Glass shatterers: how female executives use language differently than their male counterparts in quarterly earnings calls

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Abstract:

This paper examines differences in word choice between male and female executives in quarterly earnings calls with the public. Female led firms are matched to male led firms with the same SIC code in the same fiscal year and quarter and count the frequency of ethos-based words. There are significant differences in word usage. Women must reinforce their capabilities by repeated use of the word “strong”. Male executives, on the other hand do not feel obligated to reinforce their capabilities and use the word “hope” much more often than their female counterparts.

Keywords: Gender differences, earnings calls, language usage, female executives

INTRODUCTION

Earnings presentations are an important way for executive leadership to share information with stakeholders. The language that executives use to explain the company's performance can influence investors' decisions. Previous research has shown that the ethos-based language that executives use can be a red flag to the listeners (Schieber & Sherrill, 2017). It is often assumed that men and women use language differently when they lead a team. But how do men and women use language to portray credibility to the public when they are in executive leadership positions? Do male and female executives communicate ethos differently? Do women in leadership positions need to use different words than their male counterparts to convey information? If so, in what way?

It is well documented that women are often caught in a 'double-bind' as leaders: that is, if they use speech patterns that are typically associated with women (i.e. indirect, cooperative, supportive), then they may not be seen as real leaders; however, if they use more direct, typically male language, they are often seen as threatening and aggressive (e.g. Baxter, 2010; Holmes, 2007; Kanter, 1993). In this study, we investigate if women who have successfully shattered the glass ceiling and have risen to the level of executive (at least a C level) of a public company overcome this bias or if they continue to use different language than their male counterparts.

This study is a follow-up study from our previous research where we explored how the words that executives used in earnings presentation was related to the firm's stock price. Specifically, the frequency of ethos-based or credibility words were examined to look for patterns when companies were doing well, as opposed to when they were performing poorly. In this study, the same approach of examining the frequency of ethos-based or credibility words for both Female and Male executive is used to see if there is a difference in ethos-based language. Implications will be discussed.

EXISTING LITERATURE

The importance of executive language in earnings presentations should not be underestimated. Investors and other stakeholders make many decisions based upon what the executives say and present during these calls. It is common for CEOs and CFOs to use ethos-based language, or language that is used to show the company's credibility in a positive light. A synonym for *ethos* here could be "credibility." In Aristotle's *Rhetoric*, ethos is defined as "the speaker's personal character when the speech is so spoken as to make us think him credible" (Book I, chap. 2, 1356a).

Research shows that corporate writing is persuasive and designed to create support for the company or to undermine any opposition (Conaway & Wardope, 2010). When executive leadership uses negative language, it can often be a red flag to investors (Bodnoruk, Loughran, and McDonald, 2015). Conversely, executives can use more optimistic language in an honest manner to improve the company's credibility (Patelli & Pedrini, 2014; Yuthas et al, 2002).

While there is much research on gender and communication, we cannot cover all of it here. Therefore, what follows is an overview from the fields of theoretical linguistics, professional communication, sociology, and composition on gendered communication.

Much research, like Lakoff's (1975) article notes that women's language is often regarded as weak and ineffective, and women are often known to use more tentative speech. Interestingly, Fishman (1983) found that in terms of conversational speech, women typically do more of the "conversational support work" which is something like "uh huh.." and other connecting phrases that tend to keep conversations going. Maltz and Borker similarly noted that men and women typically use different types of responses. Women will use responses to show "I'm listening," while men will tend to say something more like, "I agree." Tannen (1990) also found that males' and females' communicative strategies are often different. They found that women often find matching experiences and build upon them in conversations, whereas men use opposition as a focus instead.

Gender identities can also be represented through written communication. Researcher Kanaris (1999) argued that this happens in early education and that children have deeply embedded gender identities, and through writing they present "power and powerlessness" to boys and "better writers" to girls. However, Clarke (1994) asserted that male brains are more suited to academic writing because of their more argumentative and bold writing style. Many of these authors assume that there is a "male" and "female" characteristic or style of writing. This assumption was questioned by Francis, Read, and Melling (2003) who found that very few gender markers were found when assessing anonymous university writing. And in terms of speech, in a study of engineering students, male students showed a prejudice against more "self-effacing" speaking, which is commonly attributed to female speech styles.

