

The Impact of Gender & Ethnicity Quotas on Diversity Characteristics in Firm Boards

Hannah Clarke

MSc Thesis 2022

Accounting, Auditing, and Control

Erasmus School of Economics

Abstract

In this paper I explore the change in board characteristics after two California board quotas targeting women and underrepresented groups in 2018-2021. I find that in the period following the 2018 gender quota and before the establishment of the diversity quota, there is a significant increase of people of color serving on the board. There is an additional average increase of female POC serving in the executive suite. I find that before the second California quota required firms to have at least one POC serving on the board by the end of 2021, 63% of firms already met this goal in 2020.

Key words: corporate governance, quota effects, feminist theory, board diversity



Disclaimer: The views expressed in this paper belong solely to the author, and do not necessarily reflect the views of the thesis advisor, second reader, or university.

Table of Contents

1.0 Introduction	1
2.0 Literature Review	3
2.1 Race and Gender Intersection	3
2.2 Non-Performance Examination of Quotas	4
2.3 The California Setting	5
3.0 Hypotheses	6
3.1 Presence of POC	6
3.2 Female POC in the C-Suite	7
3.3 Pre-Diversity Quota Compliance	8
4.0 Data & Methodology	9
5.0 Results	12
5.1 Variable Definition	12
5.2 Summary Statistics	13
5.3 Preliminary Findings	15
5.4 Supplementary Findings	16
5.5 Statistical Analysis	18
6.0 Conclusion	21
6.1 Limitations	20
6.2 Future Research	21
7.0 References	23
8.0 Appendix	25

1.0 Introduction

From the first moment that the first gender quota for firm boards was established in Norway, many countries throughout the European continent have been gradually implementing similar quotas. Norway's quota was proposed as early as 2003, and eventually made into law in 2005 (Eckbo et. al., 2019). The following twenty years saw the rise of mandatory board gender quotas in some form throughout many European countries, namely Germany, France, Italy, and Belgium (Ekin, 2018). In countries that do not have mandatory board gender quotas, voluntary ones are also in many. Some examples of voluntary board gender quotas include the Netherlands, Austria, and Spain (Mors & Wiersema, 2016). Looking towards the rest of the world, by the time many European countries had enacted either voluntary or mandatory quotas of this sort, neither existed in the United States.

In August 2018, California became the first American state to match many European countries and pass a gender quota. The quota would affect every publicly traded firm with operation mainly occurring in California, regardless of the headquarters listed on tax records. Under the quota, every firm matching this criterion was required to have at least one female member on the board by the end of 2019. By the end of 2021, firms were required to have 1 to 3 additional women depending on whether the board size is 4 or less, 5, or 6 or more (California Legislative Information, 2018) In September 2020, a second diversity related quota was passed in California. With an identical structure to the gender quota, this quota (from now on referred to as "the California diversity quota") affected those belonging to "underrepresented groups," which the California Secretary of State defines as an individual who identifies as "Black, African-American, Hispanic, Latino, Asian, Pacific Islander, Native American, Native Hawaiian or Alaska Native or as gay, lesbian, bisexual, or transgender." From this point on, the various racial and ethnic groups mentioned by the Secretary of State shall be referred to collectively as people of color (POC). Additionally, the second quota stated that individuals from underrepresented communities could also fulfill the requirements of the first quota if these individuals identified as female. Finally, affected firms were required to submit a report to the California Secretary of State detailing the number of women and individuals from underrepresented groups each firm had on their board of directors. Each of these reports from compliant firms was compiled and published in the March 2022 Diversity on Boards Report. With these two quotas in place, the number of racial and ethnic minorities, as well as the number of women and members of the LGBT+ community were set to increase across California boards.

However, in Spring 2022, both quotas were repealed only a few years after their introduction. In April 2022, the diversity quota was deemed unconstitutional in California courts, and later in May 2022 so was the gender quota (Post, 2022). Although the quotas have been repealed at the time of this paper's conception, the March report listing the firms in compliance has already come out. The two quotas have been in place for a few years as legally mandated, so there is some ability to garner progress in terms of firm compliance. The extent of a firm's willingness to comply with the two quotas relates to the conversation around firm motivation. If a firm complies with the quota to a larger extent than necessary,

what does it say about that firm? Is the firm complying this way because it exists in a progressive environment? Or is it simply attempting to appear progressive on the surface without making true, deeper changes.

Before these questions can be answered, first the effects of the quota must be examined in much deeper detail. Prior to this paper, there existed no full database of all the firms affected by these California quotas alongside the details of their compliance. This paper aims to contribute to the intriguing questions surrounding the first ever American gender and diversity board quotas. Through an extensive and meticulous collection process, I have hand collected data for every California company affected by these two quotas. Throughout the four-year time period spanning from the introduction of the gender quota (2018) to the repeal of both quotas (2022), I have collected data on the number of women and POC on firm boards, specifically noting how the amounts changed over the four years. I have also noted the number of POC and female POC in the C-Suite, as this way I can analyze how many individuals of color are progressing to the executive suite over the time frame of these quotas.

In this paper I have three hypotheses concerning the data I collected. My first hypothesis is that the number of POC on firm boards will increase in the years following the gender board quota. This hypothesis is motivated by the idea of spillover effects specifically springing from a more progressive business environment. Because more women are required on firm boards, firms may also want to increase the number of POC as well. This could be because of a genuine company culture that strives towards diversity. It could also be because firms see that progressive laws are being implemented and so they may feel pressured to appear more progressive to customers.

My second hypothesis is that following both the gender and diversity quotas, the number of female POC will increase in the C-Suite. Female POC are affected by the intersectionality of being both a woman and POC, two groups that historically are not treated equal to white males in company representation (CWDI 2020, Deloitte 2021). Because of the fact that this group feels both these affects, the change in representation in firms may be different. This group will be affected by the gender quota, but it will also be affected by the potential increase of POC on firm boards previously mentioned. The reason I am focusing on the C-Suite is because those in the C-Suite are generally the most public and more well-known people in a firm. If a firm is becoming more diverse, they may choose to showcase this diversity where the public can most easily see it. This theory ties back to signaling, and the assumption that a firm will want to appear more progressive to the public.

My final hypothesis naturally stems from these aforementioned arguments. I hypothesize that firms will have been increasing the number of POC on the board of directors before they are legally required to under the diversity quota. I discuss the theory that many firms will already comply with the 2021 diversity quota before it is necessary. This is likely due to both the increasingly progressive business environment in California, and the desire to pander to customer demand for diversity.

To test these hypotheses, I use a Wilcoxon Test to evaluate the statistical significance of my data. I show that firms increased the median number of POC on firm boards in 2019-2020, which are the years following the California gender quota. This number is significant at the 5% level. Additionally, I find that while there is a numerical increase of female POC in

the C-Suite, it is not statistically significant at the 5% level. Finally, I find that 63% of firms were already in compliance with the diversity quota in the year before it came into law.

Through this paper I present a never-before-seen comprehensive data set focusing on the California quota years. I add to the literature on corporate governance, feminist, and race theory, and I bring attention to the ways gender quotas could affect other disenfranchised groups in a society. I open the door for further research opportunities into the first ever but short-lived American diversity quotas for firm boards.

2.0 Literature Review

Worldwide, organizations regularly prove the existence of a disparity between men and women in many different positions (Dixon-Fyle, et. al., 2020). This can extend from politics to business, and especially is true for firm boards. To try and minimize this, many governments have implemented some form of legislation to combat this apparent difference in treatment which can result in awarding women less pay or power. Usually in the form of quotas, these aim to require the hiring of more women or people of color (POC), in order to elevate the underrepresented group to an equal level (California Legislative Information, 2020).

Academic research on this topic seeks to understand the workings of a quota as well as which factors are more likely to allow for more underrepresented groups to rise up in their fields. For example, research shows that if there are women in the C-Suite, and especially if there is a woman running the company, then there tends to be more women on the board as compared to companies without women in these positions (CWDI 2020, Deloitte 2021). Nevertheless, there are still only around 5% of women holding executive positions in the United States (Flabbi et. al, 2016).

The goal of this paper is to exploit a research setting that is related to gender, ethnicity, and the combination of both effects, therefore producing findings that can impact the literature on these topics. As discussed in the introduction, the first quota of interest in California is the gender quota. It follows that it has the potential to be more pivotal due to the shift from no quota to having a quota. Since there is currently no literature containing the exact focus and methodology as this paper, it becomes necessary to lay the foundation with literature that inspired each different facet. The following is a collection of literature that covers gender, race, or quota effects, as these three together mirror the contents of this paper.

2.1 Race & Gender Intersection

An increasing trend in literature has shifted the view away from simply looking at gender or race effects in society and looking at the intersection between the two. In other words, what is the experience for women who are also people of color? Modern feminist and race theory has developed the idea of intersectionality (Crenshaw, 1989). This is the idea that

race, gender, and class overlap, so that individuals have experiences as a result of the combination of belonging to multiple groups. Therefore, under this theory, female people of color experience effects of their race and gender together, in a way that is unique than just one or the other separately. As this applies to regular life, this presents itself to women of color through experiences that are more negative than if these individuals had just belonged to one group.

In the workplace, studies document more discrimination, less pay, and a harder time finding a job for women who are POC than for any other group (Kalev & Deutsch 2018, Browne & Misra 2003). These obstacles result in the lack of women POC in board or C-suite positions (Fairfax 2005, Gore-mann 2020). Combined with the already existing gender gap in the workplace, the difficulty faced by people of color creates room for research on how this group is affected by diversity quotas. While there is documented evidence that gender quotas are effective in lessening inequality between men and women, there is less evidence on how it impacts female POC specifically. The California setting is optimal for this research, as it provides a gender quota as well as a second diversity quota. The coverage of both these themes allows for a unique chance to analyze the possibility for intersectionality, specifically the effect on female POC and therefore are affected by both quotas.

Of the current literature that exists, the insight by Fairfax written in 2005 comes the closest to mimicking the contents of this paper, as it reflects on the experiences of board members who are POC, women, and female POC. Few studies capture the effects of all three categories specifically for individuals on firm boards, so this distinct angle is critical. This paper takes inspiration from that approach but also factors in the effects of quotas on these different underrepresented groups, and therefore aims to be a unique contribution through revealing the intersection of these effects.

