this exhibit shows, inflation is unlikely to rise above its target over the next two years. Reasons for this include but are not limited to the flattening of the Phillips Curve, the several headwinds noted in this presentation, and the Fed's announcement that it will be utilizing inflation targeting for the near future. Therefore, the Fed should continue with its plan of low interest rates until at least 2023 and should not consider raising rates until unemployment nears the NAIRU and average inflation rises above 2% for an extended period. This will help to support a strong and quick economic recovery.

FORECASTS: REAL GDP GROWTH

Christina Geddes, Siena College

Exhibit 13 shows forecasted Real GDP Growth for the next three years. Most economists agree GDP growth will contract in 2020 by about 4 percentage points, but is expected to rebound to about 4% in 2021. Following 2021, GDP growth is projected to gradually decline to about 2% in 2023. Additionally, the Congressional Budget Office anticipates annual growth to be 1.6% for the next three decades. These forecasts demonstrate that economists predict that long term economic growth has been negatively impacted by the pandemic. As mentioned earlier, slow employment growth and permanent job losses could persist and cause hysteresis, further weakening the labor market and long term growth. Another headwind is rising inequality in the US. Long term growth could be further depressed depending on whether the recovery takes a K, W, U, L or V shape. In order to offset long term damage, the Fed must continue to combat economic headwinds by maintaining expansionary monetary policy practices in order to encourage future GDP growth.

FORECAST UNEMPLOYMENT

James Ardito, Siena College

Exhibit 14 shows a projection of the unemployment rate forecasted for the next three years. Leading economists all agree that the forecasted unemployment rate will remain above the natural rate of unemployment of approximately 4% for the near future. As we near 2023, economists begin to disagree slightly on the possible unemployment rate. The Philadelphia Fed's SEP predicts an unemployment rate of 4% in 2023 while the FOMC's SPF predicts a rate of 5.3% for that year. These rates are all contingent on the continuation of the economy's recovery, a second "lockdown" could cause another large increase in the unemployment rate, which would likely alter these predictions. With that being said, these

predictions are quite optimistic, and suggest a much quicker recovery than we saw after the Great Recession, which will be much more likely if fiscal policy continues to match the magnitude of recent monetary policy.

CONCLUSION

Kathleen Callery, Siena College
Alex Perry, Siena College

In conclusion, the current state of the economy is quite weak by nearly every measure, and short term forecasts indicate high uncertainty in labor and financial markets. Expectations are for unemployment to continue above its natural rate and inflation to remain low well into the future. This suggests that if economic conditions remain within forecasts, the Fed will be prompted to take the recommended actions. Despite signs that a recovery may be beginning, many predict the rate of recovery will slow, and that the economy will be in a pinch for a long time. Additionally, a second Coronavirus wave could set things back even farther.

In addition, a few leading indicators and long term headwinds lead us to believe that contractionary policy will not be appropriate for some time. These headwinds will act to slow the recovery and future economic expansion.

As a result, we suggest that the Federal Reserve should keep rates steady at the zero-lower bound, continue in large-scale asset purchases to create accommodative conditions, be prepared to engage in large-scale asset purchases to maintain functioning financial markets, and continue lending to businesses. Should there be stronger indicators of a recovery such as a reduction in unemployment, we still recommend maintaining rates at 0% to ensure the recovery is as fast as possible. Due to the severity of this most recent recession, and the amount of time economists forecast a full recovery will take, the Fed needs to continue ensuring that the supply of credit remains steady to keep businesses open and workers employed. Even then, there is only so much the Fed can do; the rest is the responsibility of fiscal policy.

Federal Reserve Challenge 2020

Opening Statements

- Pursue expansionary policies
  - Maintain Federal Funds Rate at 0-0.25%
  - Engage in large scale asset purchases
  - Direct lending to businesses
- Threat of inflation is muted allowing for the Fed to combat the high unemployment rate aggressively

Exhibit 1: Real against Potential GDP Growth

- Real GDP growth is significantly lower than potential GDP growth

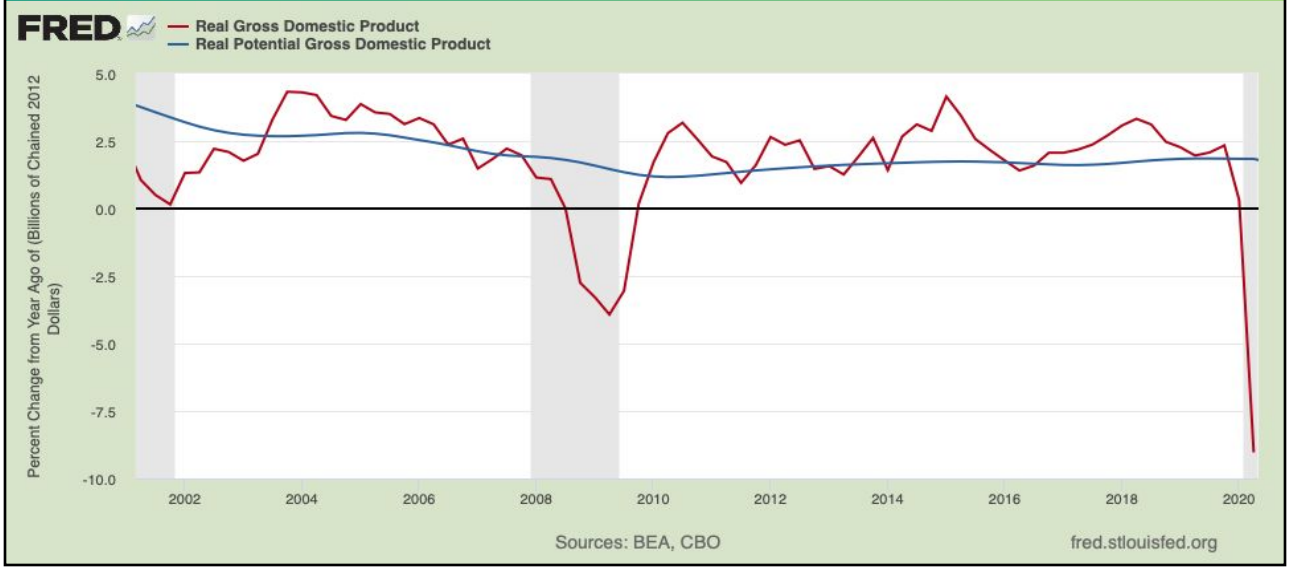


Exhibit 2: Headline and Core PCE Inflation Rate

- The inflation rate is below the Fed's 2% target

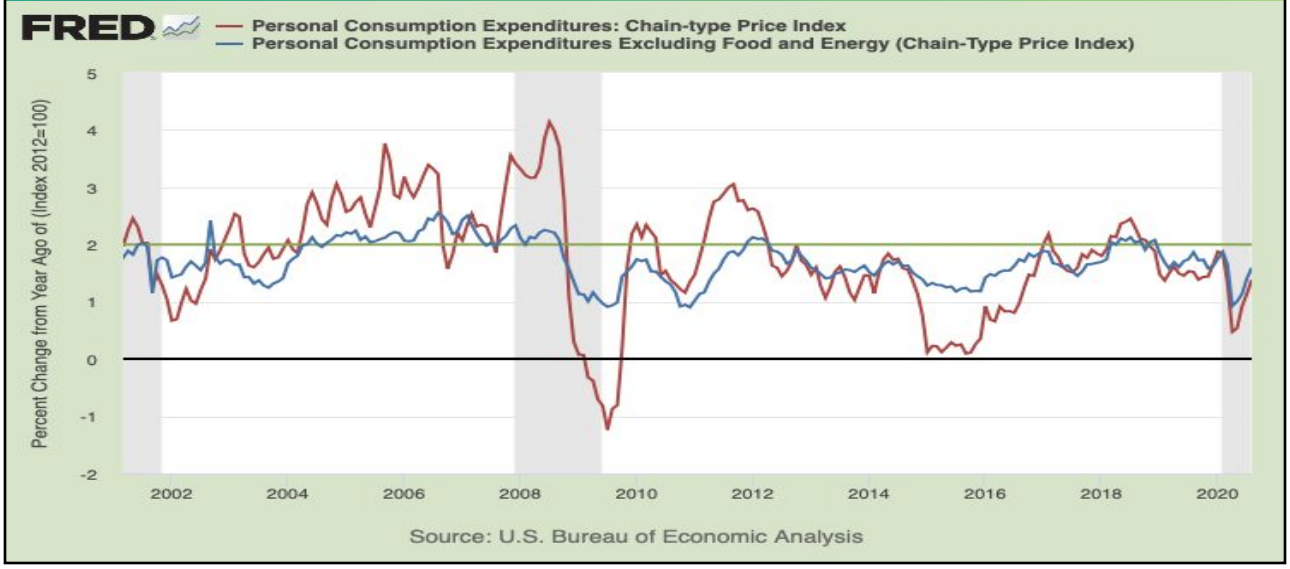


Exhibit 3: Unemployment against Natural Rate

- Unemployment is above the natural rate

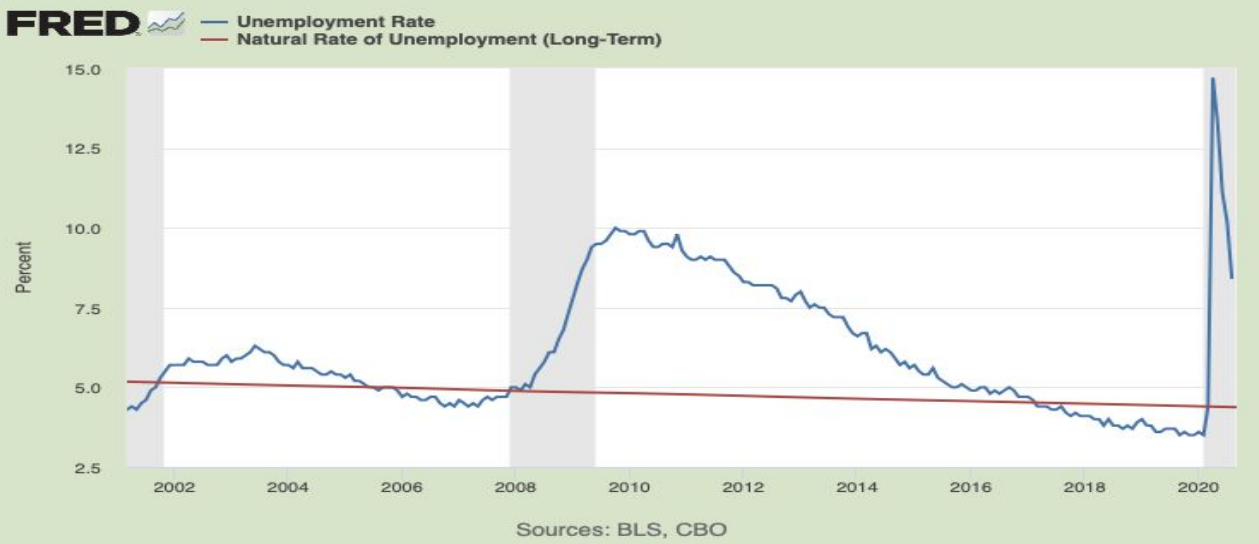


Exhibit 4: Forecasted Inflation Rate

- Forecasted inflation rates remain below the Fed's normal 2% target

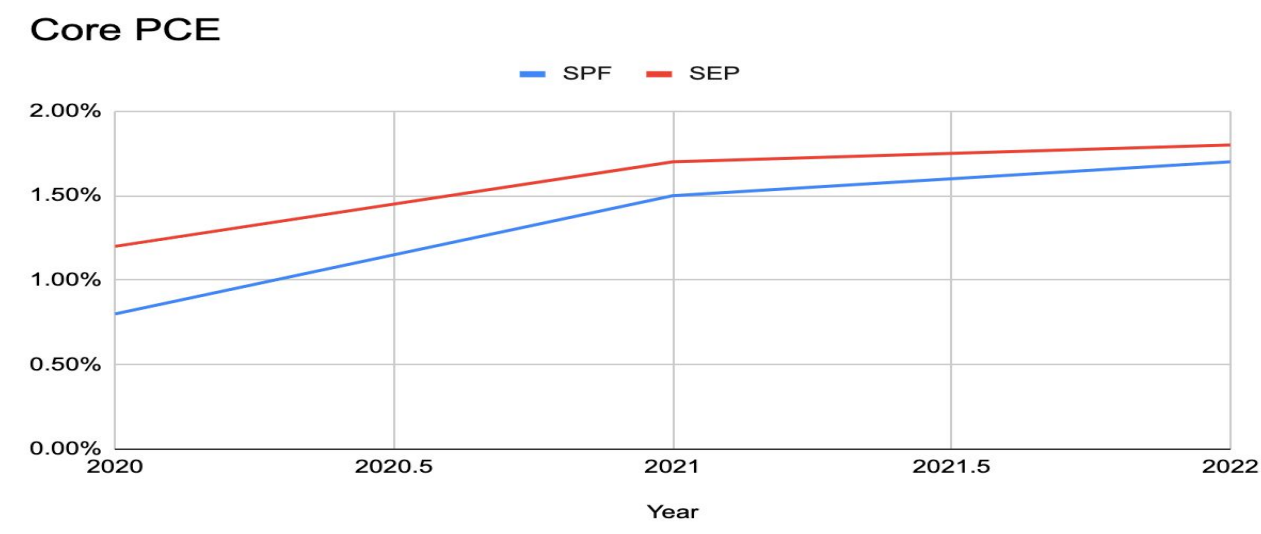


Exhibit 5: Forecasted Real GDP Growth

- GDP growth is forecasted to increase

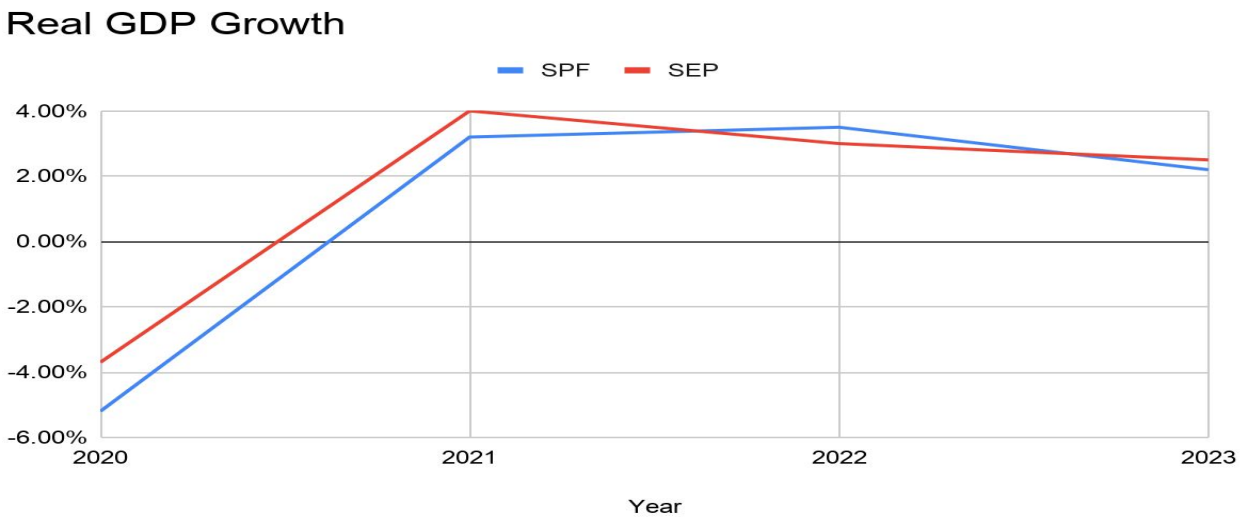
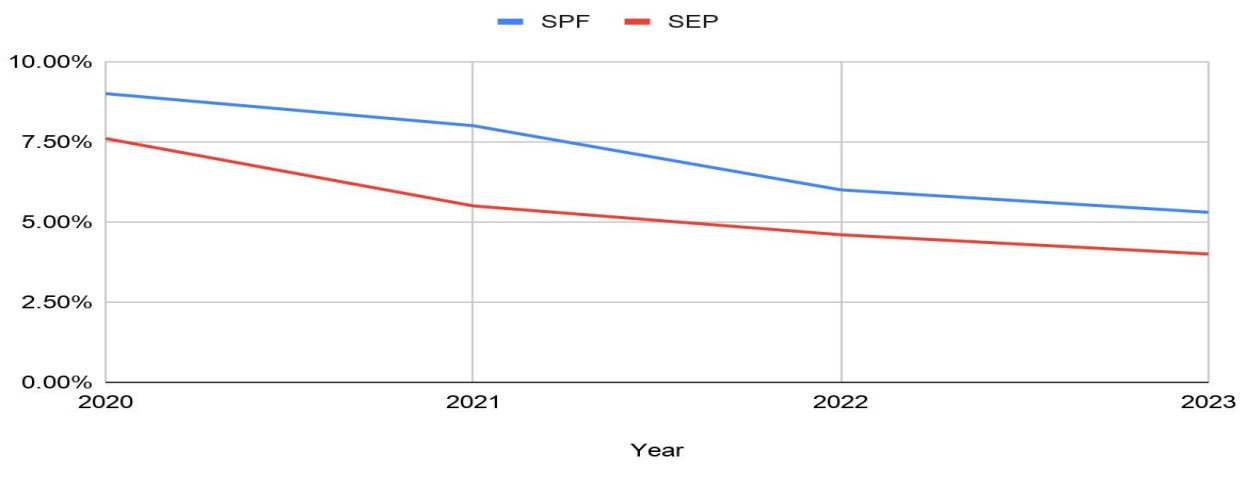


Exhibit 6: Forecasted Unemployment Rate

- The unemployment rate is forecasted to decrease



Monetary Policy Recommendations

- Maintain Federal Funds Rate at 0-0.25%, engage in large scale asset purchases and continue direct lending to businesses
- Labor markets are weak and economic headwinds will work to slow economic expansion
- Without adequate monetary and fiscal policy, the economy will struggle for some time to recover

MASKED BEHIND BARS: POLICY IMPACT ON COVID CASES AMONG THE INCARCERATED

Brooke Boermeester, Siena College
Dr. Ashley Provencher, Siena College

ABSTRACT

Over winter break, I had the pleasure of working under the supervision of Dr. Provencher to research the impact of policy on covid cases among the incarcerated. Correctional facilities are designed to house the most people as inexpensively as possible, making space and personal protective equipment for inmates limited even pre pandemic. Since the virus first reached the US in early 2020, it has rapidly spread among those incarcerated. However, efforts to limit the spread were not prioritized for those left vulnerable in correctional facilities. Some states had mask mandates for all inmates and regular testing, while others had no policies in place at all.

The lack of consistent reporting among states and various policies from facility to facility made the comparison of efforts to mitigate the spread much more difficult. Towards the end of the winter research, I began to construct a dataset to serve as a collection site for state prison cases and policies, as all prisons within a given state follow the same guidelines. The majority of the data was compiled through non profit organizations as opposed to the correctional agencies themselves, proving the safety of the incarcerated was never a priority for those responsible for their lives.

REMITTANCES AND FOOD SECURITY IN DEVELOPING NATIONS

Jonathan Burns, Siena College
Dr. Elias Shukralla, Siena College

ABSTRACT

There is a body of empirical literature that looks at the relationship between remittances and food security. However, most of the papers tend to focus on a specific geographic area. This paper utilizes the WDI data base and FAOstat data sets to look at low- and middle-income countries across different regions of the world. We document a significant impact of remittances on food security. The results are robust to changing the variable used to measure food security and variations in the control variables.

INTRODUCTION

Food security is becoming increasingly prevalent both in literature and on the global stage. Out of the 17 sustainable development goals from the United Nations (UN), the first three are to end poverty, eliminate hunger, and to achieve good health and well-being of global citizens. Food security continues to be a pressing issue in the world today. Even though food insecurity has fallen in absolute terms, food security continues to persist in every corner of the world. According to projections, food security overall, is supposed to improve by 2029 (Thome et al., 2019). However, due to extenuating circumstances that exist in many countries the most food insecure places in the world are most prevalent in developing, low-income countries. The region that is most plagued by food insecurity is Sub-Saharan Africa, it is estimated that in 2019, 35.3% of their population was considered food insecure (Thome et al., 2019). While the SSA countries continue to be the greatest challenge when it comes to food security there are other regions and countries with staggeringly high numbers. For example, Haiti is estimated to have around 47% of their population living with food insecurity (Thome et al., 2019).

As we rapidly approach 2030 when the 17 goals are supposed to be met, it will be crucial to evaluate what effects food security. There has been mounting literature in this field that looks at Africa and other low-income nations, using varying metrics to try and explain what effects food security. In this paper, we will use a panel of 69 low- and middle-income countries to assess the effects of remittances on food security, controlling for inequality, institutional and other variables. Using data through 2019, the paper will show food security and what effects it through a wider lens encompassing more countries over a more recent period.

REVIEW OF LITERATURE

There is growing literature on food security. Although there has been progress in the fight against food insecurity, the SSA countries, and other low income areas remain the population plagued with the highest levels of food insecurity in the world (Ogunniyi et al., 2019).

COVID 19 and Food Security

Papers studying food security could not come at a better time. As the Covid-19 pandemic continues to ravage in many parts of the world it is crucial to understand what effects food security the most. Across many countries, Covid has effected both the public health but also the food structures of entire nations. With a little hindsight we knew that pre-covid, hunger was already on the rise. Knowing this there is no surprise that the already deep inequalities have deepened even further. A recent World Bank report explains just how dire this situation is. The report notes that global food prices rose almost 20% in the last year, this paired with a shattered food supply system will lead to major food security crises if not handled correctly (de Preneuf, 2021). A report from the UN confirms that the worries from world organizations. In November 2020, there were 33 million people facing severe hunger due to remittance loss (UN News, 2020). Those numbers are only increasing.

Household data on remittances and food security

In addition to panel analysis of several countries and their macroeconomic indicators, there have been several recent studies that look more specifically into household food security in a specific geographical area of a country. A paper by Regmi and Paduel (2017), for example, looks at Chitwan, Nepal. The study uses a survey consisting of 18 questions presented to subsistence farmers in the Chitwan region. The authors were able to distinguish the impact that remittances and other explanatory variables have on food security in the area. Overall, they conclude that remittances played an important role in both food insecurity and overall economic growth in Nepal (Regmi & Paduel, 2017). Using household data from over 48,000 people in Sub-Saharan Africa, spanning over 32 countries, - (Sulemana et al., 2018) documents, remittances were positively related to household food security in the 32 countries they analyzed. More importantly they found that the frequency in which the households receive the payments is more impactful in the relationship (Sulemana et al., 2018). Mabrouk and Mekni (2018) use panel data from select African countries to look at the effect of remittances on food security using four specific channels: availability, access, utilization, and stability. While they found remittances to have a positive impact on food security through access, stability and utilization the impact through the availability channel turned out to be negative.

Governmental quality, remittances, and food security

The literature indicates that governmental quality is a fundamental piece in ensuring food security of a nation. However, until very recently the literature was lacking in an analysis on the intersection of governmental quality, remittances and food security. In a study looking at 15 SSA countries, it was found that the interaction between remittances and governmental quality had a significant positive impact on food and nutritional security in those countries (Ogunniyi et al., 2019). This study is a crucial step to understanding the relationship between food security and remittances, while also making an important distinction in the role that governmental quality and corruption play. Gapen et al, 2019 conclude that although remittances help with food security, they won't have an impact on long run economic growth since remittances are more of a social safety net rather than an investment (Gapen et al., 2009).

Trade and food security

In recent decades many developed and developing countries have started to open their economy and embrace varying levels of globalization. In doing so, researchers have been able to use country data to better see how trade affects the economy. There is a significant amount of literature that links trade openness to economic growth and higher efficiency. However, the focus of trade literature for the most part is seldom about the relationship between trade and food security. Therefore, the dynamic panel analysis of trade openness and food security (Dithmer & Abdulai, 2017), is an important addition to this area of food security research. The findings reveal trade openness and economic growth to have a strong

positive relationship with food security, namely dietary energy consumption. In addition to increased dietary consumption, the authors found that trade openness also improves both the diversity and the quality of the food in the country (Dithmer & Abdulai, 2017). The literature also reflects the importance of a more specific part of trade openness. Poor trade facilitation has been said to be a significant driver of food insecurity in SSA (Bonuedi et al., 2020). The authors concluded that a main source of this poor trade facilitation was due to high document requirements for trading and the long export and import times that are experienced in the SSA countries. Another paper on remittances and food security looks at countries in the Global South. Using data from the Gallup World Poll, the authors were able to use almost 69,000 interviews from more than 60 countries in the Global South. They concluded that the effects remittances have on food security may be on a country-to-country basis (Ebadi et al., 2018). They found that while remittances work, the relationship was more powerful regarding the absence of remittances and how much more likely a family is to have severe food insecurity because of the lacking remittances. There has also been evidence that shows how important trade openness and facilitation is as a natural way to lower food prices without direct governmental intervention in the food markets. In a study done in Zambia, authors Dorosh, Dradri, and Haggblade found that regional trade both lowered the overall food prices in the country, and stabilized price volatility in staple foods down the road.

Drought and food security

In a comprehensive study of drought and food security in the Middle East (Hameed et al., 2019) found that out of the four types of drought, hydrological drought was the most prevalent and impactful in terms of food security in the Middle East. Hydrological drought refers to the lack of surface and subsurface water in a region, making it impossible for farmers to keep up with agriculture. The study shows that along with hydrological drought; livestock, population growth, and agricultural products also significantly impact food security in the Middle east. The authors note that the factors they used are place-based and if this model were used for other areas there needs to be a complete study of the region to be able to adapt the model to account for different drivers of food security of a region or country (Hameed et al., 2019).

Gender and food security

To successfully try to decrease food security of a country or region there needs to be a deep understanding of gender and how it is related to food security. In a noteworthy study on gender, geography, and off farm employment, Dzanku (2018) explores the nexus between the above-mentioned variables. The author evaluates how to successfully lower food insecurity and poverty in rural sub-Saharan African countries all while achieving it in an equitable way for all genders (Dzanku, 2018). Using household data from 56 villages across 6 SSA countries, Dznaku finds that women and household participation in off farm employment will be a crucial step forward in combating the cycle of food insecurity in rural sub-Saharan Africa. However, Dzanku also recognizes that geography matters a great deal too. Therefore, it is suggested that place-based policies need to be implemented. In a broader view, a study from the IMF looks at how income and gender related inequality acts as an impediment to growth. They further extend this to see how these inequalities affect per capita GDP growth in sub-Saharan economies (Hakura et al.,2016). They concluded that, targeted, place-based policies that increase the economic opportunities of low-income female headed households will play an important role in alleviating the problems that plague developing low-income countries in sub-Saharan Africa. However, women outside of SSA also experience a great deal of discrimination and deepened inequalities that men simply do not face. Women make up a large proportion of the food insecure world, and a pressing issue that they face on the global stage is they are simply not represented enough in progressive food security goals. Agarwal (2018), shows this exact problem where the sustainability goals have a chance at improving food security for everyone, if done correctly. Agarwal goes on to explain that the goals are not

focused enough on increasing women's access and lowering limitations to land and natural resources. If unaddressed these will inevitably impede the strides that the world is making towards better food security.

DATA & EMPIRICS

In this paper we use data from Food and Agriculture Organization (FAO), and the World Bank's World Development Indicators (WDI)s. The data set consists of 69 low-middle income countries from all over the world. In the data set, there are very few missing data cells. In the following, we present some preliminary results from ordinary least squares (OLS) regressions.

Dependent variable

Our dependent variable used in this paper is the average dietary energy supply adequacy (ADESA). The ADESA measures the number of calories from food that are able to be consumed by the citizens of that country. The strength advantage of measuring food security with ADESA is that it uses raw consumable calories which is a more personal measure than a food production measure. Moreover, this data is widely available for most countries over long spans of time, making it an ideal proxy for a food security variable. Moreover, ADESA is used commonly across food security literature, including a recent paper from (Ogunniyi et al., 2019).

Main explanatory variable

We used personal remittances as our main variable of interest. As indicated in the literature review, we expect remittances to have a positive and significant impact on food security. It will be interesting to see how remittances perform in a larger set of data that draws from many different areas of the world.

CONTROL VARIABLES

There are several drivers of food security that we control for in the model. For example, the literature indicates that trade openness will not only help a country increase their absolute levels of caloric consumption, but trade openness also along with market liberation will help to provide quality increases as well (Dithmer & Abdulai, 2017). Another control we used was GDP, the literature indicates that GDP plays a role in the shifting food security levels. Political stability was used to capture both the functioning government and the levels of violence within the countries. Ogunniyi et al (2019) mentioned that the highest levels of terrorism and political violence take place in low-income countries effected by food security. Nevertheless, political stability and absence of violence is a crucial variable to control for.

Econometric model

Our baseline empirical specification is given in equation 1.

$$ADESA_{it} = \beta_0 + \beta_1 Remit_{it} + \beta_2 trade_{it} + \beta_3 (inequality)_{it} + \beta_4 (Institutions)it + \beta_5 \mathbf{X}_{it} + \varepsilon_{it}$$

Where i indexes country and t denotes time. $\mathbf{X}_{it}$ represents a vector of other controls. The analysis uses an unbalanced panel of n countries (i=1,…,n), over the period 2000 - to - 2019.

The results of our pooled OLS regression are presented in Table 1

$$ADESA_{ij} = \beta_1 + REMIT_{ij} + \sum CONTROL_{ij}$$

The CONTROL variables:

AOFP, GDP, PerCapFD, PSTAL, VFTIME, ALI, TRADE (the names and description of the variables are given below).

The results of our pooled OLS are seen in the table below:

Table 1.

Model Summary					
Model	R	R Square	Adjusted R Square	Std.Error of the estimate	Durbin Watson
1	.571	.327	.318	10.002312	.168

Description of variables used in economic analysis:
Table 2.

Variable	Description	Source	Mean	S.D.	Expected Sign
Food Security	Average dietary energy supply adequacy (percent) (3-year average)	FAOstat	110.9	12.077	n/a
Remittances	Personal remittances, received (% of GDP)	WDI	3.98	5.576	+
AOFP	Average value of food production (constant 2004-2006 I$cap) (3-year average)	FAOstat	219.59	150.575	-
GDP	GDP per capita (current US$)	WDI	6170.681	5717.3260	+
PerCapFD	Per capita food production variability (constant 2004-2006 thousand int$ per capita)	FAOstat	9.460	9.0806	+
PSTAL	Political stability and absence of violence/terrorism (index)	FAOstat	-.4429	.79194	-
VFITME	Value of food imports in total merchandise exports (percent) (3-year average)	FAOstat	41.14	90.700	+
ALI	Percent of arable land equipped for irrigation (percent) (3-year average)	FAOstat	14.351	21.3437	+
TRADE	(Exports of goods and services (current US$) + Imports of goods and services (current US$)/ (GDP (current US$)	Author Estimation with WDI data	.72	.343	+
DESU	Dietary energy supply used in the estimation of prevalence of undernourishment (kcal/cap/day) (3-year average)	FAOstat			n/a
UND	Prevalence of undernourishment (percent) (3-year average)	FAOstat			n/a
HEALTH	Percentage of population using at least basic sanitation services (percent)	FAOstat			+

Descriptive Statistics
Table 3.

Descriptive Statistics			
	Mean	**Std. Deviation**	**N**
ADESA	110.92	12.077	658
Remittances	3.98	5.576	658
AVOFP	219.59	150.575	658
GDP	6170.681	5717.326	658
PerCapFD	9.460	9.080	658
PSTAL	-.4429	.79197	658
VFTIME	41.14	90.700	658
ALI	14.351	21.3437	658
OPENNESS	.72	.343	658

Results and Discussion:

Outliers

The case wise test was run with three standard deviations and there were no outliers, indicating that all the data from the 69 countries is normal and is now safe to run the regressions.

Correlation coefficients:

Table 4.

