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Diana Orozco

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WHERE ARE ALL THE LATINAS IN INFORMATION TECHNOLOGY?  
UNDERSTANDING AND ENGAGING “LA FUERZA POTENTE” OF  
A POWERFUL DEMOGRAPHIC

by

DIANA OROZCO

A DISSERTATION

Presented to the Faculty of the University of the Incarnate Word  
in partial fulfillment of the requirements  
for the degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF THE INCARNATE WORD

August 2023

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## DEDICATION

To my parents, Albert and Virginia Lozano, for giving me a stable home that provided an advantage and steppingstone to my beginnings. And for my dad, reminding me as a vocational counselor that if he could put a one-armed woman through beauty school, I could do hard things. To my father-in-law, Luis Orozco, one of my biggest cheerleaders; I know we will see you one day again.

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WHERE ARE ALL THE LATINAS IN INFORMATION TECHNOLOGY?  
UNDERSTANDING AND ENGAGING “LA FUERZA POTENTE” OF  
A POWERFUL DEMOGRAPHIC

Diana Orozco, PhD

University of the Incarnate Word

This study was inspired while I was researching other studies on employee motivational factors for non-profit organizations. I stumbled across the employment factors of Latinas in IT. This led me down a path of researching numbers, facts, organizational campaigns, and employment statistics. Latinas represent only 1% of the IT workforce, despite educational and organizational hiring campaigns and efforts. This led me to further inquire: What are the obstacles, what are the motivators, what is the solution and finally how would the resolutions be implemented? With many qualitative and quantitative studies that identify the deficiency, there has been little done to move the needle on improving that 1%. My desire is this study is to provide answers to the Why so we can then move to the How.

Relevant theories that influence the issue will be briefly reviewed and later expanded upon and compared to the findings. As applied to Latinas, the theories and concepts that influence motivators and obstacles are Bandura’s self-efficacy, Hofstede’s cultural dimensions, and marianismo. Other theories that are considered to influence Latinas’ way of thinking are Chicana feminist epistemology, which encompasses many of the predominant concepts in Latinas’ ways of knowing. By comprehending the ways how Latina self-efficacy is achieved within the challenges of culture and gender, work programs can better formulate their hiring campaigns to meet and engage this growing demographic where they are, potentially

increasing qualified and educated Latinas in their talent pool. With regard to how we can motivate Latinas to enter IT, if we do not adapt to them, we will not attract them.

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## **Chapter 1: Low Representation of Latinas in IT**

The lack of representation of women in STEM has been identified on a national level as problematic. National initiatives originating from the White House that reflect on the need for and importance of women in STEM have existed since at least 2009 (Exec. Order No. 13506, 2009). White House initiatives have gone further to identify through legislation the importance of diversity and have developed a roadmap for inclusion practices in STEM (National Science and Technology Council, 2021). Inclusion and diversity not only offer a more rounded perspective that helps to inoculate against the narrowed perspectives of groupthink but they encompass the benefits recognized by the United States as part of a larger strategy to “out-innovate, out-educate, and out-build the rest of the world”—specifically noting the inclusion of women in STEM and its importance to women themselves (Noonan, 2017). To learn more about the deficiencies of this lack of inclusion, I delved into the issue on a more granular level. For both personal and professional reasons, this study analyzes a specific demographic, the low representation of Latinas in information technology (IT) that reflects 1% of the IT workforce (Zuckerman, 2022).

I first reflected on the benefits of IT in consideration of my own understanding of cultural and gender expectations. The IT industry notes that 48% of tech workers work remotely (Teale, 2022). As a young Latina, a flexible schedule would have better suited meet the needs of my young family and the cultural expectations of being the primary caregiver, despite variance in pay or positions. At my current stage in life a remote environment is still desirable. The pay scale in IT, averaging over six figures, provides a better income bracket for Latinas looking to support a family or become financially independent. The low representation of Latinas in IT spurred many other considerations within the premise for this study. While Latinas are missing out on

some of the benefits provided by a career in IT, so are IT employers. The ability to out-innovate is limited by the exclusion of Latinas' perspectives and contributions.

I categorized the premise for this study into four areas, which were fleshed out further in the conceptual framework chapter: importance of diversity and inclusion, identification of low representation, enticing an active demographic, and personal perspective.

### **Premise for the Study**

Rock and Grant (2016) established that increasing workplace diversity provides greater analysis and accuracy, leading to improved results, and indicated that diverse teams were 58% more likely to appropriately price stocks. Additional support for their research was found in the 2015 McKinsey report, which found a 15% increase in the likeliness of financial returns above the mean among 366 companies in the top quartile for gender diversity (Hunt et al., 2015). The increase in financial returns above the mean increases to 35% for organizations in the top quartile for ethnic and racial diversity, further supporting the financial gain that organizations can realize by incorporating diversity. Without representation from all demographics, companies lack insight and contributions from those who are underrepresented, reflecting also the muted voices of Latinas and the contributions they might provide.

Latinas experience a significant gap in pay in the IT workplace. Latinas get paid 46% less than white men and 26% less than white women (Lean In, n.d.). The pay gap increases with age and education: Latinas between the ages of 16 to 24 make 9% less than white men but those ages 24 to 54 make 34% less, and Latinas 55 and over make 42% less – almost half their salary (Lean In, n.d.). Latinas with less than a high school education make 21% less than white men, while those with a bachelor degree earn 31% less (Lean In, n.d.). Latinas negotiate for promotions and salary increases at comparable rates to white men, however only 75 Latinas are promoted for



every 100 men promoted to manager (Lean In, n.d.). Despite these gaps, the cost of living does not vary based on demographic, so Latinas must learn to live in the same cost-of-living locations with a larger deficit in pay.

Latinas have a low representation in IT. While all women represented only 25% of the IT workforce in 2020 (Needle, 2022), Latinas only accounted for 1% (Zuckerman, 2022). This represents a monumental gap in the perspectives and contributions of Latinas in IT, with the concomitant reduction in financial gain for employers. The low representation of Latinas also contributes towards concerns that less diversity equates to reduced innovation. Further examination in this study attempts to identify and mitigate barriers that create this gap in Latina demographic in IT.

Latinas are an active demographic in the United States and a more engaged subset of the Hispanic population. The Hispanic population in the United States represents 62.1m, the second largest ethnic group in the country at 19% (Funk & Lopez, 2022). The U.S. Census Bureau quickfacts data also reflects that Latinas account for 50.5% of the Hispanic population, representing a large demographic that is an active and mobile demographic in politics and education. Latinas also have a higher turnout for voting than their male counterparts (AAUW Latina Initiative, 2021), providing even greater emphasis on the inclusion of a group that ensures their voices be heard. Additionally, Latinas lead the charge in their Hispanic demographic towards obtaining college degrees, thereby increasing the formal educated talent pool (AAUW Latina Initiative, 2021).

My personal perspective of this issue expanded beyond IT and STEM. It seeped into politics, leading organizations, and even movements. Not to belittle the efforts of activists such as Martin Luther King and Cesar Chavez, but where are the marches for Latina political activists

such as Dolores Huerta or Emma Tenayuca in San Antonio? Many Latinas have led political change initiatives, yet despite the high population of Latinas, San Antonio has never had a Latina mayor. San Antonio has had a White woman, Hispanic males, and a Black woman for mayor, but not yet a Latina. In America, there has been a Black man as president, a White woman run for president, and a Latino enter his hat into the ring. No Latina has run or been heard of as a potential candidate for president in the United States, or as a mayor in San Antonio. This left me asking the question, why are we always last to the table? Is it because many of us are raised with an expectation to set and clean the table, but never have a seat at it? Are our limitations a biproduct of the submissive cultural expectations for women?

### **Purpose of This Study**

This is a qualitative study that sought to not only fill the gap in literature regarding motivational factors towards Latinas in IT, but to also identify growth in areas where we are underrepresented. By identifying influencing factors for this demographic towards a career often perceived outside the cultural norms of Hispanic culture, this study provided a roadmap to increasing representation in other areas. The goal was understanding the discouragers and motivators that can be navigated appropriately, thereby creating a path forward for Latinas to realize their dreams and aspirations, despite not seeing many like them in their career choices. While there are several studies that pertain to Latinas in higher education, there is still a need to dig deeper into the aspects that impact Latinas' preparation, enrollment, and success in IT, a discipline of STEM, to address low representation and hindered innovation, and the inclusion of a more vocal group. Through the lens of the cultural beliefs of machismo and *marianismo* gender roles, as navigated through Latina & Latino Critical Legal Theory (LatCrit) (Solórzano & Yosso, 2002) and based in Chicana feminist epistemology, this study synthesizes data emerging from a

new theory of Latina motivators and resilience in unfamiliar territory. Bandura's (1994) self-efficacy theory is utilized through the lens of LatCrit and Chicana feminist epistemology to better understand what self-actuation means for Latinas, and their ways of knowing grounded in their life experiences (Delgado Bernal, 1998). By interviewing, meeting with, and processing stories with other Latinas in IT, a new model emerged to engage and retain Latinas in careers in IT to aid in overcoming discouragers and misunderstandings that serve as obstacles. By targeting how Latinas navigated through obstacles and pursued a degree in IT in consideration of cultural parameters and expectations, this study may lead to further research on how to develop motivators, influences, and factors at an early age that can be intentionally built upon and applied to find determinants that motivate other underrepresented demographics in other industries and educational environments. This application can then be modified to accommodate motivational factors among various underrepresented demographics. Initially, the study was designed to carry out group interviews in order to incorporate collective biographies. However, participants requested individual interviews to maintain a strong sense of anonymity. Research Question 3 was modified to account for this.

### **Research Questions**

1. What assets and liabilities do Latinas bring with them that promote or constrain their ability to accelerate their careers in IT?
  - a. What understandings do Latinas in IT careers have that enable or hinder their advancement?
2. How do internal and external elements of culture and identity influence Latinas in IT?
  - a. Were the aspects of gender roles fully embraced, integrated, or abandoned?
  - b. Were these influences viewed in relation to cultural beliefs and practices?

3. How might Latinas construct and draw from their reflection and the crafting of their stories?
  - a. What coping mechanisms did Latinas use to navigate through gender and cultural expectations throughout a career in IT?

## **Methodology**

This qualitative study utilized a modified constructivist paradigm with a grounded theory research design to understand concepts, motivators, factors, and influences that helped Latinas overcome challenges in an unwelcoming and low-represented environment that is considered by many as outside traditional Latin cultural expectations. Grounded theory is a qualitative inquiry that provides the researcher with a strategic process to encapsulate the perceptions and views of the participants studied (Creswell, 2014). The study design was a grounded constructivist theory influenced by a combination of theories and concepts: marianismo; Chicana feminist epistemology; LatCrit, a subset of critical race theory; and Bandura's self-efficacy theory, which better aligns with the participants' demographic.

Grounded in pragmatist roots, constructivist grounded theory best lends itself to the nature of critical qualitative inquiry (Charmaz, 2014). Constructivist grounded theory provided the flexibility needed to further explore and examine the obstacles and motivators that influenced Latinas working in IT. The theory design allowed for the data to emerge from the participants' experiences, and allowed for me to work in a collaborative approach, rather than feeling the need to isolate the two (Higginbottom & Lauridsen, 2014). Constructivist grounded theory provided the approach that cultivated the necessity of dynamic critical questions throughout the process, further refining the study as necessary. This type of fluidity in structure allowed for constant interaction with the data, which influenced and helped refine the inquiry, better developing a

path forward towards realizing the nuances of a problem. It provided an open perception of the problem without preconceived notions or the influence of existing theories that may not have been tailored to the specific issue, allowing the theory to emerge from the data (Strauss & Corbin, 1998).

Grounded theory seeks to construct theories that emerges from stories and exchanges between the researcher and participants bound by a common thread in experiences (Strauss & Corbin, 1998). It expands on the notion that data alone can interpret the realities as perceived by the participants. However, through an interactive method and “its temporal, cultural and structural contexts,” the participants’ reality emerges, revealing a deeper understanding of their experiences (Charmaz, 2000, p. 524). This was evident in my study as participants shared their stories, both of us coming to dynamic realizations of past educational, cultural, and professional experiences. In some instances, participants like Hernandez realized how she always considered the “have nots” to determine how to make things work with the resources she had. Almost all the participants, after reflecting on their educational journey, came to a realization of what they noted as “toxic,” which led to deeper reflection of professional experiences building from that.

### **Significance of This Study**

The systemic issue of low rates of Latinas in IT goes deeper than corporate initiatives, and begins when their exposure and opinions are being framed at a much younger age. Factors of accessibility and parental beliefs, particularly fathers’, can influence girls’ decision towards career ambitions (Adya & Kaiser, 2005).

Corporate initiatives fail to increase the number of Latinas exponentially because the population of Latinas in IT are so miniscule to begin with (Table 1). Understanding how Latinas are motivated can help organizations tailor and improve recruiting methods for increasing the

**Table 1***Compilation of IT Diversity Data 2016-2020*

Company	2016	2020	Delta
<hr/> Apple <hr/>			
Hispanics	8%	8%	0.0%
Asian	27%	39%	12.0%
Black	8%	6%	-2.0%
Native American	1%	1%	0.0%
Women	23%	24%	1.0%
<hr/> Facebook <hr/>			
Hispanics	3%	4.6%	1.6%
Asian	46%	35.6%	-10.4%
Black	1%	3.1%	
Native American			0.0%
Women	17%	24.8%	7.8%
<hr/> Google <hr/>			
Hispanics	4.1%	4.8%	.7%
Asian	38.1%	47.6%	9.5%
Black	1.7%	2.4%	0.7%
Native American	0.6%	0.7%	0.1%
Women	20%	24.7%	4.7%
<hr/> Microsoft <hr/>			
Hispanics	4%	5.3%	1.3%
Asian	36.9%	41.8%	4.9%
Black	2.4%	3.6%	1.2%
Native American	.1%	0.2%	0.1%
Women	17.1%	22.8%	5.7%

number of Latinas seeking a degree in Computer Science, which can benefit the baseline quantity of this specific demographic into the current talent pool.

Finding women in IT still seems to be challenging for organizations located in Bexar County in Texas, which has a Hispanic population of over 60% (Data USA, 2022). This limitation led to expanding the locations and prerequisites of participants. The goal was to fill the gap of qualitative literature, specifically for Latinas in IT. While there have been several researchers who have studied Latinas in STEM, there has not been the much with regard to the specificity of research towards this demographic in IT. This chapter provides information on the need, but Chapter 2 will try to dissect the why—is it due to lack of ability, cultural and gender factors, educational environmental factors, and considerations of social and family values?

## **Chapter 2: Conceptual Framework**

Several concepts that were considered as influencing Latinas' choices were briefly identified in Chapter 1: the importance of diversity and inclusion; low representation and seeing less of themselves in the industry; enticing an active demographic; and my personal perspective. I have considered each of these areas within what the literature indicated.

### **Importance of Diversity and Inclusion**

Diversity within organizations renders groups to be more creative and innovative, as noted by White House initiatives and research (Noonan, 2017). More innovative solutions can be recognized when teams are composed of individuals with diverse backgrounds and experiences (Coleman & Taylor, 2023). This research supports the benefits of diversity, as reflected by statements made by Apple, Facebook, Google, and Microsoft (Figure 1), who vow to be more inclusive. Microsoft's website for their diversity page notes "Different perspectives help us to achieve more." I extracted and combined key elements of each organization's statement that recognizes that diversity is the cornerstone to providing different perspectives and which builds products that represent these organizations. The diversity statistics for these same organizations were also referenced in Table 1.

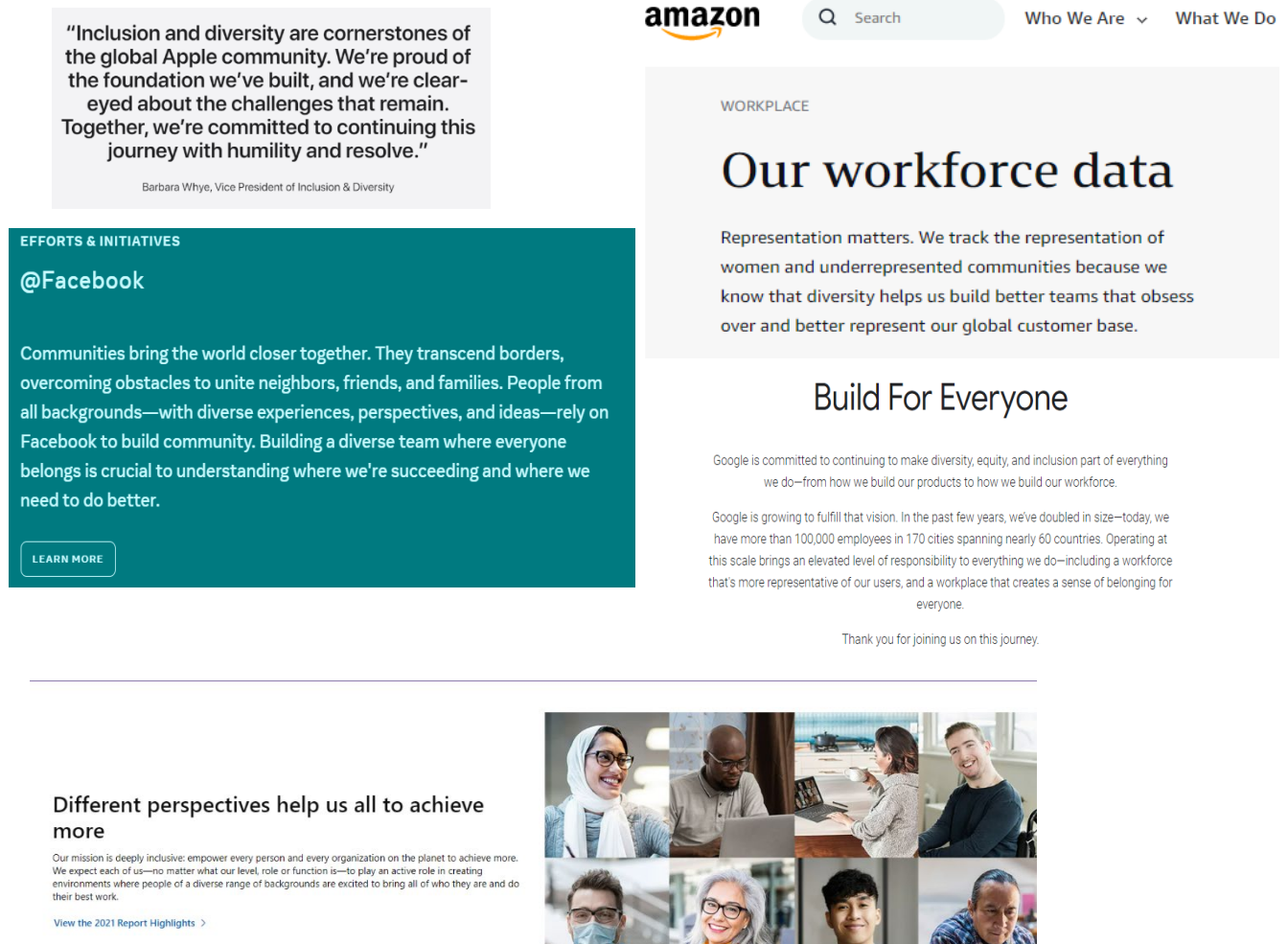
From an academic perspective, predominantly White professors creates an unfavorable outcome for students of color (Jaeger & Haley, 2016). An example of this negative experience was provided by a participant of this study, Gary, a Black education student. He felt as though the "dominant perspective" stifled his story. Being a minority, Gary had to challenge the stories of the majority to try to preserve his story. Jaeger and Haley (2016) noted that students of color experience a feeling of being oppressed to conform to the dominant narrative. The low representation of ethnic diversity within academia provides a reduced workforce of professors



who are available as role models or mentors for students within the same culture and experience (Smith, 2015).

## Figure 1

### *Major IT Companies' Diversity Statements*



Lack of diversity limits innovation on a team, providing only solutions in line with the predominant perspectives. Cross-cultural perspectives and solutions, which increase the performance of organizations, can be achieved through diversity (Mishlin & Krisztina, 2022). When professors of like ethnicity do not exist, academia struggles to comprehend

underrepresented demographics, their journeys, obstacles, challenges, and motivators. Verena, a Mexican female student in this study, noted her difficulties being the only student of color in her graduate program. Low representation left her with a lack of “mentors or people of influence who looked like her” (Jaeger & Haley, 2016, p. 292). While Verena found ways to overcome these challenges, this low representation indicated that many do not. This lack of support or of feeling understood then limits the number of individuals seeking an education, thereby decreasing the number of qualified individuals in the talent pool. Ultimately, as students continue to leave or avoid an academic program due to not seeing their own representation, that demographic remains minimal in number, thereby limiting growth capacity for this specific population within an industry and reducing a more diverse understanding of organizational perspectives. My goal was that this research would offer insights that provide a new perspective on career aspirations, motivational factors, communal environments, work life balance, and family prioritization for Latinas within the IT industry. While various industries may struggle with low representation among several demographics, I chose to analyze those in a familiar environment, IT. This emphasis allowed for a more concentrated and focused approach to the research. The more concentrated approach allowed focus on factors within a demographic that share common beliefs, ideas, and challenges, and discriminators among the participants as well as with myself.

### **Low Representation**

Initially, I considered researching the enrollment rate of women in Computer Science college degree programs, to determine if the issue for low representation started before or after college, or in the workforce. According to Stem Women (2022), the rate of women seeking degrees in STEM, specifically in Computer Science, has a low representation of 19% as of 2019,

with a further dip in representation for those who actually graduated with a degree in Computer Science, to 16%. This indicated that women's representation in STEM was already low, prior to entering the job field. This supported the notion that Latinas see fewer women, and likely even fewer Latinas, prior to entering the workforce or even making the decision to pursue a degree in IT, a subset of STEM. The tolerance and acceptance of low representation begins before entering the workforce, which begins to explain the low 1% of Latinas in the IT workforce.

With women comprising 27% of employees in the technology field in the United States in 2022, the low representation of women in employment in this field is evident (National Center for Women & Information Technology, 2022). According to the U.S. Census Bureau, Latinas represent 19% of the entire U.S. adult population, which is the largest female representation of all minority groups (Funk & Lopez, 2022). Despite representing the highest female minority population in the United States (National Center for Women & Information Technology, 2022), Latinas represent only 1% of the IT workforce in 2022 (Zuckerman, 2022), which is down 1% since 2020 (Urwin, 2023).

Low Latina representation in STEM education and degree selections spills over into the IT industry. Despite corporate initiatives, Google has been unsuccessful in significantly increasing employment statistics for Latinas within their workforce (Table 1). In 2014, Google's diversity report reflected 30% females and 3% Hispanics (Cawsey et al., 2016). The Google (2018) report shows 30.9% females and 3.6% LatinX. Google is not alone. Microsoft's diversity report reflects 19.9% female and 4.5% Hispanic/LatinX in tech roles, which is an increase of 1.5% and .3% respectively in the last year (McIntyre, 2018). Apple indicates no change from 23% in the representation of women in tech positions for 2016 and 2017 but shows an increase of 1% increase from 2016 of Hispanic employees, at 13% for 2017 (Apple, 2018). Apple does

boast that 50% of new hires in 2017 for tech positions were individuals from underrepresented groups (Apple, 2018). Despite this focus on diversity and inclusion, Hispanics and Latinas, who are a large growing demographic in the United States (AAUW Latina Initiative, 2021), are still underrepresented in the tech industry. It would stand to reason that if the number of Hispanics increases at 2% or less, and women represent an average of 22% in the largest tech firms within the industry, the growth for Latinas is mathematically miniscule.

Contributions from a diverse workforce help to provide innovative solutions that capture the perspectives of all demographics, making the industry better poised to out-innovate the competition. Facebook, Google, Apple, Microsoft, and Accenture all have initiatives to improve underrepresented demographics and for years have been providing their diversity reports online. These workforce reports provide a breakdown by gender and ethnicity and, in most cases, by technical roles. This provided insight into the dynamics of their workforces. For example, a young Latina considering employment at Facebook would not only see low representation for women, but also for Hispanics and Latinas.

The demographic for Hispanics in some organizations has increased at a slow rate of 1.6% to 0%, just behind that of Native Americans, and either tied or behind Black Americans. Facebook seems to be the outlier with a decrease in the Asian workforce, while other tech companies show increases of 4.9% to 12%. Diversity campaigns focus on all underrepresented demographics, yet there is little growth realized in the IT workforce for not only Hispanics, but also for Black and Native Americans. This is problematic, because Latinas, who represent 50.5% of the second largest ethnic group in the United States, are being overlooked in terms of contributions towards innovation, solutions, and inclusion. With such a large and growing population, considerations of solutions for a sizeable market share are not being heard. For

reasons of culture and gender, I decided to focus on the demographic that I feel I can speak to most and represent well, Latinas.