2.2 Non-Performance Examination of Quotas

Due to the landmark status of Norway's firm quota implementation in 2003, many large studies focus on this setting, especially examining the change in firm performance through a difference-in-difference model (Ahern & Dittmar 2012, Eckbo et. al. 2019). Firm performance is a commonly used indicator when examining the effects of a quota, however as the body of gender quota literature increased, as well as the number of countries implementing quotas, research evolved to examine other factors that could attempt to quantify the success of a quota. These factors go beyond firm performance and examine how effective a quota was at lessening difference facets of inequality between men and women. One option is examining the difference in turnover rate after the establishment of a quota (Ferreira et. al., 2017). Findings indicate a decrease in turnover for women in the French setting, which shows a benefit of increased job stability following the quota.

This study however also highlights the potential for classism, as this effect varies depending on the socioeconomic background of the women. It is not the only study to bring awareness to this. A 2021 Danish based study examined how the hiring practices of firms change after a gender quota implementation (Chevrot-Bianco, 2021). While the quota was

intended to aid all women towards becoming equal to men in similar positions, the unintended consequence was that unforeseen preferences arose. Firms show a tendency to prefer high-class women with substantial experience, and therefore the quota did not help women of every background. The results of this study brought attention to the idea that discrimination can come in many forms. While the quota aimed to alleviate gender prejudice, a prejudice against low class women rose to fill the place. Both of the aforementioned studies discover that a quota can have effects and effect certain groups that were not initially intended. This paper will attempt something similar, rather for POC than for people from different societal backgrounds. Additionally, this study is also similar due to the examination of quota effects that are not related to monetary outcomes like firm performance.

Similar to class-sex intersectionality, many studies examine quota effectiveness in terms of how many women were in higher management positions (such as the board of directors or C-Suite) following a quota. A 2020 study on the aftermath of an Italian gender quota showed that, although the quota improved the presence of women on firm boards, there was almost no increase in women holding top management or earning positions (Madia & Weber 2020). This paper attempts to expand on this same idea by tracking not only the number of women in top positions, but specifically women POC. The goal is to add ethnicity to this discussion of quota effectiveness, putting pressure on firms to add not just sex but also race to the discussion of who should be leading firms.

2.3 The California Setting

While board gender quotas are legalized in many countries, California is currently the only state in America to have passed such a quota. As the quota was legislated fairly recently compared to other examples, there is not as much literature covering the quota effects as there is for many European quota settings. In the limited research that exists, the focus of research tends to be on purely economic results, such as performance indicators or firm value fluctuation (Greene et. al. 2019, von Meyerinck et. al. 2019). Research also covers fields of the implication behind sentiment in voting indications (Gertsberg et. al. 2021). Nevertheless, the limited research creates a clear opportunity for further investigation into this unique setting.

One aspect that makes the California gender quota unique and ripe for analysis is the diversity quota that was passed two years after. As an important aspect of this paper is the intersection of race and gender in the corporate world, the two California quotas provide a back-to-back opportunity for both women and POC to be uplifted to the firm board. Since the diversity bill is more recent and thus has less literary coverage, this paper will serve to bring awareness to and utilization of this unique research setting.

3.0 Hypotheses

3.1 Presence of POC

As this paper is heavily inspired by gender quota literature, the focus is primarily on this. The motivation behind the following hypotheses lies in examining the spillover effects of quotas. Nearly all previous literature on the effects of quotas in any setting demonstrates that often there are unintended consequences after the establishment of a quota. When speaking about gender quotas, the intent behind these quotas is to decrease the inequality between men and women in society, whether in terms of the wage gap or opportunities available. Therefore, any results following that are not strictly related to movement of inequality would be unintended consequences. In the case of other gender quota studies, this could be the revelation that only women in higher social positions are eligible for candidacy, thus casting light on the inequality between women of different classes (Chevrot-Bianco, 2021). It may be the case that a quota law succeeds in decreasing inequality between genders, but in doing so highlights inequality of a different kind. Therefore, the passing of the California gender quota may cause the lack of diversity regarding race and ethnicity to be highlighted. While not required to be law, more firms may then increase the number of POC on the board.

Hypothesis 1: The gender quota will increase the presence of non-white board members (POC) on the boards of California-based firms.

The passing of any quota can be seen as a reflection of progressive values in a society. This holds true for gender quotas. A quota aims to diminish inequality, a mentality that is often connected with other progressive initiatives. The content of the quota is associated with views that are deemed important by that society. For example, a country that takes a firm stance on decreasing gender inequality likely contains a population that cares about this issue. With society becoming more progressive, it follows that it will begin to work on lessening other types of inequality. Firms see the values society is holding and may wish to reflect those back. Race and gender inequality is a commonly discussed point, and a progressive society tends to seek to lessen this. If firms follow this same line of reasoning, they may take a step further than just abiding by the regulation of the gender quota, and they may begin electing more POC to the board to fit in with the progressive societal views around them. So the firms in California may wish to reflect the diversity of the state by not just appointing more women on the board, but more POC as well. California is considered one of the more progressive states in the U.S., so the firms located there may wish to reflect the progressive attitude of the people by increasing board diversity.

Relating closely to this, firms may have a similar line of reasoning but choose to apply it in a different way. Following the signaling hypothesis for firm decisions, firms could try to “kill two birds with one stone” when electing board members and choose a female candidate who is also a POC. Since there is a limited amount of space on firm boards, firms may try to utilize that limitation by selecting candidates that satisfy the criterion of both quotas. This way firms can appear more progressive, potentially winning public favor, while also following the law requirements. Noting which year the increases happen can help

distinguish which effect is likely causing the change, as before 2020 the diversity quota was not in effect. Nevertheless, whether the reasoning is due to firm signaling or an attempt to utilize scarce resources, it is a possibility that the presence of women who are also POC will increase on firm boards.

However, one important point to note is the potential lack of qualified candidates which would heavily impact the hypothesized increase of female POC numbers. A common theory in gender quota literature states that the availability of qualified candidates limits a firm's ability to elect as many female candidates as the otherwise would have. This theory is often used when questioning whether firm boards are inherently sexist, but a version of this thinking can be applied here. If the pool of candidates for qualified female board members is limited, the pool for qualified female POC is likely even more limited. Therefore, firms may wish to elect female POC for the reasons previously mentioned, however they may not be able to due to the availability. For this reason, it is also likely that there will be no increase of female POC on the board.

3.2 Female POC in the C-Suite

The theory behind this second hypothesis can be closely linked to the theory of the second hypothesis. Whether due to the signaling motivation or wishing to check off two criteria, firms may appoint a female POC to a position such as CEO, CFO, etc. Additionally, firms may be faced with a lack of options, and so cannot or wish not to appoint a female POC to one of these positions. The reasoning for this hypothesis goes deeper than this, however. Previous studies note that firms with a large female presence on the board are more likely to have a female CEO (Madia & Weber 2020). The same may be true for female POC on the board. Therefore, for this hypothesis it is necessary to track number of female POC on the board together with amount of female POC in the C-Suite, and so this hypothesis will function closely with Hypothesis 2.

Hypothesis 2: The two California diversity quotas will increase the number of female POC in the C-suite.

As mentioned earlier, a motivation for why firms would elect POC prior to the diversity quota is the attempt at signaling. In this case, signaling would mean that a firm does not elect POC for any reason other than appearances. This could also be the case when viewing the changes over times in the C-Suite. As with the board of director, a firm might want to appear more progressive, which is one possible reason the number of female POC in the C-Suite might grow. By appearing more progressive a firm could appeal to a customer base that highly values firms with diverse employees. This would therefore determine that firms with only signaling motivations have no interest in substantially becoming diverse, and then the diverse policies might only apply to firm related individuals that a customer could see. While prolific managers or more public individuals related to a company might be women, POC or both, these diverse practices would likely not extend further down the management chain, resulting in less diversity.

While the main theory discussed primarily involved a firm acting in its best nature, there is of course the hypothesis that firms actually are not self-serving. This theory would imply that a firm could take actions that are genuinely meant to better society. If there was an observed increase in POC on a firm board before the legislation required it, it could be showing a firm's true intentions towards becoming more diverse. If a firm does not increase POC on the board, it does not necessarily indicate something about a firm immediately. It may instead be related to issues described in the hypotheses earlier, such as availability of viable candidates. The motivations of a firm making choices like those described above can only be uncovered with further research, however the findings of this paper may uncover a tendency towards a certain theory. Since deeper research into firm employee characteristics is not even possible in company spheres, it is far beyond the scope of this paper. Nevertheless, since the identity of board members is public knowledge, thus making board member characteristics those of public knowledge, then it follows that the increase of POC on firm boards could be a result of firm signaling behavior.

3.3 Pre-Diversity Quota Compliance

A final question to raise involves the compliance of firms to the second quota before they were required to be. In other words, were many firms already electing an appropriate number of POC to their board of directors before it was necessary? The details of the quota require a firm to have a member belonging to one underrepresented group by the end of 2021, so if a firm had at least one board member like this before 2021, then that firm would be in compliance already. As a side note, the second California quota also includes the LGBT+ community under the term "underrepresented community," but this study will only be considering the portion of the quota discussing POC. Therefore, it is possible that a firm could be in compliance with the quota by having a member belonging to the LGBT+ community, but in this study by saying a firm is "in compliance with the diversity quota," this is only saying that a firm has at least one POC on its board.

Building off the two earlier hypotheses, it is likely that firms will be instilling more progressive practices around the timing of the gender board quota. As previously discussed, this could mean hiring more POC as well. Especially between the introduction of the gender quota but before the diversity quota, firms would likely increase the number of POC on the board. As the gender requirement was announced in 2018 and needed to be met by the end of 2019, and the diversity quota was announced in late 2020 with a required compliance starting in 2021, this would specifically be looking at the years 2019 and 2020. These years fall in between the two quotas, and especially since they follow the gender quota, it creates an optimal environment for firms to increase their progressive image.

Hypothesis 3: California firms will increase the number of POC on the board of directors before the diversity quota is in place, especially in the years between the quotas.

The change in number of POC on the board of directors will be examined throughout the 4 years included in this study. The expectation will be that the final year in the study, 2021, will be the year with the highest amount of POC on the board. Before the quota was

overturned in 2022, the law stated that firms needed to be in compliance with one board member by the end of 2021. To reiterate, if not all firms in this dataset have one POC by the end of 2021, it is possible that those firms could be in compliance with the quota through having an LGBT+ member.

In summary, this paper will uncover the impact that two different California diversity quotas have on board characteristics. Primarily, the focus is on the gender quota and seeing how it impacted the presence of POC on the board, and especially how many of these POC are also women. The second hypothesis how many female POC arose in the C-Suite of California based firms. The final hypothesis considers whether firms were already acting in compliance to the second California board quota prior to the requirements being mandated. The aim is to ultimately report how effective these quotas appear to be towards their goals of increased diversity on firm board.