Correlations										
		Remittances	AVOFP	GDP	PerCapFD	PSTAL	VFTIME	ALI	OPPENESS	HEALTH
Pearson Correlation	Remittances	1.000	-.268	-.332	-.144	-.079	.287	.023	.227	-.092
	AVOFP		1.000	.660	.542	.071	-.280	.144	-.010	.518
	GDP			1.000	.340	.277	-.199	.389	.235	.826
	PerCapFD				1.000	.178	-.097	-.069	-.017	.333
	PSTAL					1.000	.204	-.250	.231	.109
	VFTIME						1.000	-.148	.027	-.085
	ALI							1.000	.086	.505

	OPENNESS								1.000	.332
	HEALTH									1.000

In the correlation coefficient table (Table 4), there are very few issues with highly correlated explanatory and control variables. To adhere to the collinearity assumption of the ordinary least squared model this table must be evaluated in the paper. Overall, there are no glaring issues with multiple variables and multicollinearity, however the Average value of food production, and HEALTH variables seem to have issues with multicollinearity. For the remainder of the data analysis the AVOFP, and HEALTH will be withheld and added as a robustness checks towards the end.

New regression with AVOFP, and HEALTH variables withheld:

Table 5.

Model Summary					
Model	R	R Square	Adjusted R Square	Std.Error of the estimate	Durbin Watson
1	.557	.310	.303	10.066	.183

Table 6.

Correlations								
		Remittances	GDP	PerCapFD	PSTAL	VFTIME	ALI	OPPENESS
Pearson Correlation	Remittances	1.000	-.317	-.142	-.089	.288	.029	.223
	GDP		1.000	.336	.256	-.199	.397	.216
	PerCapFD			1.000	.169	-.099	-.037	-.018
	PSTAL				1.000	.199	-.233	.226
	VFTIME					1.000	-.154	.031
	ALI						1.000	.048
	OPENNESS							1.000

With the food production and health variables withheld there no present issues with multicollinearity.

Effects of remittances on food security

Table 5 yields an r^2 of 31.0% with an adjusted r^2 of .303. This reveals two important findings. One, our explanatory variable and the control variables explain 31.0% of the variation in food security in the countries that are part of the study. Secondly, the adjusted r^2 in the regression tells us that all the variables in the model are pulling their weight and were not added to inflate any of the results.

Table 7.

Coefficients							
Model	Unstandardized	Coefficients	Standardized	t	Sig.	Collinearity	Statistics

	B	Std. Error	Coefficients Beta			Tolerance	VIF
(Constant)	100.574	1.194	n/a	84.240	.000	n/a	n/a
Remittances	.291	.083	.133	3.518	<.001	.723	1.383
GDP	.001	.000	.575	12.773	<.001	.511	1.956
PerCapFD	.247	.047	.185	5.242	<.001	.837	1.195
PSTAL	-4.481	.581	-.292	-7.710	<.001	.725	1.378
VTIME	-.001	.005	-.006	-.174	.862	.829	1.206
ALI	-.089	.020	-.174	-4.443	<.001	.673	1.486
OPENESS	-2.135	1.267	-.060	-1.685	.092	.811	1.234

Table 7. represents the validity of our variables and shows how much the explanatory and control variables effect food security. There are many important aspects to this table and should be explained in detail. With exception to the value of imports variable, our remittance variable and the controls are all highly statistically significant (Sig < .05).

Another important piece of table 7 are the VIF numbers. VIF is a helpful tool that adds validity to the claim of non-multicollinearity. Typically, when looking at VIF the higher the number gets the worse the multicollinearity. However, if VIF reaches near 10 then there is a serious problem with multicollinearity. In our data VIF for all the variables does not go above 2, which strengthens our results.

All the variables carry the expected signs except trade openness and ALI. This is an important finding for two reasons. The first being, these variables may not be as good of a control as was originally indicated both in the literature and in our indications at the beginning of the paper. Additionally, this may indicate to a degree, when these variables are extended to 69 differing low- and middle-income countries, the effects of trade openness and arable land are differing. Overall, these variables warrant further research into them.

Further tests for heteroscedasticity and autocorrelation

Glejser Test for heteroscedasticity:

Due to the potential run in with heteroscedasticity another test must be employed to truly see if this regression is skewed hetero. To do this the Glejser method will be used. In doing this a new regression will be run. The absolute value of the residual will be used as a proxy dependent variable. The independent variables will be the same as they are in the original regression.

Econometric model:

$|u_i hat| = \beta_1 + \beta_{2REMITTANCES} + \beta_{3GDDP} + \beta_{4PERCAPFD} + \beta_{5PSTAL} + \beta_{6VTIME} + \beta_{7ALI} + \beta_{8OPENNESS}$

Table 8.

Model Summary					
Model	R	R Square	Adjusted R Square	Std.Error of the estimate	Durbin Watson
1	.351	.123	.114	5.48609	.270

After running the Glejser method there is no indication that the independent variables explain the variation in the residual term meaning there is most likely not a major problem with hetero.

Robustness Check

The robustness check consists of adding two other variables into the model to test the strength and validity of the explanatory variable. The two added variables:

- AVOFP
- HEALTH

Table 9.

Coefficients							
Model	Unstandardized B	Coefficients Std. Error	Standardized Coeffecients Beta	t	Sig.	Collinearity Tollorance	Statistics VIF
(Constant)	99.823	1.260	n/a	78.454	.000	n/a	n/a
Remittances	.179	.083	.083	2.148	.032	.682	1.456
GDP	.000	.000	.117	1.473	.141	.162	6.174
PerCapFD	.112	.053	.085	2.101	.036	.627	1.596
PSTAL	-3.012	.613	-.197	-4.914	<.001	.633	1.580
VTIME	-.002	.005	-.017	-.465	.642	.780	1.282
ALI	-.067	.024	-.119	-2.823	.005	.576	1.735
OPENNESS	-3.191	1.314	-.091	-2.427	.015	.725	1.378
HEALTH	.153	.029	.359	5.201	<.001	.214	4.671
AVOFP	.018	.004	.225	4.415	<.001	.392	2.551

This robustness check yielded some unexpected results. While the r^2 and adjusted r^2 increased notably, there were changes among the significance and signs of some explanatory variables.

The second robustness check will be running all the variables and seeing how they effect the presence of undernourishment (new proxy variable for food security). When testing the effect of remittances against the prevalence of undernourishment variable

Firstly, the remittances sign flipped to become slightly negative. While this may be worrying there are many reasons why it could have flipped. Other than the main x flipping slightly negative there is no other indication that something is wrong within the data. As expected, the HEALTH variable (which is reflective of sanitary norms) is negatively related to the prevalence of undernourishment. Nevertheless, the HEALTH variable is strongly related and statistically significant to food security.

Table 10.

Coefficients							
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Statistics VIF
(Constant)	26.000	1.117	n/a	23.274	<.001	n/a	n/a

Remittances	-.363	.071	-.215	-5.122	<.001	.682	1.466
GDP	.000	.000	-.076	-.920	.358	.178	5.604
PerCapFD	.058	.050	.052	1.155	.249	.598	1.672
PSTAL	-1.380	.537	-.115	-2.572	.010	.606	1.650
VTIME	.004	.004	.033	.847	.397	.776	1.288
ALI	-.006	.020	-.013	-.288	.774	.567	1.765
OPENESS	4.678	1.143	.169	4.091	<.001	.708	1.412
HEALTH	-.162	.026	-.449	-6.327	<.001	.239	4.193
AVOFP	-.016	.004	-.246	-4.512	<.001	.405	2.472

CONCLUDING REMARKS AND POLICY SUGGESTION

This study aims to evaluate the effect that remittances have on food security. The data set that was used in this paper comes largely from FAO and WDI World Bank databases. The goal was to broaden the scope of food security research to include SSA, Latin America, East and Southern Asia, and the Middle East. Instead of using strictly countries from SSA, the study uses 69 countries from every corner of the world. This was possible in part to the vast data available for most variables in most of the countries used.

Moving on, remittances do in fact play a large role in food security. However, what we also see in the coefficient of the remittance variable is that the relationship is not as concrete when you increase the scale of the research. This leaves a lot of questions unanswered, further research must be done in the field that investigates more than just the physical amount of money someone is receiving. There has been some research already done in this area. Sulemana et al., 2018, looked at international remittances and household food security across 32 SSA countries. It was found that remittances are important, but, even more important are the frequency that they are received. As the literature progresses in this field, there should be more focus on studies similar to Sulemana et al.

The regression yielded strong results for a number of our control variables. Namely, our political stability and absence of violence control. In the original OLS regression and the robustness checks, PSTAL was both significant and showed the correct signs. There was however another variable that was consistently insignificant. Surprisingly, the GDP per capita variable other than in the first regression, was strongly insignificant. Lastly, is the trade openness variable, which similar to GDP turned out to be an insignificant variable. An interesting piece from the regressions was how inconsistent the relationship between trade openness and food security ended up being. The only two times trade openness was significant, the signs in each of the regressions yielded different results. This casts doubt on another classic development tactic of completely liberating trade markets and subjecting a county to the full effect of the global economy.

Looking at the results of the original regression and the two robustness checks that took place, two conclusions can be made for policy. The first, is all the variables featured in this model are well worth government attention because in one way or another they undeniably playing a role in food security. Two, across every regression ran in this paper, the remittances and political stability and conflict variables proved to be important in explaining the variation of food security. Therefore, it appears that for many reasons including food security, countries must make it a priority to set up and fortify existing institutions that produce political stability and avoid corruption and conflict. Moreover, countries will see less food insecurity if they focus on policies that make receiving remittances frictionless. Ensuring food security is a long way down the road, but further research in this area seems to be a step in the right direction.

The important finding in this data is that across varying types of low- and middle-income economies, remittances prove to be a strong tool against food insecurity. In addition, remittances also prove to be robust, when adding new variables and a different proxy for food security. An additional contribution from this paper comes from the control variables and the conclusions that can be made from them. The first was GDP per capita and how consistently insignificant it was in the regressions. Although focusing on GDP growth is the main goal of many in the development field, the findings in this research may provide an alternate view to development. Similar to Sen's (1999) revolutionary idea of "Development as Freedom", the answer to food security may lie in unlocking capabilities of individuals rather than focusing on mere GDP and income. Though this needs more research, the data found is in line with what is proposed in Sen's essay, that is, although it is a factor GDP cannot be the only focus when fighting food insecurity and poverty, respectively.

APPENDIX

Figure 1:

Chart 1:

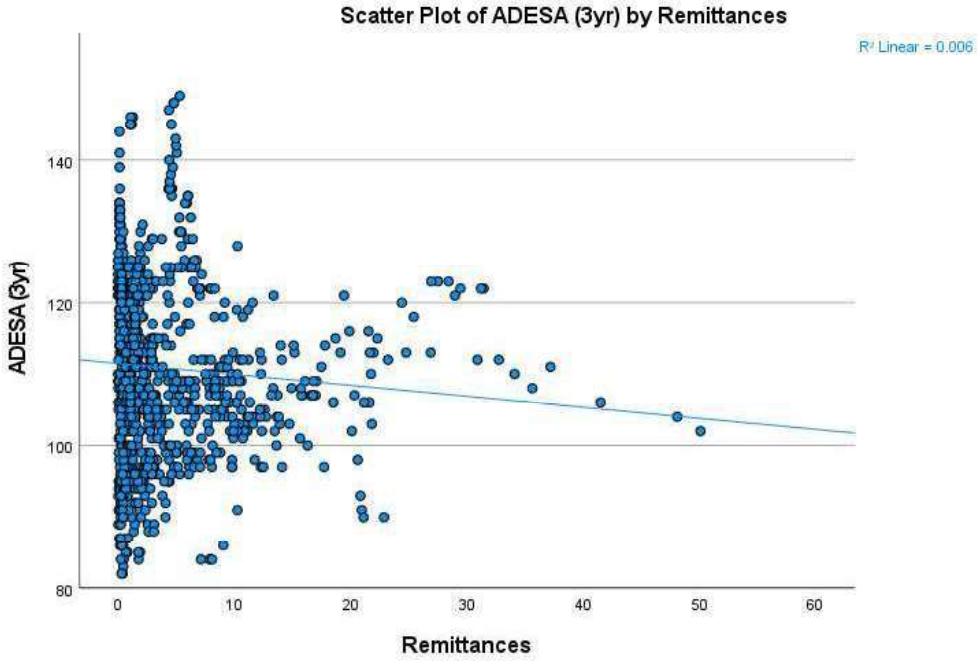


Chart 2:

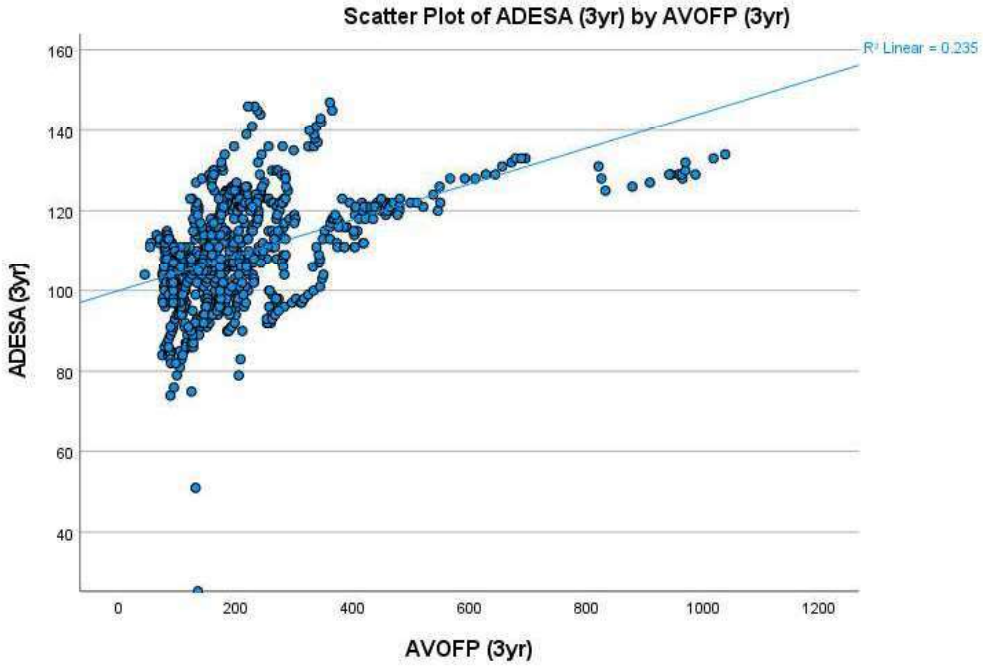


Chart 3:

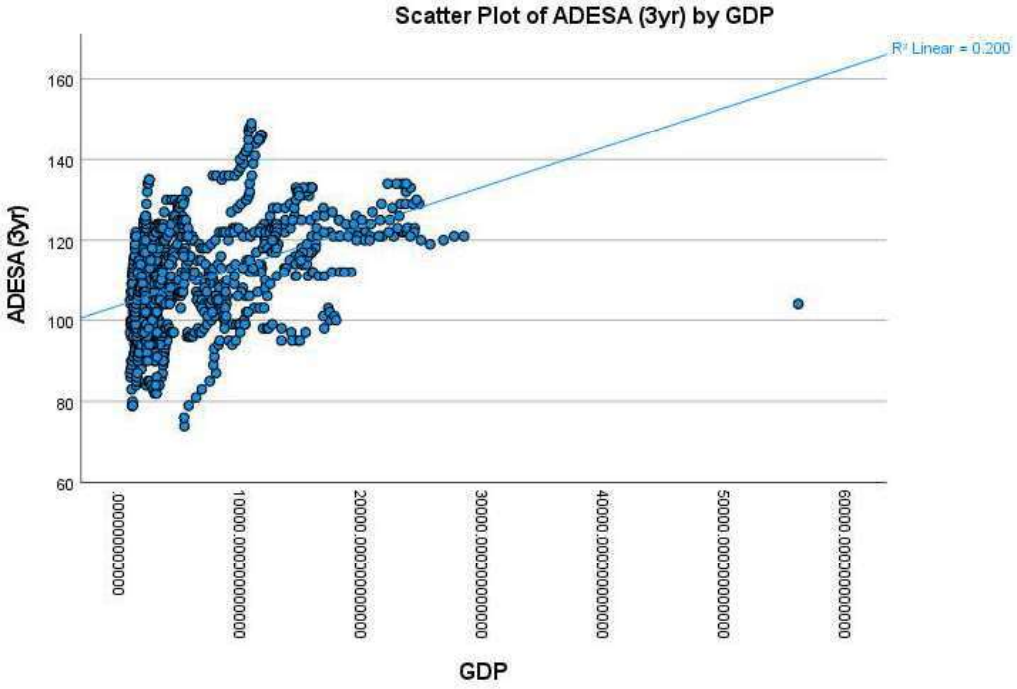
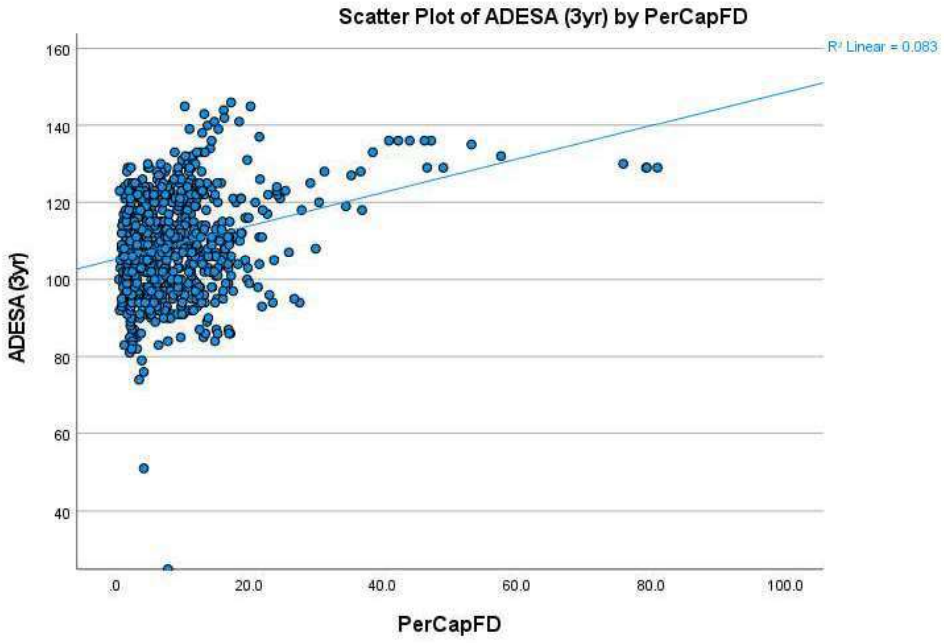


Chart 4:



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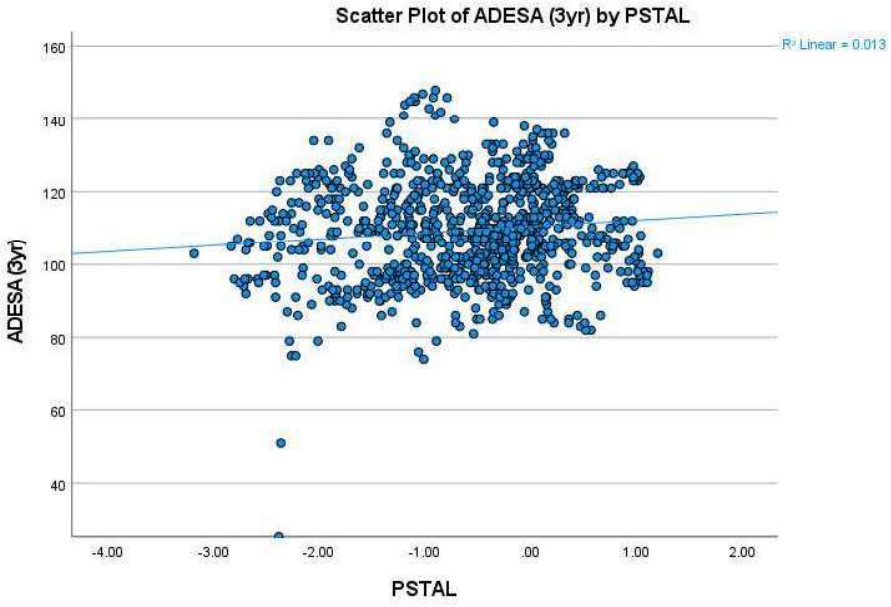

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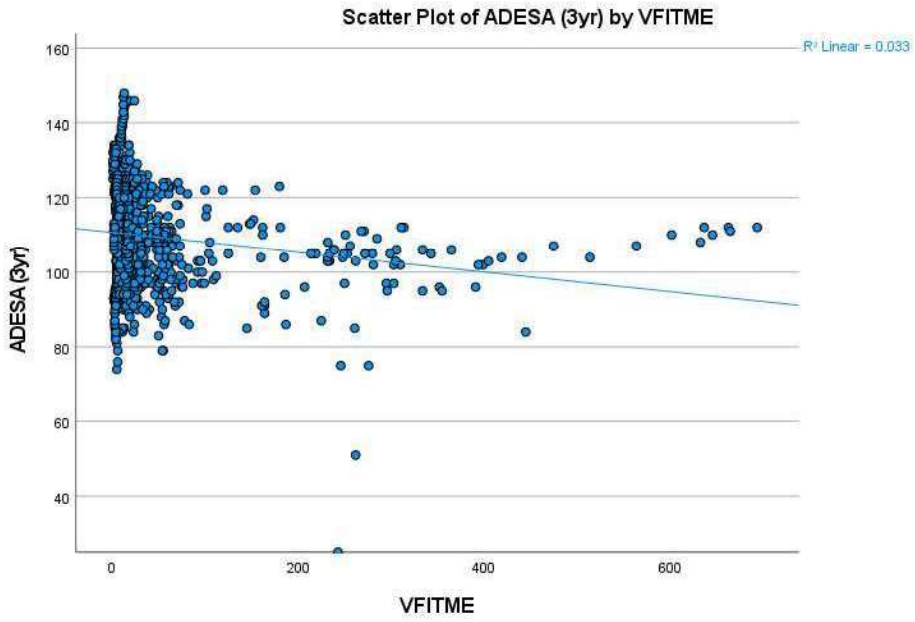


Chart 7:

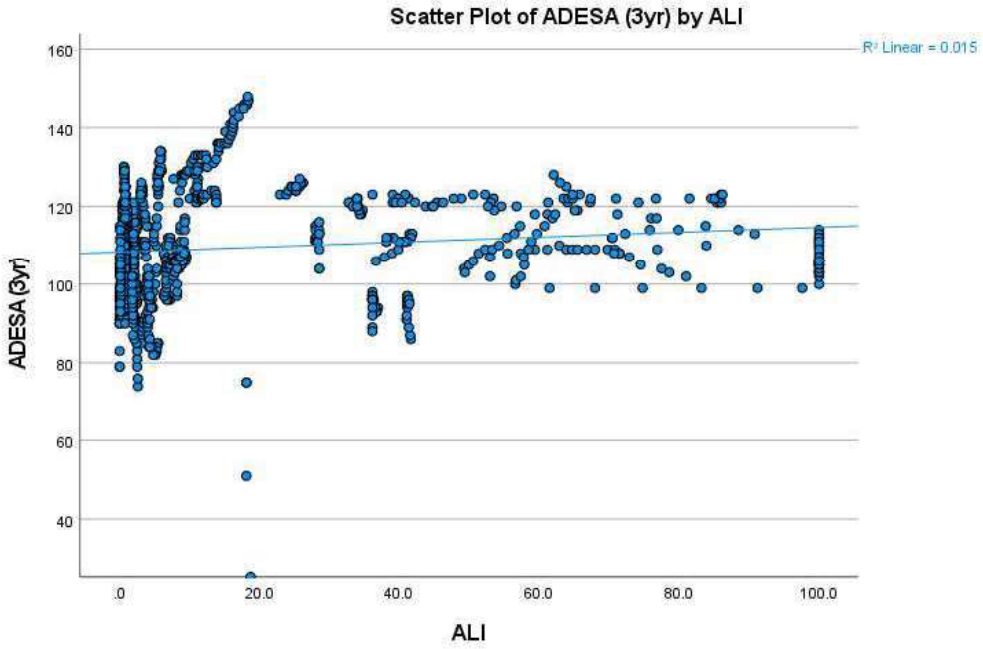


Chart 8:

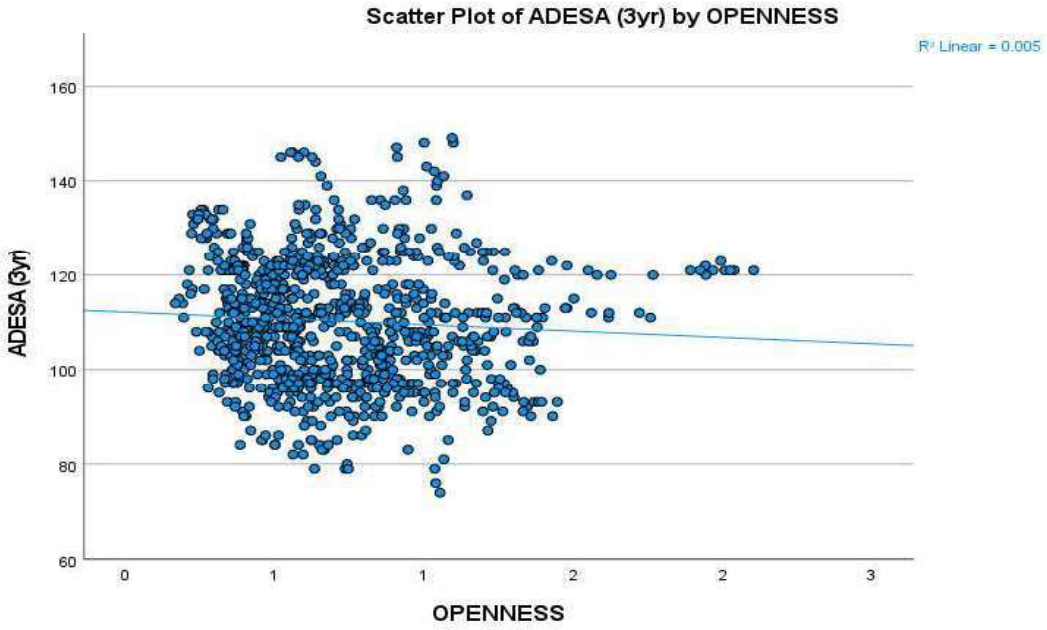


Chart 9:

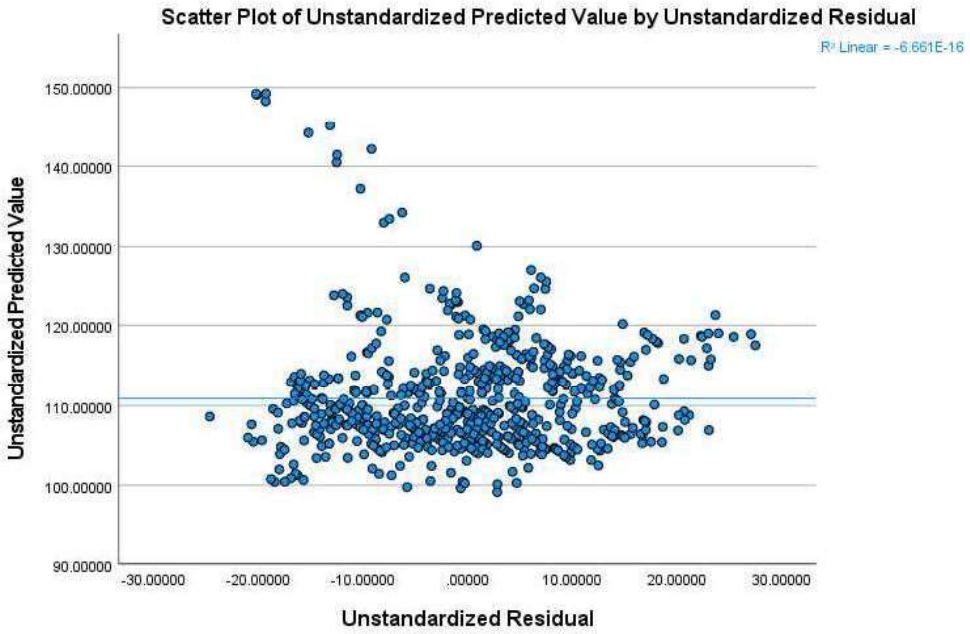
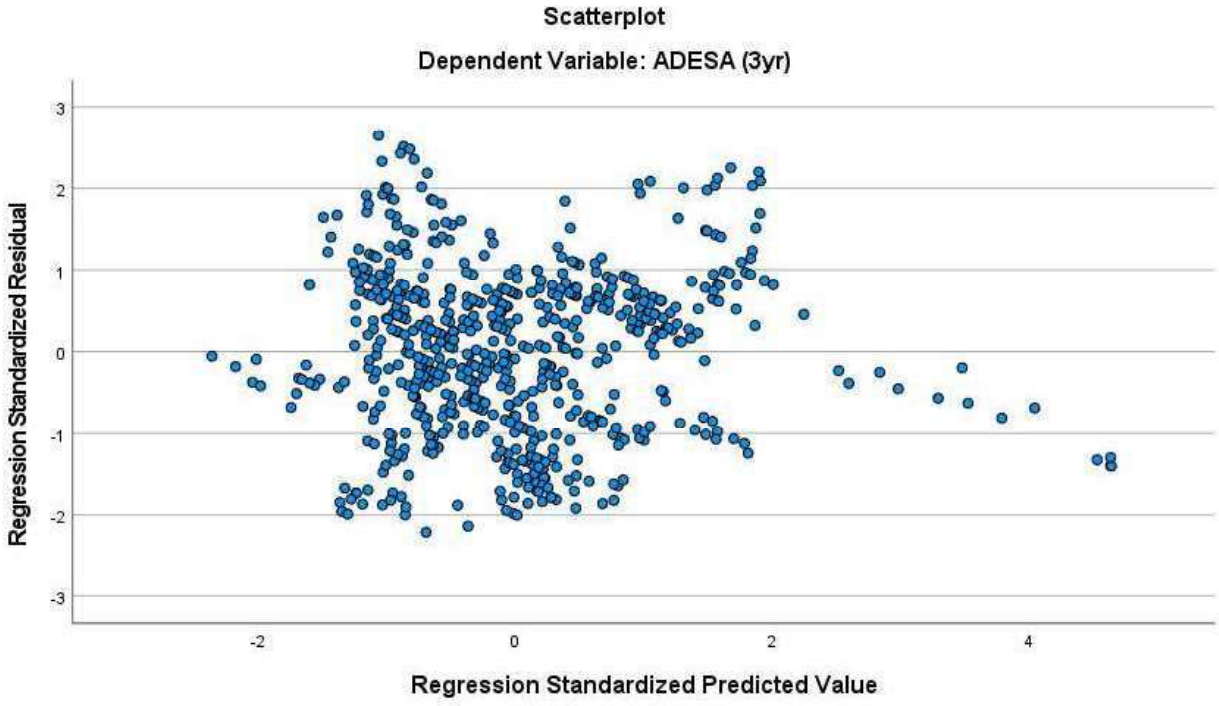


Chart 10:



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STRENGTH OF ECONOMIC EXPANSIONS SINCE 1997: AN ANALYSIS INTO RECENT AMERICAN GROWTH

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ABSTRACT

In 2020 Donald Trump tweeted "Get out & VOTE! Under my Administration, our ECONOMY is growing at the fastest rate EVER at 33.1%. Next year will be the GREATEST ECONOMIC YEAR in American History!". This papers thesis runs counter to what Donald Trump tweeted about during his presidency. The paper tests the hypothesis – growth has been getting slower as we move throughout the 21st century, and the slowing growth does not end with GDP, growth is slowing across many macroeconomic indicators. These indicators include: GDP, productivity, payroll employment, unemployment, CPI, wage growth, expenditures, business investment, net exports, S&P 500, the budget, and factors regarding inequality. Overall, the data analysis reveals that a large portion of these indicators have been slowing with each consecutive presidential term and show no signs of stopping. This helps to fortify the hypothesis of the paper, that across the economy many major macroeconomic indicators have seen increasingly slow growth as the years pass. The paper concludes with a lengthy discussion on the origins of this trend, and what can be done to strengthen US economy in an equitable way.