As I discovered that Latinas only represent 1% of the workforce in IT, I started to reflect on my own experiences. In college, when I was taking courses towards a Cisco Certified Network Administrator certificate in 2008, I realized I was only one of two Latinas in the classes. This now seems odd to me, living in a city where my demographic is represented by over 64% (Data USA, 2021). Further research indicated that, even though organizations such as Facebook and Google have identified the importance of workforce diversity through hiring and recruiting campaigns to increase the numbers for underrepresented employees (Table 1), no real movement for Latinas has been realized since 2016 (Cawsey et al., 2016). Being a Latina working in IT, this resonated personally with me.

The number of women enrolled in IT degree programs is low in comparison to the number of women pursuing degrees. If the number of women obtaining a degree in IT has only increased by less than 25% in the past 6 years, the increase of Latinas in this industry is microscopic, thereby only marginally increasing this demographic in the available talent pool for the IT industry (Noonan, 2017). The goal in analyzing how this demographic overcame issues of diversity and culture was to understand the motivators of Latinas to assist future generations in overcoming obstacles and engaging career path resources they may not have considered or thought to be too difficult to traverse. While there are other areas of underrepresentation of Latinas in STEM, focusing specifically on an area I am personally familiar with provided awareness and a template for other underrepresented demographics to navigate in their career choices

## **Enticing an Active Demographic**

Heavily hit by the pandemic, Latinas have one of the highest poverty rates, second to Native American women (AAUW Latina Initiative, 2021). Additionally, 25% of Texan Latinas between the ages of 18 and 44 are uninsured, which represents twice the national average. Yet despite these challenges, the number of Latinas earning a bachelor's degree or higher has doubled in the past 19 years. Over the past 11 years, the number of Latinas seeking a bachelor's degree has increased by 8%, surpassing their male counterparts who had a 5% increase during the same time frame (Krogstad et al., 2022). These statistics further reveal the resilience and steadfastness of Latinas, despite the obstacles, achieving more with less.

Additionally, with Hispanics being the second largest growing minority, and women being responsible for 85% of household purchases, Latinas hold an equitable amount of buying power (Flores, 2017; Maier, 2015). Providing a seat at the table for Latinas would help to improve an organization's product understanding of a significant amount of market consumption within the United States. Several large organizations, such as Facebook and Google, have attempted diversity initiatives towards attaining and retaining a diverse workforce (Cawsey et al., 2016). Despite these corporate efforts, Latinas seem to remain untapped, with the national representation of Latinas in IT at 1%. Understanding why IT corporate initiatives are failing to increase growth within the specific demographic of Latinas remains an issues.

## **Personal Perspective**

In their book, *The Maria Paradox*, Gil and Vasquez (1996) further elaborate on the concept of marianismo and cultural expectations of Latinas. Marianismo is a term first proposed in the literature in the 1970s by Stevens, 1973 as a way to describe a set of values and norms associated with being a woman in Latin American culture. It generally refers to the cultural

expectation that a woman be passive and submissive. The 10 mandamientos were established identifying cultural expectations of Latinas, and include Don't forget your place as a woman, Don't wish anything but to be a housewife, and Don't be unhappy with your man, no matter what he does to you.

To address the issue from a more granular and digestible level, I considered my own personal experiences as a Latina previously managing my organization's IT. On reflection, I found that there were no faces that looked familiar. In 2016, after the business building of the nonprofit where I managed the IT operations was devastated by a fire, other organizations offered to loan equipment and space to house our staff and technology. One incident I recall was running errands around town with my husband, trying to get equipment for operations and an IT infrastructure set up for the staff. One stop led to an interaction with an organization where the IT director was a Caucasian male. When I showed up and let him know I was the Director of IT picking up loaner laptops, he took one look at me and immediately turned to my husband and asked if an administrator password was needed on the devices. I answered his question. He again turned to my husband and asked another question about Wi-Fi ability. That time my husband pointed to me and said, "She is the one to ask." It was odd and the first time I was able to categorize this previously felt perception of being somewhat devalued. I was not sure if it was my gender or ethnicity, or both. I chalked this up to gender, since my husband is the same ethnicity. However, in speaking to other participants I realized that, as a Latina, I faced twice the discrimination our male counterparts do, creating one more layer of prejudice Latinas must overcome.

Another incident was dealing with the setup of temporary offices at a different location, where a man questioned the IT requirements I requested that I was confident and certain of. I did

get another system administrator involved to repeat my requests so that we could move forward with staff access on the premises. The third instance I recalled during this time was when I was setting up temporary structures on campus. The cabling company listened to my specs, but I had to call them back out to correct network access, as they set up what they felt was best versus what I instructed. Unfortunately, I had to get a male involved to reiterate that what I was requesting was what was needed.

As a manager of IT operations, and working in staff augmentation of IT services, I rarely if ever saw another Latina. On a team recently built of cybersecurity professionals, there is one of eight team members that is a Latina.

I live in a city that is predominately Hispanic, with Latinas representing over 60% of the population (Data USA, 2021) and graduating at a higher rate than Hispanic men. Yet Latinas still experience the lowest representation in IT (AAUW Latina Initiative, 2021). When taking programming classes, I was either the only one, or one of only two, women in a class of 15. Most colleagues and participants in the same demographic as myself shared the same experience of being the only Latina in IT classes. I navigated through programming classes with professors who thought I might be entering the wrong class, and I had to assure them I knew the room and class I was entering. It did not really become apparent to me that we were underrepresented until I came across an article while researching another topic. Suddenly, all the programming classes and interactions I had within my education and career made sense. I reflected on the fact that, in my academic journey, I rarely saw someone like me. That low 1% figure resonated with me being a Latina and forced me to ask why? In this day and age with cultural, gender, and diversity awareness, why were Latinas being missed? As a proud Latina, this mattered to me. I raised three Latinas and to think that a career I love seems farfetched for them is unsettling. However, I



realized I was not the only one impacted by this low statistic. White House initiatives also identified the importance of the lack of inclusion and legislation to increase diversity in underrepresented demographics in STEM (Women and Minorities in STEM Booster Act, 2019).

Growing up a grandchild of migrant workers and having a father who marched with Caesar Chavez and the Brown Berets for migrant workers' rights, as well as personally marching for minority rights at the MLK and Caesar Chavez marches, I grew up proud of my heritage and gender and wanting to see others like me succeed in all industries. I left reading the Latina statistics in IT with a strong sense of *No Es Justo!* a statement made famous by Emma Tenayuca, a well-known Mexican American labor organizer and civil rights activist. How could I not be concerned that others like me were lacking opportunities? Having raised three Latina daughters, I wanted to find and fight for opportunities for them. However, I must first dissect, understand, and address the issues in a familiar backyard, Latinas in IT.

Further reflection of my own personal experiences also led me to consider that maybe it is our own cultural influences that restricts us from exploring multiple opportunities or attempting to forge unbeaten paths. The engrained cultural belief system that unites us might be the same one that oppresses us. And without noticing, could we have become our own warden, who imprisoned ourselves in this captive belief system? Whatever the issue was, I wanted to study it, dissect it, and work towards resolving it. I wanted my daughters to be confident that, if they wanted to run for mayor or president, or run a tech company, they would see more young women like them saying *Si Se Puede!* a statement associated with Dolores Huerta a famous American labor leader and civil rights activist.

## Theories and Concepts Influencing This Study

Theories and concepts that influenced the initiation of this study were marianismo, the impact of Latina's self-reflection as explored by Stevens (1973), LatCrit as tailored using Chicana feminist epistemology (Delgado Bernal, 1998), Bandura's (1994) theory of self-efficacy, and Hofstede's (2001) cultural dimensions. While these theories could be generalized, adjusting the lens to a Latina's perspective provided deeper understanding of the distinctions in these factors between genders, within the same culture, and between cultures within the same gender.

### *Marianismo*

Marianismo provides an understanding of cultural expectations for Latinas. The expansion of this term provided by Gil and Vasquez (1996) in the *Maria Paradox* provides the understanding of the delicate balance between culture and career in Latin American culture. Gil & Vasquez explains the enigma that transpires when old world traditions and new world self-esteem must co-exist. Gil and Vasquez generated the 10 mandamientos to define these expectations:

Don't forget your place as a woman

Don't give up traditions

Don't be an old maid, independent, or have your own opinions

Don't put your needs first

Don't wish anything but to be a house wife

Don't forget sex makes babies, not pleasure

Don't be unhappy with your man, no matter what he does to you

Don't ask for help

Don't discuss your personal problems outside the house

Don't change.

### ***Critical Race Theory and LatCrit***

Critical race theory in education challenges the dominant doctrine that oppresses the understanding of experiences of those of color (Ornelas & Solorzano 2004; Solorzano & Yosso, 2002). The theory further identifies the variance in ambitions, access to resources and opportunities, and impartiality that take into consideration race and gender. Critical race theory recognizes the distinctions of people of color and seeks to integrate their lived experiences, rather than generalizing (Delgado Bernal, 1998; Solorzano & Yosso, 2002). It provided another lens outside the homogeneous approach that most theories provide in educational research, offering focus and understanding for people of color. Understanding how shared and different experiences impact a Latina's way of thinking was essential to further examine their motivators and challenges. All participants were aware of the challenges their male counterparts, or their female counterparts of other ethnicities, did not face. To further concentrate on the educational experiences of the specific race of Latinas, LatCrit was considered.

The theory of LatCrit was adopted from Critical race theory, attempting to fill the gaps in literature specifically for Latinos/Latinas in educational research (Fernandez, 2002). LatCrit further explores Latinos/Latinas perspectives, taking into consideration inequalities such as socio-economic statuses, bilingual factors, and occupational and special educational classes (Fernandez, 2002). This research stemmed from Solórzano and Yosso's (2002) insight into how counter-storytelling can provide a window into a further understanding Latino/Latina's awareness of their world and the cultural factors that intervene in this knowledge. LatCrit has been used in educational research to remove generalizations about a specific culture that

experiences a phenomenon different from those of their peers. Both critical race theory and LatCrit theories provided the distinctive aspects of understanding for students of color, which provided a more focused insight into advancement in educational endeavors (Delgado Bernal, 2002). A LatCrit perspective provided a more focused understanding of concerns specific to this marginalized demographic that encompasses gender, language, ethnic, and socio-economic discrimination faced (Solorzano & Yosso, 2002; Delgado Bernal, 2004). Generalized theories without the application and incorporation of a more focused approach lack the ability to support the understanding of this demographic and truly identify and comprehend issues faced by Latinas. While critical race theory recognizes the experience of people of color, LatCrit provides a more purified approach tailored to Latinas (Delgado Bernal, 2004; Solorzano & Yosso, 2002). This tailored approach is necessary to dissect and truly understand the challenges faced by Latinas.

### ***Chicana Feminist Epistemology***

Chicana feminist epistemology provided a narrative that encompasses Latinas' particular process of navigating through "beliefs and values" stemming from the heritage, past traditions, and culture that is unique to this demographic (Anzaldua, 2002, pp. 561-562). Theories are often developed in the thread of upper-class Caucasian men misaligning with the Chicanas' mindset, leaving a deficit in understanding of their "development and personality" in reflection (Flores-Ortiz, 1998). Flores-Ortiz (1998) suggests that this lack of representation of Latinas provides only an understanding of White middle-class men and women, further emphasizing the need for a voice and space for understanding how Latinas measure success, goals, education, and achievements.

### ***Bandura's Self-Efficacy Theory***

Bandura's (1994) self-efficacy theory explains the connection between people's beliefs of their capabilities and performance outcomes. While it establishes basic tenets of what is needed to achieve self-efficacy, the gap between culture and gender was considered. Considering achieving self-efficacy against or within cultural beliefs and how these women navigated them provided an additional consideration and insight of this demographic. These women had to traverse inherent societal and cultural processes unique to their gender in order to achieve the same level of self-efficacy of their male counterparts and others of the same gender in different cultures in the IT industry.

### ***Hofstede's Cultural Dimensions***

Hofstede's cultural dimensions theory is a global study conducted from the 1960s to the 1970s by IBM. Utilizing factor analysis, the study describes the relation between values and beliefs and behavior and attitudes of a societal culture and its members. Hofstede's cultural dimension theory provides the international differences in work-related values. The study was allocated across 20 different languages, and 88,000 respondents across 53 countries and regions (stabilized) in 50 occupations (Hofstede, 2001). The theory helped to explain and quantify observed differences between cultures. It helped to explain the influence of values based on participants' societal culture and its members. This was one of the first theories that was quantified to explain cultural differences within an organization.

As IBM is a technology company, this theory brought additional consideration to the technology environment for this study and added additional reflection on cross-cultural environments within a technology organization.

## **Consideration of Potential Barriers for Latinas in IT**

### ***Culture and Gender Factors***

Marianismo implicitly tells young Latinas to choose a career, but only if it will support caring for a family and is a career where women are accepted. This is consistent with mandamientos one and three (Gil & Vasquez, 1996). Many young Latina girls may be or have been influenced by careers that agree with mandamientos one, three, four, five, six, and eight of marianismo (Gil & Vasquez, 1996). This seems to be consistent with the participants' perception of culture and career.

Young Latinas must be inoculated to the gender-stereotypic goals, occupations, and gender beliefs that impact career selection (Evans & Diekmann, 2009). They must be able to envision the opportunities of a career in technology as achievable and acceptable for their culture and gender to evolve past the marianismo belief that women cannot succeed in IT, because that would create a strong independence that violates mandamiento number three (Gil & Vasquez, 1996). Latinas' keys to self-efficacy rely not only on their abilities and personal experiences but on a career that would align with the expectation of having a husband and family, in order to achieve self-efficacy within their culture (Bandura, 1994). A consideration in the initial stages of this study as to why there might be a low representation of Latinas in IT, was if IT was perceived only as a career for men. With that consideration, many Latino husbands and fathers would not want to see their wives or daughters as part of the minority in an atmosphere where women must violate mandamientos three, four, five, and seven (Gil & Vasquez, 1996). After discussing careers choices with the participants, this type of narrative, while potentially broad in representation, seemed to be a bias or expectation still enveloped in cultural expectations.

### ***Providing the Curriculum, Motivators, and Space***

If in the early stages of high school the curriculum seems to be male-oriented, women will forgo the opportunity to explore the subject that may influence their engagement in IT (Mutekwe & Modiba, 2012). This corresponds with Brook's theory of how women's perception of curriculum is established, and provokes the question, "Does the information appear to be more male oriented in structure and conception?" (Brooks, 1988). If the curriculum in IT is deemed by Latinas for men only, the idea of pursuing a career in that field may be construed as violating mandamiento one, forgetting their place (Gil & Vasquez, 1996; Nunez et al., 2016). This leads to unspoken verbal persuasion that women do not belong in IT (Bandura, 1994). While high school is one aspect of the issue, finding the space that welcomes young Latinas to develop these skills is also critical. To further support this consideration, additional research indicated that females have a preconceived notion that STEM disciplines are "male-oriented" without consideration of "societal benefits, leading them to disengage, particularly in subjects like engineering and computer science," which aligns with notion that IT is geared towards males, and opposing mandamiento one (Archer et al., 2013; Holmes et al., 2021).

McMillan and Chavis (1986) proposed that a sense of community consists of four elements: membership, influence, integration and fulfillment of needs, and shared emotional connection (p.9). Further research suggests that people are likely motivated by those in their same social category, which further builds upon and supports the elements of sense of community (McPherson et al., 2001). Social support in the workplace provides the connection between how assistance is received and achieved, further encouraging Latinas' career development (Liu et al., 2021). Based on the cultural values of Latinas, an established, cohesive, and organizationally created space to connect can make the difference in career aspirations

(Ruiz, 2005). In speaking with the participants, all acknowledged seeing a low representation of others like them. Without a sense of community, access to others within the same social category, and social support, these deficiencies can serve as barriers to resources towards career development. Through created collaborative spaces, Latinas can see more individuals like themselves, providing the physiological perception that they belong, thereby sustaining *mandamiento* one (Gil & Vasquez, 1996). Understanding the value placed on the collective environment should and seems to have compelled organizations to create a workspace that fosters community within the organization rather than allowing that aspect to evolve organically. The importance of community is evident by the multiple large tech companies' initiatives towards diversity and inclusion as well as both formal and informal peer groups established in large tech firms, as identified by the participants.

### ***Careers that Cater to Latina Values***

Bandura's (1994) social-cognitive theory provides one understanding that might impact Latinas' career choices. However, these theories must be considered through the lens of Latinas and in understanding how they perceive success and self-efficacy. Based off Bandura's social-cognitive theory, social cognitive career theory is considered in empirical studies to examine the career paths of people of color (Mejia-Smith & Gushue, 2017). Career choices derive from an individual's racial and ethnic background, gender, socioeconomic status, and cultural background, which influence obtaining self-efficacy. In consideration of Social Cognitive Career Theory (SCCT), career paths are considered based on the realization of accessible careers and the belief in achieving self-efficacy within a role (Lent et al., 2000). With little representation, belief in achieving self-efficacy in IT may be stifled, thereby deterring Latinas from pursuing a career in this field.



Career paths with low representation of Latinas, such as those in IT, might hinder young Latinas, as it would be difficult for them to see many other women like them modeling careers in STEM. This would make it problematic for them to comprehend their ability to achieve self-confidence, and their ability to master science and technology (National Center for Women & Information Technology, 2022). This concept was further explored when considering the construct of community and shared experience as essential towards acquiring a sense of belonging (McMillan & Chavis, 1986). With low representation of Latinas in IT, it is reasonable that the supervisors or management they report to differ in ethnicity, gender, and culture. This notion of low representation in leadership was confirmed by the participants, as they noted either being the only representation of their demographic or their demographic being the lowest representation in their work experience. This might impact verbal encouragement, both explicit and implicit, as it is received from a person that differs in both culture and gender. Cultural communication variations can hinder development towards self-efficacy even further.

Additional motivational factors that create job satisfaction for women are flexibility of schedule within their career (Rogier & Padgett, 2004). This coincides with marianismo's understanding that women are the primary caregiver and should consider employment that appeases that role (Gil & Vasquez, 1996). Flexible and remote opportunities are more enticing for women than men because of the marianismo gender role expectation. The need for a career that offers flexibility and ability to be the primary caregiver was confirmed by the participants. Women's perception of IT providing the flexibility that coincide with family obligations should create an environment that removes job dissatisfaction, identified as most important to women (Rogier & Padgett, 2004). This should create a sense that a career in IT and caring for a family is attainable and not mutually exclusive. Family and career are important cultural aspects with

many Latinas (Ruiz, 2005). A career that is perceived as being able to attain both would likely weigh more heavily on career decisions with Latinas than men, because the societal rules for men and women differ (Burke et al., 2009).

Despite many generations of Hispanics living within the United States, cultural expectations such as family and career are still imposed on Latinas, as noted by Suarez-McCrink (2002), whose mother cautioned her about obtaining a college degree. This notion is further supported by Crocco (1999), that regardless of advances in career and education, women's primary role was to be a caregiver. With this in mind, the cultural expectations of Latinas has a strong impact on the career and family choices made at a young age. The influence of marianismo is always present when determining how this demographic is motivated, even if it is subliminal. Suarez-McCrink and Crocco's understanding of the influence of marianismo was further supported by the participants in this study.

The emotional impact that cultural influences and expectations can have on Latinas was further explored in this study. It is crucial for Government and industry to recognize these theories through Latinas' perception of self-efficacy, success, education, and acceptance when determining how to attain and retain Latinas in STEM, but more specifically in IT.

### **Chapter 3: Methodology**

#### **Overall Interview Approach and Rationale**

Qualitative interviews create the environment that provides a deeper understanding of participants' experiences and interpretations woven by unique conversations and exchanges between the researcher and participants (Hatch, 2002; Mishler, 1986; Spradley, 1979). One of the better suited methods for capturing experiences of participants is through interviews (Charmaz 2014; Creswell 2014). Interviews provide the best avenue for investigating more complex social phenomena (Creswell, 2012). Qualitative interviews provide a tool and technique for bringing to light the "meaning structures [that] are often hidden from direct observation and taken for granted by participants" (Hatch, 2002, p. 91). Using a qualitative approach in this study provided the space for participants to share their perceptions, views, thoughts, and experiences freely. Interviews unearthed "the meaning structures that participants use to organize their experiences and make sense of their worlds," bringing to the surface hidden perceptions of Latinas (Hatch, 2002, p. 91).

This approach also allowed the data to emerge and formulate into a theory that identified the process used to appease, integrate, or abandon cultural constraints. In considering how participant Latinas navigated cultural expectations and a career outside of that, an understanding was achieved that can provide guidance for others who traverse the same path. Quantitative studies provide numerical data about successful women and cultural environments but do not lend a voice to the participants impacted. Qualitative methodology allows a richer context and understanding of the issues faced by a specific demographic. Creswell (2012) noted when factors that explain a process, such as contributing factors for certain demographics into higher education or a specific career, a grounded research approach is best (p. 423). From the data

perspective, a grounded research approach allowed me to stay more intimate with the data, allowing the categories to build organically and not forced to adhere to the concepts or framework of existing theories (Creswell, 2012). This aligned with the design of this study about a particular demographic, Latinas, in a particular industry, IT.

The data regarding the number of women pursuing degrees in STEM was established in Chapter 2 and represented a low number. However, the data did not separate different ethnicities or cultures. There may be more granular aspects that impact Latinas versus white women or other women of color. Hispanic culture in the United States has long term ties and influences on gender expectations, despite acculturation. Efforts towards increasing the Hispanic demographic in industries may be improving in other industries, but the disparity between Latinas and other demographics in IT, including their male counterparts, is still disproportionate. Finally, what motivates Latinas to endeavor against or navigate within cultural and gender influences to obtain a career outside marianismo, is still unanswered.

### **Specific Methodology**

There were a number of steps involved in the methodology for this study, as follows::

1. Participant eligibility was determined via emails and phone call interactions between myself and participants.
2. Surveys with a brief video introduction, explaining the tenets of the research, were administered via email (Appendix D).
3. An initial consent page was sent via email providing consent to participate in the study and informing the participant of the ability to withdraw at any time (Appendix E).
4. After the participant selection was completed, in-depth qualitative individual interviews were conducted as the main source for data gathering (Rubin & Rubin,

2011). Participants were given the choice of having the interviews conducted individually or in a group.

- a. I introduced a worksheet called This is My Story (Appendix B), which was used to help guide participants through crafting their stories recollecting and identifying occurrences or behavior. This worksheet was utilized to detail participants' past and present, which included positive and negative influences. The goal was to stimulate a type of reminiscence of motivators, influencers, and life altering occurrences, providing richer stories that investigated on a more vertical depth of information than horizontal.
  - b. Stories were recorded by me, with the consent of the participants (Appendix F).
  - c. Interviews occurred using an online meeting tool and included structured and open-ended questions. The interviews and phone calls captured demographic information as well as non-structured information about the participant.
  - d. Follow-up information was obtained as agreed on by the participant. The interviews were obtained on an individual basis as agreed upon by the participant and arranged by me. None of the participants desired to do group interviews for fear of losing anonymity. Meetings occurred via Zoom. All interviews were recorded after obtaining consent from the participants.
5. During data analysis, I evaluated responses, developing new inquiries deemed essential to a more comprehensive understanding of the phenomena.
  6. Emergent redesign questions were asked during follow-up interviews, calls, or emails with the participants. New questions or rephrasing emerged as necessary to capture the essence of the participants' stories and unique or similar experiences.

7. Field notes and recordings were generated during these interactions. The worksheets, recordings, and field notes were utilized for data analysis. These forms of data generated additional information that contributed to the emerging theme throughout data analysis and assisted in thorough documentation of the experiences of the participants (Charmaz, 2014.)
8. Memo writing occurred after interviews that generated additional notes and comments I had during the process. This provided a chronological understanding of the participants' experience that assisted later in the ability to synthesize the data.
9. Coding occurred after the memo-writing process, which also generated additional notes and comments as I synthesized the data.
10. Electronic notes were kept via Color Note to revisit between research analysis, interviews, interactions, and reconsideration of the data.
11. The data was segmented, then categorized under themes. I performed theoretical sampling by developing properties to categories until no new properties emerged. Through continuous review of the categories, themes began to emerge. This led to the final product of construction of the theory that developed from the data.

## **Sample/Participants**

### ***Setting***

I sought Latina females employed in various types of organizations in IT positions. The time and date of the interviews were coordinated between the participant and the researcher. All participants joined the interview outside of their working schedule and from home.

## *Participants*

Participants were women who identified as Latina who were United States citizens or naturalized citizens. Access to the data and participant pool was requested electronically from IT employers, supervisors, human resource officials, and my colleagues. After initial clearance was granted, an email requesting participation in the survey was sent with details of the study, a brief video, and a link to my calendar, with confidentiality agreements embedded on the landing page utilizing Calendly (Appendix H). The invite delivered via email used a link to Calendly to schedule the interviews, which also provided a reminder.

Participants were screened via an initial phone call or email requesting information about their background. This screening narrowed down the inclusion criteria and ensured the participant sample met the qualifications for the study, but was relaxed as necessary to benefit the study.

The following was the inclusion criteria for participants:

1. Participants were second-generation Latina women.
2. Participants were working in a STEM career currently or have had an employment history of at least 2 years in STEM.
3. Participants had obtained a degree in STEM from an accredited university.
4. Participants were self-identified as Latinas.

The following was the exclusion criteria for participants:

1. Latinas not from the United States.
2. Latinas who obtained a degree in STEM but were never employed in a STEM environment.

