Career Barriers for Native Chinese In the U.S. High-Tech Industry: 
A Pilot Study
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Abstract:
Chinese immigrants in 2018 are the third-largest foreign-born group in the United States and it has already become a leading country of sending students to the U.S. Nearly half of these Chinese students were pursuing degrees in STEM related fields, and many Chinese students chose to stay and work in the U.S after graduation. Chinese citizens are also the second-largest group who receive employer-sponsored H1B temporary working visas. However, the number of Chinese in Executives or managerial positions does not seem to go up with the growing number of Chinese employees, even though the statistic shows that more and more Chinese are working in computer science and high-tech related companies. Due to a large number of highly skilled Chinese immigrants who are working in the U.S. and a small number of native Chinese on managerial positions, there is a growing interest and need in understanding employment experience and outcomes among native Chinese. Among the many urgent questions about Chinese employment in the US are those seeking to find the level at which many native Chinese employees are experiencing the career barriers, defined by scholars as “bamboo ceiling”, and the differences between managerial positions held by Whites as compared to Chinese as well as other Asians. These experiences may not be simple symptoms of failing processes in individual companies but may be evidence of an expansive racial disparity in U.S. high-tech companies instead. This pilot study chooses Google headquarter campus as a study case and conducts a mixed-methods research to explore the reasons behind the experience and perceptions of “bamboo ceiling” from native Chinese employees. By utilizing semi-structured interviews and resume analysis, this study demonstrates that career barriers experienced by Chinese high-tech workers may not be simple symptoms of failing processes in individual companies but may instead be evidence of an expansive racial disparity in U.S. high-tech industry.

Keywords: Chinese, Immigrants, Employment, Labor Study, Racial Justice, Glass ceiling, Bamboo ceiling, high-tech, Asian American
Introduction

“Every company tries to make efforts to be diversified and be inclusive and it is their ultimate goal. However, when you look at companies’ board members, who is the winner and how diverse it is? Any Chinese? Not really, right?”  ----Jamie

Jamie, a new immigrant from China, graduated with a master’s degree in Computer Science from a U.S. college and worked in Google for 6 years. He told me that he does not believe that his company is that diversified even though this company is proud of being culturally and racially diversified in the industry. He also claimed that Chinese are always easily ignored in managerial positions conversations not only in his company but also in this country. This anecdote is one of many claiming that career barriers for native Chinese immigrants in the U.S. workforce is a large-scale phenomenon that has been ignored intentionally in this society.

Chinese immigrants, seen as “model minority” in the U.S., have already improved their position significantly in terms of economic well-being, professional status, class standing, and social acceptance. Despite of this, there is still large number of evidences showing that Chinese are underrepresented in managerial positions, paid less than their White counterparts in the U.S workforce and experiencing barriers for advancing their careers. These barriers are defined by scholars as “bamboo ceiling” (Hyun, 2005). It is originated from glass ceiling, referring to the phenomenon that Asians are recruited into firms dominated by White men but fail to progress as far as White men in their career path. The Federal Glass Ceiling Commission (1995) described these barriers as “unseen” and “impenetrable glass ceiling”. In some cases, bamboo ceiling has become a systemic problem that many organizations “turn a blind eye” due to the Asians’ “overrepresented” situation on entry level positions. Buck Gee, an Asian scholar focusing on diversity in U.S. workforce, said that “Asians are the most forgotten minority in the glass ceiling conversation” (McGirt, 2018). The intentional action from the organizations and the public may cause overt discrimination or bullying, “as a form of power play” (MindTools, 2017). It is not only a simple promotion process in the organization, it is a racial disparity in the U.S. society.

This pilot study examines the experience of educated first generation Chinese in the U.S. high-tech industry by resume analyses and semi-structured interviews. The aim of this research is to test whether, why and to what extent that educated native Chinese encounter career barriers in the U.S. high-tech companies. The focus on first generation Chinese is justified on several reasons.
According to Migration Policy Institute, Chinese immigrants nowadays are the third-largest foreign-born group in the United States (Zong & Batalova, 2018; see notes in Appendix 1). China also has become a leading country of sending students to the U.S, accounting for around one-third of the total foreign students in the U.S (Zhou, 2018). Nearly half of these Chinese students were pursuing degrees in STEM related fields, and almost 60% chose to stay and work in the U.S after graduation (The Institute of International Education, 2018). Chinese citizens are also ranked as the second-largest group who receive employer-sponsored H1B temporary working visas (USCIS, 2018). Thus, Chinese immigrants are among the most educated and the most employed foreigners in the United States. In addition, Chinese are also different from other Asian groups because of the unique culture of Confucian value systems (See notes in Appendix 2). Thus, the examination of the workplace experiences of Chinese professionals is an important area of research in terms of their successful incorporation in the U.S society. Furthermore, the focus on high-tech firms is a suitable industry for such a test. This paper aims to contribute to an increased understanding of career paths to high-level leadership positions in high-tech companies specifically focusing on Chinese immigrants.

This pilot study starts with details of the history of Chinese immigrants to the U.S. and facts of Asians in the U.S. high-tech companies, following with existing literatures analysis and theoretical framework. A mixed-method research design will be explicitly discussed by addressing resume analyses and semi-structured interviews. Next, findings from data and analytical methods will be provided. In the final section, discussions on project reflection, limitations and implications will be addressed in detail.

Background

1. Facts about Chinese immigrants

Chinese immigrants have a long history of institutional exclusion and discrimination. In the early 1800s, Chinese men were allowed to immigrate to the United States but only for the limited purpose of replacing Blacks as low-skilled and cheap labors and being used by whites to discipline black workers (Li, 2014). During the nineteenth century, many Chinese worked as prostitutes in California which was one of the leading causes to the Chinese Exclusion Act (Li, 2014). After the Civil War, Congress decided to restrict Chinese immigrants from getting citizenship because Congress thought naturalizing Chinese immigrants would threaten the survival of American democracy (Li, 2014). Even after the suspension of the Chinese Exclusion Act in
1882 which allowed Chinese immigrants to naturalize, Chinese were still denied the rights, privileges, and protections typically associated with it. For example, Chinese were prohibited from testifying against white men in court, excluded from getting gainful employment, excluded from white public classrooms and excluded from owning property (Li, 2014).

Chinese immigrant population expanded again after the change of policies both in the United States and China in the mid-1960s which provided opportunities for Chinese to migrate (Zong & Batalova, 2018). The Chinese population increased by 700% from 1940-1980 and increased 104% from 1980 to 1990 (Leo & Tang, 2016). A report conducted by Migration Policy Institute in 2018 shows that Chinese nowadays are the second largest source of immigrants to the U.S. after Mexican and the number of Chinese immigrants has reached 2.7 million in 2017 which accounts for almost 6 percent of the total number of immigrant population in the United States (López et al., 2018). Different from the previous Chinese immigrants in the 19th century who worked as lower-skilled manual laborers, most Chinese immigrants who arrived after 1965 are predominantly skilled (Zong & Batalova, 2018).

In recent decades, an expansive number of Chinese immigrants come to the United States as international college students and China has become a leading country of sending students to the U.S (Zhou, 2018). According to the report from the Institute of International Education, there are more than 340,000 Chinese students who were enrolled in U.S. higher education institutions in 2018, accounting for over 30% of all foreign students which make Chinese nationals as the largest group of international students (The Institute of International Education, 2018). Nearly half of these Chinese students were pursuing degrees in science, technology, engineering and math fields (The Institute of International Education, 2018). Chinese students have accounted for around one-third of the total foreign students in the U.S. (The Institute of International Education, 2018). Some studies also indicated that the majority of Chinese students chose to stay and work in the U.S. after they graduated from a U.S. college (Kelly, 2018). In 2013, the National Science Foundation reported that around 92% of Chinese students who got an American PhD degree still stayed in the U.S. even five years after graduation (Kelly, 2018). In 2016, even though the number of students returning from the United States grow 37.61%, there are still 53.05% of Chinese students chose to stay (Kelly, 2018). Thus, China is one of the main sources of skilled immigrants in the U.S.
Furthermore, Chinese citizens are the second-largest group who receive employer-sponsored H1B temporary working visas after Indians who received 72% of H-1B visa number while Chinese receive only 11.2% in recent five years \(^1\) (USCIS, 2018; Chaudhury, 2019). H-1B visa is The H-1B visa is a non-immigrant visa that allows US companies to temporarily hire foreign workers with a bachelor’s degree or higher and in specialty occupations that require specific theoretical or practical skills in specialized fields such as in finance, accounting, healthcare, IT, engineering, mathematics, science, etc (USCIS, 2010). During the recent decade, nearly 10 percent of total H-1B visas have been issued for Chinese nationals. Moreover, according to the USCIS (U.S. Citizenship and Immigration Services) report in 2017, nearly 70% of H1B holders are working in computer science related industries and most of them are Asians (USCIS, 2018). 52% of Chinese immigrants largely concentrated in the applied science related occupations (Zong et al., 2018). Thus, the examination of the workplace experiences of Chinese professionals is an important area of research in terms of their successful incorporation in the U.S. society.