Judith Butler (1990, 1993) argued that gender identity is based on cultural norms and societal expectations. She writes, "Gender is an act which has been rehearsed, much as a script survives the particular actors who make use of it, but which requires individual actors in order to be actualized and reproduced as reality once again" (1990, p. 272). The language that we use and is formed by our culture and the discourse that surrounds us. Therefore, the language that CEOs and CFOs use in their earnings presentations is essentially performing executive ethos.

Because there are traditionally so few women in leadership, many books have been written to help women speak/act like a leader. Some books give advice on handling microagressions, impression management, and the obstacles that women will face in leadership (Cunningham, C., Crandall, H. M., & Dare, A. M., 2017; Decosterd, 2013; Helgesen, S., & Goldsmith, M., 2018).

Women in leadership positions are often perceived differently than males. Studies that have analyzed the gender of CEOs and their impact in advertising, including that of Jin-Ae & Hong (2019) found that there were gender differences regarding how men and women responded to audio advertising based on the gender of the CEO and customer in the ad. For example, Jin-Ae & Hong (2019) found, "There was a relationship between a male speaker's perceived authoritativeness and audiences' favorability to the ad, but no such relationship when the speaker was a woman" (p. 1). Audiences also seemed to focus more on the female character's likeability than her authoritativeness and showed more favorable attitudes towards the male CEO character.

However, in terms of language, Liu and Nguyen (2019) found that female CEOs tend to use a more neutral tone when discussing firm performance, by using less positive and negative words. Similarly, Baxter (2010) found that female leaders tend to use a "double-voiced discourse" when they are in a male dominated corporation to help their own agenda but also to listen to others' points of view. The author explains that women do this by using a warm speaking style, politeness, and indirect engagement. And Loughran and McDonald (2015) found that larger corporations tend to use more female pronouns in their annual reports.

(Please note, this literature review does not even begin to cover the amazing depth of research that is covered on women of color in executive leadership positions, or of the experiences of executives who are not cis-gendered, as race and gender identity were not explicitly discussed in the earnings presentations we analyzed. For an overview of that topic, please see Sanchez & Davis, 2010).

However, few studies have compared the ethos-based language used by female and male CEOs and CFOs in earnings presentations. Building on the work of these previous studies, we posit that women executives do speak differently when discussing company performance using earnings call transcripts as our venue and ethos-based words as our differentiation.

DATA AND METHODOLOGY

A list of C level executives was obtained from Compustat IQ via Wharton Research Data Service (WRDS). The gender of the executive, the company name, the four-digit standard industry classification or SIC code, and the fiscal year and fiscal quarter wase also obtained from Compustat.

This list was sorted to obtain only those executives who were identified as female. Each female executive firm was matched to a firm in the same industry using the four digit SIC code that had a male executive. If the female executive was identified as CEO then the matching firm was required to have a male CEO. If the female executive was identified as a C level executive other than CEO, then the matching firm had a male executive that was something other than CEO. This consisted primarily of CFOs, but there were some COOs and CMOs.

Transcripts for quarterly earnings reports from fiscal year 2018 quarter one, up to fiscal year 2020 were downloaded from Seeking Alpha. The earnings reports were obtained for the female executive firms and the matched male executive firms. The reports were matched on the same quarter and year. Thus, if there were three quarters of earnings calls for a female CEO, the same three fiscal quarters for the matching male CEO firm was used, even if there were more reports available. This keeps the number of earnings call transcripts identical for female and male executives.

The executive could have changed within our timeframe as long as the gender remained the same. For example, if a female CEO was replaced by another female CEO then the matched firm did not change.

This created a set of fifty matched firms, with 648 total quarterly earnings report, as shown in table 1(Appendix) for the firms used. In some instances, a firm had multiple female executives. These firms were matched to a firm with multiple male executives. The word usage of each executive was counted. Thus, the total number of earnings reports is less than the total number of executives compared.

Each earnings report was parsed both for the female executives and the male executives and counted the frequency of certain “ethos” words. The fifteen words searched for are:

Strong, firm, responsible, ethic, trust, reliable, confident, commit, discipline, steady, solid, value, hope, duty, and believe.