THE IMPACT OF LABOR MARKET INSTITUTIONS ON INEQUALITY IN OECD COUNTRIES

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Colin Jacobson, Siena College
Dr. Elias Shukralla, Siena College

INTRODUCTION

The global economy has arguably changed more in the last 30 years than it has during any other period in history. Since 1980, the number of countries competing in the global marketplace has exploded, with many new entrants from African and Asian countries. The progression of automation has continued, with new technologies, such as robotics, artificial intelligence (AI), and information and communications technology working to raise productivity. Finally, the explosion of the internet has linked many buyers and sellers who otherwise would have no connection. These developments should contribute to a large expansion of the economies involved.

However, this has not occurred, at least to the extent possible. For example, in the United States, the growth rate of real GDP from 1948 to 1979 was 3.9%. From 1980 to 2020, it was 2.6%; the rate fell as time went on, with the growth rate from 2000 to 2020 being a mere 2.1% (U.S. Bureau of Economic Analysis). Further, due to several economic headwinds such as environmental issues and rising public and private debt, some predict the growth rate of the economy to stagnate (Gordon, 2012).

Although it is true that the developments mentioned above have lifted many out of poverty across the world, reducing inequality across countries, most of the economic expansion of the last 30 years has not been equally shared within countries. Globalization tended to benefit large firms through larger markets and lower production costs from outsourcing and importing, while gutting middle-class jobs from high-skilled economies.

Further, inequality between workers has risen, with workers from export-competing firms largely maintaining secure jobs, while workers from import-competing firms suffer from overseas competition. Automation has had a similar effect, replacing workers in some industries, while raising the productivity of workers in others. Further, those that own this technology profit from higher returns to capital. All of this translates to rising inequality; the higher quartiles of earners are seeing a large expansion in their incomes, while the lower quartiles remain stagnant. Although some argue that this is not an issue, there is plenty of evidence that suggests that our slow growth may be at least partially caused by dampened aggregate demand from high inequality, which has risen across the world with no signs of slowing (Jaumotte, Lall, and Papageorgiou, 2013).

We argue that stronger labor market institutions may help to redistribute the gains from globalization from those who profit from taking advantage of lower labor costs from abroad to those who lose their jobs to foreign competition and outsourcing, thus helping to reduce the inequality-raising effects of globalization. While some believe that lowering taxes and increasing the flexibility of the labor market will help ease the effects of globalization, we believe that the opposite actions, like raising taxes to fund better social welfare nets, higher union membership, elevated minimum wages, as well as stronger government regulation of firing, is a better approach.

BACKGROUND

In recent literature, much attention has been given to the topic of within-country inequality, with many papers explaining its significance, including the reasons it has risen so sharply in recent decades.

Although some inequality provides the idea that harder work is rewarded, too much inequality resulting from factors other than effort is detrimental. Dabla-Norris et al. (2015) summarizes the theory, suggesting that by concentrating income in the hands of the top income earners, aggregate demand would fall, because of the fact that they tend to spend less of their money than the middle and lower income earners. This would lead to lower consumption and investment, pushing real GDP below its potential. This section highlights the dominant thinking in the literature and also provides evidence that income inequality carries a host of other problems with it as well.

The Real Cost of Inequality

The literature shows that inequality has high costs, ranging from lowering GDP growth rates, to causing political polarization and social instability. Ostry, Berg, and Tsangarides (2014) find that a 5-point increase in the net Gini, the preferred measure of within-country inequality, lowers growth on average by 0.5 percentage points, and that heightened inequality lowers the duration of economic expansions. The same study also finds that redistribution from top percentiles to lower ones raises GDP growth. In short, higher inequality leads to weaker, less-sustainable growth. Further, Price and Edwards (2020) suggest that the bottom 90% of the population in the United States would earn an extra 2.5 trillion dollars had income growth remained at the growth rate of per-capita GDP. Stiglitz (2016) theorizes that long-run growth is being dampened by many children growing up in poverty, which greatly reduces their educational attainment. This then lowers future productivity and hurts their career prospects, leading to lower wages, and lower aggregate demand. The resulting feedback loop is that lower aggregate demand then leads to lower growth rates, expanding these negative effects across a greater swath of the population.

Inequality also helps create financial crises, with central banks combatting low aggregate demand with low interest rates. This instead leads to the creation of large asset bubbles, which carry with them financial instability, where those at the bottom of the economic ladder suffer the most (Tridico 2017, Stiglitz 2016). Further, Dabla-Norris et al. (2012) suggests that financial crises serve to put those with lower-wage jobs at risk of slipping below the poverty line. This drives the need for further expansionary monetary policy, which then paves the way for more asset bubbles and instability. One can see those factors materializing in reality today in the U.S, as the Federal Reserve scrambles to inject cheap credit into banks to stop a financial collapse, while the U.S. government is complacent to deliver aid to those at the bottom.

Finally, there is evidence that inequality can erode a nation's identity, as those who are left behind feel resentment for those at the top, as well as the institutions that seem to perpetuate these inequalities, believing them to be corrupt. Lichbach (1989) suggests that this can trigger greater and more severe uprisings against a society, as people have less to lose and seemingly more to gain from joining in violent demonstrations. In fact, inequality can increase actual corruption, as those at the top with more money lobby for lower taxes and policies that favor themselves, such as financial deregulation (Tridico 2017). None of this bodes well for social and political cohesion, both of which are necessary for a stable society. History is full of unjust societies being violently toppled, and there is no reason to assume such a thing could never happen again, even in advanced economies.

Inequality and Globalization

The literature on the relationships between trade openness and inequality is mixed, though most agree that globalization has reduced inequality between countries. Generally, trade tends to have a stronger positive impact on within-country inequality in more advanced economies (Jaumotte, Lall, and Papageorgiou 2013). Harrison, McLaren, and McMillan (2011) shows a variety of models in which trade may impact inequality in advanced countries. The major implication of these models is that globalization allows jobs to be offshored to where labor costs are lower. Instead of offshoring, some firms also choose

to substitute capital for labor. This offshoring and automation leaves those who previously held these positions behind, as there is often a skill mismatch between the jobs that they previously held and those currently available. Further, remaining import-competing firms are forced to lay off workers or close completely due to heavy competition from abroad. Meanwhile, skilled workers benefit, as the firms that employ them are usually export-competing, allowing them to command higher wages, while their jobs, requiring critical thinking, are largely safe from automation. Further, increased returns to research and development from lower tariffs benefits these high-skilled workers as well. This not only raises inequality between workers in different industries, but also between workers and capitalists, who see an increase in profits from lower labor costs and higher profits from new markets abroad. As for developing countries, composition of the jobs gained from globalization matter. The Stolper-Samuelson theorem predicts that developing countries will see a reduction in inequality from the influx of middle-class jobs from abroad. However, just because a job is considered low-skilled in an economy where skilled labor is abundant, does not mean it is considered low-skilled in an economy where skilled labor is scarce (Harrison, McLaren, and McMillan 2011). Composition of exports also matters. Evidence shows that an increase in agricultural exports can lower inequality, but also that an increase in industrial exports can also raise inequality (Urata and Narjoko 2017). The former effect is a result of the fact that farmers are one of the lowest tiers of income earners across the world, and the extra income they gain from increased agricultural production raises their share of income relative to that of other workers, which would lower inequality between workers. The latter effect comes from manufacturing jobs being considered high-skill jobs in developing countries, thus increasing the wages of skilled workers relative to that of other workers, raising inequality between workers. However, using data from Brazil, Tai (2020) shows that institutional quality heavily impacts the effect trade and globalization has on inequality, with stronger institutions helping to redistribute gains from trade from rich to poor, increasing trade's inequality reducing effect. In a more positive light, trade can also help reduce inequality by providing lower cost consumer goods, which raise the standard of living.

The literature also shows that foreign direct investment (FDI) can help to contribute to increasing income inequality in both developing and developed countries (Jaumotte, Lall, and Papageorgiou 2013). In developing countries, FDI is usually allocated to specialized industries which already have highly compensated employees. Due to this, the introduction of investment that is specifically geared to already wealthy industries raises inequality between workers. Outward FDI helps to polarize the labor market by outsourcing middle class jobs to other countries. Further, countries may offer tax incentives and purposefully weaken labor market institutions to attract FDI. This leads to a "race to the bottom," as countries subject their workers to worse conditions and wages to attract foreign firms (Tridico, 2017).

Inequality and Automation

Jaumotte, Lall, and Papageorgiou (2013) find evidence that the biggest driver of inequality has been automation, through a variety of channels. First, technological change increases capital intensive production, which increases returns to capital, benefitting capital owners. At the same time, middle class workers, whose jobs can easily be automated (as they rely on repetitive tasks) lose their jobs due to automation. Over time, this has polarized the labor market, as the only jobs that are safe are low-skilled jobs requiring situational awareness (construction work, service workers), and high-skilled jobs requiring critical thinking (university professors, engineers). Technological change also increases demand for skilled labor, as workers must now be able to operate the new technology present in production processes, raising their wages, while those who lose their jobs to labor-saving automation experience lower wages. Through these channels, automation works to increase both between-worker and between-class inequality. Building a theoretical framework, Moll et al (2021) show that besides high skill labor, the owners of capital also accrue benefits from automation technologies which they say increases inequality.

Inequality and Labor Market Institutions

Many studies have emerged which link the increased labor market flexibility of OECD countries to rising inequality, as well as other problems. Vergeer and Kleinknecht (2010) and Mandal, Perry, and Trees (2020) find that countries with less rigid labor market institutions (lower union density and employment protection) saw depressed wage and productivity growth compared to those with stronger labor market institutions. They argue that better employment protection increases worker morale, and forces firms to invest more in the training of workers, leading to better-trained, harder-working employees, which are more productive. Instead of firing workers, firms may instead try to train them into a position for which the worker is better fit. Further, heightened worker bargaining power due to costlier firing allows for more open dialogue about management decisions, which may lead to better, more careful managers. Dosi et al (2017) provide evidence that introduction of labor market deregulation into a "Fordist" regime (going from strict to deregulated labor markets) not only allows firms to capture more of their productivity gains in the form of higher profits, increasing between-class inequality, but it also serves to raise unemployment, the duration of unemployment, and lower wage growth, providing evidence of a negative between inequality and labor market efficiency. The reasoning is that although firms have higher profits in the short term, due to lower marginal propensity to consume for higher-income earners compared to middle and lower-income earners, consumption and investment are dampened, which then lowers demand for labor and pushes GDP below its potential. Dabla-Norris et al (2015) find that lowered union density raised inequality between income deciles, due to lower worker bargaining power, allowing firms to pay lower wages in spite of increasing productivity. Lower minimum wages also may contribute to this effect, by lowering the wages of the lowest income earners. Further, they suggest that fiscal policy that favors the poor and middle class is helpful in reducing inequality. This idea is also supported by Moene and Wallerstein (2002), which goes further, providing evidence that specifically benefits that favor unemployed, sick, and disabled workers are helpful in reducing inequality.

CHANNELS

While trade can have both positive and negative effects on inequality, we argue that stronger labor market institutions can help reduce the inequality-raising effects of trade through the following channels:

Labor that is protected by unions, employment protection, and social safety nets may be more productive (Vergeer and Kleinknecht, 2010). As a result, jobs are better protected; despite costing more per unit, the productivity gains from strong labor market institutions may make it so that domestic labor remains more efficient than foreign labor.

Unions and employment protection raise the cost of firing through longer notice periods for firing, higher severance pay, and potentially more strict definitions of unfair dismissals. This may contribute to a higher cost of offshoring production, and thus fewer companies will offshore workers. Further, higher firing costs mean that firms may choose to adopt technology that complements workers, rather than adopting labor-saving technology.

Unionized workers tend to command higher wages, meaning that they may be better able to survive job loss due to trade or automation. If workers earn more money, they will be better able to afford education to avoid being permanently shifted downward in economic status. Additionally, higher severance pay may help workers who become unemployed from trade or automation to access education in order to stay competitive in the labor market. The same logic applies for more adequate unemployment benefits.

MODEL

The model which we use to estimate the relationship between labor market variables is simply a pooled OLS model, using data from 37 OECD countries from 1985-2019. The baseline model used to estimate the Gini index is as follows:

Inequality = $\beta_1 + \beta_2$(EPL) + β_3(Trade Share of GDP) + β_4(Union Density) + β_5(Min.Wage) + β_6(Unemployment Benefits)+β_7(Automation) + β_8(Rural Population)

Below are some notes on some of the variables, including justification for their inclusion in our model, followed by the variable definitions themselves.

As discussed earlier, perfect equality eliminates the return to innovation and hard work, and would lead to a stagnant economy. Price and Edwards (2020) show that using the ratio of the differences between current income and income in a reference year, and between a counterfactual income (income had median income grown at the GDP growth rate), would be a more correct measure of inequality, as it would compare current median income to what the median income could be had growth been evenly shared. Although we would have liked to have used this measure, we concluded that using a single reference year for initial income for all countries would be inaccurate, as inequality may not have begun rising at the same time in all countries. We also concluded that it would not be accurate to use country-specific reference years, as we lacked a good methodology to find this reference year; although it is relatively easy in the U.S. because of the large shift in economic policy that occurred with the election of President Reagan, to assess when those policy changes occurred in every single country in our study would be highly subjective and time consuming. Further research could explore how to standardize this statistic across nations, as we do believe it could be a better measure of inequality.

There is a large amount of evidence linking higher minimum wages to lower levels of inequality (Komatsu and Filho 2016, Dosi et al 2017, and Jaumotte and Osorio-Buitron 2015) Therefore, we felt this was a necessary variable to add to the regression.

The composition of a nation's exports is important, as manufacturing exports may increase inequality by increasing agglomeration, while agricultural exports may reduce inequality by increasing income for farmers, who are traditionally society's poorest class (Urata and Narjoko, 2017). We measure this using a measure of rural population.

Table 1

Variable	Definition	Source
Inequality	Combined World Bank and OECD estimates	OECD, World Bank WDI
EPL	Strictness of employment protection legislation	OECD
Trade Openness	Imports and exports as share of GDP	World Bank WDI
Automation	Ratio of gross fixed capital formation to employed persons	OECD, World Bank WDI
Union Density	Percentage of workforce represented by unions	OECD
Rural Population	Percentage of population living in rural areas	World Bank WDI
Unemployment Benefits	Net Replacement Rate in Unemployment at second month, 67% of average wage for a family with no children and spouse working	OECD

	at 67% of average wage	
Minimum Wage	Real value of minimum wage in 2019 USD	OECD

Results

Table 2 Shows the descriptive statistics for the data, Table 3 shows pairwise correlations, and Table 4 shows the results from the pooled OLS regression.

Table 2

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
EPLA	1020	.093	5.000	2.19985	.887216
Trade	1199	16.014	408.362	84.17729	51.716588
KL	1129	.862	72.702	14.00844	9.097727
UnionDensity	1007	4.300	97.800	33.07418	22.250424
MinWage	837	.142	12.588	6.09792	3.336862
RuralPops	1260	1.959	54.702	24.83519	11.239496
ReplacementRate	624	50	94	80.48	10.137
CombinedGini	619	.207	.572	.32067	.061143
GDPperCap	1204	4697.517	111968.349	33898.96010	20450.287036
Valid N (listwise)	268				

Table 3

Variable	EPL	Trade	KL	Unions	Min W.	Rural	RepRate	Gini	GDP per Cap
EPL	1								
Trade	0.043	1							
KL	-0.282	0.365	1						
Unions	-0.057	0.030	0.165	1					
Min.W	-0.325	0.216	0.694	0.291	1				
Rural	0.381	0.006	-0.329	-0.0291	-0.504	1			
RepRate	0.248	0.267	0.033	0.182	-0.235	0.053	1		

Gini	-0.033	-0.273	-0.310	-0.501	-0.409	0.000	-0.259	1	
GDP per Cap	-0.364	0.343	0.868	0.297	0.812	-0.386	0.078	-0.369	1

Table 4

Pooled OLS

regress CombinedGini EPL TradeShare KL UnionDensity MinWage Rural replacementrate GDPPC, vce(robust)

Linear regression Number of obs = 268

F(8, 259) = 44.38

Prob > F = 0.0000

R-squared = 0.3834

Root MSE = .03328

Variable	Coefficient	Robust Std. Error	t		p	95% Conf.Int
EPL	-.0001037	.0033793	-0.03		0.976	-.0067582 .0065508
TradeShare	-.000309	.0000464	-6.66		0.000	-.0004004 -.0002177
KL	.000384	.0003789	0.81		0.416	-.0004378 .0010546
UnionDensity	-.0008394	.0001902	-4.41		0.000	-.0012139 -.000465
MinWage	-.0086912	.0014891	-5.84		0.000	-.0116236 -.0057589
Rural	-.0007796	.0002812	-2.77		0.006	-.0013333 -.000226
ReplacementRate	-.0006821	.0001742	-3.91		0.000	-.0010252 -.000339

GDPPC	1.32e-06	2.68e-07	4.91		0.000	7.90e-07 1.85e-06
Constant	.4571059	.0220657	20.72		0.000	.4136549 .5005569

To begin with, the EPL variable holds a negative sign, but was not statistically significant, meaning that its impact on income inequality is negligible. This may be because while better employment protection standards may reduce inequality in certain ways, there is also theory that states it may raise inequality. This is because firms may be more reluctant to take on new employees if they know it will be hard to fire them later. Although it may lead to higher wage growth for some workers who remain protected, it may restrict employment opportunities for others who are unemployed, leading to higher long-term unemployment, and increased inequality between workers. If this theory is correct, it may cancel any reduction in inequality from the channels described earlier.

Trade is negatively related with inequality, with higher levels of trade reducing inequality slightly. This is because increased import competition lowers prices for consumer goods, raising the standard of living for the poor and middle classes. This sign does not mean that trade is entirely beneficial, just that its inequality reducing effects outweigh the inequality raising channels of labor market disruptions, holding all else constant. Although trade may still raise inequality in certain areas, it reduces it in other areas enough to provide a net negative impact. Further research is required to determine which channels are significant in this relationship, and which groups gain and which ones lose.

Union density also has a negative relationship with inequality, meaning that union membership is effective at redistributing profits from firm owners to workers. This relationship also has a larger coefficient than trade, meaning that higher union density holding trade volume constant reduced inequality more than higher trade openness holding union density constant. This suggests that unions are also beneficial at reducing inequality in the presence of trade. By raising the productivity of domestic workers, firms will be less likely to offshore, as foreign labor, though cheaper, may not be as efficient. This then protects some workers from the strain of having to find another job which maintains their standard of living in the event that their job is offshored, preventing them from losing income, and warding off a rise in inequality. Although this may not protect every sector, as certain countries simply may not be efficient at producing certain goods despite productivity-boosting policies, union workers tend to command higher wages, thus making them better able to afford education to escape income loss from offshoring or import penetration. Further, workers, through higher bargaining power, are able to distribute more profits from firm owners to the workers, reducing inequality between firm owners and workers. Our model also finds no support for the theory that unions make things better for those who can maintain employment, but worse for those who cannot. One would expect that if these unions were causing higher wages but lower employment, that any reduction in inequality would be mitigated by the fact that workers would be leaving unionized industries (which tend to be in higher-wage industries) and shuffled into lower-wage low-skill industries, thereby widening between-worker inequality. The fact that union density has a negative effect on inequality shows that firms in the countries in this dataset have monopsony power in the labor market, another important policy implication.

Unsurprisingly, more adequate replacement rates for unemployment benefits are negatively associated with income inequality. Reducing income lost during unemployment is one of the most important fiscal policy responsibilities of the government. By reducing income loss for unemployed workers, workers are able to search longer for a job, increasing the chance that they will find a more satisfactory, higher-paying job, rather than taking a lower-paying one out of necessity to meet short-term obligations. This then increases the average wage of workers, reducing inequality. Further, better unemployment benefits also allows for greater consumption during unemployment, reducing aggregate

demand lost from spells of heightened unemployment. As recessions tend to impact those who earn the least the hardest, higher unemployment benefits should reduce inequality, with lower classes losing less to unemployment and recessions. Further, better unemployment benefits require more progressive tax systems, as they cost more to implement and maintain. This also has the effect of reducing inequality, as wealth from top earners is taken and redistributed to the unemployed, directly increasing the share of income of workers at the expense of the wealthy.

Although most minimum wage jobs are service jobs, with little danger of being outsourced, our data shows that higher minimum wages cause a reduction in inequality. In a model where firms have monopsony power in the labor market, higher minimum wages bring wages closer to equilibrium, raising both wages and employment in those sectors. By raising employment and wages for some of the lowest income earners in the economy, higher minimum wages will thus lead to a reduction in inequality both between workers, and between workers and firm owners.

We also found evidence that higher numbers of agricultural exports help to reduce inequality as well. Although we used a proxy variable to measure this, as agricultural exports would likely be related to trade volume, a higher share of population living in rural areas should mean a higher number of farmers, meaning that a country exports more agricultural goods. As explained earlier, this should reduce inequality by raising the share of income of farmers, traditionally one of the poorest professions in every economy.

Surprisingly, we did not find automation to have an appreciable impact on inequality in either direction. This is particularly interesting, as most of the literature seems to credit increasing substitution of capital for labor as one of the largest driving forces behind rising inequality. However, this could be because of our measure; other studies use information and communication technology (ICT) as a share of gross capital formation. However, data on this variable is not recent, meaning it was not suitable for this study. We believe that enhancing the timeliness of that particular variable would go a long way to making future studies more accurate.

CONCLUSION

Our model shows that although stricter employment protection legislation did not reduce inequality, other labor market institutions, especially higher union membership, helped to reduce inequality in the presence of trade. Further, trade itself has a negative relationship with inequality, meaning that overall, trade has not played a role in raising inequality in western nations, actually working to reduce it instead. As the results of this study seem to be inconsistent with other findings, we believe that our OLS technique may not be suited to this data. However, this model suggests that stronger labor market institutions and redistributive policies tend to lower inequality. More work should be done into these directions, to see exactly which groups benefit and which groups lose, and to determine the exact channels through which these variables operate.

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UNDERSTANDING THE FINANICAL LITERACY OF YOUNG ADULTS

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ABSTRACT

Young adults in the United States are facing problems in areas of financial management such as budgeting, savings and the use of credit. This is an area of national concern because individuals are harming their financial well-being and can hurt the future of the economy by creating more debt for themselves. If individual debt is increasing, then it can cause consumer confidence to go down and could create a wealth gap in our society. (Hilgert, Hogarth, and Beverly, 2003). According to Michelle B. Hagadorn, financial well-being is a "highly personal state, not fully described by the objective financial measures. Instead, well-being is defined as having financial security and financial freedom of choice, in the present and in the future" (Hagadorn, 2017). In order to help better protect their financial security and financial freedom, young adults need to improve their financial literacy and their financial decision making. This study created and administered an online survey instrument to measure the financial literacy of first-year college students enrolled at a private, liberal arts college. The survey asked questions about a student's reading, management, analytical and communication skills regarding personal financial. In order to measure financial literacy from the survey, an index score was created to determine if a student was more or less financial literate. The data analysis conducted was through descriptive statistics and linear regressions. After conducting the analysis, the data showed some key findings that gender, income, discussions with family, and reading skills have an effect on a student's financial literacy skills. The purpose of this research is to give the findings to the non-profit organization TRIP, Troy Rehabilitation & Improvement Program, Inc., to build a program to help young adults with their personal finance. As a result, the findings from this study will help better target the population of students who are struggling with their financial literacy skills.

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LawnAdmin

Mobile Business Application for Landscape Businesses

Company Profile

Industry
Business related applications providing solutions to the Landscaping Industry

Founded
2020

Location
Albany, New York

Employees
3 employees, 1 intern

Fundraising
Seed Funding

Vertical
Landscape businesses with revenues between $10,000-$100,000 initially

Horizontal
Expansion into other blue-collar industries (i.e., Plumbers, electricians, HVAC, Housekeeper)

Executive Team
Mark Bodner - Founder

Key Company Contact
Mark Bodner
Founder
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LawnAdmin is dedicated to providing a suitable mobile business application to landscape business owners so they have the ability to increase efficiency and grow their business by decreasing the time spent on administrative responsibilities.

Problem
There is a need for landscape business owners to increase efficiency within their business through a mobile application. Landscape business owners are seeking input from other landscape business owners through social media on what mobile business applications work for landscaping. The current applications available, are not meeting the needs of these landscape business owners. The opportunity to offer a solution is anticipated to last until early 2023.

Solution
LawnAdmin allows landscape businesses to run more efficient, leading to growth by eliminating many of the tedious tasks associated with running a landscaping company such as automatic invoicing, scheduling, following up on job estimates, and collection reminders. The customer view allows landscape business customers to view outstanding invoices in real-time. LawnAdmin is the only mobile application engineered for landscape business owners that autonomizes these tedious administrative tasks.

Target Market
The $102 billion landscape industry is growing at a rate of 2.5% annually. This correlates to more landscape businesses being established. As this industry is experiencing an increased presence of technology and innovation, LawnAdmin is entering the market at just the correct opportune time.

Competitive Advantage
LawnAdmin's main competitors are Yardbook and Turfhop. Yardbook is a web-application that offers single users a free account however, there is no mobile application provided by Yardbook. Turfhop is a mobile landscaping business application that is priced above LawnAdmin however, lacking the autonomizing features that LawnAdmin offers.

Business Model
LawnAdmin will offer two monthly subscriptions: a basic ($24.99/month) and a premium ($59.99/month). Our start-up investment will be $30,000 with profitability in fiscal year 2. In fiscal year 3, LawnAdmin will enter the multi-sided market by connecting prospect landscape customers to landscape businesses and collect a 3% fee on any service provided to the prospect customer.

Pawket Vet

—

Company Profile:

Industry
Pet Industry
Founded
2020
Employees
N/A
Fundraising
Seed
Funds raised: $5,450
Seeking: $68,000
Vertical
Telemedicine / teleconsulting for pets
Patents/IP
N/A
Executive Members
Meghan Brewer-
CEO / Founder
Advisory Board
Michael Hickey-
Chief Advisor
Dr. Sharon Small-
Chief Technical Advisor
Ryan Fischer-
Technical Advisor
Dr. Nicole LaMora-
Veterinary Advisor
Key Company Contact
Meghan Brewer
CEO / Founder
(518)-708-7849
meghanbrewer16@gmail.com
mn30brew@siena.edu
Company Website
www.pawketvet.com

Tagline

Bettering pet owners and Veterinarians / Technicians lives.

Summary

A web app providing telemedicine / teleconsulting to pet owners. At any time of day, you can engage in live virtual text or video chatting with a Veterinarian or Technician.

Problem

The main problems are pet owners constantly worrying about their pets health, since pets can not communicate the problem effectively, and the heavy fees often associated with Vet visits. Pet owners want immediate answers, but this is not always available to them at a reasonable price or convenience. Our customer discovery showed cost and pet anxiety as the biggest hardships currently with taking a pet to the Vet. All of the Veterinarians we have talked to said that their biggest problems were not having enough time and not being compensated correctly for the general health related calls they get outside of working hours.

Solution

Our solution is an app that allows users to communicate with a veterinarian via live, virtual text or video chat at any time of day. Pet owners register their pets in the system for easier future use. This creates value for pet owners by being easy, convenient care, time efficient by being available 24 hours a day and relieving stress for pet owners. Also adds value to Veterinarians by giving them the opportunity to work for the service and earn extra money to help pay off high student loans, which are common after Veterinary school. It also eliminates minor advice-based questions, allowing Vets and Techs to concentrate on emergency situations that need immediate attention. It also allows for Vets and techs to be compensated correctly for these questions that they often take outside of regular working hours.

Target Market

Our large, and continuously growing target market is pet owners. In the United States today, over 67% of American homes include a pet. We are in the telemedicine for pets industry expanding into the Veterinary opportunities segment. The telehealth industry has continuously grown since 2016 and is projected to keep growing beyond 2028.

Competitive Advantage

Our unique competitive advantage is that we hire our own Vets and Techs to work for our service rather than selling our service to Vet clinics and hospitals to use with their current clients.

Business Model

We will charge $35 for a one time visit and an option of $70 for a monthly membership that includes up to 3 calls per month. Calls will last approximately 15 minutes on both plans. 70% of each call's revenue will go to the Veterinarians and Technicians that take the call to compensate them for their time, while 30% will go to Pawket Vet.

The Future of Fitness Sharing

Industry

Fitness/Social Media

Founded

2021

Location

Loudonville, NY

Employees

Three founders with equal equity

Vertical

Fitness Niche

Patents/IP

-Economy LLC

-Operating Agreement

-EIN Obtainment

-Business License Package

Key Company Contact

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-CEO

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Summary

Fit Central is a fitness community-based platform providing extensive sharing features and positive atmosphere to allow the user to showcase optimal expression. As there is no fitness centered social media, Fit Central satisfies the needs of consumers through a convenient and comfortable design, enabling users to feel confident in sharing their experience as efficient as possible.

Problem

The absence of a universal fitness media in which consumers can thoroughly convey their preferences/routines. Not only is there no existing platform providing a comfortable fitness atmosphere, but there is also an absence of efficient fitness distribution

- Primary Research:
  - Survey showing high interest in sharing fitness, however, noticeable lack of those who actually share
- Fitness industry growing rapidly- Perfect window of opportunity

Solution

Fit Central provides a transparent window into all aspects of the customers fitness journey through a new and exciting fitness media. Not only are we offering an all-inclusive platform, but we also provide unique features and a fully customizable profile to showcase the user's real preferences and activities. Customers will be able to conveniently post on Fit Social without having to worry about judgement and display their personal fitness journeys at an optimal level.

Target Market

- Market estimation of 45 million adults (Appendix)
- Top 20 fitness influencers on Instagram allocate 90 million followers
  Our target user would include any fitness participant of any age and income. Ideally, our users would identify as an influencer and display bold preferences with an outgoing personality in which they are open to sharing.

Competitive Advantage

- Instagram
  - Offers generic platform
  - Flooded with ads, variety of un-used content
- Fit Central
  - Niched Platform
  - Low ad count, high customer relation

Business Model

- Current revenue streams
  - Ad revenue
- Future Revenue streams
  - Commerce page
  - Used equipment page
- Cost Factors
  - No Code software
  - Developer costs
  - No code transition (away from adalo)

THE EFFECT OF CEO GENDER ON CORPORATE MANAGEMENT

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ABSTRACT

The question of equal representation of women and men in top execute positions at companies around the world has been discussed for decades. This study offers notable evidence that women executives add value to the firm in different ways. Specifically, this research finds that companies leaded by female CEOs deliver higher benefits to stockholders, especially during times of crisis). Additionally, female CEOs take more risk during good times, spend more on SG&A, invest more in ESG. These findings go against common stereotypes and generalizations about women being risk averse and not financially intelligent and prove the value and importance of having females in top leadership positions in firms.

INTRODUCTION

Women have risen to the top of the corporate ladder to become the members of the c-suite (highest-level executive positions in a corporation) and members of the board of directors (a group of people who manage or direct a company or organization) of some of the most powerful companies in the world. It took women a very long time to be elected to hold the top leadership positions in firms. The term "glass ceiling" was coined in 1986 as the "forces or circumstances which prevent female professionals from reaching senior management positions" (Sandberg, 2019). Many studies have determined the barriers women faced that prevented them from getting to the top. In lieu of the previous papers, this paper investigates whether having female representation in top leadership positions adds value, "technical, economic, service, and social benefits a customer company receives in exchange for the price it pays for a market offering," (Anderson and Narus 1998) to a firm and increases the firm's financial position and performance. Since crisis puts new values into focus, this project will also investigate how gender operates in corporations and whether or not women in leadership positions approach times of crisis differently.