## **Qualitative Data Analysis**

This study utilized purposeful sampling and in-depth interviews for data analysis. Woven into the data analysis was literature specific to Latinas in IT, which was limited, leadership theories, and characteristics of culture and gender expectations. Themes emerged from the interview data from participants, notes, journals, gerunds coding, categories, properties, and memos. While the interviews and questions asked of all participants were not in the same order, during the memo process, for consistency, the data was extrapolated and organized in chronological order into the following categories:

- Home life
- Elementary School
- Middle School
- High School
- College
- Post college
- Now
- Specific Questions: Why do they think there are not more Latinas in IT?
- Advice: Encouragement and Warnings

Sequencing the data provided an order and structure of the data that allowed for better assessment and comparison of consistencies.

## **Limitations and Delimitations**

Location may be perceived as the first limitation of the study. Because the study was performed online, a certain comfort that face to face might offer was removed. The choice of being on camera or off camera was offered to participants to promote their comfort level in



sharing. I anticipated engaging Latinas working in Bexar County, but this was relaxed to include Latinas working in IT in other counties and states. The initial logic for requesting individuals located in Bexar County was to provide a setting in an environment with a rich and vibrant Hispanic culture, eliminating potential influences and unknown cultural implications of the various counties and states that could impact motivational factors. The other reasoning for selection of those in IT was to allow for further investigation of Latinas pursuing careers in a more isolated environment, where their demographic was more prominent geographically. This created a more selective and most likely smaller number of participants for the study. Ultimately, after screening and speaking with Latinas in different locations, I realized that the barriers, experiences, and cultural implications were so similar that physical ties to Bexar County were not necessary. It became necessary to expand the study. This study intended to provide more in depth, rich data that was more vertical in breadth than horizontal.

Time constraints were considered a limitation of the study that was a personal factor of both my and the participants' schedules, due to pandemic and family and work life boundaries being blurred. The study was conducted over months due to my lack of financial resources. It was not researched as a longitudinal study following Latina students throughout their academic endeavors to allow for time sensitive reflections and recollection of coping mechanisms and real-time obstacles.

Another area that may have been considered a limitation was the positionality of myself as the researcher. From my perspective, the similarity of the participants with myself created a richer and deeper understanding of the study; however, this may be construed by others as a limitation. The data was filtered and analyzed through my lens as the researcher, with similar experiences in culture, education, and employment, a Latina working in IT. Certain

understandings and concepts were considered reached sooner due to the similarities. However, some may also interpret this as a bias. Biases were addressed by documenting them in a journal, as noted in the trustworthiness section of this paper.

### **Protection of Human Subjects: Ethical Consideration**

Due to the interaction and examination of human subjects, I submitted the study to the University of Incarnate Word's Internal Review Board (IRB) for review. The study commenced upon receipt of approval from the IRB (Appendix C). Informed consent was specified in the first portion of the email that was used to invite participants and establish criteria. Response from participants was used to capture consent. Consent included the opportunity to waive their participation should the participant be underage, decide not to participate, or express a sense of anxiety from participation. The consent form and email consent detailing the study (Appendices E and G), was sent to the selected participants prior to the initial interview and included consent of initial and subsequential interviews throughout the study. Audio consent was captured at the beginning of each recorded interview and subsequent interviews. The interview questions were constructed to inquire more about the participants' personal perspectives, and their experiences of educational, organizational, and family environments (Appendix A). A worksheet was emailed to participants prior to the interview to help them prepare and to ensure they were okay with the overall structure of the interview (Appendix B). Participants were informed that the interview information would remain anonymous and voluntary, and that they could terminate at any time. The purpose of this information was to remove any concern, apprehension, or anxiety on the part of the participant caused by the study. Concealment of personal information served to obtain more honest engagement. Participants were notified of their rights to privacy under the Code of Federal Regulations (Department of Health and Human Services, 2009) regarding their

personal responses. Acknowledgment of this information offered participants a deeper sense of assurance of the anonymity of their responses. Consent was administered each time, and a reminder of anonymity and voluntary participation was provided at the beginning of any follow-up or additional interviews requested.

### **Data Collection**

Data collection methods included semi-structured interviews, field notes, questions, and electronic notes for descriptive purposes. I employed purposeful sampling, as it was necessary to specifically identify Latinas with higher education in STEM and a career in IT. The Zoom recording feature was utilized for capture of the interviews, and the recordings were then transcribed. The transcriptions of the interviews were secured via encryption, and password protected on a secured platform. Raw information was extracted and categorized for further evaluation from interviews and notes. While interviews were the main data source, field notes contributed towards the data gathering process. At the beginning of each Zoom interview audio consent participants provided audio consent to be recorded. All datasets were stored in electronic documents for evaluation and categorization of responses. During interviews I used detailed notes and recordings to capture every aspect of the participants' responses and their life, regardless of any perception of relevancy at the time. Notes during the interviews were taken separately so as not to confuse participant responses with my thoughts. All datasets, including interviews and fields notes, were stored in an electronic format for evaluation and categorization.

### **Data Preparation**

Each participant was assigned a pseudo name and their responses coded to that name so that certain responses could be utilized in the final research and keeping of the participants could be assured. The data collected from all interactions was reviewed and categorized according to

like characteristics of the responses. Electronic documents contained all data from the participants to help categorize aspects of responses by similar words, phrases, and themes of experience. From the data, responses were analyzed for motivational factors that both impede and promote the engagement of the participants.

## **Memos**

Memos were created from the transcribed interviews and notes to organize the data. Coding was then performed in the order of the timeline for ease of comparison of themes. I captured additional thoughts in a separate notes document during this process. The coding process was established by reviewing the participant data. Data was organized in a chronological timeline and placed into memo format (Charmaz, 2014).

After each interview was complete, memos were then generated from the participant data, which was a “pivotal intermediate step” between the collection and analysis of the data (Charmaz, 2014, p. 343). Memos were compiled from the chronological interview data, as well as additional concepts, thoughts, and perceptions appended to the data during the data marination period. Notes appended were generated from various methods and time as thoughts and concepts emerged during marination of the data.

The memo data for the participants’ stories is listed in alphabetical order by pseudo name in Chapter 4. Names of cities and organizations were sanitized to protect the anonymity of the participants. While employment of these participants was in larger corporations, due to the minuscule representation of this demographic, specific details of cities and employers could have provided enough detail to discover their identity. For this reason, the employment data was sanitized to remove employer names to help preserve anonymity. All stories ended with responses to the following questions:

- What advice would you give younger you while in middle or high school in regards to pursuing a career in IT?
- What words of encouragement would you give the same younger you?

### **Coding**

Coding shapes the development of the collected data towards an emergent theory to further clarify and categorize the data (Charmaz, 2014). Coding occurred through notes and transcripts from the interviews. A general practice of organizing the data occurred by coding the raw data (Rossman & Rallis, 2012). Ground coding was initially used to extract data for further analysis (Charmaz, 2014). The data was coded by extrapolating key and common phrases from the transcribed interviews for each of the participants. The coding was performed individually and then compiled utilizing all participant data. This process allowed for potential thematic approaches within the data. After the initial approach to coding, the requirement to “winnow” the data provided a more unified method of data collection (Guest et al., 2012). The data was then combined into a thematic approach to determine frequency of common motivational and cultural factors identified through the interviews across studies (Creswell, 2013). Finally, through commonality of factors between the categories and refinement, a potential theory emerged. An inductive analysis strategy was applied to link an emerging theory to the refined categories (Patton, 2002).

### **Categorization**

After coding was complete, I analyzed the data, segmenting coding and assigning headings. I then categorized the headings by similar meanings. After several rounds of review, I was able to establish the current categories (Table 2).

**Table 2***Themes and Categories*

Theme	Category
Theme 1: Steadfast Soldiers	Category 1: Overcoming Considerable Challenges  Category 2: Battle to Prove Worth.
Theme 2: Tactical and Tenacious Strategists	Category 1: Calculating Risks Category 2: Walking a Fine Line
Theme 3: Resourceful, Innovative, Self-Advocates	Category 1: Learning to Forge Their Own Path  Category 2: Fast Adapting to New Environments

This process allowed me to synthesize the data through each iteration of analysis, allowing for the various segments of data to be condensed to categories known as theoretical coding. Finally, after I made several reviews of the data both within the categories and separate from them, theoretical coding allowed for theorizing of the data and establishing a relationship between the segments and data.

While the coding helped to “crystallize meanings” from the data, the memo process helped to formalize these concepts (Charmaz, 2014, p. 11). These memos assisted in developing themes, categories, and properties that emerged. After deducing the common concepts from the memos, several rounds of analysis were performed to categorize the data by similarities. A larger theme seemed to absorb categories that were then further supported by the underpinning properties. This led to the final overarching themes: Steadfast Soldiers, Tactical and Tenacious Strategists, and Resourceful, Innovative, Self-Advocates.

### **Properties of the Categories**

I performed theoretical sampling by developing properties of the categories, continuing this process until no new properties emerged. Properties were utilized to further support the categories. This process provided the analysis to address any deficiencies. Theoretical sampling strengthened the construction of categories, ensuring compilation of similar data (Charmaz, 2014).

### **Data Cleaning**

I began the process of data cleaning by creating a cross-matrix between actual names of participants and their pseudo names to ensure the data maintained its integrity and anonymity. The pseudo name that was used to reflect the participant throughout the document was then compared to the matrix. I then begin cleaning the data by removing typographical and grammatical errors, and redundancy. To ensure authenticity of the data, direct quotes from the participants were not corrected for spelling or grammar. After reviewing the data and pulling common themes and words into a document, I then revisited memos and added sentences highlighting some examples of where these recurring themes were displayed. The final process of data cleaning was sequencing the data in chronological order of events and then by alphabetical order of participant pseudo names to ensure all information was transferred from the data repository and that all voices were heard.

### **Results Analysis**

Initially, the chronological data provided a consistent structure for analysis and comparison between participants and data. Later, the researcher's notes were implemented within the memo to identify examples throughout the interview that sparked these thoughts and themes. Coding from the initial memos were created and reflected upon for common themes.

There were common themes that emerged from the data. As I reread the interview data, I started highlighting words that were noted frequently. Additionally, I created a separate document to start noting the words and descriptors that came to mind upon reading the data for a third time. I then reviewed the words and categorized them into themes, aligning and realigning common threads. A common mantra seemed to continue to resonate in my head as the data was reviewed. After analyzing story after story of individuals who had one or two people at one point in their life influence their path, despite all the discouragers, a mantra became clear as if a sounding drum were beating, inspiring their journeys: *Someone Said She Could, So She Did*.

### **The Researcher's Role**

My experience in both IT and as relating to the participants in gender, ethnicity and culture must be stated. While my personal cultural experiences might exclude me from participating in the study, my experiences in higher education may be like those of the participants. Selection criteria of the participants within Bexar County was to provide a form of randomness within the same geographical area but would still allow the ability to capture experiences from a specific demographic, removing variances between educational, generational and socio-economic differences. Later the geographic location was removed as necessary to better support this study. Implementing a standard criterion of selection and documenting biases ensured prejudices were removed. By identifying biases this ensured data was being mined through a general lens that did not overwrite participants' responses with my preconceptions as the researcher.

The role of the researcher was to contribute to the body of knowledge in a systematic and prolific manner that assures anonymity for the participants as well as integrity for the study. The goal was that this process would combine the experiences of multiple participants throughout



this study, rendering richer data while providing a greater understanding of the phenomenon. In constructivist grounded theory, the researcher is the primary tool utilized to obtain and interpret data. Having shared background, ethnicity, culture, career, and gender, my interaction with and greater awareness of the participants' stories created a more in-depth approach, allowing a richer understanding and comprehension of the data emerging.

### **Trustworthiness**

There are eight validation methods that can be implemented for qualitative research (Creswell, 2014). This study utilized prolonged time; rich, thick description; and bias (Creswell, 2014). Prolonged time in the environment occurred innately as I share the same gender, culture, and environmental experiences as participants. This provided me, as the researcher, with similar experiences, and similar setting and understanding, as the participants, which Creswell (2014) considers essential. The second validation—rich, thick description—emerged from my shared experience of gender, culture, and environment. A comprehensive description of background, settings, and shared experiences was more systematic and expressive, conveying a richness to the results and offering validity organically. The third validation method, bias, has been identified in the role of the researcher. Based on my education, household type, and socio-economic status, variances in experiences were acknowledged and documented as they were identified within the study. Additionally, personal reflection, journals, and comparison of the emerging theory, allowed me to identify variances in experience that were distinct and separate from mine. This provided a more organic approach to emerging themes.

## Chapter 4: Findings

### Demographic Data Analysis

A total of 10 women were initially interviewed in this study through purposeful sampling. Of the 10 women, seven participated in formal interviews to explore further some of the initial concepts and questions of the study. As the study progressed, the interview process was lengthened. Of these seven women, three provided an in-depth interview, providing the concepts that developed the emerging theory. Pseudonyms were assigned to protect the identity of the participants, who requested to remain anonymous. Participants were given the choice to interview individually or in a group. All chose to be interviewed individually. The concept of privacy and anonymity was of high importance for the participants. The information in Table 3 reflects the demographics of the seven participants who provided more detailed interviews. Of the initial 10 only 7 had fully completed interviews. Their data is reflected in Table 3. The participants were all Latinas, with an age range from their 30s to their 50s, representing multiple generations. All had at minimum a bachelor's degree. Of the seven participants reflected in the table, three were considered to be in managerial roles; however, all were considered leaders in an informal sense as they reached back to provide resources for others within their demographic.

**Table 3**

#### *Participant Demographics*

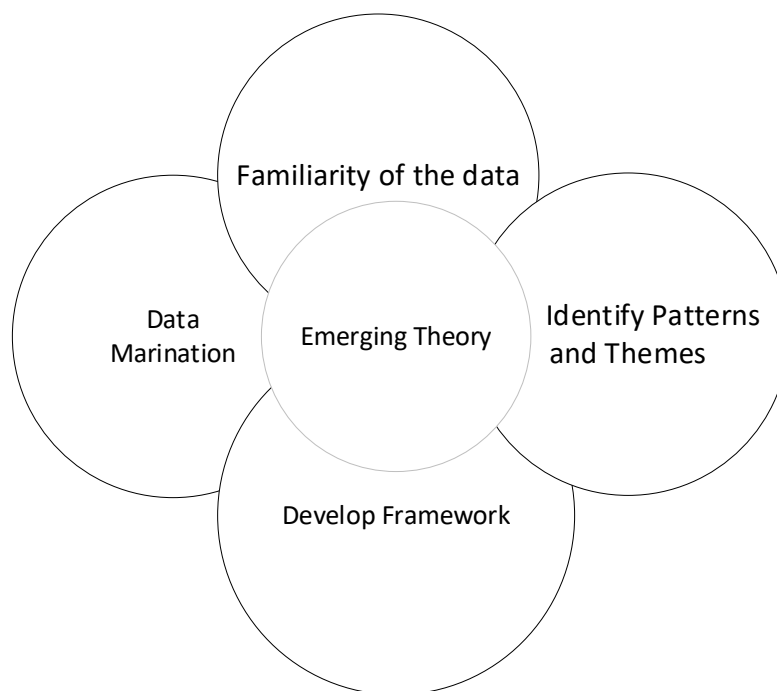
<b>Participant</b>	<b>Age</b>	<b>Education</b>	<b>Type of Position</b>
Camela	50s	Bachelors	Management
Chloe	30s	Bachelors	Non-Management
Hernandez	40s	Masters	Non-Management
Luisa	30s	Bachelors	Non-Management
Maria	30s	Bachelors	Non-Management
Martha	30s	PhD	Management
Mikasa	40s	Bachelors	Management

### ***Descriptive Data Analysis***

Broad concepts, behaviors, or phrases were highlighted in the initial participant data through the coding and memo processes. This allowed for a more systematic approach towards structuring the framework and direction of the study. The data was then absorbed, assembled, reflected on, and revisited throughout a period of time. This allowed the data to marinate with the researcher. For the purposes of this study, this period of time was considered the data marination period, which stemmed over approximately 3 months. It provided a certain intimacy and insight into the data that reflected the descriptive analysis process leading to the emerging theory (Figure 2).

**Figure 2**

*Descriptive Data Analysis Process*



## Participant Profiles

Seven of the 10 Latinas participated in the study. The remaining three did not complete a full interview and were not included in the study. The stories of the seven Latinas included in the study are as follows:

### *Camela*

Camela was a 50-year-old woman born and raised in the South Texas town she currently lives in. She was married with two adult children in their early twenties. She married right out of high school. However, she never allowed that to be a deterrent to her attending college. It was rather the opposite. Seeing the lack of options and opportunities inspired her to seek out a degree to ensure herself a brighter future. Her spouse, her biggest cheerleader, saw her love of computers, and her potential and abilities, and continued to push her towards completing her degree in IT. Her story begins:

I am a product of a teenage mom; my mom was 15 when she had me. So, you can do the math. She raised me and married my adopted father when I was almost 3. She had four kids before she was 27. She did the best she could. And it took me a long time to realize that, because we butted heads so much when I was growing up. I mean, she was so young. So, while I thought we lived a great life, and we probably had lived better lives than a lot of other people. We still were just low end of you know, your mid income family there. We were just over the probably just over the poverty line. So, we, you know, we did my parents did the best they could, but you know, all teenagers.

For Camela, this upbringing forced a sense of “if you want to do it you will have to figure it out for yourself.” The value of education was not impressed on her by her parents, as they were teenagers when they started their family and did not prioritize education. While they never directly discouraged her, sometimes this blunt practicality could be perceived as a discourager.

Her catalyst was a middle school teacher who saw her math skills and invited her to a summer program in programming during 8th grade. There she found her love of IT and never veered from it. When it came to programming, her teacher, Mr. Rodriguez, believed she could,

so she did. This seemed to solidify her desire for college and Mr. Rodriguez introduced her to programs helping to realize that dream.

Camela went on to high school, but due to the location of the family home, her school district was one with fewer funds and resources for computer programming and math programs. However, due to an outreach program that was a successor to the program she participated in 8th grade, she was able to be a part of such a program in high school. This gave her the confidence to believe that this was something she could do and do well. Because the school lacked programs on campus, students were bused back and forth to the program, and her school day became almost 12 hours, in addition to homework. Her motivators during this time were her sophomore English teacher telling her “don’t give up, you can do it,” despite English being her “least favorite subject.”

Once she had access to the programming classes, any fear of the unknown was alleviated, and the mystique was removed and conquered. Discouragers during this time were her peers. They questioned her as to why she was wasting her time.

Camila grew up in a lower income area with schools that lacked resources, an environment that lent itself to a lack of resources for fellow students and peers at home. Likely they incurred the same issues she did with parents who lacked education and misunderstood the value of an education. Her peers viewed her wanting to grow her knowledge in this area as waste of her time.

After high school, at 19, Camela got married. Her biggest motivator was now at home.

I am married. I was 19 years old, husband was 21. And so, as an adult, my husband was probably the biggest motivator for ensuring that I finished even when I got tired, even when I was like, you know what, I don't want to do this anymore. You know, he'd always be the fan. It's always the end of the semester, right? Where you're just done, right? It's like, take the summer off, and then you know, just will work and then you go back in the fall, you know, and so we'll talk about it in August. That was always his thing. But then I

get paperwork, and then we'll talk about it in August. And by then you're usually like, okay, I'm ready now. Right.

Her husband never let her forget her dream. Her motivators during this time were her spouse and a college professor. She did not do well in one class and started questioning if she was meant to be in computer programming. Her professor in that class saw her potential and would not let her give up.

Camela had two children before she graduated. College with two small children, coupled with a difficult class, left her discouraged and questioning her path. She lived approximately 40 minutes from the college she attended. She had to find sitters, time for homework, hours to study, and had a long commute. Thankfully for her, her biggest motivator lived with her and never let her stop.

There was low representation of Hispanics in Camela's college classes and even lower representation of Latinas. She recalls one other Latina with eight males. Because it was a commuter college, bonding was difficult. They were a mature group in their late 20s, so their focus was mainly the program, which might be quite different from a young adult's college experience. Her last semester she recalls being 9 months pregnant and barely able to fit into a desk. She had so much invested in this journey she became strategic and calculated. With living far from the school and having children, she had to plan ahead for babysitters. She made sure she picked the groups to work with that were committed, including meeting on a Friday or Saturday.

After college she got her first job, which lasted 3 months. She then went to her next role for 2½ years. Prior to this, her longest role was 6 years, when she built a work family. Latinas thrive off community, which seemed to have contributed to the work family longevity, as she notes the group being "very tight and close." This showed her ability to be resourceful and build a community within her current environment. With a young family, having to segment work and

family extended her workday, which was challenging. Camela noted that “it is easier for males to bounce around” than women. She had to prioritize availability of leave over salary. This seemed to add an additional layer of complication for any working mom, and to the many layers added as a Latina in IT.

Camela’s current role for a Big Tech company has landed her the best mix of diversity, leave, and pay. While still low in representation of Latinas, there were more women in the mix. She has found the ability to be herself within her culture and religion. The only issue was when she worked for another Latina, who was not qualified and misunderstood Camela’s intent to help the team, to “show and share.” Her boss interpreted her desire to help as an arrogance in Camela, thinking she was equal to her boss. Camela’s boss was married to a white person. Camela interpreted this as her having married up and not having much tolerance for others, including those of her own ethnicity. In Camela’s perception, her boss portrayed herself one way but acted another. As an example of this, she claimed to be religious “yet [was] very unprofessional, cursing in meetings.” Camela had to be resilient, as her kids were in college. She had to stay and any consideration for leaving had to be done properly. Fortunately for Camela, her boss left within a year.

Camela commented on why there were not more Latinas in IT:

While there are commercial advertisements, often people bypass those to get to the program they are watching, so if you are not paying attention, it will be missed.

Camela felt that minorities need to be shown they can do this. Poverty overwhelms a family, and Camela felt that lack of resources leads to lack of encouragement.

Camela also noted that, in 2020, while external resources and programs had increased from when she went to college, a young, adult child dropping out of school or college would be a non-issue, but that was not true. She had a nephew who did just that. Another niece had one

course remaining since 2019 to obtain a degree, yet still has not finished. Camela has encouraged family members that education is important. In her own family, they instilled in her kids “you don’t have a choice.” Education will require some loans but the opportunities that will be open after a degree would more than suffice. She noted that “It wasn’t an option to not go to school [college]. Going away was, but not going to school [college].”

Camela gave advice to middle and high school Latinas pursuing a career in IT: “You have to decide this is what you have to do. Every day you have to decide. Income is worth it. In the end you have to Trust God. You are worth it!”

Camela gave the same audience a warning: “You have a voice. Have to remember to fit in. Know your niche. Know your worth without being conceited. Do your best.”

Camela noted that the easiest thing to do in this industry is learn sports. Since a majority of coworkers are male, this would help to create a connection with coworkers.

I have seen advice from other participants to know their worth. In assessing Camela’s advice, knowing your worth with humility seemed to be the balance Latinas must keep.

When asked if she could be herself in the workplace, she seemed hesitant. She was strategic in how she portrayed herself. She gauged her audience and how they perceived her. This was a long-term strategy and skillset she has learned to hone along the way. If she was “too aggressive people take that the wrong way. If she is quiet, she is not agreeing.” She has learned to tactfully note her opposition but go the direction of the team to provide the collaboration needed for trust and unity. Her objection, noted, afforded her the validation of the team when she was right. This allowed the team to note her cohesive soft skill, while displaying her technical abilities. As she said, “Next time [they] will pay attention [when she advises], fine and thin line.”



Camela's daughter obtained her degree in IT within the past 5 years. While their degrees were 20 years apart, her daughter was one of two Latinas in her graduating class and currently the only female on her work team. Both Camela's children obtained their degrees in complicated fields, and both are employed and doing well. Her rules during their college years was that they could only drop a class and change their major once. She felt that too much leeway allowed for people to get lost in their degree and search.

Camela provided some final advice for younger Latinas: "You can do it! Don't let anyone discourage you! Don't give up! Know and trust yourself. Know your gift."

While seeming confident in her role, Camela still seemed calculated in how she balanced being authoritative and being a team player. She talked about considering when and how to weigh in to ensure engagement of the team, and that they would recall later her accuracy of assessments. Her hope was that it would garner future acceptance of her guidance and insight.

### *Chloe*

Chloe was in her late thirties, married with children. Her story began with her upbringing:

So my mom and dad had myself. I was the first and at the time, my parents were very young. I think they were like, 19 or 20, when they had me, which was pretty normal for that time, starting a family pretty young. My dad joined the fire department. And he may have had a little bit of college under his belt, but not much. He just knew he had a family to provide for now. And same with my mom. She had a little bit of college, and went straight to work, mostly doing office clerical types of roles. And my dad had actually been an apprentice for a tile setter, somebody who has their own residential installments company; and his family before that, they'd all been electricians, but he's never been one to follow in footsteps. He's always been just somewhat of an entrepreneur, you know; he's always wanted to do his own thing. And so, when I was about four, he decided to open up his own tile company.

Chloe recollects her father's influence, seeing him "work so hard," as being the catalyst and being "food for me to see that hustle."