Every time one of our male or female executives said one of these words it counted as an instance. If a firm with a female CFO was matched to a male led firm, only the instances when the CFO said the words counted. If the match was on CEOs, then only the CEO speaking the words counted. A total count was obtained for each word for each relevant executive.

The null hypothesis is that there is no difference in word choice or word usage of these ethos words between male and female executives. The difference between the mean count for each word used by female executives and the mean count for each word usage by the male executives, should be zero. Thus, the null hypothesis is:

$H_{o:}$ female mean count – male mean count = 0

If there is a difference in word choice between female and male executives than the difference between the female mean count and the male mean count should have an absolute value greater than zero. Thus, the alternative hypothesis is:

$H_{1:}$ female mean count – male mean count <> 0

The mean word count by gender for each word in our list is compared. A pooled t-test is used to test the null hypothesis[1]. The same analysis is then performed using only the CEO level executives for both the female firms and the matched male firms. This is a subset of the first analysis, we did not find new matches for the female firms. The hypotheses remain the same. Our null hypothesis is that there is no difference in word usage between female CEOs and male CEOs.

RESULTS

In the initial analysis using all the C level executives, the null hypothesis was found to be incorrect in four instances. There are four words with a statistically significant difference in usage between female and male executives. The results are shown in table 2 (Appendix).

The first word with a significant difference is “strong”. Women executives use this word much more often than their male counterparts. This word had the strongest statistical difference as the probability that this difference was simply by chance is less than .0001 %.

Two other words were also used more by women than men but not with as strong a difference. “Firm” and “confident” were used more by women executives than male executives. The significance of the difference was within an alpha of 10%.

[1] A t-test that did not assume a common variance in the means was also used and the results were not statistically different. These results are not included here.

There was only one word in our list that male executives used more than women that had a statistical significance. That is “hope”. Male executives use the word “hope” at a greater frequency than their female counterparts.

Next, just the CEO level executives are considered. The same analysis is performed using only the female CEO and their matching male counterparts. The matched firms remain the same, so this is a subset of the first analysis. The results are shown in Table 3 (Appendix)

The results are found to be different when only considering CEOs. The only word that is used more by female CEOs than male CEOs is “strong”. Again, this is a statistically significant difference at an alpha of less than 1%.

Once again. Male CEOs are found to use “hope” more than the female CEOs. The significance of this difference is higher when viewing only CEOs.

Some other statistically significant differences are found that are not the same as when analyzing all the executives. Male CEOs use “trust” and “discipline” more than the female CEOs.

CONCLUSION AND DISCUSSION

The words that executives who participate in the public quarterly earnings calls use can reflect not only the current climate in their company but are also mediated by how they present their company to stakeholders. This analysis shows clear differences in the way male and female executives present this financial information during earnings calls.

The one word with the most significant differences is “strong”. Women executives, whether only CEOs or all of the C level executives in our study are considered, use the word “strong” more than their male counter parts. This is consistent with the findings by other researchers, Liu and Nguyen (2019) who found that female executives tend to adapt their language styles to avoid any negative gender stereotyping.

Further, if executives’ use of optimistic language in an honest manner can improve the company’s credibility (Patelli & Pedrini, 2014; Yuthas et al, 2002), can female executives’ use of the word “strong” improve outsiders’ views of the female executives? Will repeatedly using the word “strong” develop a greater outside perception that the executive is indeed strong and able to lead the company? It is possible that female executives tend to use “stronger” language to perform their own strength in leadership.

Two other words used by female executives more than male executives are “firm” and “confident”. These two words do not carry the same strength in statistical significance when the differences between make and female usage are examined, but there is a difference. This is again consistent with the idea that women executives need to reinforce their image as a leader. Both “firm” and “confident” are words that portray a level of understanding and faith in one’s plans.

Conversely, men say "hope" more than women. This is true for all the executives we examined, but the difference is even greater when examining CEO level executives only. As Schieber and Sherrill (2017) previously found, when the word “hope” is combined with the subjects “I” or “We,” the phrase often becomes a red flag signal that the communicator is concealing negative financial information about the company. According to Banerjee, Humphery-Jenner, Nanda, & Tham (2018), overconfident CEOs will often conceal negative information about the company in their communications. Thus, it could be inferred that male CEOs are more overconfident than their female counterparts.