To determine whether having female executives in the C-suite and the board of the directors improve the performance of a firm financially and add value to the firm we collected data from 2006-2019 on United States publicly traded companies listed in the Standard & Poor's (S&P) 500 index. The data starts in 2006 because in 2006 the implementation of the Sarbanes Oxley Act (SOX) was changed. The Sarbanes Oxley Act was passed in 2002 to "help protect investors from fraudulent financial reporting by corporations" (Kenton, 2020). All organizations must comply with the rules outlined in the act and if not, they will be penalized. In 2006 the Securities and Exchange Commission (SEC), announced that it intended to improve the implementation of Section 104 of SOX which is the internal control over financial reporting (SEC 2006). Before 2006 the implementation of laws ensuring "that auditors focus during integrated audits on areas that pose higher risk of fraud (deceit, trickery, sharp practice, or breach of confidence, perpetrated for profit or to gain some unfair or dishonest advantage) or material error (made intentionally in order to achieve a particular presentation of an entity's financial position, financial

performance or cash flows)" were not as strict (SEC 2006). Therefore, the data begins in 2006 where publicly traded companies were required to report more information that could put investors at risk.

Additionally, beginning in 2007 there was a global financial crisis which led to the worst recession since the great depression. This time period is now referred to as the "great recession" because the entire global financial system almost collapsed. It took over 4 years for the economy to recover after the great recession, with some people still dealing with the aftermath to this day (Trefis Team and Great Speculations, 2020). What sparked the motivation for researching female representation in top leadership positions was the company Audur Capital, a financial services company founded by women in Iceland which was the only company during the financial crisis that "did not take any losses to their equity or to the funds of their clients during the 2007 financial crisis" (Cartier). They attribute their success to the values that they founded the company on. Audur Capital was founded by Halla Tomasdottir who describes the values of Audur Capital as "feminine." The values of the company are focused on "straight talking, risk awareness, profit with principles, and emotional capital" (Hoover). Tomasdottir champions how feminine competencies can lead to better investment decisions. Tomasdottir's leadership of her firm during and after the global financial crisis led Professor Rosabeth Moss Kanter at Harvard Business School to write an article in the Harvard Business Review questioning "What if it had been Lehman Sisters instead of Lehman Brothers?" (Kanter). Lehman Brothers was the first financial institution to collapse in 2008. This article hypothesizes a different outcome from the financial crisis if there were more women involved in making decisions in finance. The article cites "masculinity" as a variable that could be used as evidence to unravel causes of the financial crisis in 2008. Kanter goes on to write how investment management, which has one the lowest percentages of women of any major U.S. industry, was at the center of the financial crisis (Kanter).

This information is valuable because women can lead companies to be super successful, yet they are still not being hired at the same rate as men are for c-suite positions and seats on the board of directors. As of January 2021, women hold only 6.2% of CEO positions at S&P 500 companies (Catalyst, 2021). This is a slight increase from 2020, where women held 5.8% of CEO positions at S&P 500 companies (Catalyst, 2020). Additionally in 2020, women only held 21.2% of board seats in 2020. The purpose of this paper is to prove why the number of women holding CEO positions and board seats at S&P 500 companies should be at least 50%.

This paper also seeks to prove that women can add equal or more value to a firm than a man can and can add equal or more increases in financial performance to a firm. This research uses Bloomberg as main data source, and all data are sorted into three main groups: CEO characteristic data, board level data, and firm level data. The purpose of the analysis in this research is to find answers to following questions: How do females add value to a company? Do firms with female top executives perform better during times of crisis? Are women more risk averse? Do women handle finances differently? How females influence management?

This paper finds that female CEOs overall outperform male CEOs financially, especially during difficult times, and that female CEOs take more risk than male CEOs during good times.

This paper also finds that female CEOs invest more in intangible asset development and environmental, social, and governance initiatives. The information found from this study can be use by hiring managers when evaluating their ratio of women to men at their company. This information can also be used to justify when a company makes a press release announcing why a company elected a woman over a man for a c-suite position or a board seat.

A practical purpose of this study is to provide value to society by tearing down stereotypes that conventionalize and standardize women in the workplace. Currently there are many stereotypes surrounding women in business. Common stereotypes surrounding women include being emotional, sensitive, whiny and instead of "taking charge women "take care" (Catalyst, 2005). Other stereotypes for women in business involve women being viewed as risk averse and not motivated by profits (BMO, 2020). The conclusions gained from analyzing data in this study serves to help demolish these stereotypes and help women gain more respect in the workplace. The main purpose of this study is to prove that women can be just as or more effective than men in the position of CEO or as a member of a board by more value and more profits for a company. I believe the conclusions found from this study will show the power of how data can drive decision making.

LITERATURE REVIEW

The literature recognizes that female representation contributes substantially to differences in firms' performance and value *(*Chadwick and Dawson, 2018; Khan and Vieto, 2013; Glass and Cook, 2017; Bullough, Moore, and Kalafatoglu, 2017). Female-led organizations outperform male-led in firm performance in non-family businesses (Chadwick and Dawson, 2018).

One fascinating analysis found that women CEOs in the Fortune 1000 drove three times the returns as S&P 500 enterprises run predominantly by men (Kress). Another study by one of the biggest banks in Europe, Nordea, showed that companies with a woman in the chief executive or chairman role performed far better than a major global index over an eight-year period (Walsgard 2017). Credit Suisse also unveiled a research report showing that companies with more female executives in decision-making positions continue to generate stronger market returns and superior profits (Misercola 2016). In short, the link between gender diversity and better results is undeniable.

This study seeks to contribute to the literature that finds firms with females in their c-suites and on their board of directors have increased financial performance. A study conducted by the S&P Global Market Intelligence Quantamental Research Team found that female chief financial officers (CFOs) are more profitable than male CFOs (Sandberg, 2019). The study also found that firms with female CEOs and CFOs have produced superior stock price performance, and that firms with a high gender diversity on their board of directors were more profitable and larger than firms with low gender diversity (Sandberg, 2019). Another study found an estimated correlation that if a firm that had no female leaders increased female leaders by 30% the firm could have a 15% increase in net revenue margin (Noland et al. 2016). This study proves how beneficial it is for firms to have an equal amount of female representation in top leadership positions.

The literature acknowledges that women add value to a firm beyond profits. A study by the journal Human Resource Management finds that firms with women CEOs or gender diverse boards are associated with strong business and equity practices (Glass and Cook, 2017). This study also found that companies with women CEOS have stronger "governance, product strength, diversity, and community engagement" (Glass and Cook, 2017). A firm having strong equity practices, diversity, and community engagement provide value to a firm beyond financial performance and allow a firm to have a positive impact in the world and to their employees and customers. A different study found that female representation in corporate leadership is positively correlated with the "absence of discriminatory attitudes toward female executives, and the availability of paternal leave" (Noland et al. 2016).

The literature on risk maintains the view that top female executives are more risk-averse than their male counterparts, resulting in a lower risk level for a firm (Khan and Vieto, 2013; Zalata, Ntim,

Aboud, and Gyapong, 2018). Risk-averse means not being very eager to take risks. In the book *How More Women on Wall Street Could Have Prevented the Financial Crisis* the author describes how innately women think differently than men and are more risk averse than men when it comes to investments (Small 2016). An article by the Harvard Business Review describes how men react more "manly" when their behavior can be seen as "feminine" by engaging in masculine behavior such as taking unwarranted risks in business (Berdahl, 2018). The Journal of Economics and Business found that if the CEO is female the firm risk level is smaller than when the CEO is male (Khan and Vieto, 2013). An interesting finding in a study by the Center for Economic Research, Swiss Federal Institute of Technology is that women will take the same risk as men in environment where an investing decision is less uncertain and ambiguous and more secure (Schubert et al. 2000). On the other hand, this same study found that in an environment that has a great deal of uncertainty and ambiguity around an investment woman are more risk averse than men (Schubert et al. 2000). This study displays how women consider the long-term results of a decision based on how much information they have available to them.

A different strand of the literature (Ahern and Dittmar, 2012; Adams and Ferreira, 2009) argues that female executives' presence on a board can decrease shareholder value and argues that gender diversity can negatively affect a firm's performance. In 2003 Norway mandated that all Norwegian public firms had to have at least 40 percent representation of women on their board of directors (Ahern and Dittmar, 2012). This mandate caused the stock price, of companies who had to do this, drop significantly (Ahern and Dittmar, 2012). Over time this mandate also "led to younger and less experienced boards, increases in leverage and acquisitions, and deterioration in operating performance" (Ahern and Dittmar, 2012). A study by the Journal of Financial Economics found that in a firm with strong governance, increasing the amount of women on the board of directors decreased shareholder value which led to a decrease in firm performance (Adams and Ferreira, 2009). This study also found that mandating gender quotas for the board of directors can decrease shareholder value if the firm has to fill a board position with someone who is less qualified which led the authors to conclude that the effect on gender diversity on firm performance is negative (Adams and Ferreira, 2009).

DATA AND METHODOLOGY

In this section, we first explain the data selection process used to collect our dataset. Next, describe the three methods used to measure a firm's financial performance, female representation and measures relating to the board of directors depending on if the chief executive officer (CEO) is a female or a male.

Data Selection

Our initial sample is S&P top 500 U.S. public companies each year from January 1, 2006, to December 31, 2019, is obtained from Bloomberg. Bloomberg provides the highest-quality data by consistently organizing and updating it in real time. The data we gathered on Bloomberg are companies that have their securities trade on public markets, and they disclose certain business and financial information regularly to the public (U.S. SEC). The S&P 500 is a group of the 500 leading companies, covers approximately 80% of available market capitalization, and is regarded as the best single gauge of large-cap U.S. equities (S&P Dow Jones Indices). A company is considered a U.S. equity when anyone in the public can purchase shares of the company from a stock exchange. The variables we chose to collect from Bloomberg were to measure firm performance based on whether the CEO was a female or a male. The variables used to measure firm performance are total revenue, Tobin's Q, return on assets (ROA), and profit margin. Total revenue is the number of sales generated by a company. Tobin's Q measures the ratio of the market value of a firm to the replacement costs of the firm's assets. Assets represent the entire property of a corporation applicable or subject to the payment of debts (Merriam-Webster). ROA is an

indicator for how profitable a company is relative to its total assets in a percentage. Profit margin is a ratio is the comparison of how much of the revenue incurred during the period was retained in income. To measure female representation in top leadership positions we used the variables CEO gender, percentage women on board, and the percentage of female executives. The CEO gender variable was the dummy variable for the study. Dummy variables are necessary to add numerical value to variables in regression analysis. In this study zero means male, and one means female. The percentage of women on the board variable represents the percentage of women on the board of directors, as reported by the company. The percentage of female executive's variable represents the number of female executives as a percentage of total executives. Bloomberg defines an executive as an individual apart of the company's executive committee board or management committee board or equivalent. To measure the board of directors we used the variables board size, board meeting attendance percentage, board average tenure, and board average age. Board size measures the number of directors on the company board. Board meeting attendance percentage measures the percentage of members in attendance at board meetings during the period. Board average tenure calculates the average tenure of all current directors on the company board, in years. Board average age calculates the average age of the members of the board. Other variables used are defined in the Appendix Variable Description Table.

Methodology

The first analysis ran was univariate analysis for firm level and performance variables grouping by CEO gender. Univariate analysis describes the pattern of response to the variable thereby analyzing each variable on its own. Another analysis ran was using the difference comparison method or the, difference of two sample mean, on Stata. This method compares two independent groups with respect to the mean of an analysis variable. It assumes the observations are independent, the two groups are independent and that the two populations from which the data are sampled are each normally distributed. The difference comparison test determines if there is a significant difference between the means of two group. In this study the two groups are: firms helmed by female CEO and firms helmed by male CEO.

Regression analysis is used for two purposes: in order to predict the value of the dependent variable for individuals for whom some information concerning the explanatory variables is available, or in order to estimate the effect of some explanatory variable on the dependent variable. We first employed the ordinary least squares (OLS) regression. The OLS regression estimates the relationship between one or more independent variables and a dependent variable. This regression method calculates the best-fitting line through a set of data points and gives more weigh to residuals that don't hold as much value. In this study the dependent variable is female CEO dummy. Therefore, this study tests how having a female CEO impacts all of the different variables. This analysis method is also referred to as the t-test, or the mean comparison test, which indicates the likelihood of the outcome, or the significance, that you are searching to find. Significance in statistics is a determination that a relationship between two or more variables is caused by something other than chance.

Secondly, we used probit model to perform a regression for binormal dependent variable. Binary outcome variables are dependent variables with two possibilities. The probit model estimates the probability a value will fall into one of the two possible binary outcomes (Glen). For example, in this study we wanted to know if companies with a female CEO generate more revenue and have a higher return on assets. In this instance a probit model, or probit regression, can be used to find the answer.

RESULTS

The summary statistic, including average, minimum, maximum, and standard deviation, are reported in Table 1 to 5. Average is the number that expresses the typical value in a set of data, meaning the most common number. Minimum is the smallest number in a set of data and maximum is the largest number in a set of data. Standard deviation is the average amount of variability, how far each data point lies from the average, in a set of data.

Table 1. Firm Level Variables Summary Table

This table presents the summary statistics of all firm level variables in the sample during the whole sample period (2006 to 2019). The data are collected from Bloomberg equity database. *AVG* is the average of each variable; *MIN* and *MAX* are the minimum and maximum values of each variable; and *STDEV* is the standard deviation for each variable.

Whole Time Period (2006-2019)	AVG	MIN	MAX	STDEV
Total Revenue	19449.98	1.56	514405.00	38828.37
Total Assets	67667.17	0.00	2687379.00	216949.05
Tobin's Q	2.27	0.68	23.29	1.69
Leverage	6.05	1.05	1813.00	46.13
Cash	3064.00	0.00	177404.00	10524.49
Capex	-1323.26	-37985.00	0.00	2883.42
R&D Expense	622.63	0.00	35931.00	1892.82
ROA	6.50	-117.86	53.34	8.28
Profit Margin	10.56	-2286.78	176.94	39.92

Table 2. Average Firm Level Variables Summary Table by Year

This table presents the average value for each firm level variable of all firms in the sample in each year during the whole sample period (2006 to 2019). The data are collected from Bloomberg equity database.

Year	Total Revenue	Total Assets	Tobin's Q	Leverage	Cash	Capex	R&D Expense	ROA	Profit Margin
2006	15337.88	.	2.41	.	1223.65	.	580.32	1319.21	.
2007	16485.17	.	2.32	.	2132.21	.	594.20	6.80	.
2008	17330.04	.	1.76	.	2321.90	.	635.08	5.09	-28.30
2009	16044.43	.	1.82	.	2293.43	.	405.78	4.30	-13.42
2010	17169.06	.	2.01	.	2579.98	.	464.59	6.37	7.64

2011	18477.46	.	1.97	.	2813.29	.	507.20	7.18	10.88
2012	19434.50	.	2.08	3.99	2959.24	-1491.83	549.86	6.45	10.50
2013	19712.79	22880.28	2.38	4.04	3107.26	-1272.42	558.78	6.84	11.39
2014	20489.88	37174.14	2.47	4.20	3041.05	-1277.30	589.53	6.87	11.75
2015	19933.07	76232.00	2.42	6.52	3180.46	-1283.04	608.82	6.08	10.28
2016	19937.21	57498.80	2.37	8.70	3089.29	-1171.52	661.31	6.12	11.41
2017	21816.06	69456.94	2.52	4.84	3645.02	-1235.95	746.34	6.50	11.89
2018	23690.40	70583.43	2.47	5.01	3444.92	-1453.65	824.32	7.46	13.76
2019	25181.13	74188.14	2.61	8.79	3755.10	-1525.59	898.74	7.44	14.15

Table 3. Board Level Variables Summary Table

This table presents the summary statistics of all board level variables in the sample during the whole sample period (2006 to 2019). The data are collected from Bloomberg equity database. *AVG* is the average of each variable; *MIN* and *MAX* are the minimum and maximum values of each variable; and *STDEV* is the standard division for each variable.

Whole Time Period (2006-2019)	AVG	MIN	MAX	STDEV
Board Size	10.77	0.00	35.00	2.54
Percentage Women on Board	18.04	0.00	57.14	9.93
Board Meeting Attendance Percentage	79.76	65.62	100.00	8.81
Board Average Tenure	8.68	0.08	30.13	3.52
Board Average Age	62.22	33.60	95.00	3.75

Percentage of Female Executives	14.12	0.00	75.00	12.05
Percent of Non-Executive Directors on Board	86.74	0.00	100.00	7.47
Number of Independent Directors	82.89	0.00	100.00	10.50
CEO Age	57.38	29.00	89.00	6.66
CEO Tenure	7.25	0.08	50.08	6.56
CEO Total Salary	1169836.56	0.00	10000000.00	600154.30
Total Stock Awards Given to CEO and Equivalent	17157992.54	0.00	276612072.00	19302777.49

Table 4. Average Board Level Variables Summary Table by Year

This table presents the average value for each board level variable of all firms in the sample in each year during the whole sample period (2006 to 2019). The data are collected from Bloomberg equity database.

	Board Size	Percentage Women on Board	Board Meeting Attendance Percentage	Board Average Tenure	Board Average Age	Percentage of Female Executives	Percent of Non-Executive Directors on Board	Number of Independent Directors	CEO Age	CEO Tenure	CEO Total Salary	Total Stock Awards Given to CEO and Equivalent
2006	.	16.20	81.01	.	60.94	15.21	84.70	80.94	.	.	.	.
2007	.	14.09	78.06	.	61.02	11.67	83.04	80.27	.	.	1030507.98	.
2008	.	13.68	78.33	.	60.97	11.16	83.79	80.57	.	.	1058530.51	.
2009	.	13.81	78.99	.	61.24	10.82	84.26	81.24	.	.	1070458.71	.
2010	.	13.99	78.80	.	61.39	10.93	85.71	81.51	.	.	1130199.62	.

2011	.	14.56	78.92	.	61.82	11.57	86.06	82.46	.	.	11572 15.66	.
2012	.	15.36	79.32	.	62.12	11.77	86.10	82.14	.	.	11482 15.70	.
2013	10.44	16.45	79.62	8.82	62.47	12.29	86.41	82.79	57.17	7.38	11864 76.04	.
2014	10.60	17.88	80.43	8.82	62.49	13.68	86.93	82.99	57.09	7.34	12185 87.88	15343780.08
2015	10.71	19.17	80.22	8.73	62.80	14.70	87.03	83.57	57.02	7.22	12074 90.19	12921543.05
2016	10.80	20.30	80.20	8.68	62.92	15.69	87.45	84.04	57.23	7.23	12183 37.85	16512878.58
2017	10.86	21.97	80.39	8.65	63.07	16.24	87.65	84.05	57.46	7.22	12128 61.01	16636287.56

2018	10.93	24.47	80.81	8.51	63.13	17.52	87.89	84.84	57.70	7.26	1252703.15	17620230.38
2019	11.03	26.18	81.54	8.56	63.10	18.17	87.92	85.19	57.96	7.14	1267245.67	19795387.73

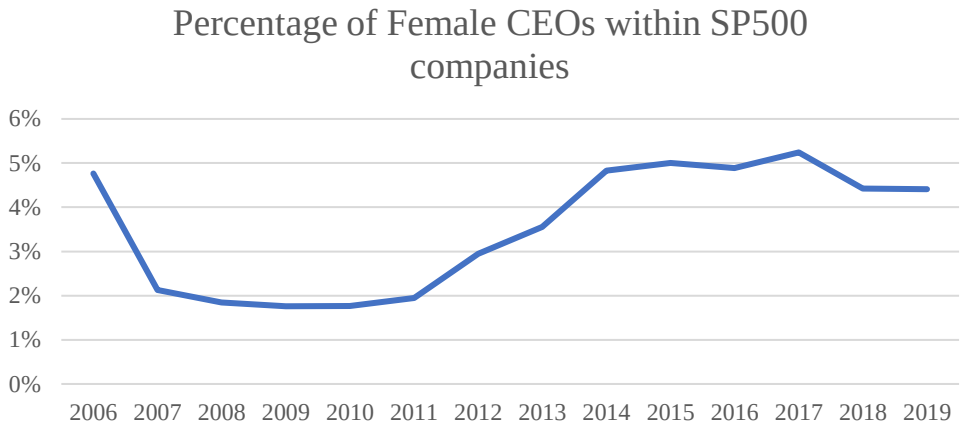
The results from table four show that during the financial crisis the percentage of women on the board of directors and the percentage of female executives declined. The percentage of women on the board of directors declined by 2.52% from 2006-2008 while the percentage of female executives declined by 4.05% from 2006 to 2008. This shows that S&P 500 companies were not placing their trust in female leadership to help deal with the implications of the financial crisis. Currently during the COVID-19 pandemic, which is also considered a financial crisis, leadership qualities that are associated with women are being valued the most. A Forbes article states how companies with high environmental, social, and governance (ESG) ratings are outperforming the S&P 500 companies in the stock market during the COVID-19 pandemic (Michelson). The qualities listed that are associated with women in the article are: empathy, accountability, management, facts, and transparency (Michelson), The author states that these are the qualities needed right now at top leadership positions in companies to successfully deal with the pandemic (Michelson). The author also cites a study by McKinsey which finds that those leadership qualities "are associated with the way women lead and why those with more women leaders perform better across all metrics, including financially" (Michelson).

Table 5. CEO Gender Summary Table

This table presents the number of female CEOs and male CEOs within the sample in each year during the whole sample period (2006 to 2019). The percentage of female CEOs within all firms in each year is also reported. The data are collected from Bloomberg equity database.

Year	Number of Female CEOs	Number of Male CEOs	Percentage of Female CEOs
2006	6	120	5%
2007	7	322	2%
2008	7	372	2%
2009	7	391	2%
2010	8	445	2%
2011	9	454	2%
2012	14	461	3%
2013	17	461	4%
2014	23	453	5%
2015	24	456	5%
2016	24	467	5%
2017	26	470	5%
2018	22	475	4%
2019	22	477	4%

Figure 1. Percentage of Female CEOs within S&P 500 Companies from 2016 to 2019



CEOS for S&P 500 companies has never exceeded 5%. This statistic is very disheartening. In 2006 the percentage of female CEOs of S&P 500 companies was at 5% but dropped to 2% following the financial crisis starting in 2007. It took until 2015 to get back to 5% however it decreased to 4% during 2018 and 2019. This finding is presented in Figure 1. Figure 1 shows how the percent of female CEOs during the financial crisis declined significantly and remained below 2% from 2007-2011.

Table 6. Company Performance by CEO Gender

	All		Female CEO		Male CEO		Female-Male
	Mean	Std. Err.	Mean	Std. Err.	Mean	Std. Err.	
Panel A: return_on_asset							
2008	-1.40	6.48	.	.	3.98	3.22	.
2009	3.75	0.75	.	.	4.09	0.76	.
2010	6.38	0.46	11.78	1.75	6.34	0.47	5.44
2011	7.16	0.33	6.61	1.48	7.13	0.34	-0.53
2012	6.52	0.37	5.23	1.82	6.61	0.38	-1.38
2013	6.86	0.31	6.05	1.20	6.90	0.32	-0.85
2014	6.86	0.32	6.53	1.57	6.87	0.32	-0.34
2015	6.25	0.45	7.26	3.46	6.18	0.45	1.08
2016	6.35	0.38	6.03	2.29	6.38	0.38	-0.35
2017	6.49	0.31	5.45	1.12	6.54	0.32	-1.09
2018	7.43	0.36	7.97	1.74	7.37	0.37	0.60
2019	7.31	0.35	9.61	1.91	7.18	0.35	2.43
Average	5.83		7.25		6.30		0.50
Panel B: prof_margin							
2008	-31.03	35.63	.	.	3.91	4.64	.
2009	4.87	1.62	.	.	5.07	1.73	.
2010	8.34	1.63	14.86	2.39	8.33	1.71	6.52
2011	11.17	0.66	8.92	1.86	11.26	0.68	-2.34
2012	10.54	0.55	8.64	1.94	10.65	0.56	-2.01
2013	11.48	0.56	12.08	2.48	11.66	0.56	0.42
2014	12.04	0.69	17.57	7.85	11.80	0.63	5.78
2015	10.36	0.93	6.19	4.68	10.57	0.96	-4.37
2016	11.47	0.96	8.31	1.92	11.64	1.00	-3.33
2017	11.95	0.72	11.90	2.00	11.95	0.76	-0.05
2018	13.88	0.65	12.73	1.52	13.92	0.68	-1.20
2019	13.93	0.58	17.35	2.24	13.77	0.60	3.58
Average	7.42		11.86		10.38		0.30

The results from table six find that female CEOs had a higher return on assets than male CEOs from 2006 to 2019. The table also finds that female CEOs had a higher average profit margin than male CEOs from 2006 to 2019. These findings answer the question of whether having female executives in the c-suite and the board of directors improve the performance of a firm financially. The answer is that having female leadership in top positions has improved the financial performance of S&P 500 firms from 2006-2019 in both return on assets and profit margin.

Table 7. Univariate Comparison of Board Variables by CEO Gender

This table presents average value of board variables for all observations in the sample, observations from firms with male CEOs, and observations from firms with female CEOs, respectively. The statistical significance of differences in abnormal returns between high and low investment capacity acquirers is tested using the t-test for the equality of means. The *Female-Male* column presents the mean difference between firms with female CEOs and firms with male CEOs based on the two-sample t-value. * and ** denote significance at the 10% and 5% levels, respectively.

	All	Male CEO	Female CEO	Female-Male	t-value
number_of_directors_on_board	10.90	10.87	11.49	0.62***	3.26
pct_women_on_board	18.19	17.74	30.37	12.63***	18.98
board_meeting_attendance_pct	79.79	79.70	82.15	2.44***	3.97
board_average_tenure	8.70	8.76	7.49	-1.27***	-4.38
board_average_age	62.24	62.26	61.85	-0.40***	-10.56
percentage_of_female_executives	14.11	13.70	23.60	9.90***	11.96
pct_of_non_exec_dir_on_brd	86.74	86.70	87.77	1.06*	1.94
pct_independent_directors	82.99	82.92	84.89	1.97***	2.68
chief_executive_officer_age	57.39	57.41	56.93	-0.48	-0.87
chief_executive_officer_tenure	7.27	7.39	4.81	-2.58***	-4.72
tot_salaries_paid_to_ceo__equiv	1184112.00	1180124.00	1297689.00	117564.90***	2.69
tot_stk_awards_given_to_execs	17200000.00	17100000.00	19400000.00	2296085.00	1.19

Table six finds that female CEOs have a higher percentage of women on their board of directors and have a higher percentage of female executives in their company. S&P 500 companies with a female CEO have a higher board meeting attendance average percentage than male CEOs. Table six also finds that companies with a female CEO have higher total salaries paid to CEOs and higher total stock awards given to executives. This finding goes against the assumption that female executives get paid less than male executives. S&P 500 companies with female CEOs have an average chief executive officer tenure, how long one person hold the chief executive officer position of 4.81 years while S&P 500 companies with male CEOs have an average chief executive officer tenure of 7.39 years. This can indicate that more confidence is placed in a man to be successful in the chief executive officer position than males. Variables that were very similar or the same between male CEOs and female CEOs were board average tenure, board average age, percentage of non-executive directors on the board, percentage of independent directors, and chief executive officer age.

Table 8. Company Performance Difference Comparison Table by Female CEO or Equivalent

This table presents the univariate comparation results for return on equity, earnings before interest and taxes, selling, general and administrative expenses, cash holdings, and Altman's Z-score on the dummy variable of female CEO or equivalent. All performance measures are further sorted based on the economic states. All time periods include all data from 2006-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). The *Female-Male* column presents the differences in performance between female and male CEOs and the statistical significance is tested using the t-test for the equality of means. *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	FEMALE_CEO_OR_EQUIVALENT				
	All	**Male CEO**	**Female CEO**	**Female-Male**	***t-value***
			All Time Periods		
ROE	19.3	19.1	24.73	5.63	*2.26***
EBIT	2750.03	2721.35	3527.28	805.93	*1.85**
SGA	3251.03	3144.74	6426.15	3281.42	*5.39****
CASH	3050.7	3047.25	3147.44	100.18	*0.14*
ALTMANSZ	5.19	5.23	4.17	-1.05	*-2.77*
			Good Times		
ROE	20.31	20.16	23.81	3.65	*1.16*
EBIT	2772.9	2737.15	3616.44	879.3	*1.79**
SGA	3254.89	3134.76	6658.17	3523.41	*4.92****
CASH	3192.65	3182.46	3438.29	255.82	*0.29*
ALTMANSZ	5.32	5.37	4.1	-1.27	*-2.76*
			Bad Times		
ROE	17.34	17.08	27.54	10.47	*2.65****
EBIT	2705.26	2690.92	3250.49	559.57	*0.61*
SGA	3242.51	3166.58	5817.89	2651.32	*2.29***
CASH	2775.84	2789.53	2228.34	-561.19	*-0.43*
ALTMANSZ	4.94	4.95	4.41	-0.54	*-0.79*

Table seven is the company performance difference comparison table by female CEO or equivalent. In this research if the t-value is greater than 1.68 the statistic is 10% significant, if the t-value is greater than 1.96 the statistic is 95% significant, and if the t-value is greater than 99% the statistic is 99% significant. Any t-value greater than 1.68 indicates that the female CEO outperformed the male CEO. The difference comparison test during the entire time period found that female CEOs outperformed male CEOs in return on equity (ROE), earnings before interest and taxes (EBIT), and selling, general, and administrative expenses (SG&A). ROE had a 95% significance level and EBIT had a 10% significance level. SG&A had a 99% significance level. This shows that female CEOs pay more attention to and spend more on SG&A expenses. This indicates that female CEOs choose to spend more money on human capital and salary than their male counterparts. Female CEOs spending more on SG&A also indicates that they value spending money on advertising, commissions, travel, entertainment, and promotion as well

(Bloomberg). Female CEOs spending more on travel and entertainment displays that they care about the well-being of their employees, while spending more on salaries displays that female CEOs value satisfying the salary desires of their employees to encourage them to stay at the firm. Female CEOs outperforming male CEOs in ROE and EBIT proves that firms led by female CEOs yield better financial performance than male CEOs. Another result from the difference comparison test during the entire time period was Altman's Z score. Altman's Z score measures how risky a firm is with their decision making. The higher the Altman's Z score is above zero, the safer the company is with their decisions The Altman's Z score for all time periods was -2.77 which indicates that female CEOs have no problem taking risk and that they take it quite often. This finding goes against stereotypes that categorize women as risk adverse.

In this study "good times" defines the time periods where there was not a crisis occurring. Therefore, good times in this study is time periods including the year 2006 and from 2010 to 2018. The difference comparison test during the good times found that female CEOs outperformed male CEOs in EBIT and SG&A. Another finding from the difference comparison test is that the Altman's Z score was -2.76. In the case of the good times period the Altman's Z score, -2.76, is way below zero showing that the company is risky. This Altman's Z score displays that female CEOs take more risk than male CEOs during good times. This is another example of a result from this study that goes against stereotypes that categorize women as risk adverse. During good times ROE was insignificant. However, during bad times, time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic), ROE was extremely significant. During bad times female CEOs outperformed male CEOs on ROE at the 99% significance level. Another significant finding during bad times is that the Altman's Z score was -0.79 which suggests that female CEOs take less risks during crises. Female CEOs may want to take less risk during crises to push a company back to a safer position during bad times. This would explain the Altman's Z score getting closer to zero during bad times. A further result during bad times is that female CEOs outperformed male CEOs on SG&A at the 95% significance level.