4.0 Data & Methodology

The starting point for collecting any data relating to the California quotas is the March 2022 report titled Diversity on Boards (California Secretary of State, 2022). Released by California's Secretary of State, the goal of the report is to inform the public about which firms are in compliance with both the diversity and gender board quotas. The report lists every firm which has its main operations based in California regardless of where the legal headquarters are. Alongside the firm name are the details provided by the firm through the 2021 Publicly Traded Corporate Disclosure Statement. This form details in which way firms are in compliance with the two quotas, namely providing the number of women and individuals belonging to underrepresented groups on the firm board. While this report is very informative, it does not specifically say how board members belong to the underrepresented groups for which specific reason. Additionally, it only includes firms which voluntarily provided board member information, and therefore there is a large quantity of information missing that could be uncovered if the data were hand collected instead. A few more problems persist that necessitate hand collection. The report only looks at the year 2021, and to examine the quota effects the full scope of the timeframe must be taken into consideration. Therefore, the years 2018, 2019, and 2021 must have data collected. Nevertheless, this list of firm names in the Diversity on Boards report will be the basis for the data collection as these names came directly from the source which created the law.

The main source behind the data hand collection is the website of the U.S. Securities and Exchange Commission (SEC), more specifically the Electronic Data Gathering, Analysis Retrieval System (EDGAR). This website has data on every publicly traded American firm going back to 2001. This includes the crucial 10-K filing that details the board members and executives of a firm every year. By cross-checking the firms listed on the March 2022 California Diversity Report, data can be gathered on every firm's board and the individuals on that board.

Before describing the process followed for data collection, it is necessary to describe the constraints the data was put under in order to get data of the highest quality. Of the 716 firms named in the March Report, only 424 firms remained in the final dataset. There are three main constraints for each firm in the dataset. First, there needs to be enough data for the 4-year timespan. For example, if a firm was established in 2020, there would be no 2018 or 2019 data, so it would be cut. Second, the gender and ethnicity of each board member needs to be verified via a picture. If 25% or more of the board members cannot be verified through pictures, the whole firm is cut from the dataset. The reason for this cutoff is because the average board size for the 4 years is approximately 8 board members. The 25% amount corresponds to around 2 board members for a board size of 8, meaning that if 2 or more individuals cannot be verified, the firm is cut. Therefore, the confidence level of known board members is always over 75%. The 25% cutoff is also used due to its flexibility; for a board size of 4, all board members must be known, but for a board size of 12 up to 3 board members are allowed to be unknown because the size of the known board members is still appropriately high. There is an exception to this rule: if all board members cannot be verified by pictures except for one, the firm will usually be kept in the dataset and assumed to be white. The reason for this is that any errors in the final result will have a tendency to downplay the level of POC or women on firm boards, rather than exaggerate results so firms appear more progressive than they are. This naturally means the data is potentially not fully accurate, but this will be discussed later in the limitations section of my conclusion. Throughout the time spent in data collection, more firms were cut due to the first rule rather than the second and very rarely would there be only one individual who could not be identified. Finally, careful consideration was given to the reporting year of a firm as listed in the 10-K filing. The fiscal year of a firm can vary depending on the preferences of the firm, but most firms follow a fiscal year that ends around December and then is released to the public in the early months of the following year. While firms could be accepted into the dataset if their fiscal years did not follow this pattern, many were removed. The reason for this is so that the information of every firm in the data can roughly match. If a firm has a fiscal year that ends in July, this is drastically different from the majority of the data and so must be cut. Additionally, to create more uniformity throughout the data, if a firm had a fiscal year that ended around April-June 2022, it would be removed so that there is no interference from the quotas being repealed. While this may have no effect on firm board characteristics, the decision was made in order to remove any potential negative bias.

The method for data collection then consisted first of searching the firm on EDGAR. The annual reports (10-K filings) for the fiscal years 2018-2021 are located here, and the firm is confirmed to have the appropriate amount of data available. Then, starting with the first year, I search each board member to find pictures of the individuals. The highest standard for picture verification would be LinkedIn or another professional business account. These options make it easy to see the places an individual has worked, therefore ensure that the name and picture match the same person that worked or is working at the company of interest. If LinkedIn is not a viable option for any reason, another place to look is the company website itself. Usually this is only relevant if the board member is still with that firm, otherwise there might not be any photos available. Finally, the third and less common

option is looking for any articles a board member might have been featured in. This usually would be the case for larger and more popular firms, where verifiable pictures of the board already exist. Nevertheless, it does serve as an option to verify the board member characteristic.

After a picture of each board member is gathered, the next step is to note down gender and ethnicity information. This involves counting how many POC, women, and female POC exist on a board in a given fiscal year. Alongside this, the number of POC and female POC who are in the C-Suite is also recorded. For the sake of simplicity and consistency across the dataset, the “C-Suite” in this case is only chief executive, financial, and accounting officers (CEO, CFO, CAO). The reason for this is that not every firm has a chief marketing officer, whether due to size or firm structure or industry. This is true for other potential C-Suite positions, whereas every firm certainly has a CEO and CAO, and usually a CFO. Not only is the number of each group counted, but the names of the POC are collected as well. The reason for this is to examine the change in the board throughout the four years. Specifically, it is to see whether the specific POC who served on that firm’s board changed, whether the people left the board before 2021, or whether new people took the place of the previous POC. It could be possible that the number of POC stays the same throughout the four years, but the individuals are not actually the same. The only way to see this change then is to keep note of the names of POC during each year. The process of searching board members and recording characteristics is then repeated for three more years, and this is done for every California-based firm.

Alongside gathering data for the four years, the industry of each firm observation is also recorded. This will be used during the analysis to note any possible trends relating industry to any of the groups referenced in the hypotheses.

A second limitation that should be addressed concerns defining who is and who is not a POC. This task is the trickiest part of this research, as the definition of “white” is heavily tied to an ever-changing culture. Additionally, there exists the presence of mixed race and “white-passing” individuals who society may consider white, but they do not consider themselves as white. There is also naturally the difficulty of making assumptions based on one photo, as often only one photo can be found to use as an identifier. Depending on the light, location, and clarity of a photo, someone can look incredibly different and therefore it is difficult to tell something like ethnicity. Identifying ethnicity or race based on photos can certainly be prone to error, but if one wants to measure society’s perceived progressiveness, it is the only current option. The best way this can be combatted is making a best guess, or in cases of doubt, asking for additional input from others to receive additional points of view or opinions different from one’s own.

After each piece of information is collected and comprised in a dataset, the file is placed in R. The following section details the findings from the tests enacted.

5.0 Results

5.1 Variable Definition

The resulting dataset from the process described in the previous section includes 30 variables and 424 rows, with each observation corresponding to a unique firm. The first column in the dataset is titled “Company,” and lists the name of the firm. The second column is “Industry,” and it corresponds to the broadly termed industry the firm best fits in. The following seven columns correspond to the first sample year, 2018, and the identifying year is listed at the end of each column name. The third column in the dataset is named “numboard_2018,” and it lists the number of board members on a given firm’s board in the year 2018. The next column is “numpoc_2018,” and it gives the number of POC on each firm board in 2018. The fifth column is “numfem_2018,” and it shows the number of women on a firm board in 2018. The last three numerical columns relating to the year 2018 are “numfempoc_2018,” “numpocexec_2018,” and “numfempocexec_2018.” These respectively refer to the number of women who are POC, executives who are POC, and women who are both executives and POC. These three are the variables which examine the resulting effect of belonging to two or more different groups. The final variable relating to the year 2018 is the variable “names_2018.” This variable shows the names of any POC which were serving on that firm’s board of directors in the year 2018. These seven columns (from numboard_2018 until names_2018) are repeated three times for the three following years in the study. So numboard_2018 becomes numboard_2019, etc. This then accounts for all 30 variables in this collection.

Table 1
Descriptive Statistics

<i>Year</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>
2018			
numboard_2018	3.000	7.771	14.000
numpoc_2018	0.000	1.005	14.000
numfem_2018	0.000	1.436	5.000
numfempoc_2018	0.000	0.2665	2.000
numpocexec_2018	0.000	0.4198	3.000
numfempocexec_2018	0.000	0.1017	2.000
2019			
numboard_2019	3.000	7.974	15.000
numpoc_2019	0.000	1.104	13.000
numfem_2019	0.000	1.851	6.000
numfempoc_2019	0.000	0.3491	3.000
numpocexec_2019	0.000	0.4505	5.000
numfempocexec_2019	0.000	0.1179	2.000
2020			
numboard_2020	4.000	8.127	16.000
numpoc_2020	0.000	1.231	13.000
numfem_2020	0.000	2.17	6.000
numfempoc_2020	0.000	0.4858	3.000
numpocexec_2020	0.000	0.461	3.000
numfempocexec_2020	0.000	0.1439	2.000
2021			
numboard_2021	3.000	8.42	14.000
numpoc_2021	0.000	1.568	12.000
numfem_2021	0.000	2.665	6.000
numfempoc_2021	0.000	0.7736	3.000
numpocexec_2021	0.000	0.4575	4.000
numfempocexec_2021	0.000	0.1277	2.000

Note. The above table shows the summary statistics for the entire dataset. For clarity only the values discussed are shown.

5.2 Summary Statistics

Table 1 displays the descriptive statistics of the entire dataset. There are many notable findings, which will be explained further by additional calculations. Beginning with the number of POC on the firm board in each year, the average number of POC is as follows. For the 424 firms, the year 2018 shows an average number of POC of 1.005. This increases the following year 2019 by around 10% to 1.104 average POC. The year 2020 shows an additional increase of around 12% to 1.23 average POC. In the last year, 2021 jumps to a much higher final increase of almost 30% compared to the previous difference, and this corresponds to an average POC per board of 1.568. The range of POC on firm boards throughout the time span is 0 POC to 14 POC on a firm board. In each year of the dataset

there is usually a few firms that are outliers in terms of the number of POC on the board. When adjusting for the outliers, the maximum number of POC on a firm board would usually rest around 2 members. This extreme difference between the maximum number and 3rd quartile only exists in this category. The year 2021 was also the initial year that firms were required to have at least one board member belonging to an underrepresented community, in compliance with the diversity quota. The average board size was 7.78 in 2018, then 7.97 in 2019. This continues increase to an average of 8.12 in 2020 and finally 8.42 in 2021. This means that POC went from on average comprising around 13% of a firm's board, to comprising around 19% of a firm's board. Throughout the four years, the largest board at any point is 14 members, and the smallest board is 3 members.