Chloe's parents "definitely felt that education was really important for us. And they decided to put us in private school from first grade on." However, Chloe noted not being concerned about college until she was in high school, "but at the same time, I just didn't care enough until I got into high school [about] college. And I really, I wish I hadn't done that because it made me struggle a little bit more in high school."

During college she did not receive push back from her family:

[My parents] were very supportive of me taking my time to figure out what it is I wanted to do. I took my time; I really did. It wasn't a quick 4 or 5 years. And I think it was about 8 years, I even took a semester or two off at one point because I was just like, I don't want to waste the money unless I really know what I want to do. And so they gave me that time, but at the same time, they're, you need to finish, you need to go back, you need to get that degree. That's really important right now. So it was always about being supportive and not making me rushed to find a job that I was going to stay in. It was the education part, like showing that value.

This was another example of parents instilling the importance of an education. Chloe started her degree in biology and this is where she realized her love of science. While in college she wore many hats: she worked for the family business and had an internship.

I'm in college, I had started to go down the path of a biology degree, as I thought I wanted to go into nursing. I really loved science. I loved the thinking about, you know, strategic things and organizing things and dissecting everything. But I realized that wasn't my passion. And I was also really good at writing. And I loved reading books. I was a big bookworm. So, I got my degree in English with emphasis on professional writing. But I didn't know what to do with that. And at the time, when I was going through college, I started working for my dad, and was doing a lot of things. I was at first just kind of an admin for answering phones and doing ad hoc things here and there. And then I moved to payroll, and then accounts payable, and then sales, so I was wearing a lot of different hats. And at the same time, [I was] going to school and doing an internship.

This was a display of Chloe's diligence and perseverance. After college she started a job at a Big Tech organization.

I had met some new friends, and one of them worked at Big Tech. And I'd heard so many great things about employees and Big Tech, and the culture there. And that's what I wanted. You know, it was just kind of a marketing type of online job where I would be speaking to customers, through email, just like quick messages on the website and on calls. And that would give me

enough information and experience, knowing the products that we sold and the services that we did. And so, I took it. I was in that role for about 5 months.

After 9 months of working for online marketing, Chloe decided she wanted more.

This is not what I want to do, I want to keep going. And I moved up to another role within the same department, but I was going to trade shows, and getting to travel and, you know, meet a lot of people, and still on the phones with customers. So, the thing is, I could really speak to what customers wanted, because I had so much face time with them.

She wanted a new role working with people. She applied for a new, more technical role, which “turned into being a business and database analyst. . . . So, I kind of had to learn on the job, know everything about databases, how to access them, how to manipulate them, SQL language, and I was very intimidated.”

As her technical role grew, so did her technical skills: “All of sudden it clicked.” She increased her skills and exercised innate wiring “strengths, like strategy, critical thinking, organizing, [which] all of a sudden led me into another technical path.” The more she learned about cyber security the more interested she was. Eventually Chloe moved into cyber security.

When I got into cybersecurity, the more technical the role, the less females I saw in my areas. So, when I joined our security operations center, I was one of three females in there.

In this new arena, she was recognized by the lead for her skills and work in cyber security. Managers saw her unique strengths. Someone said she could, so she did.

Chloe left for maternity leave and noted feeling behind when she returned. She worked hard to catch up. She noted that leave for childcare was not common for males. She reflected that they likely did not know what it felt like to be gone for over 6 weeks and then have to work to not only catch up, but keep up, with a small child at home and sleep disrupted. She was scrappy, a steadfast soldier, and a survivor. She reflected that it was harder for her to see her strengths and talents until somebody pointed them out and brought them to her attention.

While Chloe noted feeling an imposter syndrome, she additionally had a determination to get things done. She noticed that the more technical the role, the fewer women were around. Technical account managers were mainly women, likely because they are people and customer oriented. She was one of only three women in the cyber department. However, Chloe noted that being surrounded by male workers felt familiar, having grown up visiting her father's place of work, where there were primarily men. So, this environment did not intimidate her. She was curious as to why there were not more women. She was one of two women as a security analyst. However, she enjoyed feedback and used that as an opportunity to invite more women into her industry.

So when I noticed that, when I was in that role, other females reached out to me, they were like, how did you do this? What was your career path into this? What do I need to study to get into it? And so I loved getting that feedback because I wanted more of them to join.

Chloe left for another company. Currently she is the only woman at the company. She was recently asked to do a video for the sales and marketing department, and felt this might be a way to reach out to recruit more women. She was asked her opinion of how to speak to other women. This request left her with the weight of representing both women and Latinas, but also left her with the feeling that she was an advocate for others. She relayed the importance of knowing there was not only one way to get into cyber, but several. She was fully aware of the value women bring to IT.

Chloe reflected on noticing she was the only one, and that she was different, but it was not perceived negatively. It has allowed her to spotlight how she took the opportunity to run things and organize them. She was seen as the only woman, but it was perceived positively, as in she was unique, an asset, the only one to pull things together. "I bring a lot of value and strengths to our operations." She has owned her skillset and it was presented as an invaluable advantage.

Currently Chloe does not have peers or an internal network. She does have an external peer network, mentors, and good friends she leans on “pretty much on a daily basis.”

Chloe’s new norm after COVID has been difficult. The culture was different in the organization. The team communicates via online tools. She notes feeling out of place but hopeful that “when COVID is over, and we get back to the office, it’ll start to feel a little bit more normal.”

Chloe noted that, pre-COVID, she felt more normal. She had a better work life balance. Now, with the mix of space and time for family and work spilling into each other, she noted she has no time for herself. Outside of COVID, work/home life had a better balance. Now the workday includes kids. She has a “super supportive manager” who was only concerned about getting the job done and did not care how it was accomplished, just that “you get your stuff done and you’re good.”

Chloe’s current work life balance was challenging, with the pandemic and working from home. In the free time that she had pre-COVID, she would address work because she wanted to, not because she had to. “If there was something that was on my mind, I could go back in and work on it during my free time, but that’s because I wanted to do, not because I had to.” This was an example of her dedication and desire to never give up.

Pre-COVID and in a prior working organization she recalled support groups of various demographics. She was more active in the beginning of her tenure with this organization but that lessened towards the end of her tenure. This might be because she had less time as her role became more intense, or there may have been a perception that there was less need for this type of interaction or community as her career advanced.

Yes, there were definitely lots of clubs or organizations at Big Tech. They had the site, which was a Latino/Latina group. They had one for pretty much every background

diversity, if you will. And so I had joined the women in tech one. It was a lot of moms and tech discussions and things like that. I was able to attend the State women's conference, and Big Tech paid for that. So that was amazing. I was more active in it when I first started at Big Tech than in the later years.

When asked about her perception as to why Latinas were underrepresented in IT, she responded that “there is a misconception of what IT does and pays. It is portrayed one way on television but that is not the same in real life.” I did wonder if her perception of ease of programming might be because it came easy for her or that it actually was easier.

Chloe responded with advice to her younger self, in middle or high school, with regard to pursuing a career: “Start younger. Take computer classes. Don't be intimidated.”

Chloe's advice to a younger her: “All roles, whether a fit or not, led to next steps. Ask questions, don't be afraid or intimidated.” This reflected her being courageous, not scared, or intimidated, or tenacious. Chloe never gave up. If she received pushback, she would go to someone else. She was a steadfast soldier, scrappy.

These are the words of encouragement she would give to her younger self, prior to starting her career:

Don't say no or be afraid. Things begin to click, and doors will be opened. Recognize the uniqueness of women and capitalize on it. Recognize women are needed in IT. Women bring a fun creative side but analytical. Use these aspects to advantage. Roles [in IT] are more flexible than a doctor. There is more convenience and flexibility for moms in IT.

Chloe felt very comfortable in her current role and did not have to act differently. This seemed to be the spoils of her victory and persistence.

Chloe mentioned that people helped her see in herself what she could not initially: “I feel like an imposter in the role, that I don't belong in right now.” Once armed with that, she took off. “I'm running circles around this guy. Like, literally, I'm doing a song and dance and running circles around him. But the harder I work, I think that's going to say volumes more about me.”

She did feel she had to work harder than her male counterparts to prove herself. But this displayed the degree of power and strength about her. She knew her worth, skills, and abilities and was determined to use them.

### ***Hernandez***

Hernandez was in her early 40s. She grew up in a traditional family until age 15: “So, it was up until about 15 years old, a two person, a two-parent household. But one of the parents was not always available. So I grew up in many ways on my own.” When asked if both parents were encouraging of her decision to go into IT, she responded “Yes, absolutely.” However, when it came to extended family, she said, “My father’s side of the family, the Latino side of the family, were like, why?” Her father’s side of the family “were migrant farmers in the 30s and 40s moving; they eventually made it all the way up to Chicago.” At home she says,

So, my father’s generation is, you speak Spanish inside the house, but outside the house, you don’t. And this, also, is enforced by Chicago Public Schools during that time, [who] would basically slap you if you’re speaking anything other than English. I’ve heard other stories that this is also the case in Los Angeles. Unfortunately, it meant that it was more of our priority to make sure that I and my sister blended in; it was not possible to blend, but try to be as Americanized as possible.

Hernandez notes having a “tenuous relationship” with her great grandma, who would speak Spanish “because even if we went to visit the family, like, my great grandmother, she would speak Spanish, but almost nobody else would.” Hernandez’s father was in the Air Force and stationed in Germany, which meant she was “moving all the time.” This forced her to learn to quickly and “always make friends.” However, during this time the only consistency in her life were “sports, dancing and playing with computers.” This may have helped shape her ability to create a makeshift community in a short period of time.

Hernandez mentioned it being extremely rare, finding other Latinos in the “military back then. Not a lot of diversity in these small military towns. So usually we were the only Latino

family.” This may have set the stage for her acceptance of and ability to navigate being an underrepresented demographic.

She spoke about her father’s path,

He went to junior college until he was deployed; forced to move, basically. And that's where he met my mom, who was also going to the same Junior College in Chicago. So he was a southsider in Chicago. He finished school; I think he didn't finish his bachelor's until the early 80s. I don't believe she ever finished her degree.

At an early age, Hernandez was exposed to her first computer program. “So, by age 7, we’re talking early 80s, my first computer program; there were just computers all over our house. And there was already the expectation that we were expected to go to college.” This likely created a familiarity with being around computers and deciding to work with them. “I had already picked my college, which college I was going to go to, by age 10. And by age 12 or 13, I had already decided on what degree I wanted.”

Hernandez’s heroes during this time were Cyndi Lauper and Ryan Sandberg of the Cubs. Her father was the closest thing to a mentor she recalls.

The move to Chicago after her father retired from the military provided some diversity she welcomed. She recalled having “finally access to more Latinos, which were not so common in the military.” In high school, Chloe marched to the beat of her own drum:

It was odd to be into computers. I also did sports, art; I did choir and actually danced for a long period of time. Okay, why didn't I fit neatly into one group? I was always a floater. I had lots of friends, but I didn't stick to one click. I went to private school for 1 year in Chicago, but the rest of the time I was in Chicago public schools.

She further noted:

Chicago Public Schools are better now. They were trash when I went there; they did not have metal detectors in them yet. They were just installing them when I graduated in the 90s. Yes, people would bring guns to school. Yes, people would get shot when they left school. Violence was common and I went to one of the better schools. Chicago Public School, you know, they were starting to trim down on programs left and right.



During this time, she noted “noticing haves and have nots.” Hernandez started “realizing different access in education.” Some things she noted was “organized sports not common in the suburbs.” As an example of this variance she recalls a popular sport in Chicago, clincher ball:

It’s in every Chicago School. It’s a 16-inch softball, and well, it’s enormous. And I had never played it in my life until I went to Chicago, and it is played without gloves. It is kind of the very definition of, you want to play softball, but y’all can’t have it all. We don’t have money for gloves. Very popular in Chicago. That’s when I started really noticing the discrepancy, not just in the education but in the access to outlets and to two activities that would be enriching.

This was the beginning of Hernandez noticing the differences in resources, something she “didn’t know what to do with.” She felt the “system was stacked and how everything was f’d up and how much effort she had to put in to get things.” This seemed to be the stirring within to be an advocate. She recalled being “bullied, but I did go to escape into the gifted program.” This might have prepared her for feeling like a loner in IT. She recalled not fitting in better in Chicago like her father and sister. She “was always on the outskirts.” However, she navigated this variance, considering she became a “tough city girl.”

Her hero during this time was Marilyn Monroe, so revered and idolized but without having it all together, which she found very interesting.

During this time there were no other encouragers. Her mother’s “side of the family were very encouraging,” but father’s side not so supportive, “particularly his male siblings,” of her decision to obtain a degree in computers. However, her father “defended me; he defended his decision” to support her. College was not much different than high school. She mostly “hung out with the guys. Worked in the computer lab.” This likely prepared her for the IT work environment and removed any feeling of being foreign or a mystery.

She learned to leverage offerings, like tutors and mentors: “I did meet some people, but I did leverage the facility, like the offerings there, like extra tutoring and mentoring and so forth.”

This displayed her resourcefulness and ingenuity. She recalled being the only Latina in her Computer Science program and one of “two women” who graduated in the late 90s “out of 100+ computer engineering majors.” When asked how many were Latinas, she responded, “That would be one. I guess that would be me.” She went in knowing it was going to be all men, but she was used to competing with them, having done “sports for so long and played in men’s leagues.”

People tried to convince her along the way not to pursue her degree in Computer Science, including her drafting teacher from high school, who said “you’ll never get in.” She learned to ignore this negativity. Early on she was met with discouragement and adversity, having received a “B on a midterm or something like that” and “many guys in the same class as me told me ‘Oh you should quit, oh, , s%@t, you should drop out.’” She not only survived but “got on the Dean’s list that semester.”

It was hard to say who was the person who told her she could, but maybe it was more of a revelation or an inspiration from inside. She reflected on

listening to your heart; let’s say, thinking about what you want; what you want is to get here, to get to someplace and you know what you need to get through to get the degree; you need this class, you just focus on that class, you focus on the requirement of the gate that somebody has put in place, and sometimes you have to make more friends, sometimes that means you just have to learn to do the hard work of learning the material.

Hernandez did note being a “calculated risk taker,” so it is possible when people say she cannot, she assessed, then made every effort to prove them wrong. She did seem to have a high sense analysis of people and environments. She navigated through the lack of diversity by taking into consideration others’ input, but did not take to heart the negativity. “You know, don’t let other people question what you want.” This method seemed to help her navigate an industry she felt lacked acceptance of her demographic.

After college, Hernandez considered this part of her life as “wandering.” She went through a lot of companies: “I change jobs every year to a year and a half, whether it was because of layoff, or I got bored, or the company died.” Her boredom might be her need to be challenged and being potentially underutilized. During this time, Hernandez was encouraged by:

a mentor from that company, the CTO, who I do consider a mentor. He said, he had always been on me to go back to school, to either go for a master’s in engineering, he really strongly felt that I should do an MBA, and I ultimately decided to do the MBA.

During this time, she explained that she

did win the business plan competition; I did get some seed funding. During those 3 years, I was doing the MBA, I’d stopped dancing, so I returned to dancing in the 2000s. And during that time, I was helping some of my teachers/friends who were professional dancers who want to start their own company; I started helping them start their dance company, so I would do costumes for them. And I would do paperwork. And eventually I was on the board of directors, and I had started their nonprofit and filed all of their tax returns every year, other tax filings. So that’s how I was using my MBA to help dance companies that pay cash.

She also reflected on Latinas having children: “I don’t have kids. I’ve never been that into it. I feel like I’ve always been very intent and focused on my career and what I want to do, and you know, I do not think it’s fair to shortchange kids.”

Hernandez’s hero during this time was her CTO. Her villain was her now ex-boyfriend who “was not very supportive, he was a Debbie Downer” and “wasn’t all that supportive on schooling.” While this showed her ability to navigate confrontation, it also displayed an extensive amount of loyalty on her part, continuing in the relationship despite the negative environment.

In Hernandez’s 30s to 40s, post MBA, she noted

starting to really focus. There was a lot of difference, like change, like I was finishing my degree, I really wanted to start my own business. I even went into a startup incubator. I was just working with a lot of startups. The weird thing was, the big trend transition is my previous partner; the whole deal was he was supposed to finish his associate's degree

or something by the time I finished my MBA, and I was, okay, we're going to go on this trip, this big trip. I'm going to Tanzania on a safari.

She acquired defense mechanisms to survive the vulnerabilities of startups, noting “staying a couple of months” but didn’t “even cash the check with the sign-on bonus” until she was sure about the organization. This showed her ability to be resourceful and strategic, and her ability to adapt.

She explained herself in her current role at Big Tech as being perceived as “elbows to rough, doesn’t smile enough.” Hernandez called herself as “white passing” so not as many roadblocks, but she still has them.

Hernandez noted having issues with male counterparts, “When you push forward—always a guy trying to pull you back. Silicon Valley does not treat women over 35 well. Does not fit in white suburbia, can be there long enough to get by.” She described herself as being “scrappy.” In terms of being an introvert or extrovert, she described herself as “very situational. And what I'm finding as I get older, I am more giving less of a s@\*t.” This displayed her ability to adapt in any environment, like a chameleon. When asked what her leaders would say about her, she responded “not sure,” but maybe “hardworking, willing to take care of things no one else will and provide technical leadership.” The complaints about her are she was perceived as “impatient, sharp elbows, rough, rude, and interrupting.” However, her ability to take risks no one else did gave her a uniqueness and tenacity that afforded her acceptance from the team. What provided her “longevity” in this environment was that she took risks, but they were “calculated risks.”

As she nears retirement, she considered:

as my father is aged there is more pressure to make sure that he is set up, especially because I think we talked about this like the there's always this expectation that you will have you know... they will live with you, one of us, and when that can happen because of

economics. Like I can't move into a place that's all on one floor. You don't have that money which is insane to even say.

This is a typical expectation within the Latina community.

Latina leader experiences had not necessarily been positive. Of the Latina leaders, Hernandez noted "only two are visible, one considered outspoken" but that "fitting in" was more acceptable.

This left Hernandez with the impression she must fit the mold and could not be herself if she wanted to move up. "It is hilarious that tech wants to create tech companies, want to say bring your whole self to work. Oh, that's such bulls@\*t." Additionally, Latina women in leadership "do not address systemic issues, pull everyone forward, but provide motivational speeches." This left me with a question about whether these women had to adapt to advance, or if only Latinas outside the stereotype actually advance?

When asked if she felt guarded, she responded "I have to hold back and not be self." She did still feel fortunate enough to live in Silicon Valley and share her culture. In her current role, she felt like she could be herself a bit more than in previous roles, with dress and hair color as she wants. However, she did not feel comfortable being her "whole self" in work.

She advised that "taking feedback, then being overly submissive, implies incompetence." She has learned to walk this tightrope between confidence and compliance, and being knowledgeable and arrogant. While Hernandez is thicker skinned, she still preserves her mental health with guard rails and calculating risks, both in interactions and relationships. This methodology has allowed her to survive multiple startups, job transitions, and relationships.

### ***Luisa***

Luisa was in her mid 30s and

grew up in a traditional family in Central America, in a very, very small town. My dad had a bunch of jobs as I was growing up. But he always used to mostly, clerk, like a store management, something like that he would work in, kind of grocery stores; or the last few years that he worked as a clerk. He worked in a liquor store. My mom says she got married, she dedicated herself to be a mom and be a housewife. She had worked a little bit as a housemaid, before she got married.

Her home life was very rural compared to most. “I used to walk to the house next door where they had a couple of cows. And I used to go get my cousin milk, right from the cow, because she liked it that way.” Luisa was 8 years younger than her next sibling. Her oldest cousin on her father’s side lived with them until she was 9 years old. Luisa’s cousin worked in an office outside of town:

So I call her my second mom, because she did help a lot with raising me and she used to work in an office in a town nearby. And I remember waiting outside my house for her to come back. Because she usually would bring me something, like a little candy or something.

This cousin would be a great influence in later years. She would be Luisa’s hero during this time and others.

Luisa went to what is called a primary school, which was walking distance from her home. In high school, she lived in a sub town of the smaller town and was bused to school. She was an avid reader and good student: “I loved reading.” She grew up “fairly lonely because my sisters were 8 and 14 years older than me.” Her father was the youngest of his siblings, so all her cousins were older.

During high school, her parents and cousins pulled resources together to send her to a private school. This provided a subtle undertone of the importance education played in her family’s perception. Luisa disliked the school, as many there were “rich and entitled.” She was the only one there on scholarship. This provided her with the ability to navigate being the “only one” at an early age. She maintained stellar grades: “I always was the best of my grades.” This,

however, infuriated the rich kids, as they had more resources than she did. The attitudes of fellow classmates, coupled with the long commute, made this environment intolerable for her. She told her parents: “I don’t want to go there. I’m going to public school.” Luisa used her voice to push back. She changed schools and did well. She made friends and “did as well as you can do” in the new public school. There were no special classes or resources. She struggled in math. Luisa’s hero at this time was her math teacher. This teacher “started coaching me to think through things and sort of do math in my own way.” This seemed to display how Luisa created a connection between how her mind functioned and the expectation of how it should function. She began to do better in math and became good at it.

The moment of launch for her education came from a brief encounter. According to Luisa, in Central America there was not a “concept of grad school etc. to go to the university.” Her sister went to the university but because her mom was afraid of them living on campus and leaving home, her sister had to commute every day. One day her sister had to go on campus and took Luisa with her. Luisa fell in love.

I remember entering the university, and it looked like the Emerald City to me, and I was, Oh, my God, this place is so cool, right? I don’t know, I was a teenager, but to me, it was, wow. I’m going to go.

She decided at that time she would go off to college. This again is an example of her exerting her opinion and standing up for what she wanted and felt was best. Luisa’s mom was very traditional and did not want her to live far away. Her mom believed in a traditional role for women in society, to “cook and serve lunch.” In her family everyone had chores. However, when Luisa did well in school, which she always did, she received a pass from doing hers. This upset her siblings. When her bag was packed “to go to the university room, people say that my mom said, It’s okay, let her go. She’s going to be back in a week because she doesn’t know how to do

anything.” However, other family members advocated on Luisa’s behalf to go to college.

Consequently, during this time, both Luisa’s heroes and villains were her family. Family was a mix of heroes and villains, as some encouraged her to attend school, mom opposed, and some thought she might fail and return home.

The catalyst for IT came when Luisa lived with her cousin. “And my cousin is a software engineer. This is a sister of the older cousin that used to live with us. And she told me, look, you want a career where you will always have a job, and you’re going to make decent money and that is in demand.” Luisa’s cousin told her:

Look, you want a career where you will always have a job, and you’re going to make decent money, and that is in demand, you’re going to have to fight for a place, like being a teacher, even though teachers are awesome, the payment is not as good as they deserve.

Her cousin encouraged her to go into a job in Computer Science and told her, “You’re good at math, so go for it.” Culturally, traditional jobs for women do not pay as well. Her cousin’s support, encouragement, and advice gave Luisa the confidence she needed to do this.

During Luisa’s college experience, the initial welcome speech was blunt. She was told “you’re going to graduate, if you’re lucky, and super smart.” The speaker also said it “it’s a very tough career. And whatever you learn in those years you’re going to spend here, it’s going to be obsolete by the time you’re out.” While the speech was daunting, she remained in the program preparing herself for the challenge. She is a fighter.

Luisa had heard math would be a challenge for everyone,

The sub director, a woman that used to work there forever, and she’s like, the thing that you’re going to fail like you’ve never failed before is math. You can be the top student at your high school, and it could have been a private high school, but you’re going to fail. And you’re going to have to take these classes over and over and over again. And that’s okay.



These resurfaced her initial fears of math: “you can imagine that I don’t know; I’m the lowest, I don’t know.” Yet she still did not stop. She has memories of a daunting building,

the Computer Science University building and I swear to you that I saw one door, like it was these dark alleys. There were no windows once you were in the building, everyone was wearing black and chains.

Her first thought was “I’m out.” Yet, despite the discouragement, she fought and remained in the program, working harder to overcome any math obstacles.

In her initial semester she took basics. “We call them generals, and I take one computer science class.” She struggled initially. Her professor saw her potential and worked with her. “She starts, you know, paying attention to me, and she’s like, an Angel.” This professor encouraged her to “just take this class and keep an open mind.” Luisa recalled the result, towards the end of the semester, “when we’re getting to the end of the class, she’s, okay, you’re the top of the class.” While Luisa recalled it being a horrible experience, she said, “at the end, there was always my grade, and no one could take away the grade from me.” She was an overcomer. She accepted the challenge with grace and grit.

**Deeper Dive University Experience.** According to Luisa, her friends noticed “she [Luisa] is the one that does the meat of the project. Without her we wouldn’t have figured it out.” With regard to her class ratios, “we always had three or four women per class. And I think my generation was 20% to 80%. But that was huge; it was usually much lower.”

Luisa experienced disparity with these types of numbers: “I feel like I have classes where it was me and another woman. And if one of us wasn’t there, I want to see the one right.”

Additionally, she endured mistreatment from peers and professors and encountered a professor she called a soul breaker: “I remember after I did programming one, that that was the first year of the teacher that was the famous hard breaker soul breaker.”