Table 9. Multivariate analysis of financial performance of Female and Male CEOs by R&D Expenditure

This table presents the OLS regression results of research and development (R&D) expenditure on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. R&D expenditure represents the percent of research and development expenses spent by a company scaled by the company's sales level. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	RESEARCH_AND_DEVELOPMENT_EXPENDITURE		
	ALL	**Bad Time**	**Good Time**

Female CEO or Equivalent	0.016*	-0.005	0.020**
	(0.009)	(0.017)	(0.010)
Log(age)	-0.075***	-0.074**	-0.076***
	(0.019)	(0.037)	(0.023)
Log(tenure)	0.004**	0.008**	0.002
	(0.002)	(0.003)	(0.002)
Log(salary)	-0.002*	-0.001	-0.002*
	(0.001)	(0.002)	(0.001)
Log(awards)	0.021***	-0.031***	-0.017***
	(0.003)	(0.005)	(0.003)
Size	-0.007***	-0.008*	-0.006**
	(0.002)	(0.004)	(0.003)
Tobin Q Ratio	0.013***	0.012***	0.013***
	(0.001)	(0.002)	(0.002)
Financial leverage	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)
Constant	0.064	-0.123	0.130
	(0.088)	(0.164)	(0.105)
Observations	1,357	372	985
R-squared	0.185	0.234	0.177

Table eight shows the results of multivariate analysis of financial performance of female and male CEOs by research and development (R&D) expenditure. R&D expenditures are expenses associated directly with the research and development of a company's goods or services and any intellectual property generated in the process. R&D expenditures are generally incurred when a company is in the process of finding and creating new products or services. During the entire time period studied female CEOs outperformed male CEOs on R&D expenditures by 10%. However, during good times female CEOs outperformed male CEOs on R&D expenditures by 95% which shows that female CEOs tend to make the investment into R&D expenditures mostly during good times. This discovery communicates to us that female CEOs spend more money than male CEOs to invest in intangible assets. Examples of intangible assets are goodwill, brand recognition, and intellectual property, such as patents, trademarks, and copyrights. Another example of an intangible asset is customer loyalty.

Table 10. Multivariate analysis of financial performance of Female and Male CEOs by Return on Equity

This table presents the OLS regression results of return on equity (ROE) on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. ROE measures how well a company uses reinvested earnings to generate more earnings. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	RETURN_ON_EQUITY		
	ALL	**Bad Time**	**Good Time**
Female CEO or Equivalent	5.302	9.580	4.009
	(3.516)	(6.317)	(4.211)
Log(age)	9.957	8.537	9.898
	(7.375)	(13.050)	(8.882)
Log(tenure)	-1.823	-0.679	-2.274
	(0.725)	(1.260)	(0.880)
Log(salary)	0.024	0.091	0.050
	(0.429)	(0.704)	(0.534)
Log(awards)	2.723***	2.647	2.320*
	(1.034)	(1.923)	(1.235)
Size	-7.825***	-7.185***	-7.731***
	(0.754)	(1.435)	(0.900)
Tobin Q Ratio	6.096***	6.708***	5.820***
	(0.516)	(0.837)	(0.647)
Financial leverage	7.844***	6.570***	8.021***
	(0.158)	(0.428)	(0.172)
Constant	-28.229	-25.729	-22.515
	(33.451)	(59.132)	(40.409)

Observations	1,609	446	1,163
R-squared	0.633	0.453	0.670

Table nine presents the ordinary least squares (OLS) regression results of multivariate analysis of financial performance of female and male CEOs by ROE. ROE measures how well a company uses reinvested earnings to generate more earnings. Therefore, ROE is how much money a company made, after using the funds it already had made to invest into themselves, to generate more revenue for the firm. Even though the results for ROE were positive toward female CEOs, they are not significant enough to state that female CEOs outperformed male CEOs.

Table 11. Multivariate analysis of financial performance of Female and Male CEOs by Profit Margin

This table presents the OLS regression results of profit margin on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. Profit margin is estimated as net income scaled by the firm's sales. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	PROFIT_MARGIN		
	ALL	**Bad Time**	**Good Time**
Female CEO or Equivalent	0.232	3.326**	-1.036
	(1.1772)	(1.634)	(2.254)
Log(age)	1.079	2.680	0.197
	(3.835)	(5.883)	(4.827)
Log(tenure)	0.719*	0.818	0.660
	(0.383)	(0.581)	(0.483)
Log(salary)	-0.401*	0.592*	-0.289
	(0.229)	(0.310)	(0.304)

Log(awards)	-0.958*	-0.184	-1.247*
	(0.531)	(0.821)	(0.666)
Size	2.256***	1.747***	2.418***
	(0.365)	(0.560)	(0.461)
Tobin Q Ratio	2.380***	2.297***	2.393***
	(0.269)	(0.357)	(0.363)
Financial leverage	-0.016*	-0.006	-0.015
	(0.009)	(0.027)	(0.009)
Constant	0.733	-10.431	5.820
	(17.344)	(26.944)	(21.711)
Observations	1,377	385	992
R-squared	0.067	0.128	0.054

Table ten displays the OLS regression results of multivariate analysis of financial performance of female and male CEOs by profit margin. Profit margin is a ratio that measures a company's profitability (Bloomberg). The profit margin ratio "is the comparison of how much of the revenue incurred during the period was retained in income" (Bloomberg). The amount of money retained in income is the percentage of how many cents of profit has been generated for each dollar of sale after all other expenses have been removed from revenue (James and Segal). The results from this analysis found that during bad times female CEOs outperformed male CEOs on profit margin by 95% which shows that companies led by female CEOs perform better financially during times of crisis. This result finds that having a female CEO during a time of crisis is more beneficial financially for a firm than having a male CEO. Female CEOs outperforming male CEOs on profit margin displays to creditors, a person or institution that gives a company permission to borrow money intended to be repaid in the future, and investors, a person or entity that lends money without the expectation of receiving a financial return from it, that a company has strong financial health, great management skill, and growth potential (Investopedia). It is very important for a firm that wants to grow, and needs capital to do so, to display to creditors and investors that they will have the means to pay them back and provide them financial benefits.

Table 12. Multivariate analysis of financial performance of Female and Male CEOs by Selling, General and Administrative Expenses

This table presents the OLS regression results of selling, general, and administrative expenses (SG&A) scaled on the firm's sales, on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. SG&A are expenses on items such as advertising, salaries, commissions, travel, entertainment, and promotion. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)*

indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	SELLING_GENERAL_ADMINISTRATIVE		
	ALL	**Bad Time**	**Good Time**
Female CEO or Equivalent	-0.043**	-0.063*	-0.034
	(0.019)	(0.034)	(0.022)
Log(age)	-0.077**	-0.083	-0.076*
	(0.037)	(0.066)	(0.044)
Log(tenure)	-0.004	-0.000	-0.006
	(0.004)	(0.006)	(0.004)
Log(salary)	0.001	0.001	0.001
	(0.002)	(0.003)	(0.002)
Log(awards)	0.020***	0.014	0.022***
	(0.005)	(0.010)	(0.006)
Size	-0.027***	-0.018**	-0.030***
	(0.004)	(0.008)	(0.005)
Tobin Q Ratio	0.013***	0.013***	0.014***
	(0.002)	(0.004)	(0.003)
Financial leverage	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)
Constant	0.411**	0.432	0.399**
	(0.165)	(0.293)	(0.199)
Observations	1,167	322	845
R-squared	0.130	0.121	0.139

Table eleven presents the OLS regression results of multivariate analysis of financial performance of female and male CEOs by selling, general and administrative expenses (SG&A). SG&A are expenses on items such as advertising, salaries, commissions, travel, entertainment, and promotion. There was no significant result found that indicated that female CEOs outperformed male CEOs. However, this result is still significant to this study because no significant result is a good result. It is a good result because it does not indicate that male CEOs outperformed female CEOs in SG&A. This result communicates that female and CEOs, and male CEOs, spend roughly the same amount of money on SG&A expenses.

Table 13. Multivariate analysis of financial performance of Female and Male CEOs by Cash Holding

This table presents the OLS regression results of cash, scaled on the firm's sales, on the dummy variable, *Female CEO or Equivalent,* controlling other firm level and CEO level variables. Cash holding is the amount of money a company keeps on hand to meet short-term and emergency funding needs. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	CASH		
	ALL	**Bad Time**	**Good Time**
Female CEO or Equivalent	-0.001	-0.016	0.000
	(0.012)	(0.017)	(0.015)
Log(age)	-0.054**	-0.055	-0.051
	(0.025)	(0.036)	(0.031)
Log(tenure)	0.005*	0.007*	0.003
	(0.002)	(0.003)	(0.003)
Log(salary)	0.001	0.002	0.001
	(0.001)	(0.002)	(0.002)
Log(awards)	0.028***	0.026***	0.029***
	(0.003)	(0.005)	(0.004)

Size	-0.022***	-0.016***	-0.024***
	(0.002)	(0.003)	(0.003)
Tobin Q Ratio	0.014***	0.016***	0.014***
	(0.002)	(0.002)	(0.002)
Financial leverage	0.000	-0.000	0.000*
	(0.000)	(0.000)	(0.000)
Constant	0.002	-0.028	-0.010
	(0.112)	(0.161)	(0.142)
Observations	1,630	452	1,178
R-squared	0.188	0.276	0.175

Table twelve shows the OLS regression results of multivariate analysis of financial performance of female and male CEOs by cash holding. Cash holding is the amount of money a company keeps on hand to meet short-term and emergency funding needs (Bloomberg). Cash holdings are important especially in times of crisis where a company cannot project what difficulties they might have to face. Cash holdings are also important for companies who want to be able to make opportunistic purchases when valuations decline to attractive levels or who want to make investments into other ventures like start-ups which are young companies which have only recently been founded and need investors to fund their growth (Fontinelle; Krohnfeldt). The results from this analysis found that female CEOs and male CEOs hold the same amount of cash levels. This result suggests that female CEOs and male CEOs both value having substantial cash holdings available at all times.

Table 14. Multivariate analysis of financial performance of Female and Male CEOs by Altman's Z-Score

This table presents the OLS regression results of Altman's Z score on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. Altman's Z-score tests a company's likelihood of going bankrupt. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	ALTMAN'S Z		
	ALL	**Bad Time**	**Good Time**
Female CEO or Equivalent	-0.783	-1.132	-0.429
	(0.500)	(0.738)	(0.614)
Log(age)	-1.970*	-0.059	-2.296
	(1.033)	(1.487)	(1.273)
Log(tenure)	0.278***	0.199	0.283**
	(0.100)	(0.142)	(0.125)
Log(salary)	-0.153***	-0.026	-0.202***
	(0.056)	(0.079)	(0.070)
Log(awards)	0.043	0.286	-0.092
	(0.141)	(0.207)	(0.174)
Size	-0.340***	-0.456***	-0.170***
	(0.114)	(0.166)	(0.140)
Tobin Q Ratio	2.305***	1.766***	2.649***
	(0.068)	(0.086)	(0.089)
Financial leverage	-0.002	-0.000	-0.040***
	(0.002)	(0.002)	(0.012)
Constant	11.761**	0.574	13.759**
	(4.699)	(6.685)	(5.836)
Observations	1,359	375	984
R-squared	0.584	0.650	0.595

Table thirteen displays the OLS regression results of multivariate analysis of financial performance of female and male CEOs by Altman's z-score. Altman's Z-score tests a company's likelihood of going bankrupt. Thus, since bankruptcy marks the end of a business's life, Altman's z-score test the risk level of a company and the insurance function of the CEO to see if they are capable of mitigating risk and preventing the business from going bankrupt. There was no significant result found that indicated that female CEOs outperformed male CEOs. However, this result is still significant to this study because it does not suggest that male CEOs outperformed female CEOs in Altman's z-score. This

result communicates that female CEOs, and male CEOs, have roughly the same amount of bankruptcy risk when running a company.

Table 15. Probit analysis of ESG expense and CEOs gender

This table presents the Probit regression results of the ESG focused dummy variable, which equals 1 if the company is an ESG focused company, on the dummy variable, *Female CEO or Equivalent*, controlling other firm level and CEO level variables. The dummy variable is female CEO or equivalent and it indicates whether the company's CEO is female or not. *Log(age)* refers to the average age of the CEO, *Log(tenure)* refers to the average tenure of the CEO, *Log(salary)* is the CEO's salary, and *Log(awards)* indicates if the CEO has received any rewards. *Size* refers to how large the company is that the CEO is in charge of, *Tobin Q ratio* is the ratio of the market value of a firm to the replacement cost of the firm's asset, and *Financial leverage* measures the average assets to average equity. All time periods include all data from 2008-2019. Good times is time periods including 2006 and from 2010 to 2018, while Bad times indicates time periods between 2007 to 2010 (financial crisis) and 2019 (COVID-19 pandemic). *, **. and *** denote statistical significance at the 10%, 5%, and 1% levels.

	ALL	**Hard Time**	**Normal Time**
Female CEO or Equivalent	0.332**	0.073	0.471***
	(0.138)	(0.278)	(0.161)
Log(age)	0.730**	0.838	0.614
	(0.323)	(0.600)	(0.384)
Log(tenure)	-0.094***	-0.103*	-0.084**
	(0.031)	(0.060)	(0.037)
Log(salary)	0.035*	0.026	0.041
	(0.021)	(0.034)	(0.027)
Log(awards)	0.068	0.030	0.072
	(0.045)	(0.085)	(0.054)
Size	0.271***	0.234***	0.273***
	(0.031)	(0.063)	(0.037)
Tobin Q Ratio	-0.019	-0.018	-0.036
	(0.026)	(0.041)	(0.037)
Financial leverage	0.000	0.008	-0.001
	(0.000)	(0.012)	(0.001)

Constant	-7.308***	-6.423**	-7.067***
	(1.470)	(2.744)	(1.739)
Observations	1,635	453	1,182

Another analysis was run a PROBIT regression of financial performance of female and male CEOs by environmental, social, and governance factors (ESG). ESG measures how sustainable a firm is. Sustainability in business ensures appropriate valuation, appreciation, and restoration of nature while integrating environmental, social, human, and economic goals in policies and activities. The results of the analysis established that female CEOs overall spend more money on ESG than male CEOs. These results shows that female CEOs love to benefit the communities that their firms are involved in and care about the impact their firm is having on the environment. This result could explain why female CEOs have better performance during bad times because communities may choose a company that values ESG over one who doesn't show their customers that they are making decisions based on how they are impacting the environment they operate their business in.

CONCLUSION

The question of "where are the women in the c-suite?" has been asked for many decades as women and men wonder how there is still not equal representation of women in top executive positions at companies around the world (Byham). Although 2020 marked women's highest Fortune 500 (500 largest companies in the U.S.) representation gender disparity still heavily remains (Byham). Numerous studies have tried to identify why there are not more women holding c-suite positions. The studies state how a "glass ceiling", not holding roles with profit-and-loss, starting families have prevented women from rising to the top executive positions (Fuhrmans). Other studies argue that gender diversity can negatively affect a firm's performance (Adams and Ferreira). However, these studies have not researched why having more females in top leadership positions lead to better financial performance, add more value to a firm, and result in better business outcomes during times of crisis. We address these three questions through data analysis and find that: female CEOs overall outperform male CEOs (especially during times of crisis), female CEOs take more risk during good times, female CEOs spend more on SG&A, female CEOs invest more in ESG, and that having a female CEO during a crisis provides more insurance for a firm that they will succeed during and after the crisis than a male CEO. These findings go against common stereotypes and generalizations about women being risk averse and not financially intelligent and prove the value and importance of having females in top leadership positions in firms.

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Appendix. Variable Description Table

Variable Label	Variable Label	Definitions (From Bloomberg)
FEMALE_CEO_OR_EQUIVALENT	CEO Gender	This field indicates whether the company's Chief Executive Officer (CEO) is female, as of the fiscal year end or as of the date of the latest filing.
NUMBER_OF_DIRECTORS_ON_BOARD	Board Size	This is the most recent available information of the number of directors on the company board.
PCT_WOMEN_ON_BOARD	Percentage women on board	Percentage of Women on the Board of Directors, as reported by the company.
BOARD_MEETING_ATTENDANCE_PCT	Board meeting attendance percentage	Percentage of members in attendance at board meetings during the period.
BOARD_AVERAGE_TENURE	Board average tenure	Average tenure of all current directors on the company board, in years.
BOARD_AVERAGE_AGE	Board average age	Average age of the members of the board.
PERCENTAGE_OF_FEMALE_EXECUTIVES	Percentage of female executives	Number of female executives, as a percentage of total executives, as of the fiscal year end wherever available, otherwise as of the date of the latest filing. Executives are as defined by the company, or those individuals that form the company executive committee/board or management committee/board or equivalent.
PCT_OF_NON_EXEC_DIR_ON_BRD	Percentage of non-executive directors on board	Percentage of the board of directors that is comprised of non-executive directors, as of the fiscal year end wherever available, otherwise as of the date of the latest filing.
PCT_INDEPENDENT_DIRECTORS	Number of independent directors	Independent directors as a percentage of total board membership.

CHIEF_EXECUTIVE_OFFICER_AGE	CEO age	Age of the current Chief Executive Officer (CEO), or equivalent position, in years.
CHIEF_EXECUTIVE_OFFICER_TENURE	CEO tenure	Total tenure of the current chief executive officer (CEO), or equivalent, in years. Only includes tenure as chief executive officer or equivalent position. Where the chief executive officer or equivalent left and rejoined the company, only includes tenure since most recent appointment.
TOT_SALARIES_PAID_TO_CEO_&_EQUIV	CEO total salary	Total amount of salary the company paid to the Chief Executive Officer (CEO) or the equivalent as determined by Bloomberg. It may include more than one CEO's pay if there were interim or previous CEOs that served during the fiscal year.
TOT_STK_AWARDS_GIVEN_TO_EXECS	Total stock awards given to CEO and equivalent	Total amount of stock the company awarded to the executives.
SALES_REV_TURN	Total revenue	Amount of sales generated by a company after the deduction of sales returns, allowances, discounts, and sales based taxes. Includes revenues from financial subsidiaries in industrial companies if the consolidation includes those subsidiaries throughout the report. Includes subsidies from federal or local government in certain industries (i.e. transportation or utilities). Excludes turnover from joint ventures and/or associates. Excludes inter-company revenue. Excludes revenues from discontinued operations. Figure is reported in millions.
BS_TOT_ASSET	Total assets	The total of all short and long-term assets as reported on the Balance Sheet.
TOBIN_Q_RATIO	Tobin's Q	Ratio of the market value of a firm to the replacement cost of the firm's assets.
FNCL_LVRG	Leverage	Measures the average assets to average equity.
BS_CASH_NEAR_CASH_ITEM	Cash	This stands for the recording of cash and near cash items on the balance sheet. It includes short term investments with maturities of less than 90 days. It may include marketable securities and short-term investments with maturities of more than 90 days if not disclosed separately. It excludes restricted cash.

CF_CAP_EXPEND_PRPTY_ADD	Capex	This field indicates the capital expenditures and property additions located on a company's statement of cash flows. It includes purchases of (tangible) fixed assets and excludes purchases of investments. It may include purchase of intangible assets when not separately disclosed.
IS_RD_EXPEND	R&D expense	Total research and development expenditures incurred which includes R&D in profit and loss account and capitalized R&D during the period. In the case where total R&D expenditure is not disclosed, this field may return profit and loss account only. This figure may or may not be gross of government grants, subsidies, tax credits as this depends on the company disclosure.
RETURN_ON_ASSET	ROA	Indicator of how profitable a company is relative to its total assets, in percentage. Return on assets gives an idea as to how efficient management is at using its assets to generate earnings.
PROF_MARGIN	Profit margin	Measuring the company's profitability, this ratio is the comparison of how much of the revenue incurred during the period was retained in income.
RETURN_ON_EQUITY	ROE	A measure of how well a company used reinvested earnings to generate additional earnings. It is equal to a fiscal year's after-tax income divided by book value. For stockholders, it is their net income divided by their equity. ROE = Net Income/ Shareholder's Equity
EARNINGS_BEFORE_INTEREST_AND_TAXES	EBIT/TA	A measure of company profitability used by investors. EBIT = Net Income + Interest + Taxes
RESEARCH_AND_DEVELOPMENT_EXPENDITURE	R&D Expenditure	Percentage increase or decrease of research expenses by comparing current period with same period prior year. They are designed to generate future growth. R&D Expenditure = Current year's gross profit/ Previous year's R&D expense
SELLING_GENERAL_ADMINISTRATIVE	SG&A	The expense section of a company's profit and loss statement that includes items such as advertising, salaries, commissions, travel, entertainment, and promotion. SG&A = all non-COGS + interest + income tax expenses
CASH_HOLDING/TOTAL_ASSET	Cash holding/ Total asset	Cash Holding: The money a company or individual keeps on hand to meet short-term and emergency funding needs rather than investing.

		Cash holding: Working capital – cash and marketable securities/ book value of assets
ALTMAN_Z_SCORE	Altman's Z-score	The output of a credit-strength test that gauges a publicly traded manufacturing company's likelihood of bankruptcy. $Z = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E$ - Z is the Altman's Z-score - A is the Working Capital/Total Assets ratio - B is the Retained Earnings/Total Assets ratio - C is the Earnings Before Interest and Tax/Total Assets ratio - D is the Market Value of Equity/Total Liabilities ratio - E is the Total Sales/Total Assets ratio

MEASURING THE IMPACT OF SOCIAL INNOVATION WITHIN INTERNATIONAL COLLABORATIONS

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ABSTRACT

In this extended abstract we seek to add to the conversation surrounding the challenges of measuring social impact and seek to offer a promising pathway to social impact measurement approaches across developed and developing economies. Given the definitional ambiguity, we use a case study approach through observations and three series of interviews; in doing so we seek to identify possible direct and indirect measures for actors and projects in the Global North and Global South in the context of a University - Nonprofit partnership that can be organized using the triple bottom line (TBL). The TBL takes a three-fold approach to measuring impact, so as to allow organizations to explore the economic, environmental and social value that they add or destroy within a given context (Elkington, 1980). This research provides a foundation for future research within the field of measuring social impact.

INTRODUCTION

Social innovations refer to innovative activities and services that satisfy social needs and span beyond products and technology to include ideas, movements and interventions (Mulgan, 2006; Dainiene & Dagiliene, 2015; Phills et al., 2008). There is a growing body of literature on the measurement of social innovation drawing upon the Triple Bottom Line but with little consistency with regards to appropriate measures. There is much ambiguity and conflicting definitions of *social impact* in the literature (Ebrahim & Rangan, 2014). A second level of complication emerges because of the linear expectation of intervention to outcome (Ebrahim & Rangan, 2014) when for example a bricolage approach may be more suitable (Molecke & Pinkse, 2017). A final tertiary reason for the friction is the expectations of the supervisors or funders who may prefer different measures than those possible to obtain (Ebrahim & Rangan, 2014) given the different actors involved. By identifying, analyzing, and documenting social innovation processes, we aim to provide future leaders with the ability to quantitatively and qualitatively report on the impact of social innovation projects within a community in a cost-effective and sustainable manner.

The traditional approach of a profit-centric bottom line is becoming outdated and may be inappropriate for addressing social issues within the business sphere. Some such social issues include poverty, potable water access, social mobility, obesity, violence and child well-being (Dainiene & Dagiliene, 2015). Other attempts at measuring social impact include: Developmental Evaluation (DE), Social Return on Investment (SROI), Ongoing Assessment of Social Impacts (OASIS), and Bricolage. DE is an emergent and adaptive evaluation design used to ensure that the evaluation has purpose, and focuses on social innovations with no accepted model for solving the problem. This type of evaluation explores how, why, and with what effects the project is designed and implemented, as well as how it is evolving, adapting, and responding to internal and external conditions (Preskill & Beer, 2012). SROI is a method of measurement that places a dollar value on ventures with both social and market objectives (Rosenzweig, 2004). OASIS is a measurement method that was developed to assess the social outputs and outcomes of social innovation. This method is customized, comprehensive, and ongoing, and it integrates social management information systems with an organization's information tracking practices and needs

to track short- to medium- term outcomes (Rosenzweig, 2004). The most unique of these four models is the bricolage approach presented by Molecke and Pinkse (2017). The bricolage approach for social innovation measurement is a process in which organizations use and combine the various resources they have as a means of determining the impact of various approaches to a wide variety of problems and opportunities (Molecke & Pinkse, 2017).

As such, what is even less understood is how measuring social impact can be identified and reliably utilized across a Global North - Global South connection when the field has such little standard conventions (e.g. Choi & Majumdar, 2014; Molecke & Pinske, 2017). Utilizing UNCTAD and WTO typologies, the Global North are the countries considered economically developed, the Global South economically developing or underdeveloped. Our primary interest lies in contributing to the Triple Bottom Line (TBL) framework which emulates sustainability by providing the tools for an organization to measure the impact of its activities in terms of economic, social and environmental capital (Dainiene & Dagiliene, 2015). Given the nascence of the field, we use a case study approach through observations and two series of interviews; in doing so we seek to identify possible direct and indirect measures of social impact for actors and projects as aligned with the principles of the TBL.

LITERATURE REVIEW

Review of the Various Definitions of Social Innovation

Social Innovation has historically been defined in various ways by different scholars. To some, social innovation refers to innovative activities and services that satisfy social needs and span beyond products and technology to include ideas, movements and interventions (Mulgan, 2006; Dainiene & Dagiliene, 2015; Phills et al., 2008). According to the definition proposed by Bund et al. (2013), social innovations must have elements that are new to their context; be implemented; and be more effective than existing solutions. Social innovation has also been described as "the development and delivery of new ideas, products, services, models, markets, and processes at different socio-structural levels that intentionally seek to improve human capabilities, social relations, and the processes in the areas which these solutions are carried out (Havas, 2016). Social innovation is meant to be a disruptive change that aims at reshaping systems, power relations, social hierarchies, and cognitive frames (Havas, 2016). Social innovation should always be based on the voice of the society, community, people (Osburg & Schmidtpeter, 2013). Social innovation changes the basic routines, resources, authority flows, and beliefs of a social system (Westley and Antadze, 2010).

Successful Social Innovation at the Base of the Pyramid (BoP)

For successful Base of the Population (BoP) ventures, business and non-business partners must overcome differences and capitalize on their complementary potential. Rent generation might not be considered crucial when investigating BoP projects involving for-profit and not-for-profit organizations. Common vision facilitates ongoing commitment (Hahn & Gold, 2014). People-centered approaches to business and sustainable development are needed to defend human rights and address poverty; Firms need to do business *with* the BoP, not *at* them; In BoP contexts, NGOs play a vital role in identifying economic context and closing in resource/knowledge gaps; Solutions focussing on short term fail to create long-term results, and thought they may address poverty, they often fail to improve income inequality; Poverty forces families to prioritize basic needs, which has negative effects on health, nutrition, and education; Trust, social respect, communication, and a sense of obligation are vital for sustaining these relationships; Solutions must be tailored to each local context (no one-size fits all); in order to eliminate poverty everywhere, must understand how poverty manifests in the lives of individuals across nations and how it is experienced in each context; Must promote empathy, transparency, and openness (Bisignano, et al., 2014).

Methods for Measuring Social Innovation Using the Triple Bottom Line (TBL)

The TBL approach to measuring impact is not suggesting a new bottom-line metric, but rather encourages the interdependence of economic, environmental and social criteria for performance assessment and management (Potts, 2004). There is no universal or standard method for calculating the TBL. Historically, scholars have used a variety of qualitative and quantitative methods to measure the TBL. Muñoz-Pascual, Curado & Galende used a mixed methods approach to identify the determinants of sustainable product innovation performance in order to attempt to determine what is needed to make the triple bottom line approach more effective (2019). Moreover, the combination of qualitative and quantitative methods is useful when looking for measuring sustainable product innovation performance within the TBL (Muñoz-Pascual, Curado & Galende, 2019). Dainiene & Dagiliene (2015) adapted the TBL approach by utilizing a framework for measuring the impacts of social innovation by combining social, environmental, and economic indicators. They chose a four-stage measurement process and used micro-level indicators from available historical data in order to measure the change in performance between trends (Dainiene & Dagiliene, 2015).

Indicators used in Measuring Social Innovation with the Triple Bottom Line (TBL)

While this field lacks a standard method for calculating the TBL, it also lacks a universally accepted set of standards for the measures, or indicators, within each of the three TBL categories. In general, economic indicators are used to measure direct economic performance and indirect economic impacts of an organization in terms of the bottom line and the flow of money, and can focus on income or expenditures, taxes, business climate factors, employment, and business diversity factors (Atu, 2013; Dainiene & Dagiliene, 2015). Environmental indicators represent measurements of the viability of natural resources in terms of air and water quality, energy consumption, natural resources, solid and toxic waste, and land use (Atu, 2013; Dainiene & Dagiliene, 2015). Social indicators focus on the social dimensions of a community or region and could include measurements of education, quality and access to social resources, health and wellbeing, quality of life, and social capital (Atu, 2013; Dainiene & Dagiliene, 2015).

Economic indicators include personal income, cost of underemployment, establishment churn , establishment sizes, job growth, establishment size, job growth, and employment distribution by sector (Atu, 2013). Environmental indicators include: sulfur dioxide concentration, concentration of nitrogen oxides, selected priority pollutants, excessive nutrients, electricity consumption, solid waste management, hazardous waste management, and fossil fuel consumption (Atu, 2013). Social indicators include: unemployment rate, female labour force participation rate, median household income, relative poverty, percentage of population with a post-secondary degree, and average commute time (Atu, 2013).

METHODOLOGY

Our aim for this study is to answer the question: how can we identify and measure social innovation impacts on a set of actors in the context of an equitable university-nonprofit collaboration? Given the definitional ambiguity of social innovation, we use a case study approach through observations and two series of interviews; in doing so we seek to identify possible direct and indirect measures for actors and projects. The setting we chose is a partnership between a Global North (GN) University (UNI) and a Global South (GS) Nonprofit (NP). We chose this setting in hopes of creating an effective and sustainable model for collaborations between universities in developed countries and nonprofits in developing countries. Molecke and Pinkse (2017), found that many organizations looking to measure social impact almost never committed entirely to a specific formal methodology, and instead used

elements from multiple methodologies within their approaches. Following suit, we have chosen to use a mixed method approach to measuring social impact.

TBL Approach to Social Impact Measurement

Our primary interest lies in contributing to the field of social impact by using the TBL framework to "[capture] the essence of sustainability by measuring the impact of an organization's activities on the world ... including both its profitability and shareholder values and its social, human and environmental capital" (Dainiene & Dagiliene, 2015). Our measures explore the social, economic or environmental impacts of social innovation, also known as people, profit, and planet (Dainiene & Dagiliene, 2015). We created a TBL model for measuring social innovation based on that in Dainiene & Dagiliene (2015). In order to build our TBL model, we have chosen to use observations and interviews, which we put through a series of content analysis in order to collect the necessary data to populate our model and reach conclusions surrounding the impact of social innovation within a GN and GS Uni - NP context.

Observations

For our first data-collection approach, the second author observed the entirety of a 13-week International Business (MGMT 620) course taught by the first author at Siena College. Within the course, "scholars co-create a model with collaborators focusing on a project or service with a social and business impact" within Kenya and/or South Sudan. The students in MGMT 620 did not work directly with homeless persons in Kenya, but rather functioned as consultants for the community partners by doing online research to source ideas for products and services to alleviate problems faced by the homeless. During her observations of the MGMT 620 class, she observed both the students and professor, and paid attention to behavior, conversation and the 5 learning objectives outlined within the course syllabus.

Interviews

For the second data-collection approach used, the second author conducted a first round of interviews with a total of eight students and one community partner using a semi-structured format. She recorded answers from both groups to 10 previously determined questions (Appendix 3). All students were interviewed halfway through the semester and an additional 5-7 project leaders and 3-5 community partners will be interviewed within the last two weeks of the course. The community partners interviewed include associates from Strathmore University and Streets-2-Grace in Nairobi, Kenya. The questions asked focused on how the students and community partners see the projects impacting society, the goals of the projects, and the stakeholders involved. Once completed, the interviews will be transcribed and analyzed using content analysis.

PRELIMINARY RESULTS AND FINDINGS: THEMES & DIFFERENCES

To be reported in the presentation as they are under review.