Moving on to the number of women throughout the four years, the average number of women on a firm board in 2018 is 1.43. From 2018 to 2019, the increase is about 30% and an average of 1.85 women per firm board. This coincides with the first year after the passing of the gender quota that firms had been required to have a minimum of one woman serving on the board of directors. The increase from the years 2019 to 2020 is 17% with 2.17 as the average number of women. The final year 2021 shows an average number of 2.665 women on a firm board, meaning the increase from the previous year is about 23%. These numbers convey that in the first sample year of 2018 women on average represented 18% of the board, and in the final year of interest 2021, the average representation of women on the board increases to approximately 30%. The range of values for woman on firm boards during the timeframe stretches from 0 woman as the minimum to 6 women as the maximum.

The third category of interest relates to individuals who belong to both of the previously mentioned categories - women who are also POC. In 2018, the average number of women who are also POC is .2665. The year 2019 shows an increase of 30% from the previous year, which is an average of .35 female POC. The following year of 2020 shows female POC comprising on average 0.4858 of a firm board, which is a 39% increase from 2019. The final year of interest shows an increase of around 60%, which is reflected in the average of .7736 women who are also POC on a firm board. It is important to note that, despite having larger percentage increases compared to the previous two groups of interest, the average number of female POC never rises above 1 during any of the 4 observation years. This is reflected in the percentage this group represents on the entire firm board. In 2018, female POC are in total around 3% of people on an average firm board in that year. In 2021, this has only changed to about 9%. While in terms of percentages this is a relatively large increase compared to the previous group's percentages changes, in total this group certainly falls behind in receiving higher representation. Regarding the range of female POC throughout the four years, the minimum for any year was 0, whereas the maximum value stopped at 3 female POC.

The next group to consider shifts the focus away from the actual firm board towards the C-Suite, and specifically the CEO, CFO, or Chief Accounting Officer. This analysis is examining how many POC are in one of these three positions, assuming most firms have all three positions. The first year shows that on average firms have .4198 executive members who are POC. This number increases to .4505 in 2019, only a 7% increase. In 2020, the value

becomes 0.461. This is a 2% increase and is the smallest percentage increase from any of the categories so far. The findings in regard to POC in the executive office indicate very little progress towards equality. This implies that any positive effects from the quotas did not affect the executive office as much as the board, greatly limiting the possibility of spillover effects mentioned in the hypotheses. Finally, the number of POC executives in 2021 is 0.4575. For the first time thus far, there is actually a decreased value, this time a decrease of .7%. Though it is admittedly a less significant percentage value, it is still notable that the only time a decrease happens throughout the findings, it happens in this specific category.

The executive POC findings can be furthered narrowed to only focus on female POC in the C-Suite. The results can be expected to loosely follow the results found when examining both male and female POC in the C-Suite, but nevertheless it is still insightful to add to this research. Beginning with 2018, the average number of female POC in the C-Suite is .1017. Moving on to 2019, the number increases by 16% to .1179. This value increases again in 2020, becoming .1439 and 22% higher than the previous year. The final average value from 2021 is .1277, indicating an 8% increase of female POC in the C-Suite compared to the previous year.

5.3 Preliminary Findings

Through examining the data provided through the summary statistics, already evidence can be gathered to address the hypotheses raised earlier in this paper. The previous data will be addressed as follows: Category 1 (POC on board), Category 2 (women on board), Category 3 (female POC on board), Category 4 (executive POC), and Category 5 (female executive POC).

Beginning with Hypothesis 1, this hypothesis claims that the gender quota will increase the number of POC on California boards. Category 1 and Category 3 are both necessary to address this question. Both categories experience an increase in the year following the gender quota announcement (2018) as well as the year the gender quota becomes law (2019). This directly supports the claim in Hypothesis 1, as neither experience a decrease. However, it should be noted that both categories do have small increases between 2018-2019 and 2019-2020, then both significantly increase in the period 2020-2021. Since the high percentage jump occurs after the announcement of the diversity quota and farthest from the announcement of the gender quota, this seems to indicate that the high increases relate more to the diversity quota than the gender quota. While it does not disprove Hypothesis 1, the evidence seems to be less strong than what would be ideal.

Moving forward, Hypothesis 2 is addressed by looking at Category 4 and Category 5. It is interesting to note that the findings relating to female POC in the C-Suite carried much larger and more positive results, especially relating strictly to percentage changes. Additionally, while the executive POC category experience a percentage decrease from the year 2020 to the year 2021, the female executive POC did not have this occurrence. This actually provides positive evidence to address Hypothesis 2, which posits that the two California quotas will increase the number of executive POC who are also women. This

directly relates to Category 5, where all three percentage changes between the years were found to be positive. While it is difficult to say whether both quotas influenced this positive change, or maybe even neither of the quotas influenced it, it is still notable that the highest percentage increase (22%) occurred between the years 2019 and 2020. Because this happens before the diversity quota is announced in late 2020, it seems unlikely that this quota in any way influenced such a high percentage change. This means that the only quota which could have influenced this large percentage increase is the gender quota. If the gender quota did influence this, then it would give credit to the theory behind Hypothesis 1, which discusses how woman and POC together can be linked by a firm to increase progressive values. Nevertheless, it is not now possible to discuss whether the gender did certainly impact the number of female POC in the C-Suite, but it is still important to note that Category 5 had positive changes while Category 4 did not. Additionally, if theory implies that Category 5 increased due to influence from the gender quota and additional influence from progressive values in society, then this does not seem to hold for male executive POC. Though the highest increase (7%) did occur in the time directly after the gender quota was established in 2018, the subsequent decline directly after this cannot be overlooked. This is the most unexpected finding thus far, and it is hard to address from the theories discussed earlier. This can certainly become an avenue for further research, as the decrease provides interesting opportunities for exploration.

One of the major theories behind Hypothesis 1 and Hypothesis 2 was that firms try to maximize their limited board space while fulfilling the requirements of both quotas. There is some evidence for this, as the greatest percentage increase of the four years happened at the advent of the diversity quota in 2021. However, there is also evidence that casts greater doubt on this idea. In the final year 2021, female POC made up 9% of firm boards, compared to the 30% from women overall and the 19% from POC alone. If the theory held greater weight, then likely the percentage of POC would be a number much closer to either the 30% or 19%, but it falls greatly behind. Therefore, firms seem to likely not be following this line of thinking. Hypothesis 3, which relates to pre-quota compliance will be addressed in the next section, where additional tests will be conducted to uncover further findings from the data.

5.4 Supplementary Findings

Beyond examining the preliminary findings from the summary statistics, more information can be uncovered through further testing. The first of these is examining the pre-quota compliance number of firms in regard to the diversity quota, and the second main test involves relating a firm's industry to their ranking of diversity amongst other firms.

The process for calculating firms compliant with the second California quota involves filtering the data to have only firms with one or more POC on the board, with special attention paid to the years 2018 and 2019. These years fall before the announcement and enactment of the diversity quota, so firms will be unaware of the legislation. As mentioned in the theory section, compliance with the quota would in actuality involve other groups such as members of the LGBT+ community, but for analysis we will only look at POC on a firm

board. Beginning with 2018, 52% of the 424 boards already have at least one POC on their boards. In 2019 this increases to 56%. The next year 2020 includes the announcement of the diversity quota towards the end of the year. The percentage of firms with one or more POC increases to 63%. Finally, the year the quota is enacted, 80% of firms are in compliance. When increasing the requirement to at least 2 POC per firm board, the percentages reflect this change. In 2018, the percentage of firms in compliance falls to 25%. The next year, the percentage is 28% of firms in compliance. The quota announcement year, 2020, shows a percentage increase of around 32%. Finally, the year 2021 shows a compliance percentage of 45%. Disregarding the final year of the dataset, each of the earlier years have a compliance rate of about half when the compliance requirement is raised to 2. Connecting this back to Hypothesis 3, the data provides mixed evidence. There is a percentage increase in compliance when looking at 2018 to 2019, the gender quota years. However, the increase is quite small. The largest compliance increase comes during the year the diversity quota is legislated, but this is not considered under Hypothesis 3.

The next step is to consider how grouping firms by industry alters the results currently found. These Figures 1-4 display the number of POC by industry throughout the years 2018-2021. The labels used for a firm's industry are generalized, and reflect the broader industry a firm is in. As such, there are 8 industries a firm could fall under. The largest two industries by count are Technology and Healthcare & Pharmaceutical, with 147 and 95 firms respectively. The smallest is Utilities with a count of 18. In 2018, most industries had an average number of POC of 1. The industries that had an average number of zero POC were Agriculture & Food Service, Real Estate, and Healthcare & Pharmaceutical. Real Estate may be explained because it is the industry with the least number of firms. The following year, shown by Figure 2, sees that the respective amounts stayed about the same, with the average slightly shifting forward. The spread for Real Estate jumps up the most, but this is the only exception. For 2020, Figure 3, many of the previous outliers disappear and the mean for Utilities moves up from zero. All industries continue to have slightly higher means. Finally, in 2021 there is another, larger mean increase. Real Estate concludes in final place by number of POC on the board, and Entertainment & Retail is the industry to outnumber the others.

Still considering industries but transitioning to only female POC, the results are quite different. Figures 5-8 display the statistics on female POC by industry throughout the years 2018 to 2021. It should be noted that the figures are on different scales than those for POC in general. This is simply because there are less female POC on boards across all industries. In general, there appears to be fewer outliers than when examining all POC. There also seems to be more variation and less synched movements for the different industries. In 2018, the firms with greater number of female POC were Utilities, Financial Services, and Entertainment & Retail. This only last for the first year, as immediately following 2018 there is an abrupt increase. While many industries in the first year had a mean of zero female POC, already by the next year the mean for most has jumped to .5. Most firms are evenly matched, but several firms have a larger spread than the others. In 2020, every single firm has an identical spread and structure. It is surprising to see the abrupt shift from 2018 to 2020, as this volatility did not occur when examining POC overall. The final year is more varied, and two industries stand out amongst the others. These are Utilities and Entertainment & Retail. Entertainment

& Retail stretching ahead of other Industries does match the findings of POC altogether. This is notable to see that there is some variation when narrowing the findings to just female POC, however the conclusion is the same as for the whole group. When looking at which firms are not as advanced as the two leading industries, essentially all of the other industries are evenly matched. It is somewhat of a point of interest that Agriculture & Food Service has such a small spread, since it cannot be explained by a smaller sample size.