Davis et al (2015) find that female CEOs tend to use less optimistic language in conference calls, which is consistent with our finding that male CEOs use the word “hope” more than female

CEOs. If the language that CEOs and CFOs use in their earnings presentations is essentially performing executive ethos, then are women executives avoiding the word “hope” as it represents results based not on their actions, but on exogenous variables? Are female executives building a more performance-based culture than their male counterparts?

This can also be seen as the other side of the argument for women executives needing to reinforce their identity as a leader. Hope suggests that a solid plan may not exist or that any plans in place are subject to doubt. Women executives avoid using the word “hope” as it could serve to weaken their perception as a leader instead of strengthening it.

Unfortunately, this is a relatively small sample size as the number of female executives in business is small. Fortunately, that number is growing and hopefully the number of female leaders will continue to expand. As this occurs, it will be interesting to see if the differences in ethos words used in earnings calls (or other venues) continues or will differences disappear as people become familiar with the idea of females as leaders? Will the need to stress one’s leadership abilities via word usage continue or will gender no longer be a significant variable in word choice?

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Table 1: List of companies with female executives and matched company with male executive and number of quarterly earnings reports from each.

	Companies with Female Executives	Number of earnings reports	Matched Company with Male Executives	Number of earnings reports
1	ABERCROMBIE & FITCH -CL A	11	ZUMIEZ INC	11
2	AMERICAN STATES WATER CO	6	CALIFORNIA WATER SERVICE	6
3	AMN HEALTHCARE SERVICES INC	7	KORN FERRY	7
4	ARISTA NETWORKS INC	7	JUNIPER	7
5	AUTONATION INC	6	LITHIA MOTORS	6
6	AXCELIS TECHNOLOGIES INC	7	ICHOR	7
7	BIO-RAD LABORATORIES INC	4	AGILENT TECH	4
8	CLEARWATER PAPER	7	AVERY DENISON	7
9	DUKE ENERGY	7	AVISTA	7
10	EASTERLY GOVERNMENT	7	COUSINS PROPERTIES	7
11	INNOPHOS	6	TRONOX	6
12	ITT	3	GRACO	3
13	KOHLS	1	JC PENNEY	1
14	NAVIGANT	5	ACCENTURE	5
15	NEENAH PAPER	6	SCHWEITZER	6
16	NUTRISYSTEM	5	SCHOOL SPECIALTY	5
17	NVENT	10	VALMONT INDUSTRIES INC	10
18	ULTIMATE SOFTWARE	2	QUALYS	2
19	CHEVRON CORP	3	MARATHON PETROLEUM	3
20	WILLIAMS-SONOMA INC	18	LIQUIDITY SERVICES	18
21	ADVANCED MICRO DEVICES	9	XILINX INC	9
22	PEABODY ENERGY CORP	7	WARRIOR MET COAL INC	7
23	RE/MAX HOLDINGS INC	5	VECTOR GROUP LTD	5
24	GAP INC	10	URBAN OUTFITTERS INC	10
25	ANDERSONS	1	UNIVERSAL CORP/VA	1

Table 1: Continued

	Companies with Female Executives	Number of earnings reports	Matched Company with Male Executives	Number of earnings reports
26	GENERAL DYNAMICS CORP	8	THE BOEING	8
27	SLEEP NUMBER CORP	7	TEMPUR SEALY	7
28	CHILDREN'S PLACE	5	TAILORED BRANDS	5
29	ULTA BEAUTY INC	9	SALLY BEAUTY	9
30	LENNAR CORP	7	PULTE GROUP	7
31	PG & E	3	PUBLIC SERVICE ENTERPRISE	3
32	TUESDAY MORNING CORP	7	PRICESMART	7
33	DUNKIN' BRANDS GROUP INC	7	PAPA JOHN'S	7
34	TECHNIPFMC PLC	7	OCEANEERING	7
35	DAKTRONICS INC	8	NEWELL BRANDS	8
36	TUPPERWARE BRANDS CORP	6	MYERS INDUSTRIES	6
37	ROGERS CORP	1	JABIL	1
38	PLANTRONICS INC	6	INSEEGO	6
39	MARRIOTT INTL INC	8	HILTON WORLDWIDE	8
40	CHICO'S	7	FRANCESCA	7
41	TELEDYNE TECHNOLOGIES INC	3	ESTERLINE TECH	3
42	OCCIDENTAL PETROLEUM CORP	7	EOG RESOURCES	7
43	MACY'S	7	DOLLAR TREE	7
44	ARISTA NETWORKS INC	9	DIGI INT'L	9
45	AON PLC	4	CORVEL	4
46	BEST BUY CO INC	10	CONN'S INC	10
47	CRACKER BARREL OLD CTRY STOR	7	CHUY'S HOLDINGS INC	7
48	RED ROBIN GOURMET BURGERS	7	CHIPOTLE MEXICAN GRILL INC	7
49	CIT GROUP INC	7	BANK OF HAWAII	7
50	AMERISAFE INC	7	AMERICAN INT'L GROUP	7