However, her first experience was during her first exam

“the first exam in that class, my teacher gave it in person. He has me and my boyfriend in the class. And my exam, grading goes awful. The teacher is, Oh, you’re missing a semicolon here, 15 points less. And I’m, What? And he’s, what did you do here? And I tried to explain and he’s, No, no, that would have never worked. But I cannot get a word in. I start reviewing the exam of my boyfriend, who is one of the smartest engineers, he was really good. But it was the opposite. He [Professor] was, okay, you’re missing a semicolon here, but I see the idea. And he was great. And like, plus [another] 40 points.

Luisa said that “halfway through the class my boyfriend and I broke up.” She continued to work at school,

keep going like it was going well, like all my classes, all my homework and stuff like that. They all have good grades. And then at the end of the class, my teacher goes, I was being really tough on you because I thought it was him that was doing all your work. When you broke up, I realized that no, you kind of stand on your own.

She continued to have to prove herself and compared her experience to her ex-boyfriend’s: “he was brilliant, but never had to put up with these things.”

Another example of not being treated as an equal to her male counterparts was while working on a project and requesting a 2 day extension. Her professor said no while giving her male classmate an additional week. His response was, “I don’t do favors for women.”

These experiences set the tone for the environment Luisa had entered. She realized early on that she had to “fight for her place, prove herself to get the respect she deserved.” Despite the lack of acceptance of peers, professors, and supervisors, she never gave up and never gave less. “It always ended up me shutting them up, right?”

Luisa’s hero during this time was her professor. Her villains were everyone else. It upset Luisa that, on reflection, “someone always had to vouch for me, and it sucked. [I] had to work harder.” But this did not stop Luisa, but rather served as the catalyst to show “them in the end what she was made of.” By not giving up, she gained creditability and proved her place and worth in the program. She was a fighter, but for the right reasons. She belonged in the program.

After college, Luisa followed her cousin. She worked for retailers but with no clear vision. Her first job was support for Big Tech. She recalls, “I’m in a group and I’m the only woman there [in the group]. And we were four or five, something like that [in the company].”

When it came to promotions, she realized that

this lady gets transferred to my group, and I train her. And I tell her everything that needs to be done and blah, blah, blah, blah. And I’m entry level, right? And when it comes time for whatever that thing was called, they promote her. And I’m, What? I trained her. I have worked here longer than her. And they are, No, you know, she’s a divorcee and she needs the win in her life.

She felt the woman needed it more so did not question the promotion. I noticed Luisa got upset over others who received privilege without merit, but gave this woman a pass. This does show empathy on her part. However, she noticed others who were getting promoted “were the people that were going downstairs to smoke.” She left after that. Luisa reflected that, by not spending time with the smokers, she was not in the in crowd. At that moment, despite the path being more difficult, Luisa was going to continue to pursue her dream by merit and hard work, not taking short cuts by using the influence of activities.

Luisa left for another startup, where the founder of the company

got along with me really, really well. He saw me for who I am, and he used to train me. We grew the company when I was the second employee. And by the time I left, we were maybe 20 employees. I was there, I don’t know, maybe a year and a half, something like that.

She left because

the problem there was he wanted me to be a manager. And I don’t think, 2 years after school, I was ready to give up my programming and technical skills for being in charge of people, which was also so hard, because when I was 22, I was managing people that were older than me, men, so it was just too much of a fight.

Luisa's new manager was "horrible with women" forcing her to take measures into her own hands to address system issues. "I will have to grab my friend and be like, tell him. And then he would listen." During her tenure there, Luisa was put

on a performance improvement plan. So I go for the first review for the performance improvement plan. And I swear to God, I did not change anything about me. I kept working that week, just like I always do, and that guy comes in, he's, Oh, my God, you're doing so wonderful. You're speaking up in meetings, like people are seeing you, people are hitting you. Like, where has this woman being hiding? Time, nothing changed. You're paying me attention, because someone told you that you had to because you're trying to actually grade me by seeing me, but nothing has changed.

This helped Luisa understand that some male bosses recognize compliance over skillset when working with women.

Luisa started considering employment at Big Tech when her cousin's husband was offered a job:

It's always the people that are willing to help you move forward. My cousin's that like, the one that I lived with during university, the one that's referring to Big Tech. Her husband got a job at Big Tech. He referred a couple of us, the people that have worked out of country. We made this study group. We started interviewing each other in passing problems and like just getting ready for the interviews.

Here is another example of her working hard to get what she wanted. After the first round of interviews the recruiter told Luisa, "That one didn't go really well; if you want to come back, if you want to come on site, you're going to have to do way, way better at the second one." She felt the recruiter was nicer to her cousin's husband than to Luisa and her cousin. "My cousin had the same recruiter, and her husband had the same recruiter, and apparently, to her husband, the recruiter had been way nicer than to either of us." At that time, Luisa said,

I started thinking, I have my family relatively nearby. I had a small apartment that I had bought, I owed it to the bank, but it was my apartment. Had my dogs and I was, if Big Tech wants me, fine; if not, I'll be just fine. And I made it through the second interview. And then they called me to come on site.

This mindset gave Luisa a sense of empowerment, and seemed to have provided the confidence needed to prove to the recruiter that she belonged. At the end of the interview rounds, she was the final person chosen of the 5-person study group.

Luisa's experience working for Big Tech proved to be a fight much like the one throughout college and her earlier work experiences, with one added challenge, "not only a woman, but I am a Latina. So, it's two things that give people the perception that I'm not any good." In the university she faced being mistreated for being a woman. At Big Tech, she had to now fight bias against Hispanics.

In addition to fighting the biases from the larger population in IT of being a woman and a Latina, she also was not accepted by other women in engineering based on her "big hair, colorful clothes and huge earrings." She reflected it being "really, really, really hard to make my way in Big Tech" because of this.

In Luisa's first team, she felt they

didn't understand why she was weird, in the sense that they seem to be very, very focused at work. But it was like every person for their own sake, they would be, let's go have lunch. And what they meant was, let's go grab lunch and come back to our desk and eat. And it was just impossible for me to connect.

Latinas desire connections throughout their work and home life. This was a new and extensive challenge. However, she did not back down. This was another example of resilience to rise to the occasion.

Big Tech required individuals to wait a year to transfer roles. Luisa recalls

someone connects me to someone, and I end up on this other guy's team, and he ends up fighting with my manager. And I ended up transferring, but when you transfer teams, all the work that you've done before, at least in my experience, is forgotten. And I joined this other team. My manager was bad. It was there were things like, I can't, he was bad with women. He was very good technically.

She was encouraged to move forward:

My tech lead told me that I should go for a promotion. And I told my manager; he said, No. And he said, No, because you cannot handle the emotional blow. And so I asked him, What do I need? And he says, What you need is peers at a higher level.

In terms of roles, she was a “level three and he [the manager] sends me to work with these older people, [so] I was working with level six, and my key [goal] was to [be a] level six.”

This provided her the appearance of being upper level. While working with higher-up peers,

comes the next cycle. And I go, I want to go for promo. He’s, No, it’s not going to happen. I bring my higher-level peers to support, and they talk to him. And he’s, Okay, I’ll let her go. But he’s never, You have my full support. Right? And it is the managers that defend the candidates, right? When my promo comes back, he’s like, this was the easiest promo of the cycle.

Again, this seemed as though she had to get a peer to vouch for her. However, it worked. She was promoted. This provided another example of her ability to research and apply information to move forward. Luisa did find out that “when they gave me my salary adjustment, he says, We realized that we have been underpaying you all this time, so your raise will be higher than you can expect in the future.

Luisa found herself, again, working under a difficult manager.

After that, I had a manager that told me I was the Team Lead (the TL) of the group, but she did not want to make me stand out even more by naming me actually the TL and the rest of the guys were men, and she didn’t want to look like there was preferential treatment, so she never named me the TL. So I did not have any authority, and it was a big mess. They would cancel projects; everything was a mess.

It took her a year to get where she wanted “so I transferred a year afterwards, something like that. But when I go promoted, they were, You know, you’re now a level four.” However, she was also told,

but you’re very close to level five, like five is going to happen. You’re not going to, when the next promotion cycle came, they were, No, your score consistently meets expectations. And I’m, What the heck you’re telling me? I am doing close to five? Yeah, but this is just how performance works. And I’m, Okay, okay. I always have to fight. I keep track of everything I do. I talked to my managers, they are, Oh, yeah, you did that? Well, yeah, that’s true.

She had to fight for promotion to a level four and five and remind her managers of her accomplishments. This was an example of her strategic abilities to be seen since no one else was noticing her achievements.

Luisa wrote an article as part of a goodbye notice to Big Tech, based on her manager telling her the promotion she was working on in October might happen the following spring. She outlined:

everything that I wish people did differently in tech for diversity and inclusion. I have been always vocal about diversity and inclusion, and I've been working with women and Latinos to bring more women and Latinas to this industry. And I will tell you why, in spite of my horrible experience, I'm giving talks and speaking to people. But a lot of them are also technical, like they have technical content. And I'm trying to teach people how to use tools and how to get into excellent white technology. And I decided to become a developer advocate.

While fighting for herself she became an advocate for others. This experience left her feeling “unseen as I have never felt unseen,” so she finally quit. Her article got noticed and became a catalyst for change:

I wrote my goodbye email to all the people that I have worked with, and that have made me and helped me in different areas in Big Tech. I send them the article, and right after, I send the article on a Sunday night and even then, I started getting responses. But on Monday, [the] Director and chief Latina, she tells me, Can I talk to you? And I'm, Okay, and she's, What are you doing? I can't because this isn't bad. And she's, if you need a job tomorrow, you're working for me. And I'm, Thank you, but I'm totally burnt out. I cannot think right now. And she's, Okay, if it is that you should go in and leave, and then come back and talk to me. And I was, Okay, maybe, and then turns out that Google has a whole team that is specialized on keeping people from underrepresented backgrounds. And turns out the person that works with Latinas is, I haven't been through other events. So, he contacts me first for an exit interview. And then when the exit interview comes, he's, Don't go, we'll figure it out. I'll help you and in the meantime, another two directors, and then another senior manager come to me, and he's, You want a job, you have a job tomorrow, if you want. It's a change of job, like you have one of those directors key was the head of the whole organization of a sub team that I have been working with, and that I really enjoy working with. And that they seem to have more processes and more I don't know, things I like to work from. And I ended up transferring to their team.

Big Tech would not only lose their investment into this talented employee and her skills and abilities, and the ability to voice them, but also experienced another reduction in their diverse workforce.

When asked why there were not more Latinas in IT, Luisa responded with the fact that they “miss speaking Spanish. It is comforting.” This coincides with Ruiz’s (2005) research of Latinas needing a space to connect. Luisa said change was still required. Employers needed to recognize that people start from different places.

But I do think that for an actual change to happen, you need to pay attention to people individually, like you have to let go of this idea everyone has the same opportunities, everyone is starting from the same point, because that’s a lie. There are people that grew up with parents that did this job and that have grown them from whenever they were born to get to this moment, like they knew what they wanted to do at age 15, at age whatever. At age 15, I was living in Central America and around age 10, I was getting milk from a cow. How can you say the opportunities are when I signed my Big Tech offer, I had no idea, zero idea, what they were telling me when they were talking about stocks and bonds in brands?

As an adult, Luisa asked how she could be expected to negotiate her salary like others with “zero understanding” of stocks and bonds. Luisa also noted that salaries should be better balanced between individuals of the same experience, regardless of ethnicity. Luisa also noted to employers that “general advice doesn’t work. [They] need specific stories to customize help by these stories.”

When it came to perception of Latinas in IT at her current firm, Luisa said:

People that manage the micro kitchen, wear black uniforms, or they usually wear black clothes and stuff like that and a lot of the people in the food industry are Latinos. When I have worn black shirts, or whatever, I get asked questions about the micro kitchen. And I think someone that is blonde haired, I don’t know, has bright eyes, may not get those questions there. And I have been feeling that there are two very different worlds. Two worlds, but two different Big Techs; it’s this world of Big Tech, of opportunities where people help you where your mind wants to get you promoted, where, people hear your ideas and improve upon them, instead of taking credit and then getting ahead of their careers and stuff like that. And then the world that I have lived in, where I have had to prove to people that I know what I’m talking about.



Luisa's advice for middle and high school Latinas: "Do it! Feels like it is a secret that this provides financial independence. Look for help! No loss in pride."

Her warnings to them: "Don't listen to anyone that says you can't! Don't listen to the BS! They will tell you not smart enough, good enough, assertive enough."

Her words of encouragement: "Listen to the words of those who have! Believe that you can too!"

The interview ended with Luisa reflecting on her heroes. She noted:

There is my tribe of women: [older sister, two older cousins, friends that became a doctor in computer science and one in sports science.], and I would have to call out my dad. My partner right now has made me natural. Those are my tribal men that have my back as well.

These people made sacrifices and believed in her. I thought it interesting she did not mention her mother in that context. She actually regarded her as loving and hardworking but just not as a hero. It might be an unconscious thing on her part to omit the one person that she was related to who did not support her journey. This lack of encouragement seemed to stem more from misunderstanding than anything else. This might be the reason the relationship was still intact. Despite many challenges and having to fight to where she is, Luisa would not sacrifice being true to herself. She noted understanding her clothing, jewelry, and hair was outside the stereotypical engineer, yet she did not waiver in hopes of being accepted in the industry for who and how she is.

### ***Maria***

Maria grew up in a traditional home with both parents. "I grew up a military brat; my dad worked in comms, working on the poles and stuff, and then gradually made his way into a project manager role." Maria's father would take them to work with him at an appropriate age. "I

remember him taking us to work probably, truthfully, out of necessity, you know; we're probably kind of like waiting for mom to get off [work]." She remembers going to work:

I remember at one point, going with him and seeing the server room; not being in there, but just being able to see it and just all the lights and stuff. It looked like a Christmas tree, almost everything's just blinking and light. But, you know, that was really interesting. And that kind of caught my attention. I'd have to be, I guess, probably 8.

This ignited her initial spark of interest. Her father sat her down

and probably around that same age, 8, 9 or 10. I remember my dad sitting us down to learn the basics of binary. And truthfully, I'm not good at it now. But you know, it was still an introductory, so it was not this big, foreign scary thing when it came up later.

When asked about STEM, Maria noted that

math came really easy to me and my brother; it was, I guess, a period in our lives when we were eating out a little bit more, so we were calculating, my dad would always challenge us to calculate the tip. So it was different ways to do it, different ways to think about it. You can calculate out the 10% and then half it and then add those together; or, you can take a different approach; or, you know, whatever. We would talk about different ways to get to the same answer. And some ways were more intuitive to me than to my brothers and my dad, my mom, you know, so understanding that, reflecting back on it was, it was pretty important.

All these experiences seemed to create a familiar environment in computers and math.

She noted her "strongest subjects were Math and English. Those are my favorites, which I guess didn't always go together." This seemed to provide evidence of her awareness of her unique wiring.

Maria did not recall anything particular from her middle school period. She was a military kid still. In high school she had

computer classes in high school, but they were, I call them the PowerPoint class. You get that book, and you follow along, how to make a banner and Word or whatever. I pretty much worked it out. My computer teacher was also the basketball coach, and we, my dad went to all of the basketball games. And we had reports; I pretty much worked out a deal with her: Look, if I can do the entire book, for the rest of the semester can I just use this as a study hall? And she was, Alright, cool. So, I did it very, very quickly. And I just had to, you know, do whatever I needed to do for that class.

This was another display of her hunger for knowledge.

In college, Maria talked to her dad about majors:

I didn't know what I wanted to do. But I wanted to be in the business school. And in order to apply to the business school, I had to pick a major; and so I was talking to my dad, you know, he's kind of working with me on the application and we pretty much decided to just put computer information systems; and I knew everybody always talked about will you change your major 10 times in college anyway and whatever; so okay, just put it in for the acceptance into the business school. And I started taking classes and I didn't want to be anywhere else.

Her father had a huge influence on her life, but Maria considered herself

a well-rounded student; I would have participated in my community, of course; I showed up for class, I got my stuff done. But my passion, my focus was more in my life, student orgs. One of those happened to be the Association of IP professionals, the State chapter. And I was, you know, an active member and tried to push more to bring [in] some of the social aspects, because not everybody in the CIS major was wanting to socialize, or easily socialized, so I kind of helped bridge that gap. Got some good networks going. I think that was where my focus was. I wanted to make sure that my peers were building relationships with each other. I didn't quite see this part at the time, but these relationships have taken them into their careers.

The demographics in college were skewed. Maria recalls:

My COBOL [Common Business Oriented Language] class started with 30 people; I think there were three females [and it] ended with 13 people and I was the only female and I got called out for it. Like, pretty much every day.

The drop off in females could have been due to discouragement or the program being harder on them than their male counterparts. Maria noted the discord between women and men in her classes:

They didn't take the females seriously. Yes, it's like, both people, they just saw questions, like work. You know, we're friends and there is mutual respect, but that came after we got to know each other from the social part. I think that's probably what stemmed a lot of that now. Before we had a chance to shake hands, or just being in the classroom never afforded us the chance to shake hands and just see us as peers.

This seemed to begin her preparation for not being in like-minded environments:

That was my sweet spot. I've always kind of been a tomboy, probably starting, like 5th grade, I remember even begging my mom for these pants because they fit better, and they

had pockets. The point is that's kind of where I'd lived already. Some of my other female peers, they, I guess kind of just gravitated towards each other.

This duality of characteristics may have afforded her some acceptance amongst her male and female counterparts. "I talked to everybody, kind of thing. So, even though I was used to being one of the only females, I very easily still talk to my female counterparts as well." Despite the primary consensus of her not being an equal, she continued to pursue her degree in the CIS field. This showed sign of tenacity and adaption. The "stigma that females aren't technical" left women not being selected as partners in class work. Oddly, enough women held that perception or discriminator of each other, and were "sometimes a little standoffish about working with each other." However, once the sparse few in the program worked together, they realized that "we always got through it. Like, we wanted to do well, just like everyone else. You know there was No, oh well, we can't figure it out. We made it happen."

Maria's heroes during this time were her professors. She recalled a few that were involved and knew

the star students. They made sure that we were involved. They knew who their students [were]. They knew who the people they needed to look out for were studying, because they started to talk to freshman classes, as well as the upper classroom classes. They wanted to know who their students were that were growing. They were going to be some of their business advocates. They have written me so many recommendation letters and interview coaching, letting us know Hey, so and so from this company's going to be on campus. You know, make sure you go, and you shake their hand, and you have a resume printed.

The villains during this time were also professors and male classmates: "I don't think directly. I think indirectly by some of the behavior; like I mentioned from that COBAL class professor calling me out, stuff with that. You know, along those lines."

After college, Maria got hired in Texas, and while the male-to-female ratio was not equal, the environment was encouraging:

It's great to be a SQL Server DBA. I started working at Big Tech. I loved it. I was there for 5 years. I mean, it was great. The work environment was one that was very supportive. I've certainly been on teams where I'm the only female, the only one on the project, you know, solo all the time.

During the end of her tenure, 5 years, her last team was balanced: "Actually, the last team that I was on, it was an even split on the team, male and female. And not only that, three of my leads were Hispanic, two of the men, and one of them was a woman." She recognized having great women leads who mentored and provided exposure for her to upper management:

And she, I mean, I could not ask for a better mentor. All three of them, one of the major IT supporters, the advocates, they would put me in front of important people to make sure that I had every opportunity; like if they heard of anything that came with any exposure to upper management or whatever, they made sure I knew about it, and that I was going after it. And that I was prepared for it.

There were employee resources available

out the nose. They have employee resource groups, very supportive. There's a woman in IT One, and I was part of the leadership board for that. If the employees brought the need or they made the ask and they made a business case and there was interest, they generally raised support.

The women in IT created the space for this specific demographic. This is interesting, as it speaks to Ruiz's (2005) research supporting inviting diversity and providing a space for collaboration. During this time, Maria's leads were motivators, making sure she knew of advancement opportunities. Maria noted not having any villains during this time.

During the end of her tenure, Maria incurred what I referred to as a hiccup in the road:

Not always sure what to say about this part of my life because maybe I was the detractor, not necessarily from it, but I was arrested for drinking and driving, coming home from a happy hour. And I got fired. So that the first 5 years of my career. I don't have anything negative to say about any of it. I was a COBOL developer for a year. That wasn't super special to me, but I still learned a lot from it. I loved that time. And I thought I was going to retire there, you know, so it still very much hurt me because it was truly a part of my identity. I took so much pride in my job in MDM. I resonated with the mission of the company, but I have a lot of pride in that.

After the termination, she learned she was pregnant. This led to somewhat of an identity crisis. She recalled that

a month after I got let go, as I was trying to figure out what the hell I'm supposed to do now. Because I got pregnant. So, my probably having a little bit of an identity crisis at that point, because I had lost my job; wasn't really sure what that meant, or, you know, what that meant to me as a person. And now I'm pregnant. So, I need to find my identity as a mother and where it is that priorities are shifting there now. You know, as much as I want to go after another similar position and other jobs somewhere else at the time, I didn't even know, I didn't even have a court date at that time, either.

She would eventually embark on a journey that would help her discover her strength within:

I ended up working for a very short time and on the phones as email support; a lot of great knowledge but being on the phones, not for me, where I had the experience I already had. It's a great entry level job into IT, great exposure, great first step into the pond. That's not where I was at, so I luckily ended up talking to some peers that I had made those connections or relationships with at State University, and now I work for them. Today I'm an IT administrator.

Being a mother, her priorities changed. She also suffered a fear of not being hired, getting back into programming;

Now I'm pregnant? Who's going to hire a pregnant woman? Not so much who's going to hire but, I mean, there's a stigma, and well, is she going to come back? It's like, do I even apply for something in IT now? Do I wait it out? What do I do? And who the hell am I?

Maria was her own villain, doubting herself and ability to return to the IT world. "I couldn't really apply for places that I didn't know how to background check with them, that's where that discourages."

Eventually Maria faced her fears by slowly entering back into IT, with the help desk position previously described as not a good fit for her. However, her hesitation reflected on her ability to show caution and calculation in returning to this world that was so hard on her in the beginning. It was an act of dipping her toe in the pool before diving in. Her relationships from

college opened a door to larger Tech firms and roles. She is now back into her “sweet spot” and confident of her career choices.

I enjoy the problem solving, I enjoy even the pressure, you know. Hey, this stuff is down, get it back up, how quickly can you get it up? And knowing too that it’s a critical system, or you know that you don’t want downtime, and how can we prevent this in the future? How can we make sure this doesn’t happen again? And you know, I don’t want to be anywhere else. I do want to be in IT.

This period, life after the hiccup, showed Maria was a fighter, survivor, and an adapter. She worked her way back up the ladder, one that was never welcoming to begin with and just as difficult to climb a second time. During this time, the villain that existed right after the hiccup was gone and was now a motivator: herself. She pulled herself up by the bootstraps and worked her way back up from the bottom. New villains emerged and that was family not understanding her road to recovery in her career. However, this was her journey to own, to travel, and to process, and she owned it.

Along the way, Maria learned to defend herself. She noted having dealt with sexual harassment and “lingering eyes” throughout her career: “I’ve been groped by peers. Not on campus or anything, but after a happy hour. I’ll be really frank with you. I hit him so I didn’t feel the need to report him. He got the message.”

Maria had to learn to defend herself, not only against misguided perceptions and discrimination, but also mistreatment and belittlement. This required calculating the risks of response and reaction on her part:

If it is called out, it’s just, Oh, well, sorry, I just get a little, you know, I’m just friendly. So, I guess I didn’t feel comfortable telling anyone. I already have that label of Oh, you see everything with a lens of gender and well done. And then you want to add the layer of accusing up here of sexual harassment, nobody’s going to want to sit at my table, because there is a very real fear from men in it that women are going to get them in trouble, which is f@2%ing bananas because if they would just keep their hands to themselves, it wouldn’t be a problem. But they’re scared of us and how we’re going to change the work dynamic.

When asked about different standards for men and women, she responded that it was

more common than I would like. I'm going to venture and say it's more common than I like. Because again, you know, it is because I've seen after-hours work parties where management starts leaning on new hires, they're a little bit too familiar, where I can see in the poor girl's face that she is fricking uncomfortable. And I mean, you know, they're just hanging all over.

Women must uncomfortably remain silently to avoid the stigma of being the whistleblower or problematic: "There would be a stigma or something to be reported. I mean, these guys talk. They have their networks." Maria described herself as calling things out from a young age and being considered

boisterous. I already have this stigma because [at] a very young age, knowing, calling out double standards when I see them. Informing people that pink is not a girl color, you know, stuff like that. I say it and I call it how I see it.

This, in conjunction with reporting an incident, would only add to the layers of nonacceptance in this industry. Maria must walk a narrow line that one should never have to balance, between defending herself and guarding her reputation. Maslow's (1954) basic need of safety here seems almost nonexistent, as the conflict between personal security and employment are competing for survival. How Maria navigated through challenges, belonging, and beyond showed her tenacity and inner strength. It was a conflict no one should have to endure. Overcoming this strife displayed an extensive amount of perseverance that is not common.