5.5 Statistical Analysis

The following findings result from enacting statistical tests, on different variables of interest, paying specific attention to the medians of each year. The goal in these tests is to find if the preliminary findings are statistically significant. In this way the hypotheses presented earlier in this paper can be answered directly.

When testing for significance, a popular method is the t-test since it compares means of different groups. This can be applied to my data as my goal is to see significant changes over time as mentioned in Hypotheses 1-3, as I aim to uncover increases in POC arising from the quota enactments. Although a t-test is commonly used, by necessity the data it is applied to must be normally distributed. A normal distribution has a mean of zero and standard deviation of one, and when looking at Figures 1-8, it is clear the data does not match this. However, the normality of data can be officially verified by simply creating a histogram of the data and see if it follows the bell-curve shape found in a normal distribution. Figure 9 shows the distribution of data for number of POC on a firm board in 2018. The data is heavily skewed to the right with most of the observations occurring at zero. This means that the data certainly does not follow a normal distribution. Therefore, another test must be used. A suitable alternative is the Wilcoxon Test. This statistical test is a better fit as it does not require a normal distribution, but it is also testing significance between groups in the same way a t-test does. In research settings, it can be used to identify changes over time, such as in the case of treatment effects because at its basis it considers dependency. To conform to different datasets regardless of skew, the Wilcoxon Test uses median comparisons instead of mean comparisons used in t-tests. While there are a few versions of the Wilcoxon Test, the one used in the upcoming tests is the Two-Sided Wilcoxon Signed Rank Test. For all tests about to be discussed, the standard assumption is a 5% confidence level.

Table 3
 Wilcoxon Test P-Values for POC on Boards

<i>2018-2019</i>	<i>2019-2020</i>	<i>2020-2021</i>	<i>2018-2021</i>
0.310374	0.0366381	8.00E-07	0

Note. This table displays the results of the Wilcoxon Test for number of POC on firm boards. The p-values reflect the median differences between years.

The first topic of interest is on the Category 1 data (number of POC on a firm board), which will thus be used to answer Hypothesis 1. The null hypothesis for this test would be that the median in one year is not significantly different from the median of the following

year. After running the test and receiving the p-values, I will be able to concretely answer Hypothesis 1. Table 2 displays the results of four Wilcoxon Tests run comparing the median POC on a firm board for the years 2018-2019, 2019-2020, 2020-2021, and finally 2018-2021 (to see the overarching change). The group of interest to answer Hypothesis 1 is 2019-2020, because although the gender quota was passed in 2018, the first stage requirement of the quota did come into effect until the end of 2019. Therefore, the change from 2019 to 2020 is the best time to see a change after the gender quota but before the diversity quota. From the sample statistics we already know there was an increase of average POC on a firm board from 2019 to 2020. In order to judge the significant, we can look at Table 2. The second column in Table 2 displays the resulting p-value for the years 2019-2020 as .0366. With a cutoff of .05, this result does prove to be significant. To answer Hypothesis 1, we can now say that there is a significant increase in POC on firms boards the years following the gender quota but before the diversity quota.

Table 3
 Wilcoxon Test P-Values for Female POC

<i>2018-2019</i>	<i>2019-2020</i>	<i>2020-2021</i>	<i>2018-2021</i>
0.0261644	0.0009032	0	0

Note. This table displays the results of the Wilcoxon Test for number of female POC on firm boards. The p-values reflect the median differences between years.

We can further specify the findings for Hypothesis 1 by only looking at female POC. When narrowing this test, the results actually do change. Table 3 displays the p-values on a Wilcoxon Test for the comparisons between the medians of each year. Similar to when the test was just POC, it is also considering the significance of medians for every year starting from the first. The final column again compares the first data year with the last to see any potential overarching trends. As addressing Hypothesis 1 involves looking at the years following the gender quota but before the diversity quota, we will be focusing on column two of the table. Like with simply looking at Category 1 changes, the change of female POC for the years 2019-2020 is significant at the 5% level. Interestingly, the change for the years 2018-2019 is also significant at the 5% level. In the case of Category 1, the p-value for 2018-2019 is .314 and so is not significant at the 5% level. Nevertheless, we can now definitely confirm that for Hypothesis 1, there is a significant increase of POC and female POC for the time frame after the gender quota came into effect.

Table 4
 Wilcoxon Test P-Values for Executive POC

<i>2018-2019</i>	<i>2019-2020</i>	<i>2020-2021</i>	<i>2018-2021</i>
0.633837	0.6245942	0.816983	0.4611614

Note. This table displays the results of the Wilcoxon Test for number of POC in the C-Suite. The p-values reflect the median differences between years.

Table 5
 Wilcoxon Test P-Values for Female Exec.
 POC

<i>2018-2019</i>	<i>2019-2020</i>	<i>2020-2021</i>	<i>2018-2021</i>
0.4313099	0.2883284	0.5980911	0.1856538

Note. This table displays the results of the Wilcoxon Test for number of female POC in the C-Suite. The p-values reflect the median differences between years.

The second Hypothesis also considers the increase of POC, but this time female POC in the C-Suite. In order to confirm or reject the claim, we will turn our attention to Category 5 in the data. The test to measure significance will be very similar to that in addressing Hypothesis 1. It will also be a Wilcoxon Test to determine significant differences in the year-to-year changes, and the test will be following exactly the same process of the earlier Wilcoxon Tests. When looking at the summary statistics to analyze preliminary results for Hypothesis 2, this conclusion did not seem as favorable for this hypothesis unlike the previous hypothesis. The preliminary findings indicated relatively comparable percentage yearly percentage increase to the previous categories examined, but the overall composition of firm boards contained small numbers of female POC in the C-Suite. Table 5 allows us to evaluate the statistical significance of changes for this group. The focus this time is on the third and fourth columns of the table. These columns show the p-values associated with the 2020-2021 changes and 2018-2021 changes. Both year groups are necessary as Hypothesis 2 is concerned with how boards changed after both quotas were in place. For the 2020-2021 column, the p-value is .598. The 2018-2021 column is .186. Neither p-values are significant at the 5% level, and in fact no column in the table is. To answer Hypothesis 2, there is no significant change in female POC in the C-Suite following the two California diversity quotas.

While it is not needed to provide evidence for any of the hypotheses, Category 4 data is shown in Table 4 and will now be analyzed. The preliminary findings for Category 4, POC in the C-Suite, provided unique results. No percentage change by year was every more than 10%, and this category was the only one to experience a percentage decrease. We will now turn to the statistical testing to determine whether or not the increases are significant. Looking at the columns in Table 4, we can see each p-value ranges from about .5 to about .8. Therefore, no yearly change is significant at the 5% level, which is consistent with the earlier summary statistic finding.

The last area to consider is that of Hypothesis 3. This hypothesis once again returns to POC on the board, but this time looking at later years. We will once again look at Table 2 but this time we will look at the third column as this is the period right before the diversity quota is introduced. As one can see, the p-value for this column is statistically no different from zero, meaning that the change is highly significant and meets the 5% criteria. The fourth column is also zero, so we can now give an answer to Hypothesis 3. Despite the preliminary findings showing that the purely numerical increases of POC are small, the Wilcoxon Test

shows that the change in POC on firm boards for the years before the diversity quota is statistically significant. As we saw in the summary statistics, 63% of firms were already in compliance with the California diversity quota (only considering number of POC) right before the quota was announced. Therefore, we can confidently accept this final hypothesis and agree that California firms did in fact increase the number of POC on firm boards before the diversity quota was enacted.

6.0 Conclusion

In this research paper, I have created a comprehensive dataset following the timeline of the two California board quotas. I have discovered that there was a statistically significant increase in POC in the years immediately following the gender quota enactment and leading up to the introduction of the second quota. There was also an increase in the number of female POC in the C-Suite, however this increase is not statistically significant. When considering the firms grouped by industry, I have found that Entertainment & Retail is the industry that had the most POC and female POC on firm boards by the final year of the quota timeframe.

6.1 Limitations

Although the process in crafting this thesis has been thorough, there are a few limitations. Firstly, there is the potential for error in the data collection. Although I set many boundaries and requirements, there is a possibility that I mislabeled an individual, either by claiming them as a POC when they were not, or claiming they were not a POC when in fact they were. These line up with Type I and Type II errors, and in this data, there is potential for both. Throughout the collection process I did try to stay on the conservative side – in other words, if I was completely unsure if the person was a POC or not, I would label that person as not a POC. For that reason, if there is a miscalculation, it is more likely that I have underestimated the number of POC rather than overestimated it. Relating closely to this, there is the possibility that there are other miscellaneous errors in the data. As I am one person hand collecting every piece of data, there is a natural margin of error for human mistake. It is almost certain that the accuracy of the data will increase with more people working to collect it.

Another limitation is the extent of the data to make statements. The findings of this paper do show that there is an increase in the number of POC on firm boards following the gender quota. However, I could not state that the gender quota caused this increase. I would need much more fine-tuning regarding my data and testing. There would need to be a much more sophisticated model to verify this. Moving on, I hypothesize that a motivation behind the increase in POC could be an expanding progressive environment or firm signaling behavior. Similar to making causal statements, there would need to be further testing to try and confirm what the likely motivating factor behind the increase is. I believe that my data is an accurate and sturdy jumping off point for further tests to occur.

Due to the nature of the research setting, there is some limitation regarding the time frame. The quotas together only lasted around 4 years. As many researchers may know, it often takes longer periods of time to see the lasting effect of laws. This relates to the previous point, since because the quotas have a short time span, it could be difficult to see what effects can be traced to the quota enactments, and what effects are just general trends or caused by some other event that is not captured in the model. This issue can be somewhat mitigated. The quotas had specific deadlines for when firms had to comply with them, and for both quotas these requirements came into effects the year after the quota was introduced. Therefore, when attempting to trace effects, it can help that there are not large lapses of time in between phases of the quota.

6.2 Further Research

The future research following this thesis has endless possibilities. As stated earlier, there is not much literature on the California gender quota, and there is essentially none on the diversity quota. Although both quotas have been repealed at the time of this thesis, the quotas were still landmark as they were the first quotas of their kind in the United States. There were several years for the quota to have some effect and so there is potential for analysis. One option is to combine my data and findings with financial statement information in order to connect gender and ethnicity movement trends with monetary trends. Previous gender quota literature has found a negative stakeholder reaction and lower stock prices in the period following gender quota announcements and implementation. Not only could future research see if this holds true in the California setting, but there is an opportunity to see if it holds true for a quota of a different kind.