2. **Asian and Chinese immigrants in the U.S. high-tech companies**

When it comes to talk about diversity in high-tech industry, issues like recruiting, maintaining and promoting black and Hispanic employees arise and usually attract more public attention. People usually think that Asians are well-represented or even overrepresented in high-tech industry. However, the numbers of Asian employees on managerial positions shows the public a totally different story.

Ascend, the largest non-profit Pan-Asian organization for business professionals in the U.S., evaluated the executive parity index for White, Hispanic, Black and Asian employees in the U.S. high-tech industry (Gee & Pack, 2016). Executive Parity Index (EPI) is calculated by percentage of executives divided by percentage of all professionals (Gee & Pack, 2016). Any ethnic group with an EPI number of 1.0 means that its executive representation is at parity with its professional representation (Gee & Pack, 2016). Figure 1 shows that Whites were 57% above parity and overrepresented as executives in 2015 while Asian were 60% below parity and underrepresented as executives in 2015. Hispanics had a higher EPI than Asians and were more likely than Asians to be Executives.

Figure 1: EPI by race from 2007-2015 in high-tech Industry

\(^1\) In 2018, Indians 309,986 Indians received H-1B visas while 47,172 Chinese received H-1B visas (USCIS, 2018). According to the Economic Times, Indians have received between 67% to 72% of the total H-1B visas issued by the U.S. in last five years while only 11.2% of H-1B visas were held by Chinese (Chaudhury, 2019).
To provide more insights into prevalence of managerial underrepresentation across population groups, we focus on the top five U.S. high-tech firms, according to MyVisaJobs.com (2018). As shown in Appendix 3, we see that these five firms have an average of 52% are white employees and an average of 35% are Asian employees. However, Asians hold 40% fewer managerial positions than whites in these five high-tech companies.

Ascend also conducted analysis on Equal Opportunity Commission data of Silicon Valley in 2015. Across Silicon Valley, 47% of professional jobs are held by Asians which is slightly more than whites (Gee & Hom, 2015). However, over 70% of executive positions are held by Whites while Asians only held 25% of the similar positions (Gee & Hom, 2015).

We find similar trends in managerial representation in high-tech firm using data from the EEOC (The Equal Employment Opportunity Commission). Their Employer Information Reports indicate that over 83.3% of executive positions are held by Whites while only 10.6% are held by Asians (EEOC, 2016). First or mid-level management position racial compositions are only modestly more balanced, however, White managers account for 76.5% of managerial positions while Asians only occupy 11.5% (EEOC, 2016). We note that, here “Asians” refers to all groups originated in South and East Asia; therefore, we don’t know the true extent of managerial underrepresentation in Chinese, much less Chinese immigrants. According to a study by the University of California Berkeley in 2012, it shows that Indians stand “much higher in the hierarchy” that over 33 percentage of the large companies in Silicon Valley has at least one senior executive or chief technology official who are Indian, but none who are Chinese (Xia etc., 2018).
Literature Review

Jane Hyun addressed this kind of phenomenon as “bamboo ceiling” in her book *Breaking the Bamboo Ceiling: Career Strategies for Asians* in 2005 (Hyun, 2005). This term refers to the phenomenon that Asian Americans are experiencing barriers, repeatedly passed over for promotions and particularly underrepresented in managerial positions in the U.S. workforce (Hyun, 2005). Hyun claimed that the bamboo ceiling is a combination of individual, cultural, and organizational factors that impede career progress of Asians specifically (Hyun, 2005).

The term “bamboo ceiling” is originated from “glass ceiling”. The metaphor of a “ceiling” was first introduced by Kanter (1977) and the expression of “glass ceiling” was first used by Hymowitz and Schellhardt in the Wall Street Journal in 1986 (Hymowitz, Schellhardt, 1986). The Federal Glass Ceiling Commission (1995) defined the concept of glass ceiling as “artificial barriers to the advancement of women and minorities”. These barriers caused “glass ceiling” is “unseen, yet unbreachable barriers that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements” which shows the “discrimination...a deep line of demarcation between those who prosper and those who left behind (Federal Glass Ceiling Commission, 1995).” The commission also reported that there still 9 out of 10 chief executive officers are White even several decades after the passage of Title VII of the 1964 Civil Rights Act (Federal Glass Ceiling Commission, 1995).

Cotter and his colleague (2001) gave definitions and criteria of a glass ceiling based on the official definition from the Federal Glass Ceiling Commission and examines gender and race inequalities by using random effects models and data from the Panel Study of Income Dynamics. They claimed that not all gender or racial inequality can be called as glass ceilings and the real “glass ceiling” has to meet the following four criteria: 1) it represents a gender or racial disparity that is not “explained by other job-relevant characteristics of the employee (Cotter etc, 2001)” ; 2) it represents a gender or racial disparity that is “greater at higher levels of an outcome than at lower levels of an outcome(Cotter etc, 2001)” ; 3) it represents a gender or racial inequality in the chances of being promoted into higher level positions are not comparable to the proportions of each gender or race at those high level positions; 4) and it represents a gender or racial disparity that increases “over the course of a career(Cotter etc, 2001)”. Based on these four criteria, scholars used data from 1976-1993 waves of the PSID to calculate race and gender and the results show strong support for gender inequalities that both White and African American women encountered a glass
ceiling in earnings in their careers while African American men are experiencing an earning gap between white men (Cotter etc, 2001). However, Cotter and his colleagues acknowledge that these results cannot explain why these disparities have occurred.

Maume (2004) used Cotter and his colleagues’ four criteria of a glass ceiling and extended their study by examining managerial attainment over the life course. He also used PSID data over a 12-year period in a sample of prime-age workers (Maume, 2004). He found out the evidence of different treatments against women and minorities in holding a managerial position (Maume, 2004). Moreover, this unfair treatment increased over the life course. Maume (2004) also explored few reasons from previous scholars for explaining why women and minority are largely excluded from the managerial positions. Kanter (1977) claimed that powerful White men are more likely to promote managerial candidates who are socially similar to them which is called “homosocial reproduction”. This term usually describes that those who share similar tastes, belief, backgrounds are easier to build trust between them (Kanter, 1977). Moreover, Kanter (1977) also showed that managerial work was also gendered when people talk about the characteristics of a good manager. Women always fall below White men in the queue of the most desirable managers list because the burdens from family and they are perceived that they cannot work extreme long hours as a requirement of managers (Fried, 1998; Perlow, 1998).

Asian, as a big part of minorities in the U.S., also experienced glass ceiling. Li (2014) claimed in her study that Asian Americans are experiencing double blind situation in the U.S. workforce. Compared to Asians, Whites are over represented in high level managerial positions and at the same time, Asians are not being promoted at the same rate as other minority groups even though Asian Americans make up nearly half of all minority associations. She also expressed that Asian Americans have the “lowest conversion rate from associate to partner of any minority group (Wei, 1995)” and receive “the lowest return on education of all ethnic groups (Lum, 2005)”. Tang (1997, 2000) used longitudinal data of scientists and engineers’ career path to compare within some key minority groups and found out that while all minorities faced difficulties for making transition into managerial level position, Asians always have a different and unique pattern. She claimed that at the first nine-year career path, all minority seemed to less likely than White males to get into management but at the end of this period, Asians were the only minority group left behind on getting managerial positions. Leong and Tang (2016) focused specifically on Chinese immigrants’ experience of bamboo ceiling. They used an adapted ecological model which was
integrated from Bogardus’ (1933) social distance theory and Bronfenbrenner’s (1977, 1979) ecological systems theory of human development to explain career barriers for Chinese immigrants in the U.S. Authors claimed that career barriers for Chinese immigrants are caused under lots of context such as the society, community, schools and colleges and workplace levels. Within these contexts, barriers range from racial stereotyping, “unintended consequences of the model minority myth”, language proficiency, lack of social support to workplace discrimination.