Table 2: This table shows the mean counts for each word by gender. The standard deviations ae included. The results of the t-test and the P values are also included. Three *** indicates that this is significant at the 1% level, two **s indicates it is significant at the 5% level, and one * indicates that the results are significant at the 10% level.

This is all C level executives

n=684

	Female mean	Female std dev	Male mean	Male std dev	t-value	P value	
strong	5.8328	5.6218	4.261	4.8123	3.92	<.0001	***
firm	0.2375	0.9967	0.129	0.435	1.84	0.0658	*
responsible	0.0733	0.3028	0.0674	0.2943	0.26	0.7976	
ethic	0.0117	0.1078	0.0088	0.0935	0.38	0.7045	
trust	0.0733	0.3123	0.1261	0.519	-1.61	0.108	
reliable	0.0704	0.3691	0.0352	0.2743	1.41	0.158	
confident	0.9677	1.6203	0.7713	1.4554	1.67	0.0962	*
commit	1.1085	1.8479	0.8944	2.1586	1.39	0.1646	
discipline	0.522	0.9868	0.607	1.5561	-0.85	0.3944	
steady	0.2199	0.6148	0.2346	0.7731	-0.27	0.7841	
solid	0.7654	1.1823	0.7859	1.4281	-0.2	0.838	
value	2.2405	3.1108	2.1848	3.3883	0.22	0.8231	
hope	0.393	0.758	0.5249	1.0103	-1.93	0.0541	*
duty	0.0088	0.0935	0.0293	0.3502	-1.05	0.2961	
believe	2.6129	2.925	2.5836	3.4226	0.12	0.9043	

Table 3: This table shows the mean counts for each word by gender for CEO level executives only. The standard deviations ae included. The results of the t-test and the P values are also included. Three *** indicates that this is significant at the 1% level, two **s indicates it is significant at the 5% level, and one * indicates that the results are significant at the 10% level.

This is CEO only

n=334					Pooled		
	Female mean	Female std dev	Male mean	Male std dev	t-value	P value	
strong	8.0299	6.0205	6.0359	5.3626	3.2	0.0015	***
firm	0.2216	0.6248	0.2156	0.5716	0.09	0.9272	
responsible	0.1078	0.3645	0.1198	0.3927	-0.29	0.7729	
ethic	0.018	0.1332	0.018	0.1332	0	1	
trust	0.1198	0.3927	0.2575	0.7195	-2.17	0.0306	**
reliable	0.1198	0.4884	0.0659	0.3824	1.12	0.2624	
confident	1.4611	1.8227	1.3892	1.7998	0.36	0.7172	
commit	1.4371	2.0755	1.515	2.883	-0.28	0.7772	
discipline	0.503	0.9748	1.0539	2.0689	-3.11	0.002	***
steady	0.3353	0.7413	0.3892	1.0346	-0.55	0.5846	
solid	1.1377	1.3484	1.2575	1.7595	-0.7	0.4856	
value	3.2515	3.8476	3.7485	4.1431	-1.14	0.2568	
hope	0.497	0.7674	0.7964	1.2151	-2.69	0.0075	***
duty	0	0	0.018	0.1726	-1.34	0.1796	
believe	3.6228	3.4756	3.8614	3.8296	-0.6	0.5518	