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THE CHANGING NEEDS OF DEI TRAINING IN NON-PROFIT ORGANIZATIONS: ASSESSING MODES OF DELIVERY AND CONTENT IN RESPONSE TO CURRENT EVENTS AND TRENDS

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ABSTRACT

The delivery mode and content of Diversity, Equity, and Inclusion training in small non-profit organizations are changing rapidly in light of recent developments such as Black Lives Matter and the COVID-19 pandemic. This research project analyzed present trends and best practices, past training participant reactions, and current executive management team needs and concerns regarding Inclusion and Diversity training at Unity House of Troy, a non-profit organization committed to meeting the otherwise unmet needs of people living in Rensselaer County, NY. Unity House provides services for a diverse group of people, such as those living in poverty, adults living with mental illness or HIV/AIDS, victims of domestic violence, and children with developmental delays. Unity House employees will benefit from an updated and enhanced training program as a means to increase their ability to understand those they serve, as well as create a more diverse, equitable, and inclusive organization to meet the needs of its clients. This project will assess what tools and modes of delivery are most effective for Diversity, Equity, and Inclusion training to be implemented into community-based non-profit organizations by using a survey to collect data from the extended management team at Unity House of Troy. Anonymous feedback forms from past diversity training sessions at Unity House have been reviewed to assess and incorporate the needs and suggestions of employees. The archival feedback data and the current survey results have been analyzed and presented in aggregate. The outcome of this study is a compilation of best practices based on current trends in diversity, equity, and inclusion and provide this community-based non-profit organization with recommendations for future training initiatives.

INTRODUCTION

This research project analyzed present trends and best practices, past training participant reactions, and current executive management team needs and concerns regarding inclusion and diversity training at Unity House of Troy, a non-profit organization committed to meeting the otherwise unmet needs of people living in Rensselaer County, NY. Unity House provides services for a diverse group of people, such as those living in poverty, adults living with mental illness or HIV/AIDS, victims of domestic violence, and children with developmental delays.

Mission Statement of Unity House of Troy:

Unity House is dedicated to enhancing the quality of life for people living in poverty, adults with mental illness, victims of domestic violence, children with developmental delays and their families, people living with HIV/AIDS, and others whose needs can effectively be met by Unity House services and philosophy.

The current Multiculturalism Statement at Unity House of Troy states:

"Multiculturalism" is the concept of integrating the differences people bring with them to Unity House to enhance our effectiveness, productivity and success. This integration brings people together; respecting the different perspectives individuals bring to the agency such as workplace styles, ethnic composition, abilities and other differences.

According to the Society for Human Resource Management, Diversity, Equity, and Inclusion is the focused attempt to "level the playing field to allow the best ideas to flourish, connect talented individuals from underrepresented backgrounds with opportunities that those in the majority often have unfair access to, and empower the best organizations to thrive" (Tulshyan, Ruchika).

LITERATURE REVIEW

Benefits of Inclusion and Diversity

Diversity can be defined as "The ways in which people in an organization are different from and similar to one another" (Iqrahafeez, Hafeez & Jahan, 2020). People may be similar or different regarding race, ethnicity, gender, age, marital status, religion, socioeconomic status, sexual orientation, disability, education, and many other facets that form the background and identity of a person. An array of these characteristics among employees can be incredibly beneficial to an organization if they are not only acknowledged by employers and colleagues but also accepted and valued by company culture (Iqrahafeez, et. al., 2020). A diverse workforce can result in a wide variety of positive outcomes. Some of these outcomes include increased productivity, profitability, problem-solving and decision-making, enhanced creativity and innovation, and increased ability to enter diverse markets through the knowledge and skills of diverse employees (Hostager & De Meuse, 2008). A unique compilation of staff will also be more reflective of the clients the organization is reaching and conveys to clients the organization is a "socially responsible institution, providing equal opportunities to all cultural groups and aiming to reduce discrimination" (Hofhuis, van der Zee & Otten 2015). As a result, this can improve credibility from the consumer perspective (Magras, 2019). Additional business advantages correlated with diversity in the workforce include, "Higher staff retention, reduced recruitment costs, more satisfied customers, access to a wider customer base, better supply chain management, and improve global market success" (Spiers, 2008).

Though diversity is evidently crucial to an organization's success, the concept of inclusion has become increasingly pertinent in recent literature. Inclusion can be defined as, "Engagement, involvement, and active participation of employees, encouraging and welcoming diversity at the workplace, giving value to each individual and engaging everyone in organizational matters" (Iqrahafeez,et. al., 2020). The requirements by law that facilitate diversity do not simultaneously guarantee inclusivity (Magras, 2019). Inclusion differs from diversity as it requires an organization to operate on principles of ongoing effective use and encouragement of diversity among all stakeholders that influence the organization (Iqrahafeez,et. al., 2020). These stakeholders may include customers, employees, donors, and any other facet of the organization that determines an organization's level of effectiveness and success. Inclusive organizations encourage employees at all levels to do their best work utilizing their individual talents and skills to contribute to organizational success (Magras, 2019). Unfortunately, many organizations have struggled to achieve or maintain inclusion and diversity among employees.

Challenges of Attaining Inclusion and Diversity

Organizations face many challenges while pursuing inclusion and diversity practices. Some

difficulty in this prospect derives from the thought process that it is “easier to assimilate someone similar into an organization than to incorporate an employee who is different " (Rogers, 2020). Another concept that has prevented diversity in the workplace is the Integrated Threat Theory (ITT). The ITT represents the attitudes of majority groups towards minorities and names three types of threats that could potentially be experienced in a culturally diverse environment (Hofhuis, et. al., 2015). The first threat is referred to as realistic threats which are “external circumstances that involve potential physical, economic or status loss for the in-group”(Hofhuis, et. al., 2015). The second threat is called symbolic threats, this is the “perception of the out-group’s beliefs, values and symbols as a threat to the in-group’s beliefs, values and symbols” (Hofhuis, et. al., 2015). Lastly, the third threat is titled intergroup anxiety which is operationalized as “negative feelings of in-group members when anticipating or experiencing contact with out-group members" (Hofhuis, et. al., 2015). An additional reason that organizations fail to instill an inclusive culture is the lack of training for employees. Initial training regarding inclusion and diversity covers the basic and minimum amount of information. Hence, why many organizations attempt successive training in order to build upon previous material and create a learning community. However, this becomes especially challenging for organizations with high turnover rates such as nonprofits as well as organizations with high rates of mobility among employees (van den Brink, 2020).

Other sources link diversity and inclusion to negative effects for business such as, decreased job satisfaction and commitment to the organization, increased conflict and social division among employees, increased absenteeism and turnover rates, and decreased cohesion and group performance (Hostager & De Meuse). These negative outcomes are likely the result of a company culture that does not support inclusion and diversity in the everyday norms and practices, it has not ingrained into the culture and therefore is unsuccessful (van den Brink, 2020). Culture can be defined as, "shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Iqrahafeez, et. al., 2020). This definition supports the likelihood of additional widespread obstacles such as long-standing attitudes of management that does not embrace change and therefore promotes an unwillingness to manage people who are different from them (Spiers, 2008). This attitude derives from the “ideal worker” image which is a result of bias of dominant culture and stereotypes (van den Brink, 2020). These stereotypes and biases progress and continue on in the organizational culture through recruiting and hiring processes that do not support the diversifying workforce.

Managing Diversity

One of the greatest challenges organizations are facing is managing an increasingly diverse workforce (Hostager & De Meuse, 2008). Managing diversity includes a variety of aspects such as conducting diversity audits and developing strategies to implement and maintain diversity through policy, recruitment, and selection, and training (Spiers, 2008). It is crucial to involve staff at all levels of the organization to better communicate about the needs of employees and how the current systems impact them to know what needs to evolve. However, it is not uncommon for people to feel uncomfortable when discussing diversity. It is important to use this discomfort for learning by observing behavioral and physical responses and question what people are feeling (Williams, 2017). Also, it is advised that a focus be maintained on the experience shared across humanity. This will decrease the social distance as they learn of similarities between people (Williams, 2017). However, in sharing similarities of humanity it is crucial to also encourage sharing of differences and validate the experience of those who face oppression as oppression is not a unilateral experience (Williams, 2017. Intersectionalities of identity are crucial to acknowledge and explore so that people can increase their awareness of stereotypes and perceptions of others' differences (van den Brink, 2020).

Managing a diverse workforce effectively is the first step to building an inclusive environment. Top management can develop an inclusive environment by involving people from diverse groups in

important meetings. This is beneficial because they can provide new and innovative ideas, share their opinions and suggestions and try to resolve their concerns (Iqrahafeez, Hafeez & Jahan, 2020). Furthermore, management must give credit to encourage inclusiveness and role model respectful behavior by allowing everyone to share their thoughts and acknowledging innovative ideas (Iqrahafeez, Hafeez & Jahan, 2020).

Measurement Models

There are a variety of ways to measure diversity within an organization. Employee attitude and perception of diversity can be a predictor of outcomes relating to social identification patterns, team cohesion, employee well-being, and performance (Hofhuis, van der Zee & Otten, 2015). Inadvertently, the majority employee base attitude will also be a predictor for the minority employee's sense of acceptance and level of positive attitude during intergroup contact (Hofhuis, van der Zee & Otten, 2015). It is important to be able to measure diversity within the organization to predict future outcomes and be able to anticipate the needs of a diverse employee population.

One measurement model that has been used is the "Benefits and Threats of Diversity Scale" also referred to as BTDS. BTDS is an instrument that measures the perception of employees as it relates to the effects of cultural diversity in the workplace (Hofhuis, van der Zee & Otten, 2015). This measurement has been effective in helping organizations to communicate more effectively about diversity and reduce resistance by engaging most heavily with employees who feel most threatened by the diversification process (Hofhuis, van der Zee & Otten, 2015). Another model that has been used is the "Reaction-to-Diversity Inventory" (RTDI) which categorizes respondents into three categories pertaining to diversity: optimists, realists, and pessimists (Hofhuis, van der Zee & Otten, 2015). This model can be used to assess changes in perception before and after learning experiences pertaining to diversity (Hostager & De Meuse, 2008).

Furthermore, the RTDI can provide help for the initial design and delivery of diverse learning experiences as it is used to develop a realistic and balanced perspective of both the pros and cons of workplace diversity (Hostager & De Meuse, 2008). However, it is important to note that the RTDI is not a perfect measurement model and that it cannot determine whether responses are due to situational factors or due to personal opinions regarding diversity (Hostager & De Meuse, 2008).

Current Events and Trends

The year of 2020 has been a major turning point for the conversation on Diversity, Equity, and Inclusion. Since 2020, our world has been facing a global pandemic due to the coronavirus. This has caused many companies to adapt their way of working and reassess their company structure in order to function best during these uncertain times. Furthermore, the Black Lives Matter movement has been especially prevalent on the news as many people of color have been killed as a result of police brutality. Racism against communities of color has unfortunately been prevalent throughout our nation and world's history. However, due to technological advances, the world is now able to see first hand the atrocities and violence that people of color are facing. For example, the killing of George Floyd in May of 2020 has rightfully created social unrest around the country. As a result, "many employees are expecting organizations to speak up—and to speak out—against racism" (Gurchiek, 2020). Since the death of George Flyod sparked peaceful protests across the United States, several companies have publicly stated their stance against racism and injustice and announced donations and other forms of support (Gurchiek, 2020).

Other companies have made statements of solidarity with the Black community along with, "pledges of more than $1.7 billion to advance racial justice and equity"(Gurchiek, 2020). Being that our world is enduring a public health crisis, many of the disparities that Black, indigenous and other people of color (BIPOC) experience, have been magnified (Creary, 2020). Consequently, over 130,000

Americans have died from COVID-19, however the death rate for Black Americans has been, “more than twice as high as that of other U.S. racial groups” (Creary, 2020). Many companies have had to reflect upon their operations and change as a result of the coronavirus outbreak. Subsequently, it has been found that "roughly 80 percent of companies are just going through the motions and not holding themselves accountable" (Gurchiek, 2021) according to the report, *Elevating Equity: The Real Story of Diversity and Inclusion*. This report was based on survey responses from 804 HR professionals working in a variety of industries as well as interviews and one-on-one conversations (Gurchiek, 2021). Many organizations tend to default to tactics such as bias training, diversity recruiting, and programs that can at times be more divisive and backfire (Gurchiek, 2021). Furthermore, the survey found that “76 percent of companies have no diversity or inclusion goals” (Gurchiek, 2021). Additionally, the survey concluded that “75 percent of companies do not have DE&I included in the company's leadership development or overall learning and development curricula” (Gurchiek, 2021). Also, the survey assessed that “40 percent of companies view diversity work as a way to mitigate legal, compliance or reputational risks, with HR in an enforcer role” (Gurchiek, 2021). Lastly, the survey found that 32 percent of companies require employees to attend some form of DE&I training while 34 percent of companies offer training to managers (Gurchiek, 2021). It is clear that the complex and pertinent issues of DE&I such as how companies should respond to Black Lives Matter, or harassment claims and many other complicated social issues are all being discussed by employees (Gurchiek, 2021). Overall, the survey found that of the “80-plus practices we analyzed, the most important of all was to 'listen, hear, and act' on what employees want to talk about" (Gurchiek, 2021). As a starting point, large corporations such as Twitter, Facebook, Netflix, Google and Amazon have established employee resource groups (ERGs) in order to “support employees from racial minorities or other underrepresented groups” (Ingram, 2021). Moreover, some companies have made public commitments to anti-racism and DEI initiatives through town hall meetings discussing race in the workplace, though there is still a great deal of work to be done beyond this effort to improve the opportunities and experiences of BIPOC in the workplace (Creary, 2020).

During the onset of the coronavirus in March 2020, DEI related job openings have fallen at twice the rate of overall job openings (Maurer, 2020). Although the COVID-19 crisis caused companies to retreat on investments in diversity, equity and inclusion, new research in economics suggests that employee awareness and pressure has caused companies to “back up their commitments with action” (Maurer, 2020). According to Valerie Frederickson, founder and CEO of HR consulting and executive search firm Frederickson Partners, “one of the first things companies cut is HR, and within HR, unfortunately, for many businesses, DE&I is still considered nonessential” (Maurer, 2020). However, as our world recovers from this global pandemic, DEI related jobs have begun increasing again, though the number of jobs available in this field are still 38 percent lower than it was prior to the onset of coronavirus (Maurer, 2020).

DEI Practices

According to an article published in the Society for Human Resource Management, DEI attempts to “level the playing field to allow the best ideas to flourish, connect talented individuals from underrepresented backgrounds with opportunities that those in the majority often have unfair access to, and empower the best organizations to thrive” (Tulshyan, 2020). When DEI practices are effectively implemented, organizations can achieve increased innovation, profitability, and more cohesive teams (Tulshyan, 2020). It is also important to discuss that the role of DEI in an organization should not be limited to HR functions solely, instead they must be incorporated into the company culture and environment (Tulshyan, 2020). Furthermore, to achieve the benefits associated with DEI practices, change needs to occur in the organizations systems, processes, and mindset for this change to be sustainable (Maurer, 2020). Also, these benefits need to be communicated by leaders in the organization. If this is not executed, it is likely employees will interpret DEI initiatives as a check-the-box process rather than a meaningful change (Tulshyan, 2020).

Teams can meaningfully and effectively communicate and execute an organization's commitment to anti-racism by always sending communication on DEI with explicit explanations and calling out a reason for that communication (Tulshyan, 2020). Also, it is important that organizations understand the history of discrimination and bias which allows for background of how DEI initiatives are "righting past wrongs" (Tulshyan, 2020). It is also critical to have buy-in from people of color within the organization at all levels of employment and listen to concerns and needs with humility (Tulshyan, 2020). Nicole Ferrer, managing director of Diversity Recruiters, advises that organizations align a metric to DEI programming. Ferrer states, "Something needs to be measurable so that it isn't seen as a cheerleading advocacy group or an angry group just expressing dissatisfaction," she said "I always recommend DE&I practitioners measure retention of employees of color. If these employees are not staying, then you have a problem" (Maurer, 2020). Creating an internal panel can aid the development of a strategic plan for DEI initiatives and provide leadership opportunities to BIPOC individuals while simultaneously developing allyship and involvement of white employees in the increase of diversity, equity, and inclusion in the organization (Gurchiek, 2020). Addressing the systems that have been created to be inequitable is an important step to removing the barriers that keep BIPOC individuals out of these systems to begin with (Tulshyan, 2020). Furthermore, leaders and allies within the organization must show up personally and be active in the process of dismantling unconscious bias within themselves and the organization.

A Human Resources consultancy specializing in workplace analysis, known as JoshBersin.com, conducted research in partnership with Perceptyx, a global survey and people analytics company (Gurchiek, 2021). As a result, Bersin summarized findings from this research into "5 Essential Factors: Core Organizational DE&I Practices" (Gurchiek, 2021). The first essential factor is titled "Listen and Act" with the main takeaways being: listen to employees and act to get results, show that organizational leaders support DEI initiatives and know the benefits this brings to business, and encourage people to be their authentic selves (Gurchiek, 2021). The second essential factor for DEI practices is titled "Strengthen HR Capabilities in All Roles" (Gurchiek, 2021). This section articulates the importance of HR being able to consult on DEI issues, invite business partners to seek out HR for these issues, and involve DEI in all HR programs. The third essential factor is to "Engage Senior Leadership Commitment" (Gurchiek, 2021). According to Bersin, this can be accomplished when the CEO establishes a vision for DEI and communicates progress, holds leaders accountable for outcomes of DEI initiatives, and ensures that DEI strategy is implemented into the business strategy as a whole (Gurchiek, 2021). The fourth essential factor is to "Set Goals and Measure" by investing in benchmarks to drive and measure DEI, set goals for outcomes, and internally communicate DEI metrics. The fifth and final essential factor of organizational DEI practices is to "Create Accountability for Results" (Gurchiek, 2021). Bersin articulates this can be accomplished by embedding DEI into every stakeholder (partners, customers, vendors) as well as incorporating DEI into organizational programs related to learning and leadership.

An additional resource Bersin developed as a result of this research is a compilation of "DE&I Practices that Do and Do Not Work" (Gurchiek, 2021). The ineffective practices that Bersin outlines includes: mandatory training for executives/managers/employees, DEI programs such as mentoring or business resource groups, and a lack of collaboration between leaders, HR, and all other business functions (Gurchiek, 2021). The effective practices Bersin suggests are as follows: leaders believe DEI is good for business, DEI is embedded in all facets of the organization, and the CEO creates a vision for DEI and communicates progress often (Gurchiek, 2021). Additional suggestions from organizations to implement long lasting systemic changes in DEI include: listening to employees to identify DEI issues and address them, have highly capable HR professionals to consult with on DEI, develop clear and measurable goals, and create accountability for DEI at all organizational levels (Gurchiek, 2021). Furthermore, it is important to have leaders that are active in the process of changing the organization and set company-wide strategies for DEI initiatives (Gurchiek, 2021). In addition, organizations need to

prioritize equity in their own ranks of employment by “hiring and promoting minority workers” (Gurchiek, 2020). All of these suggestions and resources listed in this section have been compiled by the Society of Human Resource Management which is an excellent resource for organizations looking to gain information about topics such as diversity, equity, and inclusion.

Allyship

Another critical aspect when discussing the topic of diversity, equity, and inclusion is the concept of allyship. According to Melinda Epler, founder and CEO of Change Catalyst, a firm that works with the tech industry to solve problems related to diversity and inclusion, allyship means understanding the imbalances that exist in opportunity for BIPOC individuals and working to correct this imbalance of privilege (Gurchiek, 2019). Furthermore, Epler states, "Your gender, your race, your ethnicity, your religion, your disability, your sexual orientation, your class, your geography—all of these can give you more or fewer opportunities for success” (Gurchiek, 2019). It is important for organizations to create an environment where all BIPOC employees can trust that their organizational culture works at developing allyship across all levels of the organization. People can be allies for their co-workers through small actions that can have long-lasting benefits for their co-workers' careers while simultaneously increasing the inclusivity of the workplace (Gurchiek, 2019). However, Epler makes a critical discernment between the practice of allyship versus trying to be a knight in shining armor who attempts to save someone, which insinuates that the person is “weak or helpless” (Gurchiek, 2019). This is clarified by Epler when she states, “While well-meant, it can be off-putting. "Knights" help one person in one moment to overcome an inequity; allies serve as ambassadors for change” (Gurchiek, 2019). Epler furthers this discernment via an example; if a member of a hiring committee says a candidate of color is not a good fit for the position, a “knight” would likely speak up for the candidate and offer assistance if the person is hired (Gurchiek, 2019). Whereas an ally would instead recommend an evaluation of the hiring process and criteria to ensure objectivity prior to discounting a candidate (Gurchiek, 2019). Overall, an ally is someone who listens and supports, without letting their voice overpower those whose voices are being ignored or underrepresented. An ally is someone who can use their privilege to support people who are being oppressed. Allyship is crucial when it comes to the topic of race as well as the topic of gender and sexual orientation. Organizations should develop allies for all BIPOC individuals as well as the LGBTQ+ community.

One particular framework that has been developed and utilized for the topic of allyship and inclusion is called LEAP. The LEAP framework is “designed to help people from different backgrounds build stronger relationships in the workplace” (Creary, 2020). It was created from the concept that it can be challenging to relate to people who are different than ourselves (Creary, 2020). However, this framework serves to help allies and employees do the work required to “notice, connect, value and respond to others' needs results in more effective working relationships” (Creary, 2020). This framework is particularly useful for leaders in an organization such as managers who are in a position to support BIPOC employees and in the process become better leaders and allies in DEI work (Creary, 2020). LEAP is an acronym with four main points for allyship and inclusion. The “L” stands for “ Listen and learn” from the experiences of your BIPOC colleagues' (Creary, 2020). The “E” stands for “Engage” with BIPOC colleagues in a racially diverse and casual environment (Creary, 2020). For example, if your organization does not have an employee resource group for BIPOC employees, contemplate joining an online community that openly discusses personal experiences about race while being facilitated by experts (Creary, 2020). The “A” stands for “Ask” BIPOC employees about their work and goals (Creary, 2020). When focusing on aspects such as race, personal lives, or physical appearance in conversation, any form of inquiry can be perceived as invasive and threatening to BIPOC workers (Creary, 2020). As an ally, it is critical to ask about their actual work such as what their future goals to accomplish, potential concerns about those goals, and how you may be able to help them achieve their vision (Creary, 2020). Taking this genuine interest can help improve the quality of your relationships in the workplace. Finally,

the "P" stands for "Provide" your BIPOC colleagues with "opportunities, suggestions, encouragement and general support" (Creary, 2020)**.** Some examples of this may be to refer and recommend them for opportunities, volunteer to provide feedback on work, introduce them to other colleagues with influence, acknowledge their accomplishments publicly to other coworkers, and reward them for doing DEI related work in addition to formal work (Creary, 2020). Overall, the LEAP framework is a guide to how to become an ally to BIPOC employees at any organization and can be utilized as an outline for organizations seeking to develop their employees as allies.

METHODOLOGY

Academic advisor Deborah Kelly, J.D. and community partner, Unity House of Troy have been integral to the completion of this community-based research for the Bonner Service Leadership Program. The survey was sent to 20 members of the Extended Management Team. Unity House was not involved in answering questions regarding consent, collecting data, or having access to indirectly identifiable data and therefore were not engaged. The HR Director forwarded a pre-approved email containing a consent form, reducing potential for perceived pressure on employees to complete the survey. The survey was open for 14 days and a follow-up email was sent during this time to remind participants of the opportunity to complete the anonymous survey. The survey questions did not contain any sensitive or identifying information of the subject and the survey was pre-approved by the HR Director at Unity House of Troy. The purpose of this research is to develop a collection of resources and information regarding diversity, equity, and inclusion (DEI). Methods to develop this project included collecting data from the Extended Management Team at Unity House of Troy (i.e. approximately 20 individuals) through an online survey. All employees of the Extended Management Team had access to a computer and did not need paper copies of the survey. Also, anonymous (no personal identifying information) archival post-training feedback data that was collected by the organization from attendees at prior diversity training sessions was analyzed and summarized. The result of this research was a deliverable of a paper that assessed historical and current trends of diversity, equity, and inclusion initiatives. Specifically, the challenges, benefits, and aspects necessary to develop a successful change in an organization regarding DEI were addressed. The outcome of this study was to educate the Extended Management Team on the importance of DEI, give them tools to best serve colleagues and clients, and provide information to help them form and implement diversity, equity, and inclusion initiatives in the future.

An important note about this community-based research is that I have spent the last four years as a Bonner Service Leader at Unity House of Troy. Therefore, I have built trust and many relationships with employees across departments which significantly aided the research process Also, it is because of this time spent within the organization prior to this research that observations of daily operations could be made to identify gaps in resources. Without the benefit of time and relationships, it is likely that I would not have been able to access archival data of post-diversity-training feedback forms to measure, summarize, and analyze the reactions of participants. However, access to this information allowed for learning from past mistakes and enabled the development of a survey with the help of the Human Resources director. Thus, providing an opportunity to gain knowledge from employees of the Extended Management Team that would help guide future research and recommendations.

DATA COLLECTION & ANALYSIS

The previous diversity training at Unity House was a consultant leading a powerpoint presentation with handouts. At the end of the one hour presentation attendees completed a short survey. Different versions of the survey were used at different training sessions. Table 1 below summarizes one version of the archival post-training feedback survey and Table 2 below represents the other version of the archival post-training feedback survey. The compiled summary results of those archival post-training

feedback surveys is as follows:

Summary of Responses from prior Diversity Training

Table 1: Survey A Summary n=21

	Strongly	**Agree**	**Neutral**	**Disagree**	**Strongly**
1. The objectives of the training were clearly defined	11	4	6	0	0
2.Participation and interaction were encouraged	14	6	1	0	0
3.Topics covered were relevant to my job	12	7	2	0	0
4.The content was organized and easy to follow	10	6	3	2	0
5.The materials distributed/showed/displayed were helpful	10	7	4	0	0
6.The trainer was knowledgeable about the topic	16	5	0	0	0
7.The trainer was well prepared	13	5	3	0	0

Overall Impression of the training:	**Overall impression of training location:**	**Comments or suggestions for future training:**
-very in tune to the 21st century -good but should've been more interactive -crucial topic, should be multiple of them (series) because there so many more in-depth conversations that could have developed -good (x2) -great -it was definitely needed, however there should be a more in-conversation/trainings about diversity because it is a very subject matter -open & safe space -very knowledgeable of diversity awareness -great training! -excellent -it was great, and well understanding and educational -very informative -very good info -Ivette did a great job! -open discussion -training is definitely needed	-not good, parking is tight -good (x3) -great -perfect -good, helped to see others for discussion purposes -engaging -good (x2) -clean, quiet -great privacy -needs to be cleaner-just saying -fine -inconvenient/ projector don't work, so instructor was unable to use her equipment -good	-make it more open to interaction -allow for participant introductions at the beginning (dept., etc.) -keep her teaching the training she's great -maybe a powerpoint or a new large notepad to write on -there was no real resoluting (sp.) about how to service of clients w/ racial issues

Table 2: Survey B Summary n=12

	Excellent	**Average**	**Poor**
1.Your overall impression of the training:	12	0	0
2.The instructor's knowledge and presentation of the material	12	0	0
	Too Fast	**About Right**	**Too Slow**
3.How was the pace of the	0	12	0
	Too Basic	**About Right**	**Too Advanced**
4.The general level of the subject matter was:	1* *(0+.5+.5)	11* *(10+.5+.5)	0
	Too Long	**About Right**	**Too Short**
5.The duration of the training	0	12	0
	Very Much	**Some**	**Very Little**
6.How much did you learn?	9* *(8+.5+.5)	3* *(2+.5+.5)	0
	Yes	**No**	**Other**
7.Was the information presented helpful to you?	12	0	
8.Was this a good location for the training?	12	0	
9.Would you like more education in this area?	10	1	1 (blank response)

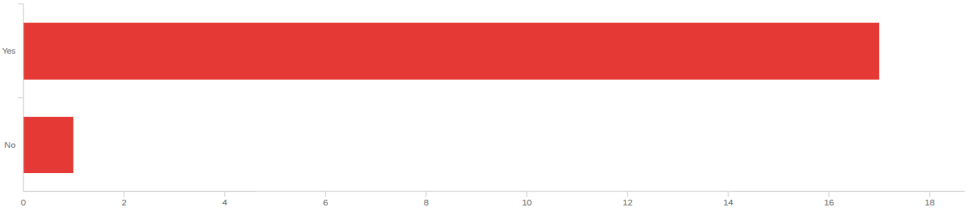
***= .5 means one respondent split vote between two categories**

What was most useful to you?	What was least useful to you?	Comments or suggestions for future training?
-the structure was perfect, allowing for discussion and video clips -the discussions around diversity -different perspectives & outlooks of diversity & learning the differences with privilege -the idea of privilege being more than "white privilege" -ted talks -racial discussion -the examples used on the worksheets/conversations -learning more about diversity -all of it -introduction of conversation of diversity -being reminded of cultural biases! (would love a training on the "ever-changing terms" - etc. latest resources	none	-maybe a series of diversity trainings (ex. 101,102) might be useful to further explore issues of privilege, working with specific client populations, addressing issues of diversity within the workplace -hit on privilege a little more as people may not understand the true meaning behind it -Ivette was good! Funny too. I would definitely include the conversation on privilege in all training! -more info on 'privilege'

Summary of Survey Responses from Extended Management Team

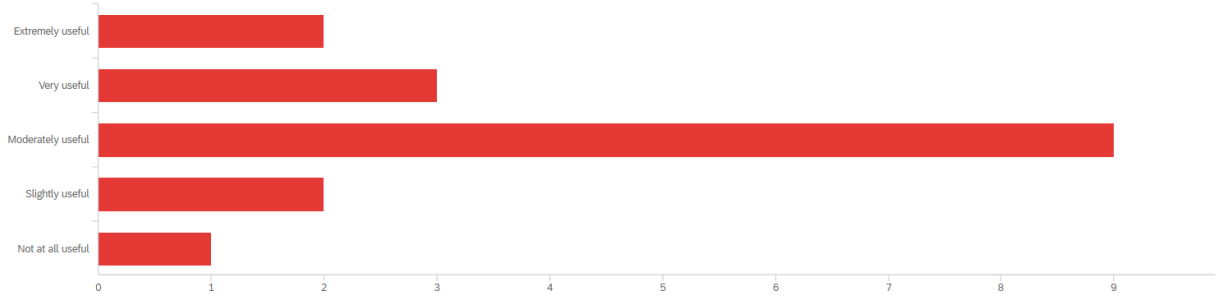
Employees of the Extended Management Team were asked to complete a survey based on inclusion and diversity initiatives at Unity House of Troy. Table 3 below represents the number of members of the Extended Management Team that have attended an inclusion and diversity training at Unity House or another organization:

Table 3: Number of members of the Extended Management Team that have taken an inclusion and diversity training at Unity House or another organization



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Have you ever taken a inclusion and diversity training at Unity House or any other organization? (If no, skip to question #5)	1.00	2.00	1.06	0.23	0.05	18

The majority of employees on the Extended Management Team at Unity House have attended an inclusion and diversity training at Unity House or another organization. Respondents who attended an inclusion and diversity training at Unity House of Troy or another organization rated how useful they found the training they attended. Table 4 below summarizes the responses as to how useful the Extended Management Team found previous inclusion and diversity training:



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Did you find this training useful?	8.00	12.00	9.82	0.98	0.97	17

Table 4: How useful the Extended Management Team found previous Inclusion and Diversity Training?

On average, employees found the inclusion and diversity training they attended to be moderately useful. However, there were also outliers of responses where respondents rated the training extremely useful and not at all useful. Based on the prior ratings of usefulness, employees of the Extended Management Team were asked to explain their rating choice. Table 5 below represents the number of responses for each rating of usefulness as well as explanations given for that rating.

Rating of Usefulness	# of Responses	Explanations
Extremely Useful	2	*Very reflective training and knowledgeable trainer*
Very Useful	3	
Moderately Useful	8	*It was too broad with no particular focus on objectives of the training* *It was taken over 5 years ago. Not sure if the training format has changed.* *Helpful on breadth of definition of diversity* *The one I had was very good as an introduction - but was basic.* *It was very brief and only touched on it a little. No real permanent solutions.* *Always good to learn more* *Too short, not enough information on inclusion*
Slightly Useful	2	*I did not learn anything new from the training* *It was quite a while ago. It wasn't specific to UH needs*
Not at all Useful	1	*It's ineffective. I don't believe that employees shed their biases because of a training they attend for a couple of hours. I feel like these trainings are more about limiting exposure and liability for the company than truly and meaningfully investing in a diverse and inclusive culture. Two out of five stars.*

Table 5: Explanations to level of usefulness of previous Inclusion and Diversity Training

In general, the Extended Management Team found the past training they attended to be too broad in topic and lacking in depth and efficiency. It was interesting that respondents who rated the training as less useful provided greater explanations for their choice. Respondents also rated the inclusion and diversity training they attended for level of effectiveness. Table 6 below provides the range of responses on a scale of one to ten as well as the mean, standard deviation, variance, and total count of responses for the level of effectiveness the Extended Management Team found the inclusion and diversity training they attended.