Varma (2002) used “Silicon Ceiling” to describe the phenomenon that Asians immigrants are facing unbreakable barriers in getting prestige leadership positions specifically in high-tech field. He conveyed that Asians have won the battle in getting higher education and more employment, but they get penalized by “successful model minority” stereotype and experience racial discrimination in career advancement (Varma, 2002). The author pointed out that science and engineering field has a huge difference from any other fields in workforce because Asian immigrants play an unreplaceable role of “high-tech coolie” and succeed the most in this field (Varma, 2002). Varma (2002) expressed that this phenomenon is caused by structural racism and cultural exclusion which made Asian immigrants lack of requisite qualifications for manager positions at the very beginning. Tang (2000) also provided evidence in his study that Asian American engineers have had limited success when compared to Caucasian engineers. He found that Asian Americans are less likely to get promoted to managerial positions even after controlling for nativity, length of residency time in the US, and other demographic characteristics, such as education and experience, than Whites.

L literatures on Indians’ bamboo ceiling experience in the U.S. workforce including in high-tech industry are well developed and studied. For example, Saran (1985) and Helweg (1990) provided qualitative data to show that Asian Indians are experiencing larger career barriers than white managers and how Asian Indians were facing challenges in economic and cultural adaption. Fernandez (1998) specifically focused on exploring educated Indians’ glass ceiling experience in high-tech industry in the Bay area by analyzing the 1990 5% PUMS census data and applying theoretical assumptions derived from human capital, assimilation, labor market structures, size discrimination and cost of race to predict and test glass ceiling experience. He found that educated Asian Indian males experience a huge disadvantage in promotion but once these Indian males

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2 Successful model minority refers to minority groups especially Asians, that have achieved a high level of success in terms of education and economic wealth in the United States (S.E. Lee & Rong, 1988).
successfully became managers, their economic returns will be better than their white counterparts. He concluded that the cost of race assumption leads to a net disadvantage for Indians in promotion to management levels. The author also claimed that both immigrant and U.S. born Asian Indian females face the glass ceiling by getting less chances for getting promoted to a managerial position and earning less than comparable U.S. born white females once they become managers. Varma and Rogers (2004) claimed in their study that even Indians are well represented in the U.S. IT industry, they are experiencing the hard route to success since they are paid less than their US-born colleagues and are usually prevented from getting fair promotion opportunities.

However, there are only very small numbers of articles especially focusing on Chinese bamboo ceiling experience in high-tech industry. The only scholarly article explores Chinese engineers’ glass ceiling experience is based in Canada by analyzing 2001 Census or Canada and a mailed survey to Chinese engineers who graduated from the University of Calgary (Wong, 2006). The author found out that model minority thesis has limited applicability to the Chinese in Canada, but Chinese engineers get lower return to their education and experience than their White counterparts. The results from the survey also points out that Chinese perceived a glass ceiling and experienced the ceiling that is hard to break. However, Wong’s study is based in Canada. Since most of the leading tech companies are based in the U.S., it is necessary to explore how Chinese experience their career path in the US. This study will contribute to the career study of minorities from lenses of Chinese immigrants and high-tech industries in the US. Furthermore, most of studies on glass ceiling used census data as their primary data source. This study used another data source, resume data, which is totally different from the previous studies to study minorities’ career advancement. This provided other new aspects and characteristics that census data does not possess.

**Research Question**

Given all the background on “prestige” Chinese immigrants and their underrepresentation in the U.S. workforce, it is necessary to study why and to what extent do they experience barriers in their career path. The research questions are:

1. Why there is a racial gap between Whites and Chinese on managerial positions in high-tech companies?
2. Why and to what extend that native Chinese who are working in the U.S. high-tech companies feel they have encountered a “bamboo ceiling”?
Theoretical Framework

Based on the research questions, this study needs to find out the potential causes of bamboo ceiling for Chinese. The causes of bamboo ceiling are not only result from one single determinant. It is a result of different elements interacting with each other. Race might be the biggest influencer of bamboo ceiling, but variables like education, social relations, cultural adaption, ability of assimilation will also potentially play important roles of preventing Chinese from reaching privileged positions in the U.S. companies. Hyun (2005) claimed that bamboo ceiling is caused due to the combination of organizational, cultural and individual factors. This framework is adopted and modified in this study. Institutional factor will be discussed instead of organizational factor since the former one is under a larger context. Cultural and individual factors through different capital theories will also be addressed. These three main factors interact and combine together that might cause bamboo ceiling for native Chinese in the U.S. high-tech firms. Figure 2 shows the conceptual framework inspired by Hyun.

Figure 2: Conceptual Framework
1. Institutional Factor: Racial Inequality and Stereotyping

The cost of race might be the first reason. Thomas and Powell (2009) argue that racial inequality in the U.S. is inherently advanced through inter-institutional racism, institutional resource inequalities and historical legacies. They called this symptom as “structural racism” which see racism as “institutionally constrained and speak to the race-targeted and procedural dimension of racism (Thomas & Powell, 2009)”. This kind of racism usually emphasizes on the procedures and practices within their own institutions or while interacting with other institutions which cause unequal resource distribution based on race by the broader system (Thomas & Powell, 2009). Chinese immigrants have a long history of institutional exclusion and discrimination which made Chinese excluded from top to bottom. Even these exclusions have diminished in some degree in the modern society, Chinese are still facing different patterns of racial inequality caused by structural racism. Furthermore, White are seen as the privileged and dominant group in the U.S. while Chinese are seen as disadvantaged minorities. Whites are holding much more power in this whole society at the expense of minorities (McIntosh, 1989). The privileged rights allow whites to systematically overpower certain group because of one’s race or sex (McIntosh, 1989). This white privilege caused structural racism gives us another aspect of explaining why Whites are holding more CEO or high-level positions in high-tech companies.

To explain why there is a bamboo ceiling in the U.S. high-tech industry, the concepts of perceived discrimination and stereotyping might be suitable in this specific context. Perceived discrimination is one’s own perception of being treated differently, unfairly or in a biased manner due to his or her characteristics such as race, gender or ethnicity (Mirage, 1994; Sanchez and Brock, 1996). It can be explained by social identity theory which claims that individuals usually categorize themselves and others into different groups based on their own shared characteristics (Tajfel & Turner, 1985). A large number of studies have provided empirical evidence of perceived discrimination against minorities in every aspect of employment such as recruitment, wage and promotion. For example, a study by Maume (1999) found that whites are more likely to be promoted to a supervisory position than other racial groups. Similarly, Baldi and McBrier (1997) also found out that minorities are less likely to be promoted when whites are in “scarce supply”. Furthermore, the standards and determinants of promotion are even different for minorities (Baldi & McBrier, 1997). All these findings based on perceived discrimination can provide evidence to explain bamboo ceiling.
Racial stereotyping can also create difficulties for Asians to break the bamboo ceiling. Cardwell (1996) claimed that “A stereotype is ...a fixed, over generalized belief about a particular group or class of people.” Racial stereotypes typically seem to convey that people favor their own racial group but belittle other racial groups which cause racial discrimination (Katz & Braly, 1933). Asians in the U.S. are often subject to “model minority” stereotypes (Lee, 2015). In fact, this stereotype holds both positive and negative aspects. Chinese are often seen as dedicated, efficient, productive and well-performing on many different tasks. However, this population is also portrayed as greedy, job-stealing, “quiet, hardworking, high achieving, submissive and antisocial” (Ruttimann May, 2018). Theories from Sy and his colleagues also suggest that Asians are excluded from holding certain positions in the workforce because of race-occupation fit (Sy et al., 2010). Other scholars provide evidence for Sy’s theory and claimed that Asians are usually stereotyped as highly competent in the workforce and highly proficient in technical skills (Berdahl & Min, 2012). However, on the other side of this stereotype is that Asians are usually not good at communication (Berdahl & Min, 2012). Asians always have been called “nerds” without having gregarious or outgoing personalities (Lee, 2015). Because of this stereotype, Asian Americans are less likely to be considered as manager candidates compared to their White counterparts due to the skill set required for a manager which relies on a large amount of communication (Sy et al., 2010).