Maria's working life now consisted of working from home during the pandemic. She said that she has

a very supportive team. We do on call weekly rotations and if we need to switch a week, our work I mean, we'll obviously right now work from home, but even before, we were doing every Friday working from home; my boss likes his schedule to be flexible. He likes to be able to work from home and flex hours, take a half day work, you know, that night or whatever so he encourages that for his team as well. And I really appreciate that.



Before the pandemic Maria felt there was a great balance between work and home. Now the two were comingled and the pandemic had removed the compartmentalizing of work and life for many and had additional challenges for those with small children. She noted that

last year, when I had my first child, I got the baby up, dropped [her] off at daycare, went about my business, went about my day, handled my stuff, picked the baby up. We had our time. You know, the baby goes to bed. And that's our routine. Now, it's just chaos all the time. I still love what I do; my frustration is just the stuff takes focus, sometimes it's an underscore that was supposed to be a period. You know, you have to be alert, you have to be sharp, you have to be paying attention. And it is time consuming and it's hard to do when there's babies crying in the background that also are competing for that attention, that finite attention. Pre-COVID, daycare close at six and they charge every minute that you're late, so worked it out where, if maybe I got in a little bit later I'm still going to leave at this time because I have to, but I can work that night or I can make it tomorrow or whatever it is, get your job done.

Her work provided the autonomy and support to get her job done:

Don't have people come look for you, definitely don't make them come to me, and we're good. You know, handle your business. There's a lot of trust and just overall support, team chat, everybody, somebody is always going to jump in.

Despite the new challenges of work-life balance the pandemic had created, Maria remained in good standing: "it has its own challenges and all that, you know, good stuff. But for the most part, we were good to go" and she "loves" her job, as previous noted. This again showed her ability to adapt and rise to the occasion. Her motivator/hero during this time was her boss, who encouraged the team. Her villain/discourager was balance. She found it difficult to separate work and life, now that colocation had been removed. Everything was mixed.

As to why Maria thought there were not more Latinas in IT, she responded that it was because they were "born to be wives and mothers." That was the message she received along the way. While not verbally noted, social cues and context, such as being asked questions of marriage and kids, enhanced these expectations. These were common questions for Latinas

starting in their early 20s. Maria would say, “Can I put something out in the world that is not human?”

Despite the conventional family and cultural expectations, Maria’s mom was instrumental in her education. Her mom “worked. She actually made more money for some time. You know, and there was never any weird power struggles or, you know, money issues. There is no competition for dominance or anything like that.”

This did allow her mother to see things in the “grander” scheme of things:

My mom really wanted, she really emphasized, education, and that it was important. And I needed to know how to make my own money; I needed to know to handle my finances; I needed to know how to be an individual. Because she wanted to make sure that wherever I ended up, I was choosing to be there.

Maria provided advice to younger Latinas in middle or high school for pursuing a career in IT: “Network with recruiters. Job shadow. Do practice interviews and questions. DO NOT listen to discouragers [villains] such as professors and classmates. Learn to defend yourself. Just be blunt and stand up for yourself.”

I asked Maria if she could be herself. Her response was she had to assess who she was around and the environment. She said she must be “10 times more prepared, because she might only get that ear once with the seriousness and attentiveness given.” This reflected her ability to adapt [chameleon] to the situation and be strategic and calculated. For words of encouragement, Maria provided the following:

Know your craft, own it, let it be a part of you, it gives you authenticity. Let passion shine, people respond to it. Be aware. Be prepared when you say something; make sure it is factual, and own the reactions to your words; also be prepared for a version of what you said. Say it with confidence so it is clear you are giving directions and not asking a question.

Maria survived being part of an environment that was not so welcoming to her demographic. She has ascended and reascended in this industry. She owned her mistakes, but

even more so her craft. She reached back by becoming part of organizations that provide scholarships and programs to Latinas in this industry. She was not only a survivor, but a force multiplier.

### ***Martha***

Martha was in her early 30s. She had her MBA and PhD. She grew up in a biracial family. Her mother was an immigrant; her father was white. He passed away when she was 13. She grew up close to her mother's family, very close-knit. The loss of her father created some instability in her childhood. "When you do not have it growing up you long for it." As a student she noted her grades being mediocre. Her father was a computer scientist and the catalyst for her going into IT. Martha did not learn Spanish because her mom was afraid of her having an accent. This ignited a desire for Martha's child to not only learn Spanish but be fluent in it.

Martha's interest started in high school, as she went to a STEM high school. While she had other interests, such as humanities, her desire for stability in finances and job prospects kept her focused on obtaining a degree in IT.

Martha moved away for college. This created a strain on her relationships with her family. She moved and never looked back. This move was hard for her close-knit family to understand and was outside the cultural expectations. This displayed her acceptance of going against the grain. While she was happy and excited to move away for college, she continued to be homesick. She learned to build her own community where she resided. This displayed her resilience and adaptation. She was a survivor. In college her professors encouraged her to take computer science classes. She did not know much about college or jobs and what career paths would look like, including graduate school. Her professor advised her which classes to take, told

her about internships at Google, and wrote recommendation letters. She also had others helping along the way, including an advisor in graduate school.

Her mom was a mix of motivator and villain. She would tell Martha how proud she was, but that she was “not as smart as a boy.” This created the underlying foundation in Martha that boys were better. Boys in college created a “pretty toxic” environment. In group projects they would give girls the easy part in order to patronize them. The low representation of two to three women in a class of 100 left very few allies on the landscape.

Her current role was working for Big Tech as a Director. She noted a very low representation of Latinas. She continued to reference a “growth mindset” as a way to intake feedback and understand areas for improvement. She advised that she takes everything “with a grain of salt.” While this seemed logical, it also seemed a method for survival and acceptance. She considered that people had different experiences and, as a leader, tried to account for that. Her current community was peers she had worked with closely. The majority were men but she worked with more women than was typical. The ethnicity of her community was primarily white but she did have colleagues of different backgrounds. Martha considered herself to be fairly extroverted and found that was needed for connections and dealing with people.

Sponsors and a director from a large company were motivators in her career. Martha had also learned to be her own biggest advocate. She had to prove herself in the PhD program, but not so much in college once people got to know her. Her reputation of being knowledgeable in college preceded her. She was now in a role where she felt she could be herself.

Martha paid it forward by partnering junior and senior team members, a practice she benefitted greatly from in her beginnings. She participated in Employee Resource Groups for mixed races, and those for Hispanics and women’s social programs.

When asked what her superiors thought of her, she responded: “strong communication skills and adaptive leadership style.” Her worst trait was an “area of growth, being uncomfortable with very large amounts of uncertainty.” This may have attributed to her nature of taking calculated risks. Her coworkers thought she was a caring person and brought calm to the storm. She noted awareness of others could enable or restrain Latinas in IT careers.

Martha provided the following advice to younger Latinas in middle or high school: :Okay to ask for help. Seek out professional role models to learn from, especially women. Do not be afraid to cross the cultural or professional borders others set for you.”

Martha provided the warning to “not believe the limitations that other people set for you.”

Her final words of encouragement were that “hard work pays off, even if it takes a while.”

Martha was not only a fighter and a survivor, but reached back to be an advocate for others. Her demeanor was calm and logical. Her approach to relationships with family, previous school mates, and colleagues seemed analytical and logical, and how she navigated issues provided a very methodical approach.

### ***Mikasa***

Mikasa grew up in

“basically a home of a single mom with an older sister; she's about 3 years older than I am. My mom immigrated to the United States when I was younger. And, you know, I basically started school here in the United States; grew up in California.

She recalls that her mother

did not really push me towards being the top of my academics, because, unfortunately, she didn't come from a background where there was a lot of education. And she was also very busy working multiple jobs. And so, I think that wasn't the expectation from her. But I just took it upon myself to always do very good in school.

This was an early sign of initiative and ownership.

During elementary school, Mikasa moved around:

For example, we went to different elementary schools. Large state is very heavily populated, so even though you might be next to an elementary school, they would [allocate you to] another elementary school, because they're trying to balance off the school kids, you know, the numbers. And so, I went to at least three different elementary schools. And then in between there, we used to travel. So, I'm from Central America. And we used to travel to Central America, because my grandma didn't really like being in the U.S.

The moves back and forth might have contributed to an ability in Mikasa to make fast friends and assess her environment quickly, in order to adjust. She spent a year in Central America with her grandmother. As for her relationship with her father, she explained:

My father had a business in Central America, so we had a house over there. But he was never really part of our lives in that sense. But he did provide a house for us over there. So that's where we lived for about a year.

This might be another display of Mikasa accepting situations where she may not have been well received, but still excelled. As she recalled, she

learned how to read and write Spanish so it was really good for me. So that one academic school year in Central America gave me a lot of insight to, you know, not only the language or the culture itself, because, like I said, I immigrated here when I was very young, so I had just more of an American perspective. Going back to Guatemala just gave me back some of that, you know, deep dive into the culture, in essence.

Mikasa returned to the United States after her grandmother passed. In middle school, Mikasa continued to do well in her classes despite the challenges:

I only went to one Middle School. And I did well there and Large state schools at that time were heavy in some violence. And so, it was kind of curious that at that time, on top of earthquake drills, we still have fire drills. There is a lot of drive-bys happening. And so, there's always a drill; you know, what you do in this situation, so we're prepared for that. And it was just particularly curious because I used to get shipped to this elementary school. But the middle school was in a nicer neighborhood. But I would get shipped from a more rough neighborhood. So, it was just curious to see the contrast.

This may have built a tolerance or resilience in Mikasa at an early age. During the winter, the decision to move was made because of how her mom felt about a southern state school:

She liked it a lot. And so, it was a Christmas break. And it was my eighth grade year. And she basically said, We're moving to Southern State, to Southern City, and she just liked that more people spoke Spanish, it was a little bit more inclusive, and then just the coming from [a] large state [school] and looking at the prices here, the cost of living was way more doable than it was in Big State. So, she really liked that. And so, we moved down here and to Southern City, Southern State. So, I basically just finished a couple of months of my eighth grade year here, and then I started high school.

This spoke to the desire of Latinas for community. Overall, it seemed as though this move was a good fit.

Mikasa's high school years continued to go well. The school she attended was a Title 1 school, which receives state funding. These schools primarily have families that are considered of a lower income socio-economic status in order to qualify for this type of funding. According to Mikasa, that school was divided into three categories:

So, three sub schools, basically, it was. I think they called it global learning or something. . . . But those were for the kids that were, just trying to graduate, you know, minimum requirements. And so that was one, I think it was called Global Studies. And then the other one was kind of middle tier in a sense of they offer some sort of trade training. So . . . , I remember they used to have catering and woodshop, and that kind of stuff. And so, they had that tier. And then they had the humanity tier, which was the ones that were expected to be in the top of the class, and then also attend college. And so, I was part of that group, because I've always had good grades. And so, I started that, and, you know, we had access to AP classes and smaller classes and just be able to focus on the kids a little bit more, just because, again, we were all divided into those three sub schools. And so, I think that made it a little bit more focused.

Mikasa was "very involved in sports, swimming, tennis, and cross country, so I was always trying to balance." This displayed early signs of her balancing between competing resources. The catalyst for STEM was when Mikasa

got involved with the science group, and I started participating in the science fairs. And there was two particular teachers, Mr. and Mrs. Smith, and they're very dedicated teachers and they need to be there until 11pm, midnight projects, and they would give us

rides or they would give us connections to the Health Science Center so we could find mentors for projects, and drive us to the fairs.

Her heroes during this time were the two teachers who poured themselves into their students. They created a path forward for her that would change the trajectory of her career path. There were no noted villains during this time. While Mikasa's family did not give pushback on her goals, they did not understand them. Their mindset was "if [she] wanted to be ambitious, either doctor or lawyer was the extent of potential careers." This displayed the prestige the Latin culture assigned to these career paths, but not to IT. This primarily seems to be a lack of understanding of the financial potential and flexibility of the industry.

During college, Mikasa did not initially get into IT due to lack of exposure in that particular facet in STEM. She was focused on biology. She noted herself being "shy and could not argue in front of people." She noted that "surgeons sometimes are based just on their statistics; on how successful they are." This made her "disillusioned by the fact that they'll [surgeons] refuse some people, you know, particular surgeries just because they think that they're going to ruin their numbers." She had empathy for people, a reason she changed her path. While Mikasa desired to be in the field, her empathetic nature left her feeling that "the healthcare system in the US works . . . very distant and all that."

This revelation led her to a path in which she took a break:

I went to UU Southern City for that, because, again, I was salutatorian and so I was able to get scholarships and go there. I was open to my third year of focusing on biology. And then I was, you know, just again started to think about if I really wanted to do that, because going to the medical field takes another minimum of 10 years after you graduate to actually . . . so then I just took a break. And I came back home to Southern City, and I was just, I'm going to think about what I'm going to do, so during that time, I got a job and then started looking into just the community college courses. And I was, Oh, you know, taking some art classes will be fun, just keep me busy too, just because I always like to be learning new things. And so, I ended up getting a graphic design associate degree, just because I already had my basic courses out of the way.



Mikasa was now exposed to IT with access to computers and programs, “I did get exposed more to computers, just because I was using more of the software, like Adobe Creative suites, and just getting exposed to all those applications and software.” This in turn led to her obtaining a degree in IT and an internship that started a path to cyber security:

I did an internship, and that was fun. I mean, I also think I'm creative, I always had a creative streak within me so then it gave me the opportunity to do that. But then, after a while, I started getting a little anxious because I was, It's fun, but it's long term. I just don't think that it's going to be doable for me to do this long term. So, then I started looking around again, and I just happened to see some articles about some cybersecurity courses that they're going to start offering at USSS.

Mikasa took a leap of faith and decided to go through the program and “just started to get really to enjoy it and was one of three girls [in] most of my classes.” She noted she “started making some friends that I still have connections.” I think this displayed her loyal characteristic and desire for community. She went to an internship while obtaining her degree in cyber and met her future spouse. Mikasa recalled having “graduated with my computer science degree, and I was the only girl that graduated, at least in that semester.” She was a fighter, a survivor in her own gentle way.

While obtaining her degree Mikasa reflected on her mother. “I've always had the advantage that I have a very supportive mother. And so, she was, If you want to go back to college, I'm here to support you.” Mikasa did not reflect on any individuals who influenced her into IT. Her exploring led her into a career she felt was a good fit. In a sense, this seemed to indicate she was her own advocate, her own hero. Also, there were not any noted villains during this time. However, in reflecting on the disappointment Mikasa felt in the medical program, this might be considered the villain that led to her reshaping and reassessing her future, leading to a long hiatus from education, only to return to a new industry. Mikasa did not feel like there were villains while obtaining her degree in IT. I wonder if she did not receive the visceral responses

others did because of her personality, or she did experience it, but her positivity did not receive it as such. She described herself as:

not very girly. You know I think that if you go into computer science, a lot of them are not to the point where, you know . . . I see most of these guys as brothers because I don't have a brother. And a lot of things don't bother me, you know, a lot of things that they do or things that they say, and so I think that that helps. I quickly fit in just because I can jump into a conversation, something that they're potentially watching, the show or something like that; you know, watching anime helps, something in common, video games, and all that kind of stuff. So, I think that it was easy for me to just jump in there and hang out with them.

This also might have been because of her positive outlook and the ability to see the good in her team and people, so that she did not identify individuals as villains. My perception of this was further supported as she noted of an employer when "they give you your top five strengths. So, one of mine is always positivity."

After college Mikasa started working at several tech firms, landing at a larger firm known for diversity and inclusive programs. She worked her way up from entry level to management: "I came in as a level one and I worked my way up to the manager level." She reflected on being part of and leading a team as her greatest move:

The biggest transition for me was being part of a team, and then leading that team. I became their lead and their manager eventually. So that was a good transition for me, but I'm very dedicated. And, you know, I would put in the time needed for all my projects. So, I was very hands on as well. And I think that people always appreciate that, you know, when we have [an] 11pm release, I'm there with them. So, it wasn't, Okay, you guys do it, let me know how it goes.

This reflected her stellar work ethic and care for people.

In discussing her roles, Mikasa provided the stringent standards and statistics she must adhere to in regard to server times: "The more 9s the better; as for uptimes 99.99 time." Despite her ability to speak geek she seemed very friendly, open, and understanding. This might have been the competitive advantage she offered. Her empathetic nature was still evident in her

current role. During the pandemic that started in 2020, she was able to pull from her previous experience:

I had a lot of experience with managing teams that were off site and in different time zones. So that's come in very handy. And that's been my new normal, ever since I became a lead, is just managing teams or working with people with different time zones. So, a lot of communication, a lot of planning that goes into that.

Mikasa was resourceful. She reflected on her managers:

My manager saw that I was good with people. So, she encouraged me to go into that. And at least at my company, they have a program called Emerging Leaders Program. So, I was nominated [and] got accepted, because you have to go through this whole process of getting into that program. And it's 6 months, and they basically just have a lot of training for you to be more prepared to when you transition to a manager.

This provided Mikasa exposure to different types of managers and teams and the differences in characteristics between the two:

There's a lot of training that goes on in regards to not only people, like HR related stuff, but also how to like give and receive critical feedback, for example . . . critical conversations, or how to deal with different people in the different phases of their careers. So, for example, there's one training that focuses on four quadrants that a person usually falls in, like one is, you're brand new, you're eager, it's just that you lack experience, versus the last project where you're a senior, but bored and not motivated, and have a ton of experience. It's just that there's a motivation. So how do you interact with those different layers? And, you know, the differences between you hiring a team versus you inheriting a team.

This allowed her to become more strategic in her approach by assessing the environment and planning for interactions with her team. A change occurred within the organization that changed her position. Again, Mikasa worked hard and was recognized by a Senior Director for not only her skills and experience but her personal brand:

I report to a senior director. And, you know, when he was talking to a brand leadership, he was always saying that we were doing a really good job with our engineering department. And because we were meeting all the deadlines. And I think it's just because there's less bureaucracy and politics, you know, because it's a smaller organization. So, we just get it done.

She seemed to reflect on this comment with endearment. The Senior Director gave her guidance to further her career, which she took to heart: “As a woman you bring in more collaboration and I think it leads to more productivity.” Mikasa has also had her fair share of pushback from some male engineers:

You get a lot of pushbacks from a lot of the male engineers and especially senior male engineers, not necessarily because you’re a female, but just because you have new ideas, and they just don’t like to change. And so, there’s a lot of people that have been with the company for 10+ years, that they have some entitlements. And you think that you can make something faster and something easier, add some more automation; and changing automation, they just don’t like it. And there’s a lot of pushbacks to that, because of that, because maybe they wrote their first version of the tool, and it’s just not working out any more after a couple years of the technology stack changing.

She had to “be able to defend and bring it up, if you want to make those kinds of changes.” This struck me as odd in technology, where threats and upgrades are so dynamic and changing at such a fast pace. However, she noted, “I do voice my opinions. People do listen. But I think I’ve earned that because of the level of dedication that I put into it,” which indicated her mastering the art of being heard, a common skill among many of the participants.

Mikasa led her team, “earning the team’s trust that I have the best interest, not only in the deliverables, but also in the individuals that are part of that team.” She is a firm “believer if you grow your people, you grow your team.” This reflected her being an asset, not only knowing the intricacies of software coding but understanding the communal DNA of her team. She employed a strategic mentorship strategy to her work:

I always tell my senior engineers to be mentors to juniors, because as they are getting more and more senior, the expectation is that they should be able to teach juniors and be able to give more tech talks and all that. So be more comfortable with that. So always having a mentee is a practice. And then also just, I think it’s good knowledge sharing that happens in the sessions that you have between your mentor your mentee, because they both bring different perspectives. And I think that sometimes you think, Oh, as a mentor, I know everything. But a mentee, because they are recent grads, they get introduced to all this cool stuff. And you’re like, Oh, I haven’t looked into that, you know. So, it’s good to have that.

She did say it “does help if you have an involved manager” as she strived to be the advocate for her team. Mikasa was forged from the bottom, entry level, working her way up to leadership, and has never forgotten that which created a unique insight, allowing her to relate to her team. Her strategic nature made her a unique and rare asset.

While she did not spell it out, her heroes during this time seemed to be the management who saw her potential. For villains, she did not identify any. While I would consider those who provided pushback as some, her genuine and positive nature seemed to afford them grace, thereby not being seen as such by her.

Mikasa noted that having a work life balance looked different these days:

I think, maybe, it does make a difference when you’re a female engineer, and then through my transition, you know, I went from being able to put in all kinds of hours, because I didn’t have kids, versus now where I do have kids, and I’m just trying to have a better balance so that I can have time with my kids. But I think that I put in my time at the same time. You know, just trying to balance what my new work life balance is, compared to what it was before. And also dealing with a lot of political stuff that happens within teams. And, you know, those that do hang out, like in bars afterwards, versus you’re staying at home with your kids. So that’s another challenge. But I think that, again, I’m very hands on. And so, I think that comes in very handy when it comes to the team itself.

In the Hispanic culture, and likely others, women are the primary caregivers. Forgoing motherly duties, such as at dinner, bath and bedtimes, seemed not as acceptable for women than men. Luckily, Big Tech had a mentorship program focused on women that met a few times a quarter. Mikasa added that many women experience imposter syndrome, a term I heard from other participants:

I think it’s important to grow, and focus on some of the females, just because there’s a lot of imposter syndrome that happens and, you know, walking them through that. I think my last one-on-one with my near engineer, she was asking about that, the imposter syndrome.

Mikasa had to start growing into a “new comfort zone” and “was shy.” However, she navigated through this challenge by being “very hands on,” so when she voiced her opinion, she was “heard” due to “the level of dedication.” This self-awareness helped her to build confidence to grow in her leadership role. This displayed her desire to strive for excellence in every aspect.

Mikasa provided the following advice to those advancing in this field: “Be goal specific. Be vocal. Find mentors.”

Regarding villains and heroes, she noted that “sometimes the villain can be ourselves, we limit ourselves.” During a mentoring session she recalled a senior VP saying that “he encourages you to not limit [yourself] based on the description of a leadership role, because nobody’s going to fit perfectly into that.” Mikasa reflected on similar advice from her leadership program:

When females look at a job description, they don’t apply . . . because they’re, Oh, I don’t have 80% of . . . the experience that they’re asking for; but if you ask a male, they say, Well, I have 20% of it, I’m still going to apply for it, and they get the jobs. So . . . we overthink things, and then just hold ourselves back in a sense.

Mikasa also commented that IT provided “flexibility” when having a family. To the next level hiring manager, she said she asked up front, “Hey, is there that flexibility? You know, this is my situation” and explained “my kids being online I am not as available in the morning, because my husband and I try to balance my 5-year-old, pre-kinder online classes.”

When asked why women are reluctant to get involved in mentorship programs, she said that the “biggest deflectors [were our] own self discouragement, trying to catch up, not getting discouraged.” Understanding early on that the majority of your coworkers will be men, she advised women to “find a particular cultural reference, if you’re okay with that.” She did reflect that Big Tech was more dedicated to “growing people in various efforts as leaders,” which likely allowed her the space needed to grow, not only her technical skills but also her leadership skills.

Mikasa's reflection on why there was a low representation of Latinas in IT was because "they don't see it as an opportunity; parents don't understand careers outside of lawyer or doctor." They don't realize they "can get paid as much as a doctor . . . don't have to have a degree if college is not for them. Totally doable. With HS diploma, start self-teaching. [They] Make money like a doctor without the debt." Mikasa recalled the hardest part of getting into IT was the interview. She encouraged reading books to see if women are interested in it.

Mikasa provided the following advice to younger middle or high school women pursuing a career in IT: "Be [a] more adventurous risk taker. Talk to people, random, with particular title. Network. Know your options. Be proactive. Use tools. Don't be shy to ask for help and advice." This advice spoke to being your own advocate.

Mikasa provided the following warnings: "Realize there will always be discouragers trying to derail your dream. Don't be afraid. IT field is the most doable. Do not take discouragement personally. Know when to be outspoken to build your brand so people will listen. Know the culture of your team."

She also reflected there was a "fine line between boys being boys. Be genuine to yourself. You should be able to do a really good job in your own skin."

She provided the following words of encouragement to the younger her: "Know your goals, work towards them. Be realistic of goals and self-aware. If you want it, work for it. Must be dedicated. Make sure you like what you are chasing. Keep up on technology. *Everchanging*."

Mikasa's experiences were somewhat different than most participants. She did recognize the issues with senior male engineers. However, she had a very positive approach in how she dealt with these deficiencies. She challenged the norm and found creative and innovative

solutions to address inequities. Her desire to expand her leadership ability spoke to her desire to not only reach back but to a continued desire to grow her capabilities.