As time goes on, there is another opportunity to see what movements occur after the repealing of both the quotas. The California setting is the only time so far that board gender and diversity quotas have been implemented and then quickly repealed. Therefore, this is a unique chance to see what happens after something of this sort happens. If prior research has shown a negative reaction following quotas, would there then be a positive reaction after they are repealed? Or is there another negative reaction because the market is responding to change of any sort? Future research can verify this.

Because California was the first American state to implement either type of quota, more states may follow suit and attempt to implement similar quotas. Future researchers will have the opportunity to compare the aftermath of that state with California's aftermath. Not only this, but there is a chance to verify whether or not quotas in other states will last longer than California's or if they will also be repealed.

7.0 References

Ahern, K. R., & Dittmar, A. (2011). The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation. *Quarterly Journal of Economics*, 2012, vol. 127(1): 137-197. <http://dx.doi.org/10.2139/ssrn.1364470>

Assembly Bill No. 979, (2020). Corporations: board of directors, underrepresented communities. *California Legislative Information*. (Link removed)

Browne, I., & Misra, J. (2003). The Intersection of Race and Gender in the Labor Market. *Annual Review of Sociology*: 2003 29:1, 487-513. <https://doi.org/10.1146/annurev.soc.29.010202.100016>

Chevrot-Bianco, E. (2021). It only takes a strong tie: Board gender quotas and network-based hiring. Working Paper. https://conference.iza.org/conference_files/Gender_2021/chevrot-bianco_e31446.pdf

Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. *University of Chicago Legal Forum: Vol. 1989: Iss. 1, Article 8*. <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1052&context=uclf>

Deloitte (2021). Women in the Boardroom: a Global Perspective. 7th Edition.

Diversity on Boards Report (2022). *California Secretary of State*. <https://www.sos.ca.gov/business-programs/diversity-boards>

Dixon-Fyle, S., Dolan, K., Hunt, V., & Prince, S. (2020). Diversity Wins: How Inclusion Matters. *McKinsey and Company*. <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters>

Ekin, A. (2018). Quotas get more women on boards and stir change from within. *Horizon: The EU Research & Innovation Magazine, European Commission*. <https://ec.europa.eu/research-and-innovation/en/horizon-magazine/quotas-get-more-women-boards-and-stir-change-within>

Espen, E., Nygaard, K., and Thorburn, K. S. (2019). Board Gender-Balancing and Firm Value. Working Paper. https://ecgi.global/sites/default/files/working_papers/documents/finaleckbonygaardthorburn_0.pdf

Fairfax, L. M. (2005). Some Reflections on the Diversity of Corporate Boards: Women, People of Color, and the Unique Issues Associated with Women of Color. *St. John's Law Review*, 79(4), 1105–1120. <https://ssrn.com/abstract=921037>

Ferreira, D., Ginglinger, E., Laguna, M., & Skalli, Y. (2017) Board Quotas and Director-Firm Matching. *CEPR Discussion Paper No. DP12117*.
<https://ssrn.com/abstract=2996662>

Flabbi, L., Macis, M., Moro, A., Schivardo, F. (2016). Do Female Executives Make a Difference? The Impact of Female Leadership on Gender Gaps and Firm Performance. *National Bureau of Economic Research working paper no. 22877*.
<http://dx.doi.org/10.1093/ej/uez012>

Gertsberg, M., Möllerström, J., & Pagel, M. (2021) Gender Quotas and Support for Women in Board Elections. *IFN Working Paper No. 1425. Stockholm Research Institute of Industrial Economics*. <https://www.ifn.se/en/publications/working-papers/2022/1425/>

Greene, D., Intintoli, V. J., & Kahle, K. M. (2019), Do board gender quotas affect firm value? Evidence from California Senate Bill No. 826. *Journal of Corporate Finance*.
<https://doi.org/10.1016/j.jcorpfin.2019.101526>

Gore-mann, D. (2020). Bank boards need more women of color. *American Banker*, 185(1), 1. <https://www.americanbanker.com/opinion/bank-boards-need-more-women-of-color>

Kalev, A., & Deutsch, G. (2018). Gender Inequality and Workplace Organizations: Understanding Reproduction and Change. *Handbooks of Sociology and Social Research*.
https://doi.org/10.1007/978-3-319-76333-0_19

Maida A, & Weber A. (2020): Female Leadership and Gender Gap within Firms: Evidence from an Italian Board Reform. *ILR Review*. 2022;75(2):488-515.
doi.org/10.1177/0019793920961995

Mors, M. L., & Wiersema, M. (2016). What Board Directors Really Think of Gender Quotas. *Harvard Business Review*. <https://hbr.org/2016/11/what-board-directors-really-think-of-gender-quotas>

Post, C. (2022). Workplace Gender Equality May Suffer Without California's Board Quotas. *Forbes*. <https://www.forbes.com/sites/corinnepost/2022/05/17/workplace-gender-equality-may-suffer-without-californias-board-quotas/?sh=b1bc15f6508a>

Senate Bill No. 826, (2018). Women on Boards. *California Legislative Information*. (Link removed)

The Quota Legislative Strategy for Women Directors – Global Overview. (2020). *Corporate Women Directors International (CWDI)* <https://globewomen.org/CWDINet/>

von Meyerinck, F., Niessen-Ruenzi, A., Schmid, M., Solomon S. D. (2021) As California Goes, So Goes the Nation? Board Gender Quotas and Shareholders' Distaste of Government Interventions. *European Corporate Governance Institute – Finance Working Paper No. 785/2021*. <https://dx.doi.org/10.2139/ssrn.3303798>

8.0 Appendix

Figure 1

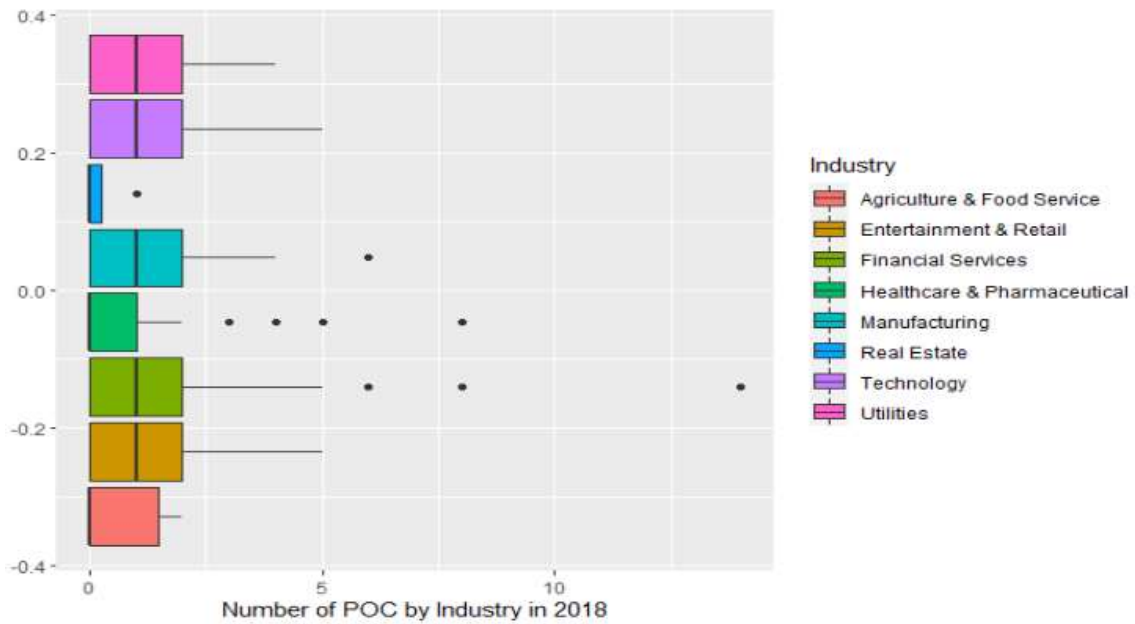


Figure 1: Number of POC by Industry, 2018. This figure shows the number of POC on firm boards, grouped by industry. As it is the first year of the study, this graph shows the amount before the gender quota has gone into place and before the announcement of the diversity quota.

Figure 2

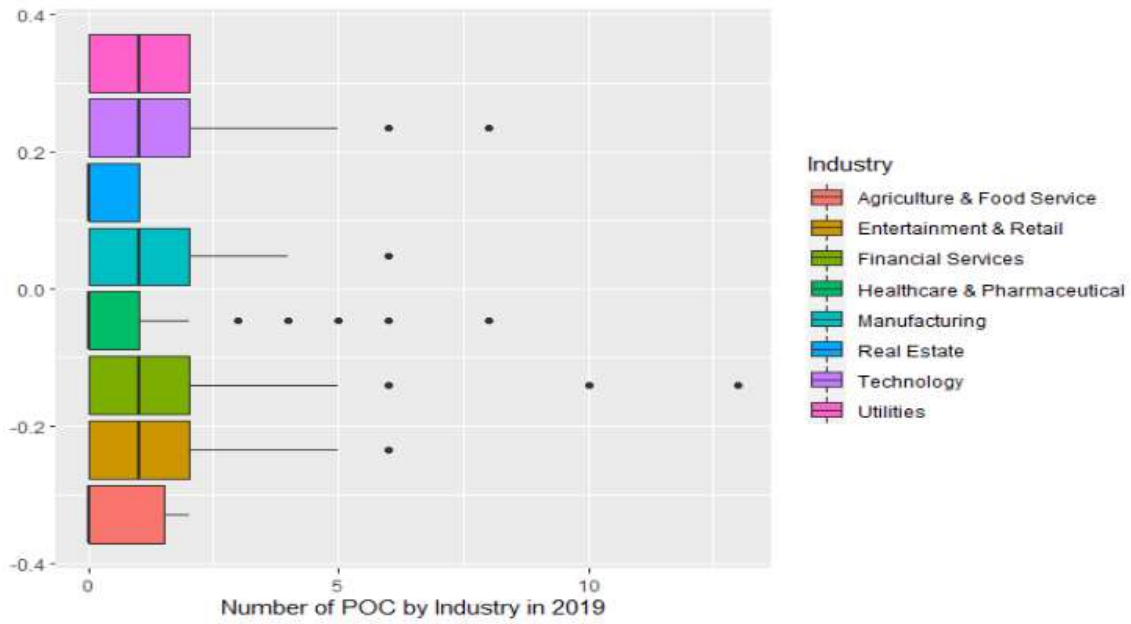


Figure 2: Number of POC by Industry, 2019. This is the second year of the study, and it is the first year after the gender quota has done into effect. The difference between Figure 1 and this figure shows that the industries tended to move together with no one industry standing out.