This kind of racial stereotype also causes job segregation based on race and at the same time, this job segregation can create minority segmentation which will further result in perceived racial discrimination (Kaufman, 2001). Minority segmentation refers to the situation that minorities are relegated to certain kind of jobs or certain fields within an organization (Kaufman, 2001). Asians, especially Chinese, are mostly working in tech-related positions but few hold managerial positions. This common situation will provide incorrect information to the public that Chinese or Asians are not suitable for management positions but only in tech-related fields which create bamboo ceiling for Asians.

2. Individual Factor and Cultural Factor: Different Forms of Capital

Considerable literatures show the importance of individual’s education and its impact on occupational status and chances for promotion (Spilerman & Lunde, 1991). People with more professional trainings and higher degrees tend to have larger chances to get high-level positions (Spilerman & Lunde, 1991). Education and trainings as investments in people for acquiring
knowledge and skills with economic value are seen as part of “human capital” (Spilerman & Lunde, 1991).

However, not all people who are holding higher degrees or more trainings will have chances to get promoted to higher managerial positions. There are many influential factors other than “human capital” and cultural factor may play an important role as well. Pierre Bourdieu’s (1986) concept of cultural capital talks about the reproduction of class-based power and privilege as well as the role culture plays in the reproduction of inequality. It explains how culture, behaviors and attitudes of different groups produce social inequality (Bourdieu, 1986). To be explicitly, Bourdieu (1986) termed “embodied” cultural capital, referring to particular different forms of getting internalized knowledge and behaviors to obtain privilege and advantages in a given context. Whites have their own cultural, norms and behavior standards while other racial groups have their own. However, White, as the dominant race in this country, set the normative standards based on their own values, beliefs and behaviors which means they generally have more influence than other race groups over the dominant cultural in mainstream American institutions (Bonilla-Silva, 1996). Bogardus’s (1993) social distance theory can provide an explanation for why Chinese are hard to adapt U.S. cultural and why there are different degrees of social distance between immigrant groups and the dominant U.S. group. In Bogardus’s study, he found out that Chinese is one of the groups with the greatest social distance from the dominant White group (Bogardus, 1993). This kind of social distance will lead to lack of contact and social interactions which will turn to more cultural misunderstanding and mistrust. Immigrants such as Asian Indians with lesser social distance from dominant group would be easier to adapt to U.S. cultural (Bogardus, 1993). Therefore, Chinese immigrants were viewed as difficult to assimilate into American society and social distance from White dominant is getting greater which leads to more career barriers in the workforce.

Social capital is another main factor of being promoted in the firm. This may combine both cultural and individual factors which make less Chinese get managerial positions. Bourdieu (1986) claimed that “social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationship of mutual acquaintance and recognition.” It means that social capital takes the form of social networks and at the same time, it focuses on the interactions and relations among individuals in a group (Spillane, et al., 2003). Putman talked about how bonding social capital may have impact on promotions.
“Bonding social capital” describes interactions and connections within a group with high level of similarities of demographic characteristics, beliefs, and resources (Putnam, 2000). It means that people who look like themselves tend to have strong close relationships (Putnam, 2000).

**Research Design, Data Resource and Analytic methods**

This pilot study is designed to investigate the professional experiences and career path as native Chinese who are working at U.S. high-tech companies. In particular, the research aims to identify unique career development and challenges for native Chinese in these companies as well as strategies for overcoming these challenges. This study is a mixed-method research. Creswell (2018) points out that research questions which are suitable for mixed methods have to subject to the following conditions: one data source is not enough for the whole research; a second method aims to strengthen the primary method; and the whole research objective has to be addressed with different phases. In order to explore whether position has relationship with racial factor statistically and at the same time, to get a deeper understanding of how native Chinese feel about their experiences in the U.S. high-tech companies, this study utilizes both quantitative and qualitative methods which includes resume analyses and in-depth semi-structured interviews. This study also uses a case study of Google. Case study is a research method that helps to explore a phenomenon within its context while using a large amount of different data sources (Baxter & Jack, 2008). In 2018, almost 40% of Google employees are Asian while around 50% are White (Statista, 2019). A Google diversity report released from FORTUNE claimed that Asians along with Whites are overrepresented among employees at Google even though they are a minority group in the U.S. population (Donelley, 2017). While the actual number of Google employees who are first-generation Chinese is not known at present, it is still likely that this population is large enough that a focus on them may yield insights about career limitations for Asians and Asian-Americans, referring to the “bamboo ceiling”.

A. Quantitative Method

**Dataset:**

Data for this quantitative part will be resumes collected directly from employees in Google Mountain View Headquarter. The choice of resume analyses is justified on several counts. Different from census data only showing one’s current situation, resume data contains more aspects. It is a self-presentation of people’s own view of their career and records one’s career path development chronologically. The census data only can provide horizontal comparison between
different ethnic groups holding different level of positions currently. On the contrary, the resume data could offer both horizontal and vertical comparisons. It not only shows positions people are holding and held, but also tells how long they have been holding the positions which might help to provide indications of glass ceiling. This type of data is widely used by scholars who conduct career path research in different occupations or fields. For example, Smith (2015) used resumes of federal agency leaders to explore women’s career advancement and glass ceiling phenomenon in public sector. Bruce-Golding (2019) also used 14 Deputy and Assistant Headteachers’ resume to examine the career trajectories of senior leadership in education. Wilson-Kovacs and her colleagues (2006) also used resume analyses as complements for interviews to explore women professionals’ underrepresentation in the science research area.

In order to explore the leadership disparity and bamboo ceiling experience of native Chinese, comparisons between Whites and Chinese employees on managerial positions are a suitable choice. By using snowball sampling, forty resumes were collected by the research informants in Google headquarter. 20 resumes are from native Chinese employees including 16 male and 4 female and other 20 are from White employees including 15 male and 5 females. The sample selection of native Chinese in this scenario has to meet the following requirements: Chinese born, got a degree from a U.S. university, started their careers in the U.S. after graduation. Whites employees in this selection process need to be Caucasian American which excludes Hispanic, Native Hawaiian and Black. All 40 resumes are collected from managers in Google headquarter and the personal identity information of these 40 resumes owners has been requested and confirmed by the informants of this study.

Analytic procedures

Resumes have been fully coded. Current position in Google needs to be coded as different level of managerial positions. Details of Google manager position level are included in Appendix 6. Personal identification information such as race, gender, origin of birth, legal status has been coded based on confirmed information by research informants. Information about different periods in job market has also been coded by years in job market, years on current position, years in Google, total number of positions before current positions. Their promotion experience is also another focus such as how long did they take to get promoted to the current position and whether they promoted within the organization or outside of the organization. Some capitals-related information has been coded by their different level of degrees, type of degrees, whether they have training or
internship experience and whether they belong to professional affiliations. Appendix 5 shows the full code book for resume analyses. Due to the time limit, only simple descriptive statistics will be discussed in this paper.

**Hypotheses**

There are three main hypotheses derived based on the theoretical framework in the last section:

Hypothesis 1: Native Chinese are less likely to get promoted even if they hold higher degrees than Whites.

Hypothesis 2: Native Chinese tend to take longer than Whites to receive promotion to a similar managerial position at their current employer.

Hypothesis 3: Native Chinese tend to spend longer years in the workforce than Whites to get promoted to a similar managerial position.

**B. Qualitative Method**

The qualitative method will help to explore the true feelings and experiences of people which quantitative method cannot tell based on the numbers. This part of study includes 5 in-depth semi-structured interviews. Interviewing gives researchers access to the observation of others and provides respondents with an opportunity to talk from emotional stance (Weiss, 1995). The goal of the interviews was to probe their perceptions of glass ceiling or career barrier issues from three main themes: personal experiences in the workplace, their perceptions on why this ceiling exists, and possible solutions to break the ceiling.