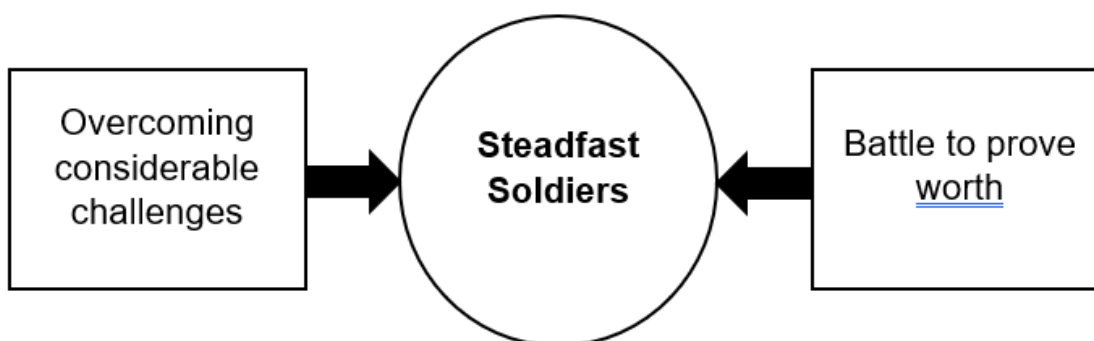
### **Grounded Themes From the Experiences**

There were three grounded themes informing the careers of Latina women that emerged from the participants' experiences, each with two categories, and two properties for each category. The themes were Steadfast Soldiers, Tactical and Tenacious Strategists, and Resourceful, Innovative, Self-Advocates.

#### ***Theme 1: Steadfast Soldiers***

Almost all of the participants noted having to fight their way through courses and career paths to get where they were. Participants used words like “scrappy, fight” to get where they were. In order to continue in their education or maintain their role, these women had to endure challenges their male counterparts did not. These women had to battle villains, also referred to as discouragers in this study. Oddly enough, sometimes due to subtle discouragement, the villains were sometimes themselves. For example, many of the women described feeling “imposter syndrome” and that maybe the villain’s perception of them was true, that they did not belong. However, the support of their motivators and love of their craft provided the ember of hope to allow them to persevere and ultimately lead others, both formally and informally. They achieved this by peacefully and strategically engaging resources, working as Steadfast Soldiers in their own lives. This involved two categories: overcoming considerable challenges, and the battle to prove their worth (Figure 3).



**Figure 3***Steadfast Soldiers*

**Category 1: Overcoming Considerable Challenges.** These women endured challenges that were perceived by them never to have been endured by their male counterparts. Additionally, the women faced the challenges of realizing dreams outside their parents' comprehension, who can be interpreted as indirect villains. Camela said of her parents not understanding her desire to go to college: "family who didn't ever finish high school so much less understand that that's what I wanted to do, was go to college." These women endured pregnancies while striving to keep up in a rigorous industry, and loss of loved ones early on in their lives. Almost all the women faced challenges that stemmed from not feeling welcomed or cared for, and being mistreated. However, they responded to this treatment by enlisting allies to provide solutions to software problems or class assignments. They did not respond with hostility, yet defended themselves when backed against a wall. I identified those who discouraged the women as discouragers, obstacles, inhibitors, and villains. In some instances, the mistreatment or lack of space to fail led these women to self-doubt, and inevitably to becoming their own villain or discourager. Overcoming considerable challenges was made up of two properties: survivors in an unwelcome environment, and confronting villains, mistreatment, and self-doubt (Figure 4).

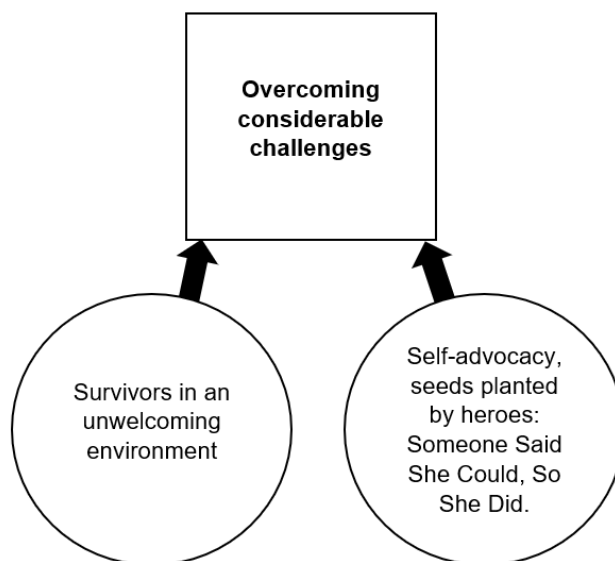
***Property 1: Survivors in an Unwelcoming Environment.*** Almost all the women noted having difficult professors, unwelcoming peers, and discouraging management. Camela reflected on a Latina manager who mistreated her, misunderstanding and discouraging her helpfulness.

Chloe noted being one of only two women on a team:

And there were two of us on our team and then only one security analyst that was a female . . . It kind of sucked, you know; I don't mind being around guys, I'm used to it by now. You know, my dad was in the fire department. All of them are guys, most of his workers, contractors, tile setters. They are all guys. So, I've grown up with that. But at the same time, I was, Why aren't more females trying to do this? Why can't we even get any interns that want to do this?

**Figure 4**

*Overcoming Considerable Challenges*



Chloe had not only survived in this environment of limited representation, but also thrived in it, advocating for more women in her industry:

Now at Big Tech #, I am the only female in our operations center. And I'm trying to get some more females in there. I was recently asked to do a promotional video for our office . . . I was just taken aback because I thought more analysts were going to be asked to do this. And this is something that both our sales or marketing and our customers are going to be seeing. And when I found out who the list of people that were going to be doing

these interviews were, I saw that nobody else from our staff was doing it. They asked me to do it. And one of the reasons is because I am the only female. And so, I was, Okay, I guess I have to represent not only Hispanics, not only females, but our entire operations. And they asked me to speak to that; like, what would you say to other women who want to get into cyber security?

Hernandez said that she had difficult professors and peers who told her not to continue.

However, she not only survived but conquered any doubts about her ability:

My first semester in college, I got a B on a midterm or something, maybe it was a C, I don't remember. And I was surprised by how many guys in the same class as me told me, Oh, you should quit. Oh, s%@t, you should drop out. You're not ever going to make it. I'm, What the f\*\*k? Even my own mentor ... a graduate student that was assigned to me to help me feel at ease . . . When I came to him, and I said, you know, is this a big deal? Am I missing something? He's, You know, you may want to reconsider your major. This wasn't even a class in chemistry, like a main requirement.

Having dealt with bullying in her earlier school years she was not a stranger to this lack of acceptance. However, this skill served her well as she continued to navigate being unwelcome. She noted having issues with male counterparts: "When you push forward, always a guy trying to pull you back. Silicon Valley does not treat women over 35 well. Does not fit in white suburbia, can be there long enough to get by." She described herself as being "scrappy."

Luisa had to begin learning how to overcome the feeling of being unwelcomed at a young age, during her high school years attending a private school on scholarship:

And it was this bunch of rich kids, entitled as I have never ever met in my life. And it was basically, I had a scholarship to go to the place and a bunch of my family chipped in to get me to the place in search of a better education. But I was good. I always was the best of my grades, but that pissed off those kids, and I was the girl on the scholarships, and their parents were the owners of the school. So I was treated there horribly, like I never fit in; it was bad.

Luisa recalled not feeling welcomed by professors and peers:

I can talk for hours about horrible incidents that happened in the university, but I never noticed them that much. And it was like, whenever people thought I was bad. I wasn't going to make it. I was just this dumb girl that was there.

Examples of this mistreatment was further elaborated on by her recollection of a request for a 2-day extension to a project where she received no grace; meanwhile her male peer was given a week extension.

I walk in the professor's office and say, Look, dude, we've been working 24 hours, we haven't stopped. It's just not possible. But give us 2 days and we're going to finish, please. And he's, Nope, nope. Not going to happen. And one of the guys in my class walks in and says, 2 days, we're tired, not done.' And the guy [Professor] goes, You have a week. The guy walks out. I'm, What the f'. And the guy [Professor] says, I don't do favors for women.

Maria noted her male peers already having decided she was “problematic and less knowledgeable” before they even shook her hand. “They did not take the females seriously. They just saw us as people with questions/work.”

She also noted not being heard or welcomed in the IT industry, and a lack of desire to continue while pursuing her degree in this unwelcoming environment:

I didn't want to go to class because I knew there was going to be some comment or other from the professor about me being the only girl, or something about me being a girl and being there. It just was obnoxious and unnecessary and it fed into none of my peers wanting to work with me anyway.

The women survived toxic traits and behaviors from male peers, colleagues, and supervisors. They noted having to work harder than their male counterparts for equal, or even less than equal, pay for the same roles. This experience was supported by the Lean In (n.d.) study that reflected that, on average, Latinas in the United States are paid 46% less than white men and 26% less than white women. Participants endured professors and mentors in college telling them to quit their degree path towards IT.

***Property 2: Confronting Villains, Mistreatment, and Self-Doubt.*** Participants navigated discouraging family, coworkers, managers, professors, and colleagues, yet continued to pursue an education and career in a field where they were lowly represented. Camela commented on her parents being young and lacking a college degree; this lack of education providing a lack of value placed on a degree. While Camela's parents did not directly discourage her towards obtaining a degree, their frank practicality and lack of encouragement could be perceived as a discourager. As Camela said,

It wasn't that they were intentionally being discouraging, but they kind of were right. And probably some family members who were, You know, that's not a realistic dream. And it was more so family who didn't understand probably tell you from example; family who didn't ever finish high school, so much less understand that. That's what I wanted to do, was go to college. So that was probably a big non-motivator from that perspective.

Camela's parents' practicality and educational immaturity led to her having to fend for herself to make her dreams happen and forge her own path:

They never discouraged me from it. It wasn't ever, You can't do that. And again, I think it was probably their immaturity at that point, right? That they're just trying to be more realistic and know that, hey, you're going to do this, you're going to do this on your own.

Her family "didn't understand high school, much less college."

Peers from high school also discouraged her. They asked her "why was she wasting her time" when pursuing STEM classes in high school:

There was a lot of discouragement just from your peers, right, who they weren't going to, and they probably didn't . . . I don't know, I lost contact with them. But they didn't have that motivation to want to go to school. So why was I wasting my time? going? So, it was probably the peer pressure more than anything else; were the people who were constantly the negative impacts, right?

Chloe also recalled doubting herself early on:

I would get really nervous because I felt like I was really behind on things and I guess I was average, but there were just so many smart kids and my even my friends were exceling. You know, it came very easy to them.

This doubt continued during her first tech role, where she doubted her ability, becoming her own discourager. “It just definitely was a self-esteem issue, like imposter syndrome, if you will, and realizing, Okay, I am not an imposter. I can do this. Let me just give it a shot kind of thing.” However, she overcame her feeling of imposter syndrome, giving her “la fuerza potente” to take on new challenges.

Hernandez remembered getting a “B” on her first midterm and her male peers telling her she should quit. The mentor assigned to her in college even told her she should consider another major. While Hernandez’s mother’s side of the family was encouraging of her choice in degrees, her father’s was not. She also dealt with discouragement from her long-term partner along the way, who she is no longer with.

Luisa recalled an incident with a professor she referred to as a soul breaker, who graded her harsher on an exam than her boyfriend. She noted men getting longer extensions than requested on projects due in college and women not getting any. Luisa also recalled managers who treated women horribly in the early stages of her career.

Maria learned to defend herself without making a formal complaint when faced with being groped by a coworker. To this day she struggles with the outcome of that incident and whether she did the right thing.

Martha recalled the boys in college being “pretty toxic.” She remembered being patronized by these individuals. Her mom was a mix of motivator and villain. She would tell her how proud she was but how she was “not as smart as a boy.”

Camela also noted that sometimes she was her own villain/discourager. At times, the weight of childcare, difficult programming classes, and long commutes had her questioning what she was doing and if she should be doing it.

Chloe noted being only one of three women in cyber. She sometimes felt like an imposter, which created self-esteem issues. Luisa recalled struggling with a programming and math class. She doubted her abilities to pass the necessary math course needed to obtain a degree in IT. Luckily, a professor saw her abilities and encouraged and provided her assistance in overcoming that obstacle. Maria became her own discourager during the time after her DWI. She questioned getting back into IT and the perception others would have of her.

These women overcame unwelcome advances and addressed villains in their own way, so as to not hinder their career advancement. Sometimes the villains were immediate family members or peers who discouraged their decision to pursue a career in IT. This created a unique dynamic, when an individual is both one's support and objector. Many of the participants grappled with and overcame their own immense amount of self-doubt, confronting the villain from within. They overcame these challenges without encouragement from their environment and, in many cases, with little to no family support.

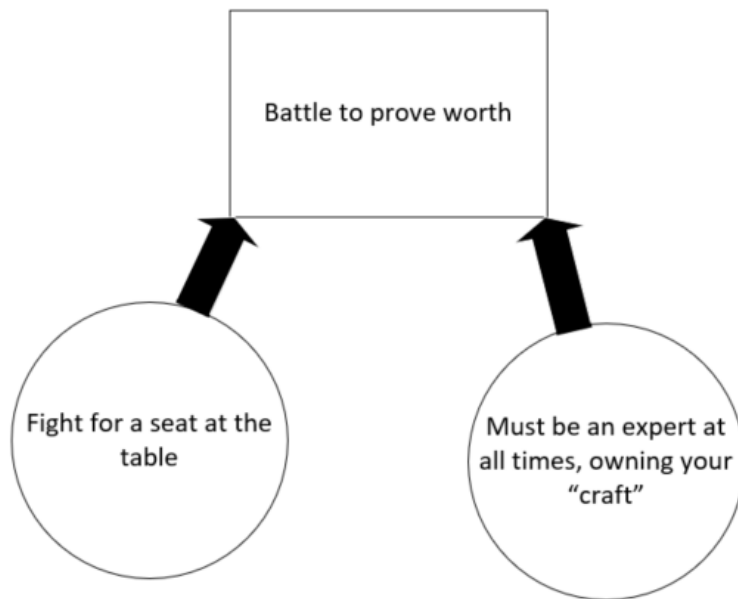
**Category 2: Battle to Prove Worth.** Almost all of the participants noted having to fight to prove their worth in the industry. They fought against the misconceptions of male coworkers, student peers, family, and even other women in order to achieve a career in IT. The concept that they must work harder to be accepted within the industry was a common understanding amongst these women. The battle to prove worth category comprised two properties: fight for a seat at the table, and must be an expert at all times, owning your craft (Figure 5).

Several of the participants noted having to provide expertise and contribute in silence because of toxic males or difficult supervisors in the environment. They prioritized the needs of the team, moving the mission forward like a steadfast soldier. The mandamiento, "Don't put

your needs first,” might have influenced this behavior. All recognized that, being a woman, they had to be 10 times more prepared to have a seat at the table.

**Figure 5:**

*Battle to Prove Worth*



***Property 1: Fight for a Seat at the Table.*** Camela had to work much harder than her male counterparts, while caring for small children, the last child being born her last semester in college, in addition to acquiring the skills, concepts and knowledge in a difficult program. She recalled not being able to fit in a desk, having to find childcare, and a long commute. Her days were longer than those without little ones and definitely longer than her male peers in college.

“It was . . . I think the challenge of going to a commuter college, right? Because at that point, college didn’t have dorms or anything. And I was married, so wouldn’t be in a dorm anyway. . . And at the time, I was at college, husband and I were living in [a] small town, which is going out far south. So, I was having to commute an hour to get to school every day. I had to plan that out properly to make sure that I was only staying nights that [my] husband was home or that the babysitter could keep child longer. So, that was one challenge that most college students don’t have to do but I just stayed at school longer.



However, with the lack of support from family, and pushback from peers early on because of her choice to invest so much time and energy in such a challenging career, Camela's ability to fight for a seat at the table was not a new concept to her.

Chloe had always learned to fight to get ahead, which started in grade school. "And I felt like I always had to work harder to get better grades. And so, I struggled a little bit through school."

These days, Chloe had to fight to find balance between her work and home. After the pandemic, she found herself having to balance programming in an environment with a crying child. This concept was not new to her, as she fought to keep up in her field after maternity leave for the birth of her first child. She also had to fight her own thoughts and self-doubt:

And with the quarantine, we haven't been able to work with each other; almost 9 months now . . . so the culture is a little different. We're trying as best as we can to communicate every day and we use Slack, and have meetings every so often during the week. So, it feels different. It's a different dynamic, but you know, hopefully, when COVID is over, and we get back to the office, it'll start to feel a little bit more normal.

Hernandez had to not only fight to prove her worth in college and work, but also at home. Her now ex-boyfriend seemed to challenge her choices, which she reflected might be due to his insecurity with her being educated and making more money:

I had a long-term boyfriend of 11 and a half years. This partner in particular was not very supportive. He was a Debbie Downer. He was very risk avoidant, so he's always nervous that I didn't have a job, as [the] last job didn't work out or whatever. So, he was always anxious that things we're going to go, so he wasn't supportive on that, wasn't all that supportive on schooling.

This reflected her ability to achieve her goals despite the lack of encouragement and in the face of discouragement.

Luisa realized early on that she had to fight for her place, prove herself, to get the respect she deserved. She initially had to fight her mom to attend college. There were professors she had

to fight to prove her ability and overcome bias against her that her ex-boyfriend never had to deal with:

He [ex-boyfriend] was brilliant, but he never had to put up with these things. All he had to do was develop his greatness. Whereas I had to fight for my name, I had to prove myself before they would give me respect. I know, in my heart, like that exam, I would have done so much better if he [Professor] hadn't been biased. He confessed his bias to me, like my grades would have been even better.

She also recalls an interaction with a professor known as a soul breaker:

He was walking by the office of my teacher, and I was sitting there, and she calls him and says, I want to introduce you two again, it's one of the best students we have here. And he looks at me. He says—it's a phrase in Spanish and translated is—If you sleep like you snore, which means I had to prove if I was as good as my teacher was saying.

She also had managers and employers, including her current, she had to fight for promotions until she said *No mas*:

We started supposedly working on my promotion. But then in October, my manager was, I don't think it's going to happen, you should not base your hopes for next spring. So, I was doing work that would still not be promotable for next spring. And I was at the peak of my frustration . . . I felt unseen as I have never felt unseen. And I felt like I was not growing. I wasn't learning anything. It was bad. And I quit Big Tech.

Luisa reflected on taking a role with Big Tech in the United States and having to fight bias, not only against women but against being a Latina: "Big Tech, I am not only a woman, but I am a Latina. So it's two things that give people the perception that I'm not good." She has had to fight for promotions and salary increases that her male counterparts received as part of a normal progression. It upset Luisa that "someone always had to vouch for me, and it sucked. [I] had to work harder."

Maria had to fight for her return back into IT. Her hiccup in the road could have led to the end of her career in this field. With a degree, she started over, working her way back up from retail, despite her prior experience, to programming. Martha had to prove to the toxic male students in college that she was not a problem, but rather a solution. She noted having to prove

her abilities throughout college. She had to fight against the preconceived notions and biases her peers had about women in IT by being strong in her skillset. Mikasa also was the only woman in cyber in her graduating class, showing her ability to fight with limited resources and see her journey to completion.

The women noted having to work harder to obtain a fair grade. They pushed back with male professors who held them to higher grading standards than their male counterparts. The women noted having to have an ally, someone to vouch for them, at all times, despite their contributions towards an IT solution. They also noted having to address supervisors for promotions and pay, methods they never noticed their male peers having to do.

***Property 2: Must be Expert at All Times, Owning Your Craft.*** Camela gave the advice to “know your niche” and to “know your gift.” She may have had to overcome challenges to achieve proficiency in her craft, but she saw the importance, as a woman, of knowing what she was talking about.

Chloe noted persistence in obtaining knowledge. She reflected on being able to “run circles” around colleagues and coworkers above her, and that sometimes tenure versus tenacity was rewarded. She reflected on having to work harder than her male counterparts to prove herself. But she also recognized women’s ability to be organized and bring a unique skillset to the table.

Luisa noted having to “work harder” in her career, and training others for promotion roles she was not considered for. Maria used extra time to study and hone her craft in high school. She advised that knowing your craft provided an authenticity that others see. She also noted having to be “10 times more prepared.” Martha noted having to prove herself in her PhD program. She did give the advice that “hard work pays off.” Mikasa noted that women look at job descriptions and

may have 80% of the skills listed, but do not apply for the role, whereas males may only have 20% of the skills for the role, but they apply and end up getting the job.

These women noted having to know their craft inside and out. They noted being “10 times more prepared.” They did not feel they had the safety to make mistakes or fail, meaning they had to be more prepared before contributing or speaking. This provided a sense of caution in their interactions.

Through steadfast persistence, these women continued to considerably make their expertise known. They worked harder than male peers and did not accept being without a voice, yet humbly found theirs by gaining the respect of their peers. They pushed back to prove their value and have a seat at the table by showing up more prepared and willing to lead the charge, accepting that that meant sometimes they worked harder for the same or lesser roles and pay.

### ***Theme 2: Tactical and Tenacious Strategists***

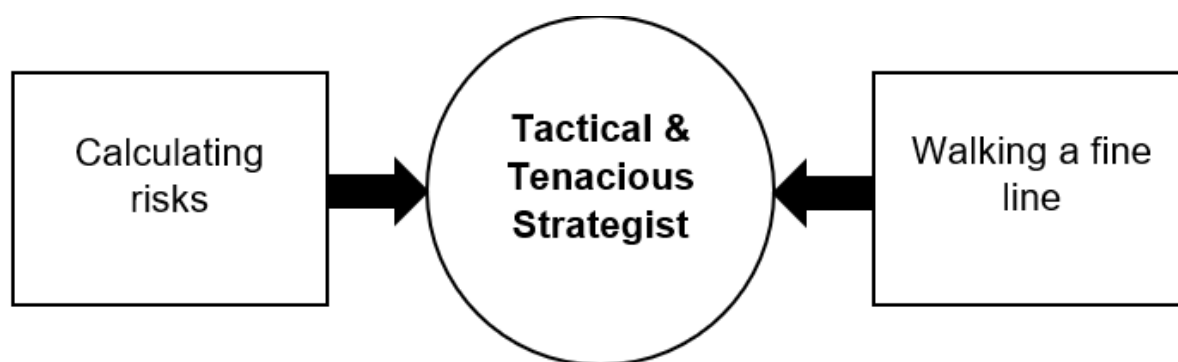
All of the women recognized the disparity between the abilities of their male counterparts and theirs, measured against the roles achieved. However, many used that as a battle cry to hone their skills and achieve better results and advancement. They noted having to operate with a level of certainty that surpassed their male coworkers. In their professional and home lives they had to walk a fine line in balancing perceptions and roles. Unfortunately, this was not always the result, and many women felt like giving up, as they did at times. This likely contributed to the low representation seen in their demographics in IT. There were two categories leading to this theme of being a Tactical and Tenacious Strategist: calculating risks, and walking a fine line (Figure 6).

**Category 1: Calculating Risks.** These women must calculate the risks of saying what they know to be true, and the results of that truth against the outcome of others’ perception of them. They emphasized having to operate with a level of certainty that surpassed their male

coworkers in order to be heard and never to be remembered as not being knowledgeable. The women developed their collaboration skills by learning to be heard without speaking, and by motivating teams after assessing and reassessing the environment and the audience's perception of them. The Calculating Risks category comprised two properties: assess and reassess the environment, and honing collaboration skills by knowing when to speak and how to be heard without speaking (Figure 7).

**Figure 6**

*Tactical and Tenacious Strategists*



***Property 1: Assess and Reassess the Environment.*** Camela emphasized knowing the audience. She assessed not only the audience before she spoke, but her choices in career. Years before, she always had to assess and reassess career choices, with children at home and throughout their college years. Now as an empty nester, her assessment of the environment looks somewhat different. She can trade time off for a supportive environment that values her, both in skillset and pay, which she feels she has found at her current role.

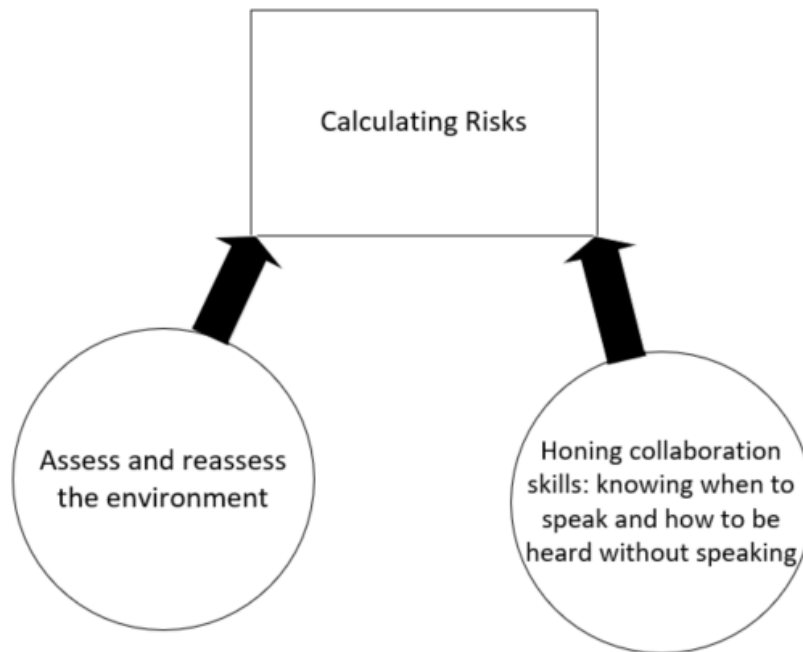
Hernandez reflected on assessing her environment and making choices by being a “calculated risk taker,” which attributed to her “longevity” in this environment. This allowed her to assess different roles, companies, and audiences, knowing when and how she would speak up. She also strategized during her earlier years in careers as she traversed between different start-

ups, developing her ability to continue employment. What provided her “longevity” in this environment was she took risks, but they were calculated risks.