Figure 3

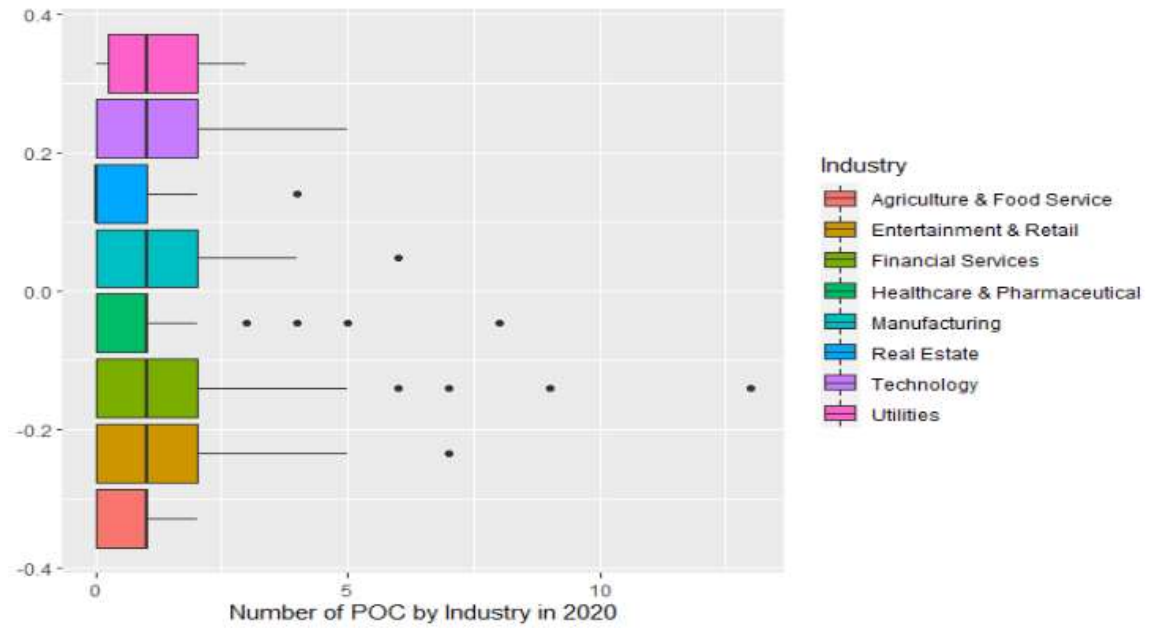


Figure 3: Number of POC by Industry, 2020. This year coincides with the announcement of the diversity quota. Similar to the previous year, there are no drastic changes amongst the various industries.

Figure 4

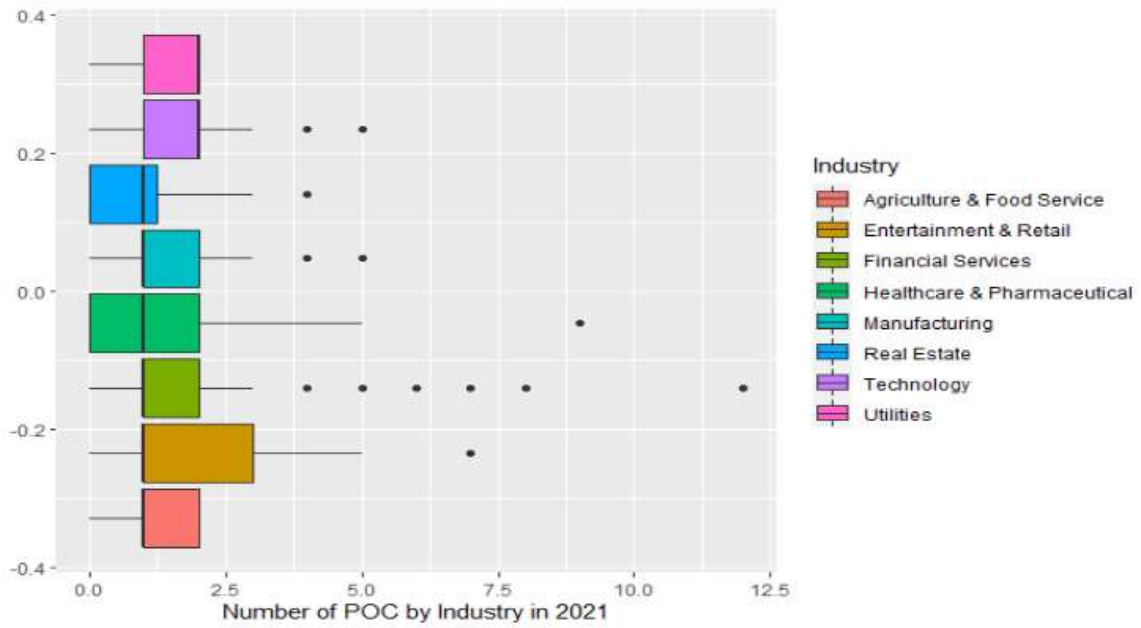


Figure 4: Number of POC by Industry, 2021. Unlike the previous 3 figures, this figure showing the final year of the study does display changes amongst industries. The Entertainment & Retail industry clearly pulls ahead of the others. Additionally, almost all industries have moved away from zero and are increasing the amount of POC on their boards.

Figure 5

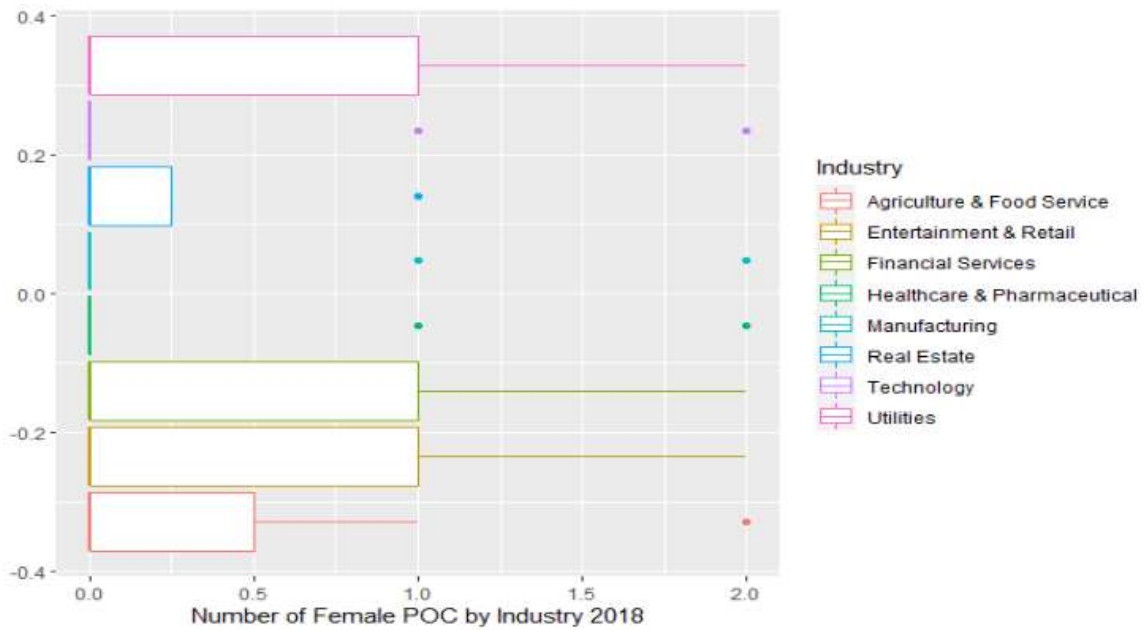


Figure 5: Number of female POC by Industry, 2018. The focus is narrowed to look only at women who are also POC on firm boards, still categorizing by industry. As the sample is smaller compared to looking at all POC, the movements for each year change may be more volatile. This figure shows the first year of the study, and many industries have no women who are also POC.

Figure 6

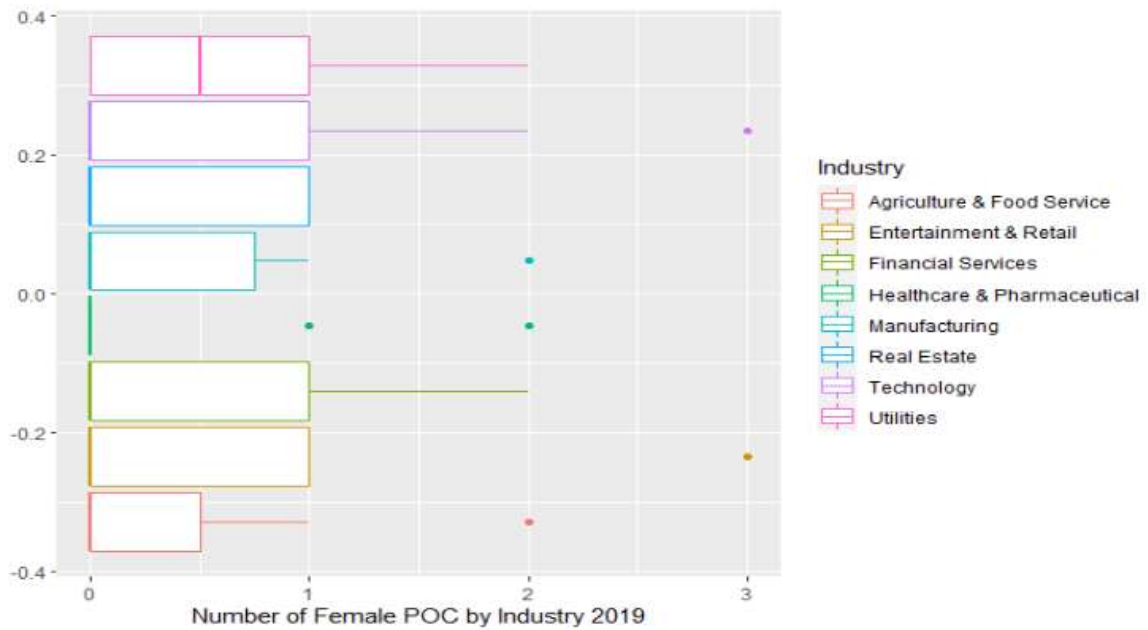


Figure 6: Number of female POC by Industry, 2019. The change from the first year of the study to the second year of the study already displays an addition of more female POC. While several industries in the previous year had none of this kind of board member, now only one industry does.