**Dataset**

Five interviews have been conducted with five employees in the Google Mountain View headquarter campus including 4 males and 1 female. All of these selected interviewees were born in China, came to the U.S. for advanced computer science related degree and found a software development related job in Google’s headquarter Mountain View campus after graduation. They were selected for participation based on their current positions in the organization such as managerial level position and tech-lead position. The first interviewee is the informant of this study. Other participants were recruited by using a snowball sampling method from contacts given by the informant in Google. The interviews typically lasted between 50 minutes to 75 minutes.

The interview procedure was based on approximately thirty open-ended questions and varied slightly for each interview. The interview guide aims to be inductive, comprehensive and deep.
The questions cover comprehensive topics ranging from their personal background information to their career path and work history to their bamboo ceiling related experience to their suggestions for younger professionals from China.

Analytic procedures:

Interviews have been recorded and transcribed by an online paid professional transcription service. Transcriptions were stripped of identifying information and coded for themes in NVIDIA. All those five names used in this paper are pseudonyms. All five transcriptions have been coded. The Coding Manual for Qualitative Researchers from Sage Publication mentioned that “A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data (Saldaña, 2016).” This coding process is very important for qualitative study because “coding is a crucial aspect of analysis (Basit, 2003)”. Codes used for this study are emphasized on interviewees’ perception of their own organization, perception of managers, their own career advancement, perceptions of diversity, feelings of working with other Chinese, feelings of cultural differences in the organization, perceptions of bamboo ceiling, perceptions of breaking the ceiling. There are some sub-codes under the main codes in order to differentiate different focuses from interviewees. Preliminary code book is showed in Appendix 6. Main themes from interviews have been addressed based on the counts of different codes.

Findings

A. Findings from resume analyses

The first hypothesis is: Native Chinese are less likely to get promoted even if they hold higher degrees than Whites. It tends to test the relationship between race and education level and their effects on positions those managers held. Table 1 describes details of education level coded from those 40 resumes of Chinese and White managers in Google. 100% Chinese and White managers obtained a bachelor’s degree. 90% of Chinese managers are holding master and PhD degrees while only 47% of White managers obtained master’s degrees or higher. Chinese managers are 29% more likely to hold a master’s degree than white managers and they are 22% more likely to hold a PhD degree than White managers. Thus, Chinese managers tend to have higher education level than white managers. This disparity indicates that it is possible that formal education requirement for managers is not same for all in the hiring or promotion procedure. The education requirement
of being managers seems to be lower for Whites while the education requirement for Chinese managers is much more stringent. This barrier might be a fact of discrimination on Chinese.

Table 1: Education level of Chinese and White managers in Google

<table>
<thead>
<tr>
<th></th>
<th>Chinese</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Master</td>
<td>56%</td>
<td>27%</td>
</tr>
<tr>
<td>PhD</td>
<td>44%</td>
<td>20%</td>
</tr>
</tbody>
</table>

To test Hypothesis 2 that native Chinese tends to have longer years than Whites to get promoted to a similar managerial position, aspects such as comparisons of years before getting promoted can provide evidence. Table 2 shows the average years that Chinese and White managers took to get on different level managerial positions. There are 6 tiers under the two main categories of mid-level manager and high-level manager. There was no resume collected from manager on Tier 5 so the data on Tier 5 will not be available in Table 2. In other tiers from Tier 6 to Tier 10 in Google, Chinese tend to need more years than Whites to get on the current managerial level. Both Chinese and White used shorter time to get to T6 than other Tier manager positions. Tier 7 and Tier 10 seem to be the most difficult one for Chinese since they took much longer time than White as well as any other tier managerial position.

Table 2: Years needed to promote to different tier level

<table>
<thead>
<tr>
<th></th>
<th>Average years needed to the position</th>
<th>Average years Chinese needed to the position</th>
<th>Average years White needed to the position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-level manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 6</td>
<td>4</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Tier 7</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>High-level manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 8</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Tier 9</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Tier 10</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

The average total years in job market of both Chinese and White managers are showed in Table 3. Chinese managers tend to need three more years in workforce in order to get on the current managerial positions. Chinese needing more years for promotion than Whites provide another evidence that native Chinese are experiencing bamboo ceiling. This finding successfully provides evidence for the Hypotheses 3 that Chinese tend to need longer years in workforce than Whites in order to get promoted to a similar managerial position.
Table 3: Years in the job market

<table>
<thead>
<tr>
<th></th>
<th>Ave</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in the job market</td>
<td>14</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>White</td>
<td>12</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Chinese</td>
<td>15</td>
<td>11</td>
<td>19</td>
</tr>
</tbody>
</table>

Based on the resume analyses, there are some other findings which might provide more evidence for Chinese bamboo ceiling experience. Whether managers are promoted from within the organization has been coded during the analysis and results are showed in Table 4. Some of managers are promoted from within the organization but some are straightly hired as manager from other organizations. Chinese managers are more likely to get promoted within the organization while White are more likely to get the manager position straightly from other organizations. It’s easier for whites to get managerial position not only from within but also from outside.

Table 4: Promoted from within or not

<table>
<thead>
<tr>
<th></th>
<th>Chinese</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote from within (%)</td>
<td>69%</td>
<td>46%</td>
</tr>
<tr>
<td>Straight to the current manager position from other outside organizations (%)</td>
<td>31%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Table 5 describes two comparisons between race and gender. The first one compares between average years needed for Chinese female and White female to get on managerial positions. The second one compares average years needed for current manager positions between Chinese male and White male. The result contradicts the concept that women of color are experiencing the largest barrier in their career path (Henry-Brown & Campbell-Lewis, 2005). Data here shows that women took fewer years than man to get manager position in Google. However, women who got manager positions tend to have longer working experience than man. Chinese women seem not to be affected by being both Chinese and women. Their years for getting manager position are equal to White women in Google. However, the total years in workforce of Chinese women are much more than any other male and white women which means Chinese women need to gain more working experience than others to get managerial positions.

Table 5: Average years needed for manager positions and average total years in workforce by race and gender

<table>
<thead>
<tr>
<th></th>
<th>Average years needed for manager position</th>
<th>Average years in workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Chinese</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>----</td>
<td>---</td>
</tr>
<tr>
<td>White</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Chinese</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>White</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

B. Findings from interviews

After coding for all the five interview transcriptions, the main theme came up: Native Chinese do feel bamboo ceiling even those high-tech companies are getting more diversified and breaking the ceiling is not easy. Key codes such as cultural differences, pressure, managers and diversity kept appearing for more than 150 times in total. This section will discuss the findings in detail.

1. Pressure

The first key code both from interview transcriptions is “pressure”. Native Chinese who are working in the U.S. high-tech companies are facing huge pressure from both inside and outside. They are facing pressure from their colleagues, their legal status as well as their family.

   a. Pressure of work-life balance

   All of these five participants are over 33 years old and married in the U.S. Three of them specifically expressed their concerns about work-life balance. They have to sacrifice their family in order to perform well in their work. Two of the participants became new fathers few months ago but they have to send their babies back to China because of the pressure from the work. They seem to get trapped into a dilemma: if they chose to make their kids stay in the U.S., one in the family has to sacrifice his/her work but they may not be able to pay for the daycare for the kid in the future; in contrast, they could get enough money for daycare if both of them and their wives work but they have to sacrifice their kid.

   Mike, who just promoted to L6 middle level manage position and became a father 8 months ago, said that:

   It is.. it’s just hard for me.. you know.. to do well in everything. You got a family to take care of, but you still got a team to take care as well. Everyone is counting on you actually. I just. I don’t have enough time to spend with my family if I pay more attention on work and if I spend enough time with my family, I will not be able to finish my project with tight deadline. And..I really cannot afford for losing my job. You know that a new born infant got lots of things to do and it really hard just depends on me and my wife. So I really have no choice to send my little girl back to China.