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Click to write Choice 1	2.00	9.00	6.06	1.92	3.70	17

Table 6: How effective the Extended Management Team found the inclusion and diversity training they attended?

On a scale of one to ten, with one being not effective and ten being very effective, the Extended Management Team found the inclusion and diversity training to be an average of slightly effective. Employees of the Extended Management Team answered the following 3 questions on a scale of strongly disagree to strongly agree. Table 7 below summarizes respondents' ratings of three different questions on a scale of strongly agree to strongly disagree.

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Unity House provides opportunities to express concerns/ideas/opinions	3.00	7.00	5.71	1.07	1.15	17
2	My identity and values are reflected at all levels of the organization	2.00	7.00	5.47	1.54	2.37	17
3	My coworkers/ employers/ clients are respectful of my identity	4.00	7.00	6.00	0.91	0.82	17

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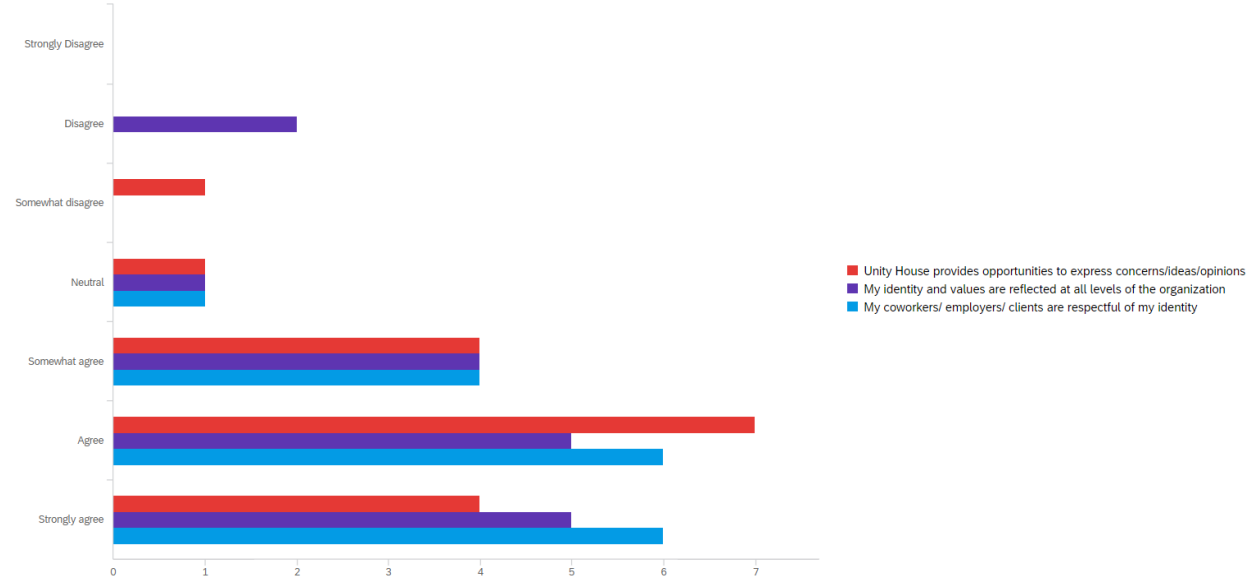


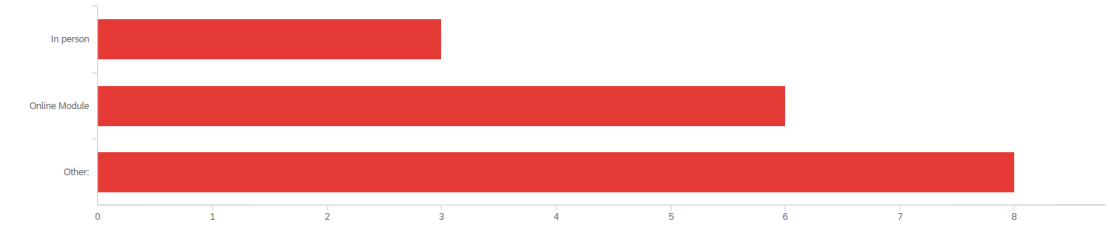
Most employees on the Extended Management Team feel Unity House provides opportunities to express concerns, ideas and opinions. They also agreed their coworkers, employers, and clients are respectful of their identity. However, some employees did not feel as though their identity and values are reflected at all levels of the organization. I found it interesting that standard deviation was greatest for the question regarding identities and values being reflected in all levels of the organization. Table 8 below displays the topics recommended for future inclusion and diversity training as well as the number of respondents who recommended that topic.

Topics Recommended	**# of times Recommende**
bias	8
privilege	7
anti-racism	9
microaggressions	9
Trauma informed	1
Workplace Aggressions (where is the line)	1
White Privilege	2
Implicit Bias	1
Unconscious Bias	1
White Apathy	1
Tone policing	1
White Centering	1
Cultural Differences	1
All the "ism's" such as age, education, physically challenged	1
At risk population	1
How to make people feel comfortable	1

White Supremacy	1
All the new ideas emerging in 2020	1
Inclusion topics like creating a sense of belonging for all employees and expanding opportunities for all employees to have meaningful participation	1
Sexual Identity (gay, trans, cis)	1
Difference between ethnicity, race	1
None, instead of training, we should focus efforts on problem-solving, team building, voluntary advisory boards/forums, and promoting social accountability	1

Table 8: What topics should be included in inclusion and diversity training? (i.e. bias, privilege, anti-racism, microaggressions, etc.)

The majority of employees on the Extended Management Team agreed the topics of bias, privilege, anti-racism and microaggressions be included for future inclusion and diversity training. Additional topics that were suggested include white privilege, unconscious bias and sexual identity. I found it surprising that a respondent replied that training should not be the focus. Table 9 below displays the responses to the preferred format for the future inclusion and diversity training. Employees of the Extended Management Team were asked if they would prefer the training to be in-person, online module or other. Table 9 also includes a table outlining the responses for members of the Extended Management Team who indicated "other" in their response and states what the suggestion was, as well as, the number of respondents who gave that suggestion.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Should the inclusion and diversity training be in-person or an online module? - Selected Choice	1.00	3.00	2.29	0.75	0.56	17

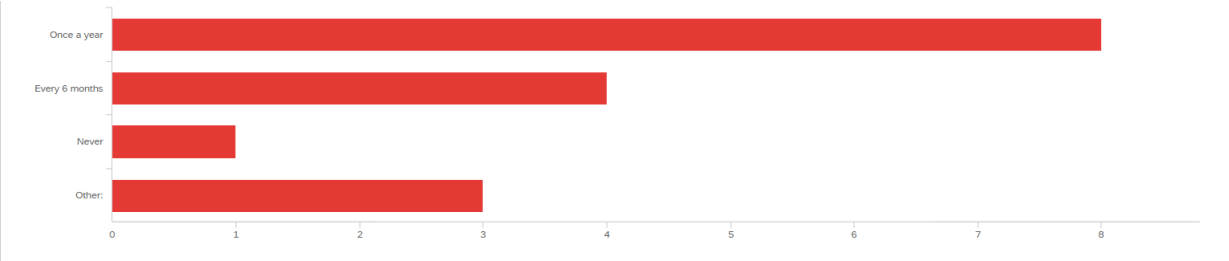
Respondents who replied with the option "Other" suggested:

Other Suggestions	**# of Times Suggestion**
Either	**1**

Both	**4**
Voluntarily	**1**
Combination if possible during COVID	**1**
Online only because of	**1**

Table 9: Should the inclusion and diversity training take place in-person, through an online module or any other suggestions?

The majority of employees on the Extended Management Team selected "other" when asked whether to have an inclusion and diversity training online or in person. Furthermore, the most suggested alternative would be to have both in person and online training. In addition to the format of the inclusion and diversity training, respondents were also asked to provide input on the frequency that the training should be administered. The options given for frequency of training were once a year, every 6 months, never and other, where respondents can provide other suggestions. Table 10 below shows a summary of the range, mean, standard deviation, variance, and total count of responses for the preferred frequency of the inclusion and diversity training.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How often should the inclusion and diversity training be administered? - Selected Choice	1.00	4.00	1.94	1.14	1.31	16

Table 10: How often should the inclusion and diversity training be administered?

Respondents who replied with the option "Other" suggested:

- *At least once a year and as needed*
- *Once a year but also ongoing*
- *Every two years*

The majority of employees on the Extended Management Team feel the inclusion and diversity training should be administered once a year. Other suggestions included having as needed training and an ongoing focus on inclusion and diversity. I was surprised that a respondent selected never for frequency of training administration. Employees of the Extended Management Team were then asked to provide their opinions on a number of statements on a scale of 1 to 10, with 1 being strongly disagree, 5 being neutral, and 10

being strongly agree. Table 11 below displays a summary of the range, mean, standard deviation, variance, and total count of responses for a variety of statements regarding inclusion and diversity at Unity House of Troy.

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Unity House is committed to inclusion and diversity	6.00	10.00	8.41	1.42	2.01	17
2	People of all cultures and backgrounds are respected and valued at Unity House	5.00	10.00	8.12	1.53	2.34	17
3	I feel included and respected within the agency	6.00	10.00	8.35	1.37	1.88	17
4	I am comfortable talking about my background and cultural experiences with my colleagues	3.00	10.00	7.39	2.43	5.90	18
5	Employees of different backgrounds interact well within our agency	4.00	10.00	7.12	1.68	2.81	17
6	Racial, ethnic, and gender-based jokes are not tolerated at this agency	5.00	10.00	9.12	1.28	1.63	17
7	This firm provides an environment for the free and open expression of ideas, opinions, and beliefs	4.00	10.00	7.71	1.90	3.62	17

Table 11: How respondents rate a variety statements regarding inclusion and diversity at Unity House of Troy

The average rating respondents gave were between 7 and 8 across all statements. I was surprised to see how large the standard deviation was in response to statement 4 and 7. Also, I found it interesting that there was a minimum response rating of 3 and 4 on statements 4, 5 and 7.
Respondents were also asked to provide any recommendations for changes or improvements regarding any policies, forms, dress code, applications, training, etc. used at Unity House of Troy.

Survey respondent recommendations for changes or improvements include:

- *I believe UH tries to improve on all of the above to meet changing needs of customers and staff*
- *I'd be interested for the agency to take a more pronounced approach around gender identity (encouraging use of preferred gender pronouns in emails/meetings, not requiring gender choices on applications when not necessary, etc.)*
- *I think we need to research and find a good training on diversity that we as an agency are comfortable with. I believe that there are currently some nice curriculums being developed*
- *Focus groups comprised of staff to determine if they feel included or are experiencing bias of any sort. A safe way for this information to be digested.*
- *More training at the ground level. More focus on the front line staff.*
- *Would like agency wide inclusion initiatives on going (sic).*

I found it interesting that only some of the respondents gave suggestions for improvements given that many more responses in prior questions would suggest that changes need to be made.

Employees of the Extended Management Team were then asked to provide suggestions for Unity House to consider for what should be included in the future inclusion and diversity policies and training.

We received responses such as:

- *Trauma informed interventions/ approaches*
- *Professionalism*
- *I think a policy around hiring diverse candidates ought to go beyond non-discrimination required by federal law*
- *Some discussion about tone policing (what it is and why/how it is a practice to be aware of) and tokenism (what it is and why/how it is problematic)*
- *I recommend we build in an openness for all employees to express their own beliefs, value historical experiences, in order to learn and move forward in terms of a greater understanding of equity and social justice issues. There is a large amount of information, definitions, deeper understanding that is needed in order to see real progress within our agency (and beyond). Most employees seem open to learning when it is non threatening -- even when the topic is challenging and new to them. I see our challenge as developing trainings that are basic and more advanced. Perhaps some podcasts as a start to open the topic, then followed by our own trainings that are leveled.*
- *Its helpful to have HR back up when and if a racially inappropriate term is used. A clearly outlined policy would be helpful for managers to be able to reference - as in these specific words and language will not be tolerated in the workplace. Some employees use certain words that are allowable in their family or social groups however that should not be permitted in a work setting regardless.*
- *Not telling, but asking.*
- *Have it in person and taught by someone not UH staff*
- *Need to also include a focus on equity*

Lastly, respondents were asked to provide any final comments regarding inclusion and diversity.

- *I want to believe that the right person is promoted or hired for a job, not base it on an opinion of needing more diversity in a case management or program director staff*
- *When developing trainings I think we need to recognize that among the different ethnic backgrounds we have within our employees there are engrained (sic) belief systems. Some groups see themselves as superior to people of color, not just white employees.*
- *This is a very frustrating issue. Want to fix it but don't have the tools.*

It was interesting to see that the additional comments in this section were reflective of the topics suggested

in prior survey questions. Some of these responses may be challenging for the organization to attain, but with additional research progress can be made.

BEST PRACTICES & RECOMMENDATIONS

Over the course of this research, the appropriate verbiage regarding this topic has changed multiple times in the span of about 18 months. Initially, at the start of this research, management referred to this area as only "diversity" and then adapted it to "inclusion and diversity", then it was changed to diversity, inclusion, and belonging (DIB) and within the last few months these terms have changed again and now the current term is diversity, equity, and inclusion, which can be abbreviated to DEI. The ongoing changes and advancements being made in the implementations and initiatives related to DEI are reflective of how much society is learning and adapting as a result of current events and trends such as Black Lives Matters protests and the COVID-19 pandemic. Significant global movements and impacts such as these have made it necessary for change to occur in organizations across the country as DEI becomes an increasingly pertinent aspect for employees in the workplace and for business success. It is important to note this research will merely be a snapshot in time of where we are today in the journey towards a more diverse, equitable, and inclusive society and that there will be many more advancements to come. However, this research will benefit Unity House as they make future decisions regarding what programs and initiatives they will implement.

Based on current trends in diversity, equity, and inclusion, as well as responses from the survey and archival data retrieved, the following recommendations have been made for Unity House. Based on survey results, Unity House should develop focus groups composed of staff within the agency to voice concerns and express needs. Also, it is important for initiatives to be enforced at all levels from front line employees to administrative levels, not just from Human Resources.

When initiatives become the sole responsibility of one department in an organization, these initiatives often fail. In order to prevent this, Unity House must implement and enforce DEI initiatives in all facets of the organization to ensure that there are shared goals and responsibilities, thus increasing the likelihood of success and sustainable change in the organization. Furthermore, it is recommended that Unity House revise their multiculturalism statement to be an inclusion statement. This change would benefit the organization as the term multiculturalism is outdated from the current terms being widely used according to the Society for Human Resource Management materials included in the literature review. Instead, a statement about the organization's commitment to inclusion or more widely, diversity, equity, and inclusion would encompass more broadly the advancements that Unity House will be making as they implement DEI initiatives. Further advisements include developing clear policies and procedures for dealing with conflicts related to topics of DEI. In addition, it is important to focus on the recruiting process and hiring more diverse individuals at all levels of the organization, especially in higher-level positions. In order to accomplish this, it is important that Unity House review their current policies and processes of recruitment and hiring to ensure that language and credentials included are inclusive and would not discredit a candidate based on factors unrelated to their qualifications. Lastly, it was recommended that an individual outside of the organization provide basic level training as well as advanced training to have an objective perspective of employees and the organization.

Based on the literature reviewed on the topic of DEI, it is recommended that Unity House incorporate a LEAP framework to develop allyship at all levels of the organization. In particular, this framework should be applied to leaders in the organization such as employees who have a managerial position. This is important in order for employees who report to their managers to know that their direct supervisor is an ally. This framework will support managers to respond appropriately and help direct employees to further support in the organization for concerns and issues regarding DEI. The LEAP framework is described in length in the literature review under the allyship heading. Based on further literature, it is suggested that Unity House consider implementing a metric to DEI programming in order to create a measurable standard to indicate whether the organization is reaching their goals and achieving success in the initiatives that are chosen for implementation. Furthermore, it is important to develop

accountability for these measures to ensure these goals are reassessed after a period of time and altered accordingly. For example, Unity House may consider measuring the retention rate of employees of color in order to determine whether BIPOC employees are remaining within the organization and if they are not, then there is a clear indication of a problem. Also, accountability is critical for making sure these goals and initiatives are achieved for the overall success of the organization, as well as, for the benefit of the employees and subsequently benefit the clients Unity House serves. All of these recommendations are based on a combination of the survey and archival data results and recent literature based on current DEI advancements.

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APPENDIX: SURVEY INSTRUMENT

Study Title	Inclusion and Diversity
Researcher	Abigail Hoekman, Siena College Student
Supervisor	Dr. Deborah Kelly, Associate Professor of Management

We're inviting you to participate in a research study. Participation is completely voluntary. If you agree to participate now, you can always change your mind later. There are no negative consequences, whatever you decide.

What Is the Purpose of This Study?

The purpose of this survey is to help Unity House assess and design inclusion and diversity programs moving forward.

What Will I Do?

You will be sent an online survey through email and will take about 5-10 minutes to complete. About 20 people in total will be receiving the survey. You will fill out the anonymous survey and share your experiences and perspectives for Unity House of Troy to reference when considering what inclusion and diversity initiatives to implement in the future. Some questions will ask about past training, knowledge pertaining to the topic of inclusion and diversity, and what employees would like to see in the future from Unity House. Some questions may be personal or upsetting. You can skip any questions you do not want to answer or stop the survey entirely. This survey will not impact your employment status in any way.

Risks

Possible Risks	How We're Minimizing These Risks
Some questions may be personal or upsetting	You can skip any questions you do not want to answer.
Breach of confidentiality (your data being seen by someone who should not have access to it)	• Data is anonymous. • We will store all electronic data on a password-protected, encrypted computer.
Online data being hacked or intercepted	• This is a risk you experience any time you provide information online. We are using a secure system to collect this data, but we cannot eliminate this risk.

There may be risks we do not know about yet. Throughout the study, we'll tell you if we learn anything that might affect your decision to participate.

Other Study Information

Possible benefits	• There is no identified individual benefit to your participation this study" • There is a benefit to Unity House of Troy as this survey will help determine future inclusion and diversity initiatives
Estimated number of participants	20 employees from the Extended Management Team at Unity House of Troy
How long will it take?	5-10 minutes
Costs	None
Compensation	None
Future research	Data may be shared with other researchers. You won't be told specific details about these future research studies.

Confidentiality and Data Security

Where Will Data Be Stored?	By Abigail Hoekman on computer through Qualtrics
How Long Will It Be Kept?	1 year

Who Can See My Data?	**Why?**	**Type of data**
The researchers	To conduct the study and analyze the data	De-identified (no names, birthdate, address, etc. attached to the data)
Anyone (public)	If we share our findings in publications or presentations. Our funding agency requires us to make our dataset public so other researchers can use it.	• Aggregate (grouped) data • De-identified (no names, birthdate, address, etc.) • If we quote you, we'll use a pseudonym (fake name)

Who Do I Contact?

For questions about the research, complaints, problems	Abigail Hoekman	Email: ar24hoek@siena.edu
	Dr. Deborah Kelly	Email: dkelly@siena.edu
For questions about your rights as a research participant, complaints, problems	Chair, Institutional Review Board (IRB; provides ethics oversight)	irb@siena.edu / (518) 782-6726

Please print or save this screen if you want to be able to access the information later.
IRB #: 10-27-20
IRB Approval Date: 11-17-20

This survey will take you 5-10 minutes to complete. Feel free to skip any questions. Your responses will be kept anonymous and will not impact your job in any way. Our target audience is the Extended Management Team at Unity House. Your data will assist Unity House in assessing and designing inclusion and diversity programs moving forward.

Thank you for taking the time to complete this survey!

Please click on the arrow below if you consent to participate in this survey.

Q1.
Have you ever taken a inclusion and diversity training at Unity House or any other organization?
(If no, skip to question #5)

- Yes
- No

Q2. Did you find this training useful?

- Extremely useful
- Very useful
- Moderately useful
- Slightly useful
- Not at all useful

Q3. Please explain your response to question #3

Please answer question #5 on a scale of 1 to 10, with 1 being not effective , 5 being neutral, and 10 being very effective

Q4. How effective did you find the inclusion and diversity training you attended?

Not Effective — Neutral — Very Effective

0 1 2 3 4 5 6 7 8 9 10

Click to write Choice 1

Q5. Please select the response that you feel is most accurate to the statements below

	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongl agree
Unity House provides opportunities to express concerns/ideas/opinions	○	○	○	○	○	○	○
My identity and values are reflected at all levels of the organization	○	○	○	○	○	○	○
My coworkers/ employers/ clients are respectful of my identity	○	○	○	○	○	○	○

Q6.

What topics should be included in inclusion and diversity training? (i.e. bias, privilege, anti-racism, micro-aggressions, etc.)

Q7.
Should the inclusion and diversity training be in-person or an online module?

In person

Online Module

Other:

Q8.
How often should the inclusion and diversity training be administered?

Once a year

Every 6 months

Never

Other:

Q9. Rate your opinion of these statements on a scale of 1 to 10, with 1 being strongly disagree, 5 being neutral, and 10 being strongly agree

Strongly Disagree — Neutral — Strongly Agree
0 1 2 3 4 5 6 7 8 9 10

Unity House is committed to inclusion and diversity

People of all cultures and backgrounds are respected and valued at Unity House

I feel included and respected within the agency

I am comfortable talking about my background and cultural experiences with my colleagues

Employees of different backgrounds interact well within our agency

Racial, ethnic, and gender-based jokes are not tolerated at this agency

This firm provides an environment for the free and open expression of ideas, opinions, and beliefs

Q10.
Please let us know if you have any recommendations for changes or improvements of any of the policies, forms, dress code, applications, training, etc. used at Unity House (give examples)

Q11. Do you have any specific suggestions that you would like us to consider that should be incorporated in inclusion and diversity policies and training?

Q12. Is there anything we did not mention that you would like to discuss about inclusion and diversity?

STRATEGIC MARKETING CAMPAIGN FOR DOORDASH

Chris Adamski, Siena College
Dr. Kimberly Preiksaitis, Siena College

ABSTRACT

This project develops a strategic marketing campaign for DoorDash delivery service by conducting primary and secondary research methods to identify areas of marketing opportunity. A research survey was completed by Siena students and faculty through the Siena Marketing Association, as well as the student and faculty digests, and was used to gauge consumer's opinions on the food delivery service market and perceptions relating to DoorDash. In addition to primary data collection, secondary research on the DoorDash company and the food delivery service industry was conducted through a 5Cs analysis of the company, industry and current buying habits of consumers as affected by the COVID19 pandemic. Analysis and results of the data collection contributed to the development of a strategic marketing plan providing marketing suggestions for both short- and long-term operations. The suggested marketing plan includes recommendations for promotional activities aimed at increasing short-term sales, and increasing the number of users on the DoorDash app. Additionally, it includes recommendations for added features and services on the platform, aimed at providing the company with additional revenue streams as well as increasing platform usage and market share.

FAST FASHION OR SUSTAINABLE FASHION: THE EFFECTS OF AGE, FAMILIARITY, AND ENVIRONMENTAL CONCERN

Elizabeth Lenihan, Siena College
Olivia Casale, Siena College
Kelsey Lane, Siena College
Dr. Cheryl Buff, Siena College

INTRODUCTION

The development and expansion of technology allows consumers to constantly be informed, more than ever, about the latest fashion trends as they emerge in the fashion industry. Fast fashion is easily available to consumers, whether that be through online stores or retail shops. The convenience, as well as the affordability, of fast fashion makes this a popular option for consumers. On the other hand, while sustainable fashion is generally more expensive, it is better for the environment and it is made more ethically than fast fashion. The goal of this research project is to understand consumers' buying behaviors and attitudes of purchasing fast fashion versus sustainable fashion. This topic is important to investigate as it provides insight into why consumers make certain purchasing decisions. This research will advance knowledge by giving marketers new inferences as to why shoppers choose fast fashion or sustainable fashion, and what factors influence these decisions. Hypotheses 1a-1c explored familiarity with fashion types. The other three hypotheses studied are: Age affects whether an individual views sustainable fashion as important; Individuals who always shop fast fashion are more likely to prefer cheap low-quality clothes, and; Most individuals purchase sustainable fashion because they are concerned about the environment.

LITERATURE REVIEW

Fashion is part of everyday life. For many people fashion is influenced by feelings and desires and it is a way to express yourself. Style is constantly changing, and consumers want the latest products to stay in trend, hence, the term "fast fashion". For instance, "fast fashion is a new term used to describe clothing collections that are based on the most recent fashion trends" (Wang, 2010, p. 8). Fast fashion companies are cycling products in and out of production faster than ever due to the advanced technological innovation and internet capabilities that the world currently possesses (Wang, 2010). "Cheap fabrics, low salaries, and worker exploitation continue to be both the products and also the casualties of the fashion industry" (Clark, 2008, p. 428).

In the past decade, fast fashion has grown tremendously due to the low-cost products that are rapidly produced. Fast fashion products require low involvement of consumers which results in less motivation to understand the process and manufacturing of the products that are produced, which leads consumers to make unconscious purchasing decisions (Wang, 2010). Fast fashion consists of products that are made with low quality materials and are designed to be worn less than 10 times (McNeill & Moore, 2015). "Fast fashion retailers have two main goals which are to reduce lead time and provide fashionable merchandise concurrently as trends emerge as a means of promoting continual economic growth" (Pookulangara & Shephard, 2013, p. 202). Each year, approximately 80 billion pieces of new clothing are purchased by consumers worldwide (Bick, Ekenga, & Halsey, 2018). Most of these clothing products are produced in China and Bangladesh, and the United States is said to be the largest consumer in the world. Approximately 3.8 billion pounds of clothing are sent to landfills each year by Americans (Bick, et al., 2018).

The article *Fast Fashion, Sustainability, and the Ethical Appeal of Luxury Brands* quotes a woman's statement regarding her feelings about getting rid of her out-of-style, unwanted clothes. "I fill up big garbage bags of things and then throw them away. It is a lot of wasted goods—some of which I may not even have worn more than once. I do feel guilty, but I have a small apartment and I cannot keep them." (Joy, et al., 2012, p. 283). Fast fashion has long term effects that some consumers are not aware of or do not even consider when purchasing this type of clothing.

Price, trends, value, and brand image are key factors that influence clothing choices (McNeill & Moore, 2015). Fast fashion is on one side of the fashion industry while sustainable fashion is on the opposite side. Sustainable clothing products are manufactured in an environmentally friendly production process, sometimes made with recycled materials and are produced to last for years (Lee, Hyun-Hwa, 2018). Indeed, many consumers would rather purchase sustainable products, however, there are large barriers to purchasing these products (Lee, Hyun-Hwa, 2018). Additionally, "consumers are assumed to have a sense of global responsibility" (Clark, 2008, p.429). Typically, people want what it is best for the environment, however, many customers are comfortable with purchasing low-cost fast fashion items and are not willing to pay a large amount of money for sustainable apparel (Lee, Hyun-Hwa, 2018).

Another term for sustainable fashion is slow fashion. Experts suggest that many consumers value ethically produced garments but are sometimes unable to purchase these products due to the higher prices. Furthermore, consumers may lack adequate knowledge about the concept of slow fashion versus fast fashion to make informed purchasing decisions (Pookulangara & Shephard, 2013). In order for consumers to make the best clothing purchasing decisions, they need to be informed about the impacts that certain fashion choices have on the environment (Pookulangara & Shephard, 2013). The individuals who are aware and against the fast fashion industry have reduced their consumption and have vowed to anti-consumption and brand avoidance (KovÃ¡cs & ZsÃka 2020). The article defines anti-consumption as "resistance towards consumption of certain products and services" and brand avoidance as "a special form of anti-consumption where consumers intentionally decide to avoid certain brands, although they have access to the product, they could afford it financially, and they have the ability to purchase it" (KovÃ¡cs & ZsÃka, 2020, p. 41).

There are many wrong perceptions regarding sustainable fashion due to the lack of available information of these fashion brands. "Sustainability is about much more than our relationship with the environment; it's about our relationship with ourselves, our communities, and our institutions" (Joy, et al., 2012, p. 274). Many assume that these sustainable brands are too expensive and are not worth the price, yet there are many benefits to buying sustainable fashion. Based on "An exploratory study of the decision processes of fast versus slow fashion consumers", the authors discovered that slow fashion consumers enjoy the fact that they will be able to keep their clothing for a long period of time, which helps them avoid purchasing regret (Watson& Yan, 2011). Also, this study found that many sustainable fashion buyers prefer quality over quantity (Watson& Yan, 2011). Many consumers who purchase sustainable fashion feel a sense of accomplishment and have an increase in self-esteem due to the high-quality products that are better for the environment (Lundblad, & Davies, 2015). When consumers purchase environmentally friendly products that use natural recycled materials, they feel like they are directly contributing to helping the environment. These individuals also make their purchases with a guilt-free conscience. These types of consumers are motivated by the thought of reducing risks for other members in society (Lundblad, & Davies, 2015).

Consumers who purchase fast fashion might do so to keep up with the latest trends, but do these consumers realize the negative environmental impacts that fast fashion has on the planet? A major question is what influences consumers to buy the products that they are consuming. Would a consumer rather purchase clothing to stay in style regardless of the environmental impacts, or do consumers look for sustainable products that will last and are not as harmful to the environment? Throughout this paper, we have studied the behavioral choices of consumers regarding fashion. We will study how consumers' shopping habits are influenced by the types of clothing that exist in the fashion industry.

RESEARCH DESIGN AND SAMPLING

Our research and data collection were conducted through a 28-question survey that was distributed to individuals through social media and email. The survey consisted of both categorical and interval style questions. The survey was not targeted at any specific demographic since we wanted to reach as many individuals as possible. The survey was open for participants to take from October 19th, 2020 to November 3rd, 2020. Following the conclusion of the survey, we cleaned and analyzed the data set. There was a total of 200 responses, and the final N was 176. The data we gathered through the survey allowed us to run tests relating to the validity of the relationships between the variables of our hypotheses.

HYPOTHESES

The following hypotheses were developed based on our review of the extant literature:

H_{1a}: Age affects whether an individual is familiar with the term "fast fashion".

H_{1b}: Age affects whether an individual is familiar with the term "sustainable fashion".

H_{1c}: There is a difference between familiarity with fast fashion and sustainable fashion.

H_2: Age affects whether an individual views sustainable fashion as important.

H_3: Individuals who always shop fast fashion are more likely to prefer cheap, low quality clothes.

H_4: Most individuals purchase sustainable fashion because they are concerned about the environment.

SURVEY DESIGN AND IMPLEMENTATION

The research follows a quantitative research approach, which places heavy emphasis on using formal, standard questions and predetermined response options in questionnaires or surveys administered to a large number of respondents (Hair, Ortinau, & Harrison, 2021). Research was conducted through an online survey, which is beneficial as there is no cost, no coding necessary, the results are ready for statistical analysis, and missing data or respondent errors can be removed (Hair, Ortinau, & Harrison, 2021, pp. 123-124). Furthermore, online surveys are a useful research method because they allow for quick data collection and have the ability to collect data from hard-to-reach samples (Hair, Ortinau, & Harrison, 2021, pp. 123-124). The survey took five to seven minutes to complete and had 46 questions. The questions varied from multiple choice questions to Likert scale questions. Questions were designed to gain a better understanding of respondents' familiarity with fast fashion and sustainable fashion, as well as understand consumers' motives behind purchasing fast fashion or sustainable fashion. The final questions consisted of demographic questions in order to gain a better understanding of the respondents' background. Overall, the questions were aimed at discovering consumers' behaviors and reasonings when buying fast fashion versus sustainable fashion.