Figure 7

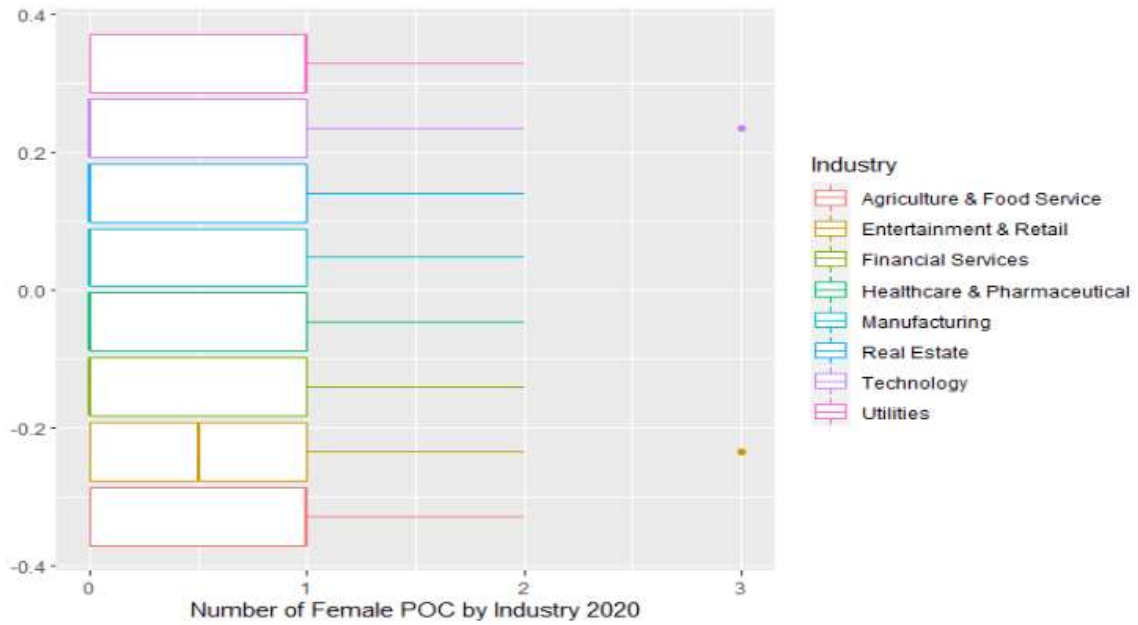


Figure 7: Number of female POC by Industry, 2020. The third year of the study is the year the diversity quota is announced. In this year, there is strikingly no difference between the level of female POC for all industries, with the exception of a couple outlier points.

Figure 8

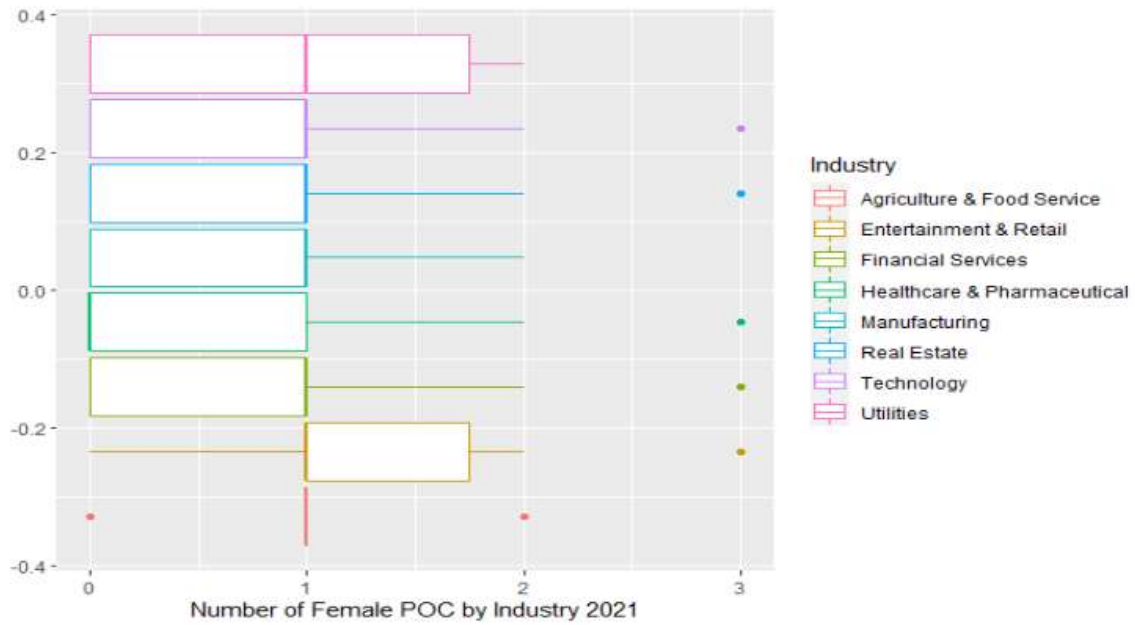


Figure 8: Number of female POC by Industry, 2021. In this final year, no industry has zero female POC on the firm boards. Once again the Entertainment & Retail stands out in the number of female POC on the firm boards, but in general the industries are relatively even.

Figure 9

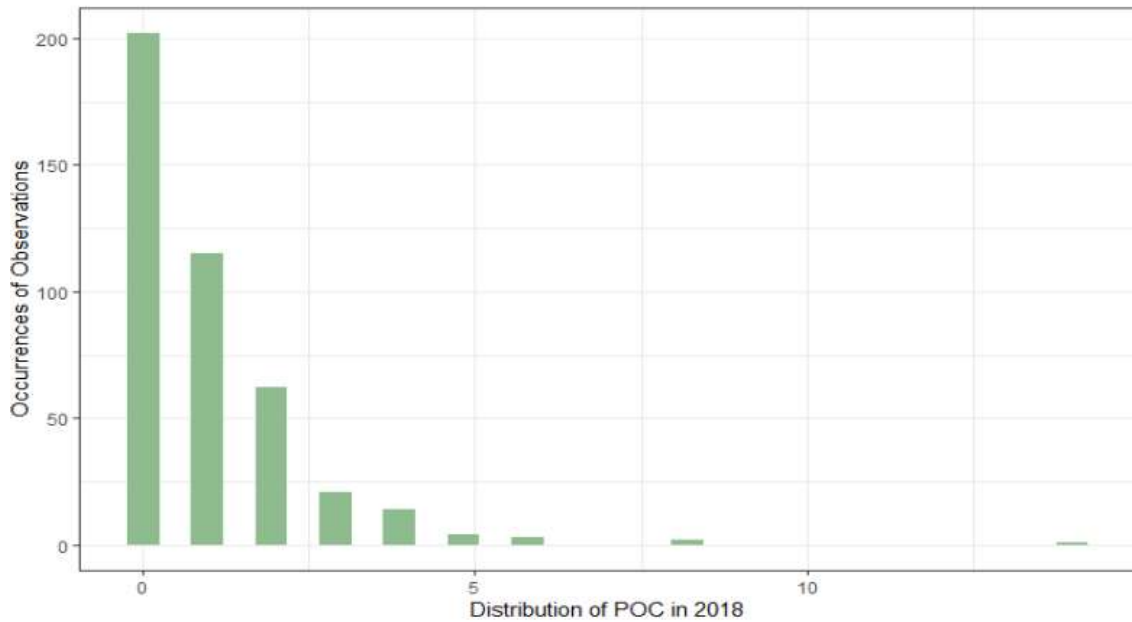


Figure 9: Testing the data to see if it follows a normal distribution. One of the simplest methods to test for this is to see if the data follows a bell-shaped curve. Only the year 2018 is shown here because since all the data came from the same source, it can be assumed that the data for the other years is also not normally distributed.

Appendix A: Further Specification of Data Collection Process

As the data in this paper has been collected by hand, it becomes necessary to give full detail as to how the data was collected and which criteria were used. This is for the purpose of promoting transparency as well as boosting the credibility of this paper.

In order to answer the questions posed in the hypotheses, one must know the gender and ethnicity of all board members and all firms based in California. This creates a few difficulties. Most databases do not maintain information on race or ethnicity. The options that do have this information do not cover the California firms specifically, therefore leaving them out. Additionally, these databases do not have ages of the board members or enough data for the entire time span (2018-2021). There is also no specific ethnicity data for each board member, rather just general trends. On the other hand, databases that do have age data or board member data tend to be decades out of date or not include gender information. In short, there is no one database that has every piece of information that together can answer the hypotheses. Because of these specific data requirements, it is then necessary to hand collect the information.

Another reason the Diversity on Boards report cannot be used is because the report is only focused on the year 2021. The focus is likely because 2021 marked the first year firms in California were required to have at least one board member from an underrepresented community. The paper aims to examine the period surrounding the induction of the diversity quota, while also considering the gender quota. The chosen time period includes the time near the passing of the gender quota (2018) coming up to the passing of the diversity quota (2020), following the effects of both to present day. Therefore, the time period will include the years 2018, 2019, 2020, and 2021 to encompass the possible changes throughout the lifetimes of both firms as much forward into the future as possible.

Alongside gathering data for the four years, the industry of each observation firm is also recorded. This will be used during the analysis to note any possible trends relating industry to any of the groups referenced in the hypotheses. Firms received the label of a particular industry by checking if a certain industry was named on the company website. If there is no industry listed there, secondary sources such as investment website could be used. In order to create more generalizable industry terms, some firms received industry labels that were not directly named by the firm itself or an outside source. For example, a video game company would likely receive the label of "Entertainment," as "Gaming" would be too narrow of a label and would include few other firms. This is another area where some level of discretion is used. Ultimately the industry label is determined by the primary goal of the company, hence why a video game company would be Entertainment and not "Technology."

I will give further explanation of why a firm might be cut from the dataset because of the specific reporting time frame. The fiscal year can be different depending on the firm, so it is important that some level of consistency applies throughout the dataset in order to avoid bias. Since most firms have a fiscal year that roughly follows the calendar year, this was the standard for the data. However, some firms may have a fiscal year that ends late in the year

but not exactly at the end of the year, for example in September or October. These firms were kept in the dataset because this is not too major of a discrepancy. On the other hand, if a firm has a fiscal year that ends in June, there is no simple way to have the entirety of each year of interest covered, so therefore the firm is removed. A secondary reason for the removal of a firm of this sort has to do with the repeal of the second quota. As mentioned in the introduction, the diversity quota was deemed unconstitutional in Spring 2022. Firms with fiscal years ending on or around December 2021 would not be affected by this, but firms with fiscal years ending anytime midway through the year could be. Some firms had annual reports released in June 2022, and although these could have been included in the dataset, they were removed to negate the bias of the repeal situation.