   This difference between Chinese and American may result from different cultural and employment history. In the U.S. culture, white males usually perceive as main household
income earner while women, especially mother, tend to stay at home and do the most caregiving in their families. In Chinese culture, most of male and female have their own jobs, and both contribute to the household income. Women usually do not stay at home full time to take care of kids. This cultural difference indicates that white males tend to have less pressure from family than Chinese male due to the different level of support from their family.

b. Pressure of maintaining on the position and their legal status

All of my interviewees are also facing the pressure of their legal status. They are concerned about the policy changes under President Trump’s administration that might have impacts on their legal status. Among the 5 interviewees, 2 of them are still under process of issuing a green card and it is held by their employers. It is really difficult for them in this situation to change employers. This job immobility results in the loss of their bargaining power. Tommy, who has been on T5 manager position for a year, expressed his anxiety in the interview:

Yes, I am a manager now. But.. But just a very low-level manager…I am still worried about when I could receive my green card. It has been 5 years that I’ve get on the line, but I still didn’t get any response of approval. If Trump says anything or take any actions against China, we are the first to be affected… and also.. people in my team are U.S. citizens and they probably are thinking about replacing you because of your unstable status? Maybe they don’t think like that, but sometimes I will have this kind of anxiety….and.. I…I really cannot move right now due to my unstable status. I cannot go to another company for a higher position because of it.. you know..

c. Pressure from same level managers and upper level managers

These five employees are also facing the pressure from the same level managers in the company. They feel excluded when interacting with other managers in the similar level. One of the interviewees told the story:

I..I..hm…actually am facing huge pressure every day since many other managers are from India…these Indian managers are not only working together but also have personal lives together. They usually live close by and they always have family parties every other week. I feel like..you know.. isolated since I don’t have my people.. I mean…other Chinese managers like..working together…

Chinese managers seem not to be getting well with their upper level managers no matter their upper level managers are Whites, Indians or Chinese. Jackie, who is on a lower-level managerial position, expressed the feelings when interacting with his upper level managers:

I feel like excluded you know…my upper level manager is a native-born white man…I am not saying he is not good but it’s true he’d like to …I mean my White counterparts are easy to communicate with him and get more attention…actually it is really common, no matter where your upper level manager came or what race they are…Upper level
manager in the different race from yours might create a larger distance between you and him…

2. Opinions on diversity

All of my interviewees see Google as really diverse on the base since they did observe lots of new hires are in different race and gender. However, they don’t agree that Google is also diverse in the boardroom or even on the lower management positions. Jamie claimed that to be diverse is only a goal that their companies want to achieve, but not for the boardroom:

Every company tries to make efforts to be diversified and be inclusive and it is their ultimate goal. However, when you look at companies’ board members, who is the winner and how diverse it is?......Any Chinese? Not really, right?

Wen, another participant in this study, even thought that companies are not willing to diversify without the diversity policy. He thinks that many high-tech companies just want to do politically right:

Companies as large as Google which focus on diversity and they have a strict protocol to follow, because of the political correctness. They are not willing to suffer too much criticism, that’s why they will try to do it “right”…you know….political correctness..it is just related to the firm’s public image and reputation...

These thoughts on diversity give us an evidence from another perspective that native Chinese are experiencing bamboo ceiling because of the low chance to be a board member or even a manager.

3. Bamboo Ceiling and reasons behind it

Native Chinese do experience barriers in promotion to managerial positions. However, my interviewees have different understandings of the bamboo ceiling. Jamie seems very controversial. He does not agree that native Chinese have experienced bamboo ceiling at the very beginning of the interview, but he emphasized that native Chinese do meet barriers in promotion. Eventually, he denied and then agreed on his first comments on bamboo ceiling couple times during the interview. He has a different definition for the phenomenon that native Chinese have troubles in promotion to managerial positions. Instead of bamboo ceiling, he prefers to define it as “bamboo curtain” or “barriers”. Wen firmly believed that bamboo ceiling exists, and it impedes native
Chinese workers’ career progress. Even though the understanding of the bamboo ceiling is different between these two interviewees, both of them do agree that cultural differences cause bamboo ceiling or barriers.

Before stepping into the reasons of the bamboo ceiling, we need to figure out what are the requirements to be a manager in the U.S. tech companies. Mike suggested in his interview that some NIUBI (translation from Chinese: awesome and outstanding) people still cannot be a manager. It’s not all just about skills but as a manager, he or she has to overcome some cultural barriers and has to be a talkative and easy communicator in an American’s way. The interview with Jackie also provided similar thoughts that as a manager, you have to express your ideas clearly, to be willing to help others and most importantly, to be open and adapt new things and culture really fast. Both of them agreed that professional skills are just the basic requirement to be considered as a manager, but communication skills and personalities are the key factors for promotion.

After getting some senses of the requirements to be a manager, it’s easier to understand why Chinese are hard to be promoted to managerial positions. The first reason is cultural differences:

So, everything has to do with race. Why there's so few Chinese or Chinese American CEO in U.S. company? It has to do with race but more than race, it has to do with culture. How you do things here is a reflection of how you do things at your own country in that culture. If you do not do things like the whole domain society do, why they have to accept you?

This is the answer from Jackie about his own understanding of reasons for bamboo ceiling. He suggested that other than race, cultural issue is the most important factor of bamboo ceiling. Jamie supported this claim and thought that the language issue is the main cause of cultural differences. He said that Chinese tend to avoid communicating with others especially with Americans because they don’t feel confident about their English. Furthermore, along with the “shy” personality, Chinese workers prefer to pay attention on themselves instead of adapting to the U.S. culture such as sharing and talking. Mike agreed with this claim and brought a new aspect of cultural difference. He thought that Indians in these high-tech companies are doing a great job in adapting the U.S. culture and doing things in American ways. He also claimed that Indians are not facing bamboo ceiling because of their successful attempts to reduce cultural differences. Compared to Chinese, not a lot of people from this group are willing to attempt or have
successfully attempted to adapt to the culture in the U.S. which caused a pipeline issue in promoting to managerial positions.

Since many Chinese are just working in Chinese style and refused to adapt to work in an American style for a long time, Chinese in those high-tech companies are stereotyped by other people. For example, my Mike explained:

I think Chinese professionals behave and do what they do in American companies carrying the imprint or…hm..stereotype of what they accustom to do in China...Traditional Chinese culture emphasizes on being "polite", being "humble" and downplay your accomplishments even you did a great job no one ever did before..so other people will have the impression of Chinese as “silent” and “not active” even though they are highly skilled.

Chinese have been seen as highly proficient in work but silent when they need to share and talk. This group seems to be excluded in the companies because of this stereotype, especially when considering promotions. Furthermore, Chinese are stereotyped by themselves. Mike, claiming that Chinese are “outsiders” in the U.S. society, believed that those high-tech companies just routinely skipped Chinese even they are doing as well as Whites. Furthermore, Chinese have already accepted the stereotypes of occupation-fit and not willing to try to break through. Because both inner and outside ways of stereotyping, Chinese have little chances to get onto managerial positions.

“Think manager, think White”, don’t you hear about it? Many people might think this is not true in this diversified society but let me tell you..hm… it is true! Chinese are never considered to put on the hierarchy actually. Chinese are even worse than Blacks, Hispanic or even their other Asian friends like Indians. We are never on the table you know.. the old saying “if you are not on the table, you are on the menu” really tells us that the domain White have extreme power than other minorities…but still, Chinese are the last to be considered..which is …hm….really sad…and..unfair…

The only female, Tia, participating in the interview provides another aspect with gender. She is currently on T9 which is known as Senior Engineering Director. Her thoughts on the interactions between race and gender provide evidence that colored female might experience larger barrier than any other colored male and Whites. She admitted that as a colored woman, she got larger pressure than males because of the huge competition in the organization. She has to compete with other females and at the same time, all other males.

Yes, I mean.. I do have much more pressure..but..Even though white males are controlling most of the high positions where colored female is underrepresented, it is not true and unfair to say this is a gender plus race discrimination. The actual number of us is quite
small that’s why we are seemed to be underrepresented. Once a female could get in, she might be easier to get promoted since she is the only one. But a colored female does have to make more efforts than White female… I mean.. a lot more.. we are “double killed” by both factors of gender and race…

Another reason for bamboo ceiling which surprised me a lot is the competitions within Asians. While Indians can do better than Chinese in adapting cultures, the numbers of Indians in high-tech companies are much more than Chinese as well. Competition between Indians and Chinese is another key factor of impeding Chinese career advancement. Jackie expressed his opinion:

You started to see years after years, there's more Indians, more Indian engineers in a company and on the base. If you think it's a pyramid.....more Indian will be promoted to the senior engineers roles, more Indians will be promoted to the manager, more Indians will promote to the managers' manager to the directors and more will be promoted to the executives and ultimately there will be more opportunities, more chances for Indians to be a CEO.