The survey and research study were reviewed and approved by the Siena College IRB. Once the survey was complete, the team distributed the survey through social media, group chats, and personal messages. The survey was promoted on three different social media platforms: Snapchat, Facebook, and Instagram. Additionally, each team member shared the survey themselves on each of these platforms. Distributing the survey on social media and messaging allowed for a large range of respondents to have access to the survey and to complete the survey. Furthermore, some respondents shared the survey on their own social media platforms which allowed for an even bigger sample. Thus, we used convenience

based and snowball sampling methods. Through comprehensive survey design and extensive implementation, information from an expansive sample was able to be collected and analyzed.

SAMPLE PROFILE

The survey included a range of demographic questions to better understand the characteristics of respondents. The research sample size was 176 respondents. Our desired audience was not specific, as we wanted to reach as many individuals as we could. We used nonprobability methods of a convenience sample with snowballing. We used descriptive, causal research using a 28-question survey created on Qualtrics to study and identify people's perceptions of fast fashion and sustainable fashion. We used a mixture of both categorical and interval style questions. In terms of the sample profile, the findings revealed that most respondents identified as a woman (83.5%). Also, most respondents were between the ages of 18-24 years old (55.7%). Next, the majority of respondents had some college education (33.5%) or completed a four-year college degree (33.0%). Finally, most respondents of the survey were either employed full time (35.2%) or were students (23.3%). Overall, we expected that the information gathered about this group allowed for accurate judgements about a larger group.

Table 1: Sample Profile Demographics, Frequencies, and Percentages

Demographic Variables	**Demographics**	**Frequency**	**Percentage**
Gender	Woman	147	83.5
	Man	24	13.6
	Genderqueer/Non-Binary	2	1.1
	Not Listed	1	.6
	Prefer not to reply	2	1.1
Age	18-24	98	55.7
	25-34	10	5.7
	35-44	3	1.7
	45-54	24	13.6
	55-64	30	17.0
	65-74	7	4.0
	75-84	2	1.1
	85 or older	1	.6
Education Level	Less than high school	1	.6
	High school graduate	11	6.3
	Some college	59	33.5
	2-year degree	14	8.0
	4-year degree	58	33.0
	Professional degree	29	16.5
	Doctorate	3	1.7
Employment Type	Employed full time	62	35.2
	Employed part time	24	13.6
	Unemployed looking for work	4	2.3
	Unemployed not looking for work	4	2.3
	Retired	19	10.8
	Student	41	23.3
	Employed part time and student	22	12.5

Note: Research Sample N = 176

RESULTS

Data was downloaded from Qualtrics into SPSS for analysis. Descriptive statistics and quantitative tests were performed as appropriate, given the data type. Results are summarized in Table 2 below.

Table 2: Description of Hypotheses, Results, and Explanation

Hypothesis	**Test Results (statistics)**	**Hypothesis is Supported or Not Supported**
H_{1a}: Age affects whether an individual is familiar with the term "fast fashion".	One-way ANOVA: F = 5.453 p < .0005	Supported
H_{1b}: Age affects whether an individual is familiar with the term "sustainable fashion".	One-way ANOVA: F = 4.468 p < .0005	Supported
H_{1c}: There is a difference between familiarity with fast fashion and sustainable fashion.	Paired Samples T-test: "How familiar is the term 'fast fashion' to you?": μ = 3.40 SD = 1.513 "How familiar is the term 'sustainable fashion' to you?": μ = 3.06 SD = 1.293 t = 4.683 p < .0005	Supported
H_2: Age affects whether an individual views sustainable fashion as important.	One-way ANOVA: F = 1.089 p < .373	Not Supported
H_3: Individuals who always shop fast fashion are more likely to prefer cheap, low quality clothes.	Independent Samples T-test: Cheap, low quality μ = 2.46 Expensive, high quality μ = 3.79 t = -5.537 p < .0005	Supported
H_4: Most individuals purchase sustainable fashion because they are concerned about the environment.	Pearson Correlation: r = 0.486 N = 175	Supported

	$p < .0005$	

DISCUSSION

Hypothesis 1a: Age affects whether an individual is familiar with the term "fast fashion".

Our goal for hypothesis 1 was to test familiarity with fashion types. One of the questions we looked at is, "How familiar is the term fast fashion to you?" We had fairly balanced responses with a slight majority (27.3%) of respondents being moderately familiar with the term fast fashion while about a quarter (25.4%) had no familiarity with the term (Appendix, Figure 5). We also looked at how often, on average, our respondents purchased new clothing. A majority of our respondents purchase clothes a few times a year or once a month, both yielding 29.7%, and 25.8% purchase clothing more than once a month (Appendix, Figure 6). We tested this hypothesis using a One-way ANOVA, which is used to test the means across age groups. The 18-24 age group had the lowest mean of 2.82, making the youngest age group the most familiar with the term "fast fashion". The F-value was 5.453 and $p < .0005$, which indicates there is a significant relationship between age and familiarity with the term "fast fashion". From these results, we accepted hypothesis 1a: Age affects whether an individual is familiar with the term "fast fashion".

Hypothesis 1b: Age affects whether an individual is familiar with the term "sustainable fashion".

We tested this hypothesis using a One-way ANOVA. We used a Likert scale of 1-5 with verbal anchors of "Extremely familiar" (1) and "Not familiar at all" (5). The 18-24 age group had the lowest mean of 2.64, making the youngest age group the most familiar with the term "sustainable fashion". The 45-54 age group had the highest mean score of 3.71, $F = 4.468$, and $p < .0005$. Through these results, we accepted hypothesis 1b: Age affects whether an individual is familiar with the term "sustainable fashion".

Hypothesis 1c: There is a difference between familiarity with fast fashion and sustainable fashion.

To test hypothesis 1c, we used a Paired Samples T-test. We tested questions with a Likert scale of 1-5 with verbal anchors of "Extremely familiar" (1) and "Not familiar at all" (5). For the question: "How familiar is the term 'fast fashion' to you?", the mean was 3.40 and the standard deviation was 1.513. For the question: "How familiar is the term "sustainable fashion" to you?", the mean was 3.06 and the standard deviation was 1.293. The question: "How familiar is the term "fast fashion" to you?" had a higher mean score, which means that more people are familiar with the term sustainable fashion. The t-statistic of 4.683 represents a true difference in the two means, so we rejected the null hypothesis; that there is no difference between familiarity with fast fashion and sustainable fashion. Also, $p < .0005$, which indicates a significant relationship. In summary, we accepted hypothesis 1c: There is a difference between familiarity with fast fashion and sustainable fashion.

Hypothesis 2: Age affects whether an individual views sustainable fashion as important.

For hypothesis 2, we wanted to determine if there was a significant relationship between age and whether an individual views sustainable fashion as important. We asked respondents if they were familiar with the term sustainable fashion and a majority (30.7%) was moderately familiar with the term while only 16.2% was not familiar at all with the term (Appendix, Figure 7). To test this hypothesis, we evaluated the age range of our respondents and their responses to the question "I view sustainable fashion as important." We analyzed the data collected from these questions through a One-way ANOVA to explore the impact of age on the view of importance placed on sustainable fashion. We tested the question: "I view sustainable shopping as important." F was 1.089 and $p < .373$. The mean score was 2.42

on a Likert scale of 1-7 with verbal anchors of Strongly agree (1) to Strongly disagree (7). This test shows us that there is not a significant relationship between age and whether an individual views sustainable fashion as important, leading us to not support hypothesis 2. Ultimately, this indicates that sustainable fashion is viewed as important, regardless of one's age.

Hypothesis 3: Individuals who always shop fast fashion are more likely to prefer cheap low-quality clothes.

For hypothesis 3, we evaluated attitudes using a few questions. We asked our sample to respond to Question 6, "When purchasing new clothes, how often do you shop at fast fashion companies (e.g., Forever 21, Zara, H&M, Zaful, etc.)?" (Appendix, Figure 2). Additionally, to test this hypothesis, we used a One-way ANOVA. This question had a Likert scale of 1-5 with verbal anchors of "Extremely familiar" (1) and "Not familiar at all" (5), and the mean was 3.49. We then looked at Question 16, "Out of these options which product would you rather buy?" to see how many people prefer cheap, low quality products versus expensive, high quality products (Appendix, Figure 2). For the option, "Cheap, low quality", the mean was 2.46. For the option, "Expensive, high quality", the mean was 3.79. We ran an Independent Samples T-test and found a t-value of -5.537 and $p < .0005$. The t-value of -5.537 represents a relationship between the two means, so we can accept hypothesis 3; Individuals who always shop fast fashion are more likely to prefer cheap low-quality clothes.

Hypothesis 4: Most individuals purchase sustainable fashion because they are concerned about the environment.

In order to gain a better understanding of respondents' beliefs, we analyzed the responses to Question 10, "The environment is important to me." (Appendix, Figure 2). Using a 7-point Likert scale with verbal anchors of Strongly Agree (1) and Strongly Disagree (7), most people strongly agree that the environment is important to them (with a mean of 1.89). To further analyze hypothesis 4, we used a Pearson Correlation for Question 31, "It is important to me that the products I use do not harm the environment" and Question 32, "I consider the potential environmental impact of my actions when making clothing purchases" (Appendix, Figure 2). We found that there is a moderate, positive correlation between the two variables, with r being 0.486, N being 175, and $p < .0005$. A significance of .0005 indicates to accept the hypothesis that most individuals purchase sustainable fashion because they are concerned about the environment.

POST-HOC ANALYSIS

We were interested in learning more about our sample and looked at some additional questions that we asked in our survey but were not included in our hypotheses. We asked our sample to respond to the question asking, "Do you purchase fast fashion garments because there is little financial risk or because it is convenient?" (Appendix, Figure 2). We measured shopping frequency using a 5-point Likert scale with verbal anchors of Definitely yes (1) and Definitely not (5). On average, subjects said they probably do purchase fast fashion clothing because there is little financial risk. On average, subjects said that they probably do purchase fast fashion clothing because it is convenient. On average, most subjects agree that garments of sustainable fashion are superior in quality to those of fast fashion. And lastly, on average, most subjects neither agree nor disagree that garments of sustainable fashion are not trendy or fashionable (Appendix, Figure 8).

CONCLUSION AND RECOMMENDATIONS

The survey has a few limitations that have impacted the results. The convenience sample is a limitation, and a more diverse sample might have produced different results. Limitations to the survey

include access to the survey itself and bias. To begin, access was denied to participants under the age of 18 years old. Participants younger than 18 years old are part of a protected class of people and need consent from parents or guardians to complete the survey. In effect, these participants were prevented from following through with the survey. Next, most of the survey respondents identified as women and were 18-24 years old. This can cause the data to be skewed to favor this demographics' view on the research topic. Lastly, bias towards or against the research subject can skew results as well. For instance, if someone who is not knowledgeable about the fast fashion industry or the sustainable fashion industry answers the survey questions without reason, this can misrepresent the results.

The goal of this research was aimed at finding consumers' buying behaviors and attitudes towards fast fashion compared to sustainable fashion. Some key takeaways from our research are that more people are familiar with the term "sustainable fashion" versus "fast fashion". Sustainable fashion is viewed as important, regardless of one's age. Those who want cheap, low quality clothing will shop fast fashion. And lastly, most individuals purchase sustainable fashion because they are concerned about the environment. These findings are significant as they provide a greater understanding into consumer buying decisions, which will positively contribute to marketers' insights and practices. Opportunities for further research include physically going to a fast fashion or sustainable fashion store in a mall or other retail location to ask people their preferences on the fast fashion industry or the sustainable fashion industry, and why they chose to shop at the specific store they are shopping at. All in all, this research study gives marketers a greater understanding of consumers' perceptions towards fast fashion and sustainable fashion, as it provides insight into consumers' shopping preferences and reasonings for purchasing the way that they do.

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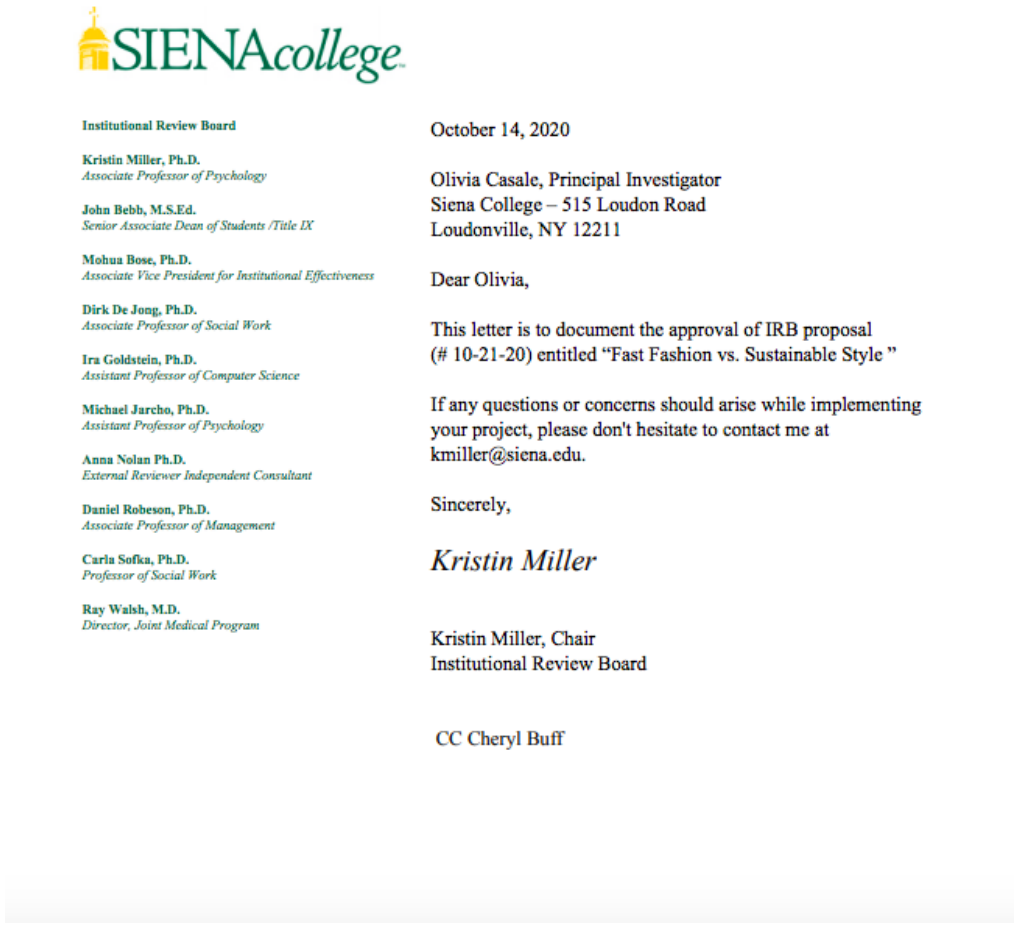
APPENDICES

Figure 1: IRB Approval Letter



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October 14, 2020

Olivia Casale, Principal Investigator
Siena College – 515 Loudon Road
Loudonville, NY 12211

Dear Olivia,

This letter is to document the approval of IRB proposal (# 10-21-20) entitled "Fast Fashion vs. Sustainable Style "

If any questions or concerns should arise while implementing your project, please don't hesitate to contact me at kmiller@siena.edu.

Sincerely,

Kristin Miller

Kristin Miller, Chair
Institutional Review Board

CC Cheryl Buff

Figure 2: Copy of Survey

Q43 The following survey is part of a research project into developing a greater understanding of consumers' behaviors of purchasing fast fashion vs. sustainable fashion. It should take approximately 5-7 minutes to complete. Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time without penalty. You will receive no direct benefits from participating in this research study. Your responses will remain anonymous, as no personal information will be requested of you in the survey. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. If you have questions at any time about the study or the procedures, I am available for contact via email at em22leni@siena.edu. You may also contact Cheryl Buff via phone at 518- 783-2321 or via email at cbuff@siena.edu. This research has been approved by Siena College Institutional Review Board: IRB# 10-21-20. Please accept our most sincere appreciation for your participation. Elizabeth Lenihan, Olivia Casale, and Kelsey Lane '21, Cheryl Buff, Ph.D. You must be 18 years of age or older to participate in this survey. Whether you decide to complete this survey or not, please consider forwarding it to others over the age of 18 years who you know, and think might be interested in participating. The survey will close on October 31,2020.

- o Yes, I am 18 or older, I have read the consent, and I wish to participate (4)
- o No, I am not 18 or older, or do not wish to participate (5)

Skip To: End of Survey If The following survey is part of a research project into developing a greater understanding of con... = No, I am not 18 or older, or do not wish to participate

End of Block: Block 2

Start of Block: Survey

Q2
Which factor is *most* important to you when you are purchasing clothing?

- o Quality (1)
- o Price (2)
- o Sustainability (3)
- o Style (4)
- o Other (5) _____

Q3
On average, how often do you purchase new clothing?

- o Once a week (1)
- o Once a month (2)
- o More than once a month (3)
- o A few times a year (4)
- o Once a year (5)

Q4 How familiar is the term "fast fashion" to you?

- o Extremely familiar (1)
- o Very familiar (2)
- o Moderately familiar (3)
- o Slightly familiar (4)
- o Not familiar at all (5)

Q45 I purchase fast fashion because...

	Strongly agree (4)	Agree (5)	Somewhat agree (6)	Neither agree nor disagree (7)	Somewhat disagree (8)	Disagree (9)	Strongly disagree (10)
I like to stay trendy/stylish. (1)	o	o	o	o	o	o	o
I wear it for a short amount of time and then get rid of it. (2)	o	o	o	o	o	o	o
I prefer to change my clothing out on a regular basis. (3)	o	o	o	o	o	o	o
I easily get bored with my wardrobe. (4)	o	o	o	o	o	o	o

Q5 How familiar is the term "sustainable fashion" to you?

- o Extremely familiar (1)
- o Very familiar (2)
- o Moderately familiar (3)
- o Slightly familiar (4)
- o Not familiar at all (5)

Q6
When purchasing new clothes, how often do you shop at fast fashion companies (e.g., Forever 21, Zara, H&M, Zaful, etc.)?

- o Always (1)
- o Most of the time (2)
- o About half the time (3)

- Sometimes (4)
- Never (5)

Q43 Overall, how concerned are you towards the environment, regarding both its future and health?

- A great deal (1)
- A lot (2)
- A moderate amount (3)
- A little (4)
- None at all (5)

Q7
I am influenced by the latest fashion trends to purchase clothes from fast fashion brands.

- Describes me extremely well (1)
- Describes me very well (2)
- Describes me moderately well (3)
- Describes me slightly well (4)
- Does not describe me (5)

Q8 Are you willing to spend more money on high quality products?

- Definitely yes (1)
- Probably yes (2)
- Might or might not (3)
- Probably not (4)
- Definitely not (5)

Q9 Do you prefer companies that recycle their products?

- Prefer a great deal (1)
- Prefer a lot (2)
- Prefer a moderate amount (3)
- Prefer slightly (4)
- Do not prefer (5)

Q10
The environment is important to me.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q46 Workers' rights are important to me.

- o Strongly agree (4)
- o Agree (5)
- o Somewhat agree (6)
- o Neither agree nor disagree (7)
- o Somewhat disagree (8)
- o Disagree (9)
- o Strongly disagree (10)

Q42 I view sustainable shopping as important.

- o Strongly agree (4)
- o Agree (5)
- o Somewhat agree (6)
- o Neither agree nor disagree (7)
- o Somewhat disagree (8)
- o Disagree (9)
- o Strongly disagree (10)

Q11
If higher prices for sustainable clothing was not a factor, would you choose sustainable fashion over fast fashion?

- o Definitely yes (1)
- o Probably yes (2)

- o Might or might not (3)
- o Probably not (4)
- o Definitely not (5)

Q12
Do you purchase fast fashion garments because...

	Definitely yes (1)	Probably yes (2)	Might or might not (3)	Probably not (4)	Definitely not (5)
there is little financial risk? (6)	o	o	o	o	o
it is convenient? (7)	o	o	o	o	o

Q14
Garments of sustainable fashion are...

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
superior in quality to those of fast fashion. (8)	o	o	o	o	o	o	o
not trendy or fashionable. (9)	o	o	o	o	o	o	o

Q16

Out of these options, which product would you rather buy?

- o Cheap, low quality (1)
- o Expensive, high quality (2)

Q17 Describe your feelings towards...

	Like a great deal (1)	Like a moderate amount (2)	Like a little (3)	Neither like nor dislike (4)	Dislike a little (5)	Dislike a moderate amount (6)	Dislike a great deal (7)
Forever 21 (22)	o	o	o	o	o	o	o
Zaful (25)	o	o	o	o	o	o	o
H&M (26)	o	o	o	o	o	o	o

Q40 Describe your feelings towards...

	Like a great deal (11)	Like a moderate amount (12)	Like a little (13)	Neither like nor dislike (14)	Dislike a little (15)	Dislike a moderate amount (16)	Dislike a great deal (17)
L.L.Bean (1)	o	o	o	o	o	o	o
Patagonia (2)	o	o	o	o	o	o	o
Lululemon Athletica (3)	o	o	o	o	o	o	o

Q23
How happy do these products make you feel, post-purchase?

	Extremely happy (1)	Moderately happy (2)	Slightly happy (3)	Neither happy nor unhappy (4)	Slightly unhappy (5)	Moderately unhappy (6)	Extremely unhappy (7)
High quality products (17)	o	o	o	o	o	o	o
Low quality products (18)	o	o	o	o	o	o	o

Q25 How satisfied are you when using these products?

	Extremely satisfied (1)	Moderately satisfied (2)	Slightly satisfied (3)	Neither satisfied nor dissatisfied (4)	Slightly dissatisfied (5)	Moderately dissatisfied (6)	Extremely dissatisfied (7)
High quality products (17)	o	o	o	o	o	o	o
Low quality products (18)	o	o	o	o	o	o	o

Q31 It is important to me that the products I use do not harm the environment.

- o Strongly agree (1)
- o Agree (2)

- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q32 I consider the potential environmental impact of my actions when making clothing purchases.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q33 Please indicate how well each of the following statement describes you:

	Describes me extremely well (8)	Describes me very well (9)	Describes me moderately well (10)	Describes me slightly well (11)	Does not describe me (12)
My purchasing habits negatively affect the environment. (8)	o	o	o	o	o
I feel as though the fast fashion industry is wasting resources. (9)	o	o	o	o	o
I am environmentally responsible. (11)	o	o	o	o	o

I am willing to change my shopping habits/preferences to be more sustainable. (12)	o	o	o	o	o
I am willing to be inconvenienced in order to take actions that are more environmentally friendly. (13)	o	o	o	o	o

Q27 What is your employment type?

- o Employed full time (1)
- o Employed part time (2)
- o Unemployed looking for work (3)
- o Unemployed not looking for work (4)
- o Retired (5)
- o Student (6)
- o Employed part time and student (8)
- o Disabled (7)

Q28 Please select your education level.

- o Less than high school (1)
- o High school graduate (2)
- o Some college (3)
- o 2 year degree (4)
- o 4 year degree (5)
- o Professional degree (6)
- o Doctorate (7)

Q29 How do you identify?

- o Woman (1)
- o Man (2)
- o Transgender/Trans woman (3)
- o Transgender/Trans man (4)
- o Genderqueer/Non-Binary (5)
- o Not Listed (6) _____
- o Prefer not to reply (7)

Q30 What is your age range?

- o Under 18 (1)
- o 18 - 24 (2)
- o 25 - 34 (3)
- o 35 - 44 (4)
- o 45 - 54 (5)
- o 55 - 64 (6)
- o 65 - 74 (7)
- o 75 - 84 (8)
- o 85 or older (9)

End of Block: Survey

RELEVANT OUTPUT AND SUPPORTING MATERIALS

Figure 3:

Figure 4:

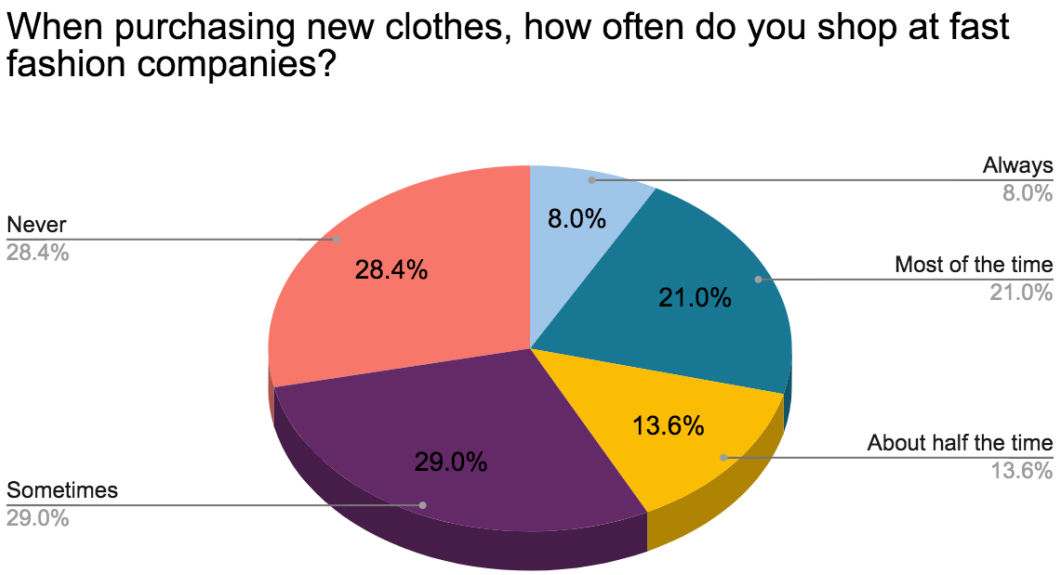

Figure 5:

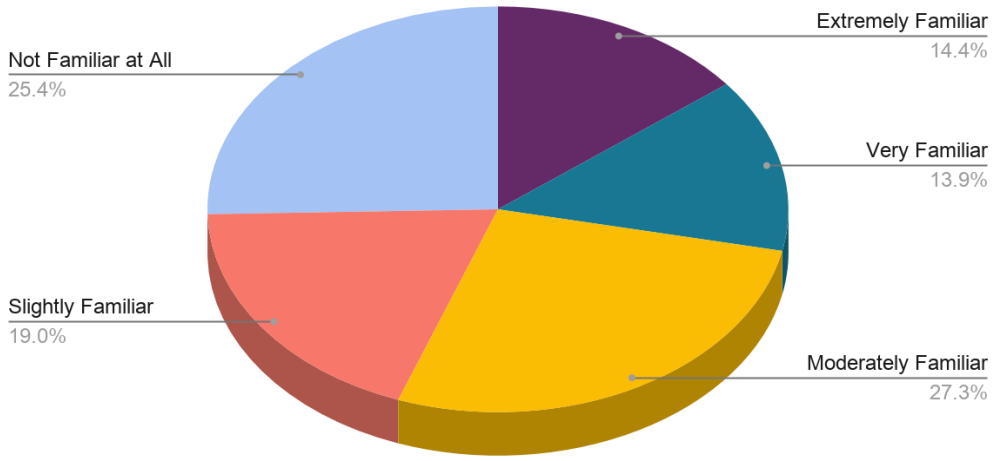

Figure 6:

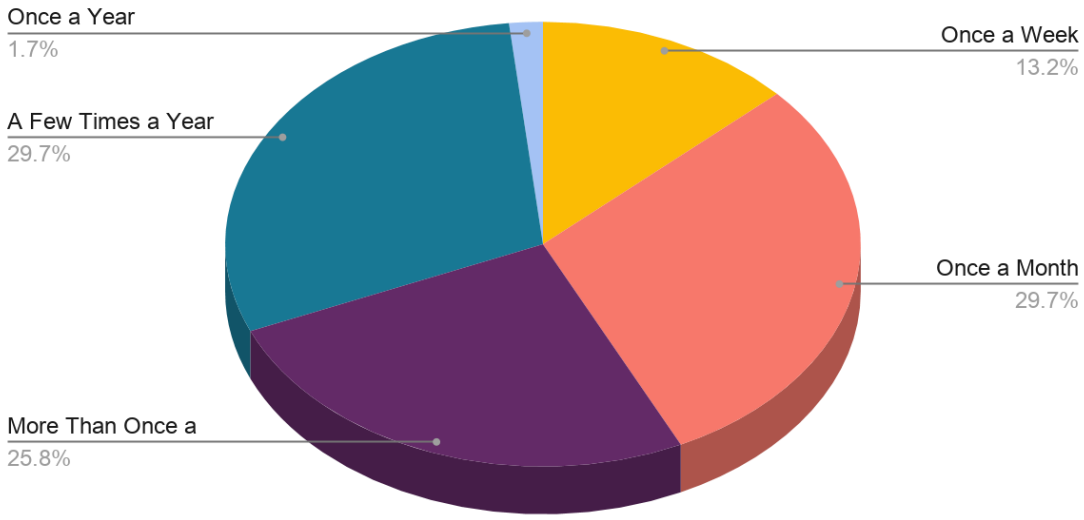

Figure 7:

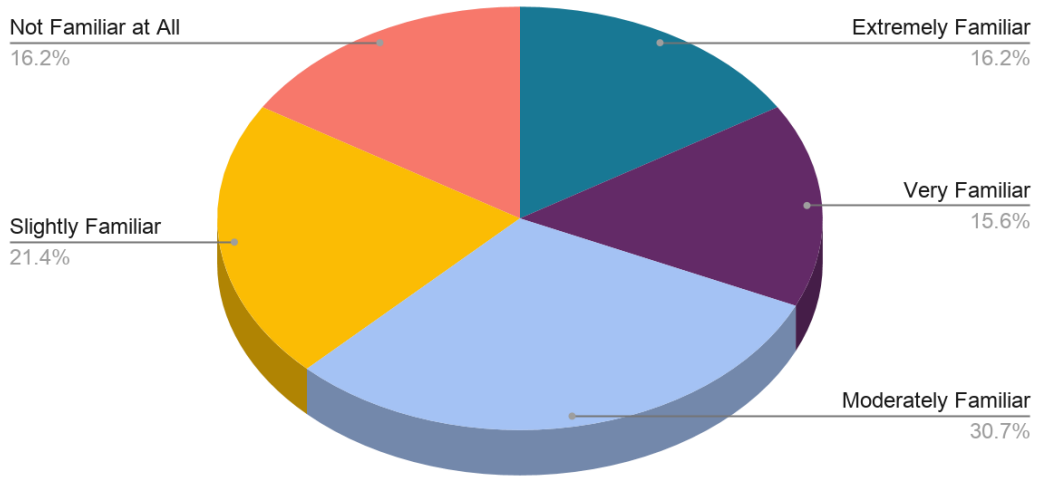

Figure 8:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you purchase fast fashion garments because... - there is little financial risk?	173	1	5	2.66	1.188
Do you purchase fast fashion garments because... - it is convenient?	172	1	5	2.35	1.046
Garments of sustainable fashion are... - superior in quality to those of fast fashion.	174	1	7	2.85	1.317
Garments of sustainable fashion are... - not trendy or fashionable.	169	1	7	4.53	1.393
Valid N (listwise)	167				

THE VALUE OF STREAMING SERVICES: WHAT ARE CONSUMERS WILLING TO PAY FOR?

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ABSTRACT

As the world dramatically adapts to a shift toward adopting online habits, streaming services have been on the rise among consumers who are neglecting cable networks (Jones, 2020, p.109). With the competition among streaming services increasing in the entertainment market, it has become more difficult for consumers to afford and choose between multiple entertainment services with competing services, costs, and technologies (Kim and Hwang, 2021, p.128). The aim of this study is to investigate factors that contribute to the willingness to pay for streaming services. We are conducting an online survey to examine the perception of streaming services and online behavior to better understand consumers' willingness to pay for streaming services. Using the extant Online Procrastination scale, we seek to understand the extent to which individuals procrastinate through use of online streaming. We predict that increased online procrastination and investment in multiple streaming services will have a high correlation with willingness to pay for a streaming service. We also predict that an increase in price will decrease consumer willingness to pay for a streaming service.

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We empower students with the knowledge and values to lead, serve and succeed in their careers, communities and lives.

The Vision of the School of Business

To be the standard of educational excellence for a diverse learning community developing business minds for today and the future.

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