The number of Indians on the base level increases the chances of being a manager, and once some Indians get to managerial positions, they tend to help more Indian peers to get on that level. At the same time, Chinese managers are facing the issue of impartialness. Since there are too many Indians on the base level, Chinese managers have to pay more attention to them and try to be impartial when considering promotions. They will be questioned if they promote more Chinese because the base number of Indian is much bigger than Chinese which caused a closed loop prevent Chinese from getting promoted even they work under a Chinese manager.

Not only among the Chinese and Indian employees on the base level, competition between Chinese managers and Indian managers is probably more intense. Mike provided evidence for this claim. He said that there are lots of Indian managers and small number of Chinese managers in his company. Those Indian managers always work together and even have personal life together. They always talk about work and make decisions on their weekly party in their communities. However, Chinese managers have no idea about what decisions that Indian managers made, and Indian managers never communicate with Chinese managers as well. When upper-level managers asked about something, Indian managers tend to have pilot ideas while Chinese managers cannot catch up with. Chinese managers are trapped: they cannot get into Indian community even though they are all Asians; they cannot get into their own Chinese community since Chinese usually do not like to share their accomplishment; and they cannot maintain a good relationship with upper-level
managers because of the cultural differences. The dilemma that Chinese managers are facing definitely has an impact on promotion to an upper-level position.

When talking about whether the bamboo ceiling can be broken through, I got different answers from the interviewees. Jamie claimed that the barriers can be dismantled, and he suggested for younger professionals that: “Don’t think it (bamboo ceiling) is true, if you do, it will become true”. However, Mike held a totally different opinion. He had no confidence that bamboo ceiling can be dismantled. He thought the structural racism and the large number of Indians is an unavoidable reason. He said in the interview:

No, it won't be dismantled. It will stay this way. There won't be more Chinese CEOs….It’s already like that for hundred years….the U.S. system functions just like this..and also..maybe there will be more Chinese CEOs or high executives but there still won't be more than the Indian ones.

Even though he thought that the bamboo ceiling cannot be dismantled, he still provided suggestions for younger professionals that they need to master professional skills very proficiently and at the same time, try their best not to be constrained by their cultural background too much.

**Discussions**

This pilot mixed-method study contains 40 resume analyses and 5 interviews with employees in Google headquarter. The findings from both methods serve to answer both of the research questions. Results from resume analyses confirm the assumptions and test of previous scholars and provide evidence that some Asians especially Chinese appear to be distinct more severe than White Americans and other Asian groups. According to descriptive statistical results of resume analyses, Chinese need much more years than White to get on each level of managerial position in Google. The requirements of average total years in workforce for Chinese to get on a managerial level is over 3 more years than White counterparts which means Chinese need to obtain more working experience to be qualified for leadership positions. Chinese have less mobility than Whites since much less of them could get promoted from outside organizations. Furthermore, education level cannot become a requisite for getting promoted in this case since Whites hold much lower education level than Chinese for managerial positions. This actually contradicts to Spilerman’s (1986) theory that individual’s education level will have positive impact on one’s occupational status and chances for promotion. When this individual factor interacts with race, the results might not be what is supposed to be. Gender also makes a role in bamboo ceiling phenomenon. The data shows that years needed for manager positions of Chinese women are the
same as White male and female. However, Chinese women need to have longer years in workforce in order to get current managerial position in Google. The racial disparity on qualifying to be a manager between Whites and Chinese is huge, indicating racial discrimination against Chinese does exist in U.S. high-tech industry.

Interviews with five employees provide illuminate some of the more personal and subjective views and more evidence that bamboo ceiling exists from different aspects. All of the interviewees expressed different pressures they are facing such as work-life balance, worries of maintaining legal status, difficulties with getting along with upper and same level managers. They extremely worried about the changes of political environment such as the U.S-China trade war may have impacts on their legal status and careers. All of them also see Google as really diverse on the base but they don’t agree that their company is also diverse in the management positions. There are four main reasons concluded from these five interviews that could explain by our conceptual framework: Chinese cannot meet the requirements for being a manager as talkative and communicable in an American way which refers to Chinese are lack of social and cultural capitals that Whites have; Chinese model minority stereotype prevents them being considered as managers and at the same time, exclude themselves from pursuing a management position which refers to institutional exclusion and racial stereotyping factor from Whites; Ability and willingness of cultural adaption and assimilation impede them from acting like the domain society which refers to cultural capital and social capital that Chinese are less likely to hold than Whites; and competitions within Asian groups provide another barrier for Chinese career advancement which refers to individual and cultural factors. Some interviewees claimed that it is impossible to break the bamboo ceiling while others thought it might be able to break through. Suggestions provided from interviewees that Chinese need to be fully equipped with both technical skills and communication skills and should step out of their Chinese “comfort zone”.

These findings answer the research questions that there is a huge gap between Whites and Chinese in managerial positions in tech industry. Chinese seem to be excluded from the potential candidates of managers from the very beginning and they even cannot meet the prerequisite of a manager position. No matter how they are well-equipped with professional skills, they are not able to be engaged in leadership like Whites. Chinese actually encounter bamboo ceiling at the first step of getting into the U.S. workforce.
Resume analyses play an important role in this study, providing different aspects of our research subjects. This method is totally different from the previous glass ceiling studies using census data as their primary data source. Interviews also provide a complement source for resume analyses, aiming to find out the reasons behind the results of resume analyses. These two methods work together well and increase the validity of this study. Furthermore, informants of both quantitative and qualitative study are extremely essential. They can provide valuable sources of data collection and interview outreaching for the study.

This pilot study provides the most up-to-date evidence to the public that Chinese, seem as a prestige racial group in the U.S., are still experiencing racial discrimination in the U.S. workforce. To deal with this workforce inequities, requirements and procedures on recruiting, promoting, providing leadership opportunities should be standardized and regularized. Workshops of multicultural awareness trainings, diversity and cultural sensitivity training, team building and experiential learning, mentor offering should be provided as a method to reduce the cultural gap and racial misunderstanding within the organization. Furthermore, policies on promoting multiculturalism within the organizations should be advocated. Finally, law enforcements are needed, such as Civil Rights Commission. They need to ensure that Chinese immigrants are treated equally like everyone else in the U.S.

There are some limitations in this study. First of all, as a pilot study, the size of sampling is quite small. 40 resumes and 5 interviews may not provide a comprehensive understanding of bamboo ceiling phenomenon. Secondly, the statistics on Chinese employees are ambiguous. For example, numbers of Chinese on managerial positions in Google and in high-tech industries are not known for sure. Thirdly, it is hard to differentiate first-generation Chinese from American born Chinese. Moreover, due to the time limit, the quantitative and qualitative parts were conducted at the same time that made us lost a chance to edit interview questions based on the result of resume analyses. All of these limitations might downgrade the validity of this study.

**Conclusion**

Native Chinese who are working in the high-tech industry are facing multilevel and multifaceted barriers in the U.S. workforce. Individual, institutional and cultural factors play important roles of Chinese bamboo ceiling experience. The unique quantitative method of resume analyses is not usually used in other Asian American career path study literatures. Rather than applying Census data, showing people’s current positions, personal identification information and
income level, resume analyses provides other aspects from employees’ personal experience chronologically in the U.S. workforce such as years in workforce, years needed for promotion. These different kinds of aspects also successfully test the Chinese glass ceiling assumption from different lenses. This study also contributes to the whole minority groups’ career advancement studies with specific focus on Chinese in tech industry. As a pilot study, it provides preliminary results and also provides theoretical and methodological guidelines for future research on racial disparity in the U.S. workforce. In the future research, enlarging the number of resume and interview samples will be the first step. Full regression models instead of only descriptive statistics will also be conducted based on a larger number of resume data. Furthermore, this future research could cover the whole high-tech industry and jump out of the only case of “Google”.
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34
Appendix 1:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country of Birth</th>
<th>Number of Immigrants</th>
<th>Share of Total Immigrant Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mexico</td>
<td>11,270,000</td>
<td>25.3%</td>
</tr>
<tr>
<td>2</td>
<td>India</td>
<td>2,611,000</td>
<td>5.9%</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>2,217,000</td>
<td>5.0%</td>
</tr>
<tr>
<td>4</td>
<td>Philippines</td>
<td>2,008,000</td>
<td>4.5%</td>
</tr>
<tr>
<td>5</td>
<td>El Salvador</td>
<td>1,402,000</td>
<td>3.1%</td>
</tr>
<tr>
<td>6</td>
<td>Vietnam</td>
<td>1,343,000</td>
<td>3.0%</td>
</tr>
<tr>
<td>7</td>
<td>Cuba</td>
<td>1,321,000</td>
<td>2.9%</td>
</tr>
<tr>
<td>8</td>
<td>Dominican Republic</td>
<td>1,163,000</td>
<td>2.6%</td>
</tr>
<tr>
<td>9</td>
<td>Korea</td>
<td>1,063,000</td>
<td>2.4%</td>
</tr>
<tr>
<td>10</td>
<td>Guatemala</td>
<td>959,000</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Appendix 2:

Scholars routinely put Asians together when they study career path of Asians. According to the United Nations geoscheme, Asia is composed by Central Asia, Eastern Asia, South-eastern Asia, Southern Asia and Western Asia (Central Intelligence Agency, n.d.). Central Asians are people from countries such as Kazakhstan, Kyrgyzstan, Tajikistan and so on (Central Intelligence Agency, n.d.). Eastern Asians are people from countries such as China, Korea, Japan, or Mongolia, whereas Southeastern Asians are people from countries such as Philippines, Indonesia, Thailand and Vietnam (Central Intelligence Agency, n.d.). Southern Asia are people from countries such as Afghanistan, Pakistan, India, Bangladesh, Nepal, Bhutan, Sri Lanka or Maldives (Central Intelligence Agency, n.d.). Western Asia are people from countries such as Armenia, Israel, Syria and Jordan (Central Intelligence Agency, n.d.). There are 38 countries in Asia and each with unique histories, cultures, languages, and other characteristics. These kinds of differences will contribute to the situation that people from different countries will have different value, world view and philosophy even though they all came from Asia.

Map of Asia

(SOURCE: worldatlas: Asia)
Appendix 3:

**Equal Employment Opportunity Report 2017: data on White and Asian workers (%)**

<table>
<thead>
<tr>
<th>Company</th>
<th>White</th>
<th>Asian</th>
<th>White on managerial positions</th>
<th>Asian on managerial positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>59%</td>
<td>39%</td>
<td>66.9%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Microsoft</td>
<td>55.1%</td>
<td>32%</td>
<td>65.9%</td>
<td>25.9%</td>
</tr>
<tr>
<td>Facebook</td>
<td>49%</td>
<td>49%</td>
<td>60.2%</td>
<td>21%</td>
</tr>
<tr>
<td>Amazon</td>
<td>42.9%</td>
<td>24%</td>
<td>63%</td>
<td>21%</td>
</tr>
<tr>
<td>Apple</td>
<td>54%</td>
<td>31%</td>
<td>63.4%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Average</td>
<td>52%</td>
<td>35%</td>
<td>63.9%</td>
<td>24%</td>
</tr>
</tbody>
</table>

(Sources: EEOC, 2017)
Appendix 4: How do Google Levels work?

1. Google manager level

- L1–3 jobs are characterized as entry level.
- L4–5 are characterized as mid-career.
- L6–7 are characterized as late career.

Levels top out at L9 for non officers. Google Fellows (T10 and T11) are actually Vice Presidents and Senior Vice Presidents (i.e. officers of the corporation).

For managers:

- L4-L6 generally manage small groups.
- L6–L7 often have other managers reporting to them.
- L8 is director (managing a group expected to grow to 50 people or more) and
- L9 is senior director (often managing several hundred people).

In software engineering:

- L3 is entry level unless you have a PhD.
- L4 is entry level for PhDs and experienced engineers.
- L5 is senior engineer, and the lowest level at which there are any engineering managers.
- L6 is staff engineer. Only about 15% of Google engineers are at this level or higher, and it is expected that most engineers will never reach Staff. The most common managers of software engineers are L6.

Above L6, the number of engineers at each level is about 20–25% of the next lower level:

- L7 Senior Staff Engineer;
- L8 Principal Engineer;
- L9 Distinguished Engineer;
- L10 Fellow (really a VP);
- L11 Senior Fellow (really an SVP).

Managers are more common at higher levels than non-managers:

- L7 engineering managers mostly manage other engineering managers or have very large teams.
- L8 is Director of Engineering and
- L9 is Senior Director of Engineering.

(Source: https://www.quora.com/How-do-Googles-internal-levels-work)
## Appendix 5: Resume Data Codebook

<table>
<thead>
<tr>
<th>Categories</th>
<th>Operationalization</th>
</tr>
</thead>
</table>
| Current position in Google              | Mid-level Managerial Position=1  
High-level Managerial Position=2  
Not on managerial position=3                                      |
| Race                                    | 1=White  
2=Asian  
3=African America  
4= Latino  
5= Other                                      |
| Gender                                  | 1=Female, 2=Male, 3=other  
4= unknown                                      |
| Origin of birth                         | 1=USA  
2=China  
3=Indian  
4=Other                                      |
| Years in job market                     | Up until April 3\(^{rd}\), 2019, the total number of years spent in workforce after highest degree;  
Unknown= resume didn’t show this information;  
the number is rounded.                                      |
| Years in Google                         | Up until April 3\(^{rd}\), 2019, the total number of years spent in Google Mountain View Campus;  
Unknown= resume didn’t show this information;  
the number is rounded.                                      |
| Whether be in google before             | Yes = 1  
No = 2                                      |
| Legal Immigration Status                | H1b = 1  
Green card =2  
Citizen =3  
Other =4                                      |
| Total number of positions before current positions | Up until April 3\(^{rd}\), 2019, the total number of positions after first degree and before current position in Google;  
Unknown= resume didn’t show this information                                      |
| Promote within Google                   | promoted to this position from within organization? 1=yes, 0=no                                                                                             |
| Years needed for promotion from within  | Up until April 3\(^{rd}\), 2019, the total number of years used to get promoted from within current organization;  
N/A (not applicable) = if they didn’t get promoted from within;  
the number is rounded.                                      |
| Training experience                     | the total number of professional trainings they took in their service;  
Unknown= resume didn’t show this information                                      |
<table>
<thead>
<tr>
<th>Professional affiliation</th>
<th>the total number of professional affiliations they participated in their service; Unknown= resume didn’t show this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship experience</td>
<td>Total number of internship experience, unknown=resume didn’t show this information</td>
</tr>
</tbody>
</table>
| Degree                  | Bachelor = 1  
                        | Master = 2  
                        | PhD = 3  
                        | Other =4  |
| major                   | Computer science/EE related = 1  
                        | Other = 2  |
# Appendix 6: Interview Data Codebook

<table>
<thead>
<tr>
<th>Code</th>
<th>Code</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal information</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>- Demographic information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Information on moving to the U.S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Education background</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Job-related background information</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>- Intern</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- First job</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Current job</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Perceptions of companies</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>- Culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Promotion systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Structures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Feelings</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Perceptions of managers</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>- Judgement of Chinese managers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Judgement of managers from another race</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Relationship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Requirements to be a manager</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Career advancement</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>- Personal feelings about moving up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Factors of promotion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Process of career advancement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Troubles of moving up</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Diversity</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>- Opinion on diversity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Diversity in companies</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Feelings of having/working with other Chinese</td>
<td>81</td>
</tr>
<tr>
<td>8</td>
<td>Cultural differences</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>- Feelings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Ways to break cultural barriers</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Perceptions of Bamboo ceiling</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>- Reasons: Race, Population, Cultural related personal choice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Feelings</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Perceptions of breaking the ceilings</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>- Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Feelings</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Suggestions for young Chinese professionals</td>
<td>78</td>
</tr>
</tbody>
</table>