I . . . didn’t go on vacation very often because I wanted to have a payout whenever the company collapsed. Knowing that the sign-on bonus is a trap, so don’t cash it until you’re sure. Lots of defense mechanisms.

**Figure 7**

*Calculating Risks*



Luisa recognized the risks of speaking out directly and identified strategic ways to fix software issues through male peers.

But that guy [manager] was horrible with women. Horrible. Like, every time I had an idea, or I found a bug, or I found anything, I had to go to one of my male friends and be, This is happening. It’s just happening. Do you see this thing here? And my friends would be, Yeah, yeah, I would go and tell him [manager] and he will not listen to me. I will have to grab my friend. This was literal. And be, Tell him. And then he would listen.

When asked if she felt she could be herself, Maria responded by having to assess who she was around and the environment. She noted having to be “10 times more prepared” when she spoke, knowing she may only get one chance to be heard. Chloe and Mikasa assessed being

around a predominantly male environment and knowing how to leverage that. Mikasa advised that knowing your audience was key.

Stakes were higher for these women, as they felt judged more harshly than their coworkers, so every interaction had to be calculated. They did feel comfortable bringing their full self to work but constantly assessed the environment before speaking, not knowing how far up the chain these interactions would go.

***Property 2: Honing Collaboration Skills: Knowing When to Speak and How to be Heard Without Speaking.*** Camela assessed the situation and strategically noted her concern with the direction her team was going, without stifling collaboration. She assessed the situation and implemented the appropriate approach. She navigated through being carefully noted about her objection yet still being supportive. However, if the direction of her team was not fruitful, she carefully assessed the timing by reminding them of her objection so she could be heard the next time. Camela gave the advice to remember to fit in. This created a connection with coworkers.

Hernandez noted of the Latina leaders in her organization: “Only two are visible. I think there’s something about them that’s also [wanting to fit] in, [to a] more acceptable point,” which left her guarding her true self, as she said that “tech companies want to say, bring your whole self to work. Oh, that’s such bulls@\*t. [I] have to hold back and not be [my]self.”

Luisa would share issues with the program with male coworkers so they could tell her boss and the bug or fix be addressed.

Maria advised to be

prepared when you say something, make sure it is factual and own the reactions to your words; also be prepared for a version of Say it with confidence, so it is clear you are giving directions and not asking a question.

She said she must read the room and be careful when she spoke.

Mikasa has been able to draw from her past experience working with remote teams to be successful working with virtual teams during the pandemic. She has increased productivity and quality in her projects, which has been noticed by leadership. Her productivity with teams has allowed her to be seen, without her having to vocalize her accomplishments.

Many of the women garnered support through their expertise and humility. They worked around periods of being ostracized on the team due to someone's insecurity around their expertise by teaching or helping team members outside the routine nine to five. Collaboration was developed in in the most unorthodox way, ensuring the mission moved forward.

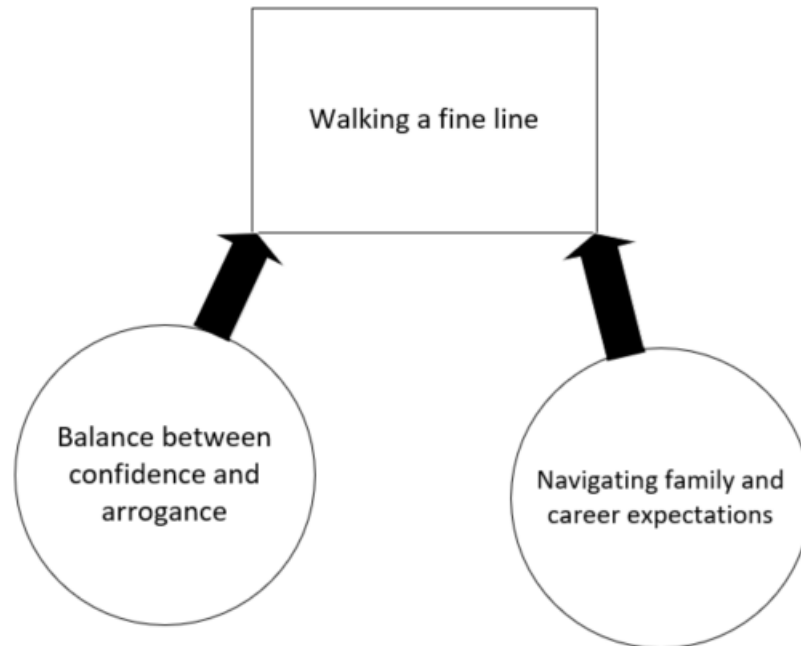
Many of the women calculated job changes, salaries, and interactions to ensure stability and leave were adequate to accommodate the cultural expectations of their gender.

**Category 2: Walking a Fine Line.** These women are strategic and have learned different methods to be heard without speaking. However, they must be careful in their interactions. If they are too confident, they are perceived as arrogant. An additional layer of complication added to this line is the balance of family and career expectations. Many noted having to be present for their family while finding other ways to be accepted by peers outside the “happy hour” crowd. This led to two properties in the Walking a Fine Line Category: balancing between confidence and arrogance, and navigating family and career expectations (Figure 8).

***Property 1: Balancing Between Confidence and Arrogance.*** Camela provided the advice to know one's worth without being conceited. She also reflected on a negative interpretation of her being knowledgeable about her craft and wanting to help her team.

As a Latina, “so much is showing and sharing. She [Boss] did not understand as a minority; doesn't mean she [Camela] was equal.”



**Figure 8***Walking a Fine Line*

Camela interpreted this as her manager being intimidated by her knowledge. The outcome was Camela being ostracized from the team and from projects. While noting her objections, Camela learned to navigate this through positive reinforcement with her team. She was aware of other perceptions of her: If she was “too aggressive, people take that the wrong way. If [was] is quiet, she [was] not agreeing.” Camela suggested that people “know and trust yourself.” This was an example of one participant building their confidence.

Hernandez advised that “taking feedback, then being overly submissive, implies incompetence.”

Maria recalled a time when she was advising on something and it was perceived as a question. She had to endure someone showing her how to do a screen shot from her phone. She now ensures her tone is clear so that she can be perceived with confidence.

Mikasa recommended that individuals know the culture of their team, saying that there is a “fine line between harassment and boys being boys. Be genuine to yourself. You should be able to do a really good job in your own skin.” She balanced the fine line between acceptance and authenticity.

These women had to constantly consider how they spoke. It was a tension created while they were garnering respect and confidence in their abilities, as they were often overlooked and underestimated and, when they asserted themselves, appearing arrogant. This provided an additional filter and complications in their interactions.

***Property 2: Navigating Family and Career Expectations.*** Participants noted having to navigate between not participating in work social events, like happy hour, and spending more time at home, yet still fitting in with the team. Camela reflected on having to stay longer than she would have liked in certain roles because she had to weigh salary versus paid leave:

It is easier for males to bounce around. I was trying to build Paid Time Off (PTO) with little kids and have time off with them. I had to be okay with losing out on income; keeps you from doing it [changing jobs].

Being the primary caregiver, Camela desired the flexibility of taking time off to deal with sick children, and the paid leave to support that need. She also commented on having to navigate a young family during her final years in college. Because of having to navigate both family and career, she even had to endure a dispiriting manager, as she had kids in college. Fortunately, this boss left, and she was in a better place.

Chloe noted that roles in IT were more flexible than those of a doctor:

There's [a] certain prestige with a lawyer and a doctor. And really, the golden egg is . . . programming . . . because it provides flexibility, provides financial stability. And it's better for work life balance. But people just don't know it; again, with TV and movies, [people] see these certain characters and what they're doing, and they just don't understand.

When asked about work life balance at Big Tech, Chloe noted having a flexible environment in IT and analyst roles. However, in customer-facing roles she had to be work all the time. Prior to the pandemic, she did note having more free time but now a schedule with blurred lines between work and home was the new norm and more challenging:

I think if things were normal, I would feel more balanced right now. I feel like I'm living at work. Because we've got the kids home. I just feel like I don't get any time to shower and sleep . . . But on a regular basis, outside of COVID, if we were back in the office, it's easy to keep that work life balance. We do a lot of stuff at work, and we're able to leave it there . . . I take some things that I have pending or on hold home with me in my mind and I'm, Okay, you know, What didn't I look at, or there's something else I can pivot to . . . and it's kind of like working out a problem in your head and you realize . . . But my manager is super supportive of our decision to keep the kids home; he understands life can throw a lot of different things at you and family comes first. So, they've been super great. The business is definitely supportive of everything we need to do. But, at the same time, they're just, Get your stuff done, and you're good; just show us that you're able to work and do your job. And we're okay with that.

Chloe still persevered and continued to reach back towards others while honing her craft.

Luisa's family also placed a higher prestige on being a doctor or lawyer. If she was not going to go with the cultural and social norms of being a teacher, then why not achieve a degree with higher prestige. They did not understand what a role in IT meant or the financial stability it brought.

Maria had to navigate her aspirations of obtaining a degree and career in IT against the cultural expectations of being a mom. After the pandemic, Maria had to navigate her workload with managing a crying baby. Before COVID, her life seemed more balanced. Now everything was intertwined, creating some hardships and additional stress.

When interviewing for an IT position, Mikasa asked up front if the position provided flexibility so she could determine how that would fit into her family life. Mikasa also noted that her parents did not understand careers outside a lawyer or a doctor. The prestige of doctors and lawyers, and the lack of prestige in IT, was noted by three of the participants.

The additional layers of complication added by being in an unwelcoming environment was further increased by the cultural and gender expectations of being the primary caregiver. Being a parent and primary caregiver meant figuring out how to be considered part of the team while forgoing the happy hours that most other team members attended.

These women tactically and tenaciously strategized achieving work expectations, navigating culture, working through difficult times of collaboration, and communicating their capabilities, all while not seeming arrogant. They achieved this by assessing and reassessing the environment and working within the constraints of family and career expectations.

### ***Theme 3: Resourceful, Innovative, Self-Advocates***

Almost all of the women noted having minimal resources when pursuing and entering the IT industry. Several participants came from very meager means that did not convey the expectations of a degree. Without strong representation, they learned to be resourceful in charting their course. These women faced many changes and challenges throughout their lives into adulthood, which facilitated them learning to adapt quickly. There were two categories leading to this theme of being Resourceful, Innovative, Self-Advocates: learning to forge one's own path, and fast adapting to new environments (Figure 9).

**Figure 9**

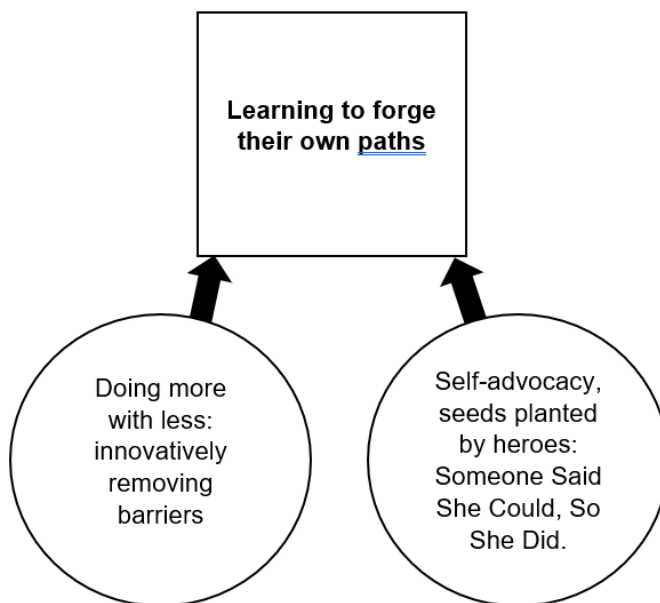
*Resourceful, Innovative, Self-Advocates*



Category 1: Learning to Forge **Their Own Paths**. Many of the participants noted lack of family support and understanding in their career choices. This led to them having to forge their own path if they were going to pursue a career in an industry where they were underrepresented and underserved. The Learning to Forge Their Own Paths category comprised two properties: do more with less, innovatively removing barriers; and self-advocacy seeds planted by heroes: Someone Said She Could, So She Did (Figure 10).

**Figure 10**

*Learning to Forge One's Own Paths*



**Property 1: Do More With Less, Innovatively Removing Barriers.** Camela's family did not have the means to fund her degree, much less encourage it. The high school she went to also lacked funding for STEM programs. However, once her teachers saw her potential and introduced her to programming, she knew that she would never stray from that. She took a bus and endured long school days to increase her skills.

So, while we had computer classes, and we had electives that year . . . we didn't always have all the funds, so that I took a computer math class, and I took a programming 101 type class in high school. . While I was in high school, because of that program I did in the eighth grade . . . I attended community college, my freshman year, half a day. So, I went half a day to regular high school, and then they bused 10 of us over to the local community college. And we took math, logic, science, and a computer class there. So, we were taking actual college courses. Now you do dual credit in high school, but that was my dual credit; I had to go to the community college to get it done. And so that was definitely a motivator into the fact that I could do it.

Camela figured out on her own how to finance her dream and hone her skill with a small family.

This was also true of Chloe, who balanced an internship, education, and supporting her family business. She had to keep up with a rigorous program. However, she learned early on from her father the value and expectations of working hard:

Seeing him work so hard to provide for the family really made me want to do that. Everything that I did, I knew I had to really work at it to get things and I didn't ever take anything for granted, or felt like I deserved things. I knew I needed to work for them. So, it was good for me to see that hustle.

Without the community she desired, Chloe developed a smaller, more trusted source of community:

I don't have it in my current workplace. But one of my colleagues from Big Tech, I still talk to, pretty much on a daily basis. It's good, because, he's one of my mentors. And he's also a really good friend. But yeah, it kind of sucks not having that internal.

Despite lack of motivators in her program, she found a way to balance it all and obtain a degree.

Luisa also noted not feeling embraced by other women in her industry, making it harder for her:

I know a bunch of women that are super comfortable in the engineer stereotypical engineering environment. But I'm not . . . I love my big hair, and I love huge earrings, and I love colorful clothes and stuff like that. And it's been really, really, really hard to make my way in at Big Tech.

Luisa also did not have the financial means to obtain her degree, yet by leveraging family resources and programs was able to go off to school and obtain a degree in IT. This ability to

forge resources continued when she was applying for a job with Big Tech. She helped to form a study group to prepare for the interview and ended up being the last one in the group to obtain a job the first round. “By that time, of the five people that were interviewing at Big Tech, I was the only one still. The rest of them . . . didn't make it that time.”

Aside from the ability to find resources, she herself has become a resource:

So everyone has to find our way to go within Big Tech. I have been always vocal about diversity and inclusion, and I've been working with women and Latinos to bring more women and Latinas to this industry. And I will tell you why, in spite of my horrible experience, I'm giving talks and speaking to people. I'm trying to teach people how to use tools and how to get into and excel in technology, and I decide to become a developer advocate.

Martha and Mikasa came from single family households. They had few resources and little encouragement towards getting a degree, much less one in IT. Mikasa's high school was one that was considered a Title I school, which receives government funding due to the poverty levels of the student population. Yet once she became determined, she was able to find programs at the local university to obtain her degree in cyber security.

These women did not have the luxury of college funds, or supportive parents, peers, or colleagues. They learned to achieve their goals without the basic resources that other peers had, yet they were flourishing in their careers.

***Property 2: Self Advocacy, Seeds Planted by Heroes: Someone Said She Could, So She Did.*** The participants had a little encouragement along the way. In some scenarios it may have only been one moment where a teacher or professor recognized their potential, and that served as the catalyst for them to pursue this career. Camela had a middle school teacher, and later two high school teachers, who recognized her potential:

I was in eighth grade in middle school. And I have always been a part of the honors; they didn't call it [that] back then; it was just honors classes back then. Or at least not in my district, they didn't. But I was a part of the Honors Program and my math teacher,

because I was so strong in math, he definitely encouraged me. It was very encouraging to those of us who were on the higher end to participate in a summer program where we went Monday nights to Local Air Force Base where we got an A. I think it was like 6 weeks and we got a little class on programming. And so, it was in the eighth grade that I was, this is what I want to do. And I stuck to that . . . IT was where I wanted to be.

My computer teacher . . . was a great source resource. And a good tool for me to turn to, if you will; [but] I wouldn't necessarily call him even a role model or mentor. Who I would say was a great role model was my English teacher, my freshman, sophomore English teacher, who I still happened to be in contact with to this day. So she was definitely, You can, you know, don't give up, you can do it. She was great. And I said, oddly enough, it was my English teacher. My least favorite subject.

During college, Camela faced several challenges, one being a course during her program that left her questioning her ability. Again, an educator, this time a professor, planted the seed that she could do this:

So, I took this computer class, and I just bombed; it was the hardest teacher I could have ever asked for. And I literally made my first F in my entire life . . . in college. And so, I [was] really bummed; that really just screwed up my GPA, for one, but I had to retake his class and in retaking his class, I was only doing a D; I was not doing any better. And I sometimes I felt like the D was being a gift from him, he was giving me a gift. But I this is what I told my kids when they were going off to school . . . I shared with them this story . . . because halfway through, I started going to his office. So, I think he was probably a good motivator, as far as encouraging me not to give up. But I was being the discouragement to myself, right? Because I was, Maybe I'm not cut out for this, maybe this is not what I was meant to do, you know, and he [professor] just really was very much, So don't give up, you'll get it, it'll just all of a sudden, the light bulb will go on. And it'll make sense here because you can talk about it all day. We've been in this office every day for the last 3 months; you got this, you know; so I ended up with a C [in the class] class. But it was a pass. I had him probably for a total of four different classes. All of the other classes I was fine in; for some reason it was that class, and I will admit networking is still not my favorite.

This was enough for her to pursue and complete her degree, even under the most difficult of circumstances.

Chloe recalled initially struggling in school but that later, how concepts in college finally came together, giving her the confidence that this was something she could achieve:

I saw some of my friends that had come from different schools, struggled a little bit with new ideas. And all of a sudden, I was, Hey, I learned that in fifth grade, I remember that.



And it was just so common for us to do it in private school. And it just came a lot easier for me. And I saw that even more in college with other students that struggled with things that I had learned a long time ago.

In addition to gaining self-confidence in college, Chloe was given an opportunity in a more technical role by managers who recognized her skillset in IT:

Some managers had reached out to me and they wanted to mentor me, because they kind of saw this strategic thinking coming into my strengths, my big strength. So, they wanted me to apply for a business analyst position.

Her manager was the first to help her recognize her potential and unique strengths in IT:

It was harder for me to see things about myself. And I think them pointing it out and saying, You do have these strengths, you do have these talents, let's use them, and helping direct me. And after that, I was able to start pushing myself and motivating myself.

Chloe recognized that it was harder for her to see her strengths and talents until somebody pointed them out. She had overcome feelings of imposter syndrome and self-doubt to be her own advocate and have a can-do attitude. This step evolved to helping her realize and grow her abilities:

And I had worked with Big Tech databases so much that I kind of interpreted it like, Okay, if I can rebuild this report in a database that looks like it does in Big Tech Program, then that'll be practice. So, I just started doing that. And then, all of a sudden it clicked. And I was, Okay, this this is good. And it just turned into a bigger role than I ever anticipated. And I became more technical than I ever thought I was going to be; especially not having that drive in school to do anything computer related, to be technical, but other strengths, like strategy, like critical thinking, like organizing, all of a sudden led me into another technical path that I hadn't even considered.

She now had permission and was recognized as having this skill, before she even owned it.

Hernandez had both parents support her decision to go into IT. This was enough to sustain her through droughts of encouragement throughout college and later life in IT, with her path peppered with discouragers.

Luisa had a cousin who encouraged her to pursue a degree in IT, and a professor who recognized her potential. Despite many telling her she did not belong, once she recognized her own potential, she was unrelenting in her pursuit of a career in IT.

Maria's father was the first to help her realize her potential in STEM. Despite being called out for being the only girl in the program, she knew she belonged. The seeds planted by her father weathered the scarcity of encouragement that came in college. Martha's father also was the catalyst for her going into computer science. Despite her losing him at age 13, his influence sustained her through a toxic environment in her early college years.

Mikasa had two science teachers who helped to spark her interest in STEM. Living in a single parent household, she gathered the resources to finish her degree in cybersecurity.

These women had to advocate for themselves in most cases to attend college. They had to be their own advocates for grades and pay in college and in their careers, respectively. Initially it was one interaction that served as the catalyst to make it possible for them to bloom, even with minimal resources.

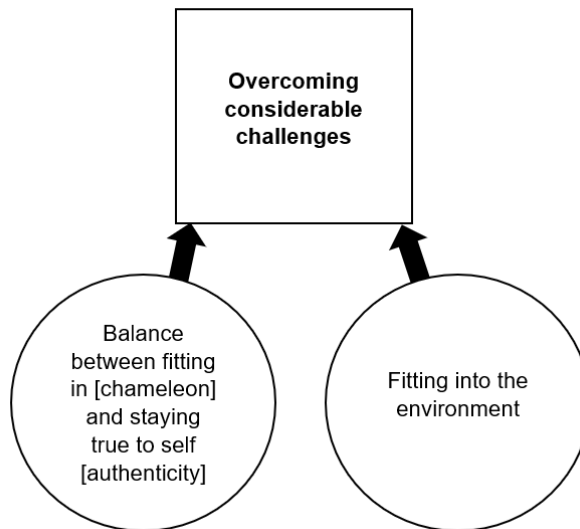
These women endured family resistance and dealt with low representation in both their educations and professions. Without representation of themselves in college and career, these women forged their own paths, cultivating their own resources. They became innovative in how they accomplished goals, finding resources outside their environment or becoming their own resource.

**Category 2: Fast Adapting to New Environments.** Several of the women noted having moved around during their younger years. Many had to navigate between fitting in and being themselves. They learned how to make fast friends and be accepted in an environment that was highly unwelcoming towards their demographics. The Fast Adapting to New Environments

category comprised two properties: balance between fitting in (chameleon) and staying true to self (authenticity), and fitting in an unwelcoming environment (Figure 11).

**Figure 11**

*Fast Adapting to New Environments*



***Property 1: Balance Between Fitting In (Chameleon) and Staying True to Self***

**(Authenticity).** Latinas are like chameleons. They must be who is around them and listen before saying anything. They analyze the room before speaking. This is out of calculation, not intimidation.

Maria said that, before she speaks, she has to “know who is around, has to listen, need to know who is in that room, want to know how high up this is going.”

Camela commented on having to fit in. She navigated between team acceptance and being true to herself. She gauged her audience and how she was perceived to determine how much of herself could be transparent.

Chloe honed her ability to adapt in college after recognizing she overcome difficult concepts that others struggled with. “But once I saw that . . . this education really did give me a

leg up. I felt like I could adapt a lot better in in high school and college.” This gave her the understanding she could adapt, well prior to her career starting. The ability to adapt has allowed her to thrive, from being one of three women in the cyber department to now being the only woman in her company. She has learned her value in the organization, as not only knowing cyber but one who can organize and “run” things. She reflected on capitalizing on the uniqueness that women bring to IT.

Hernandez’s father was in the military, and so moved often throughout her early academic years. She adapted to places from Germany to New York, navigating various cultures. However, she learned to focus on the constants in her life and create communities quickly:

So, moving all the time, lived abroad, even went to a German kindergarten for a period of time. Was already getting involved in computers, but the consistent things were playing sports, dancing, and playing with computers; and moving all the time. So always make friends. Just knowing that I was always going to be kind of [person] just learning very quickly to survive again, make friends fast.

This ability to adapt has helped her in adapting throughout the different companies in her career. She noted having issues with male counterparts: “When you push forward, always a guy trying to pull you back. Silicon Valley does not treat women over 35 well. Does not fit in white suburbia, can be there long enough to get by.” She described herself as being “scrappy.”

Martha found herself moving after the death of her father, and again for college. She learned to construct her own community within her new environments, and how to segment peers and coworkers so that she had outlets for frustration that did not bleed into those she leads. It provided a sense of authenticity for her.

Mikasa’s family moved around, so she attended multiple schools during this time. This might have contributed to her ability to make fast friends and assess her environment quickly to adjust.

Several of the participants noted moving often and learning to adapt quickly. This skill allowed them to recalibrate achieving tasks when resources were limited or obsolete. With lack of representation, they adapted to an environment without the luxury of having someone of their demographic to lean on or to learn from as they honed their own skills.

***Property 2: Fitting into the Environment.*** Many of the participants had to have a chameleon-like ability to learn how to be known and to fit in within their surroundings. Camela noted learning sports and being able to relate to her predominately male working environment, being one of two Latinas in her graduating class with a degree in IT. Her daughter is currently the only woman on her team.

Chloe noted utilizing her uniqueness as a strength to fill a gap that currently at her company only her skillset filled. She was resourceful:

I'm the oddball out. So, I bring a lot of value and strengths to our operations . . . I'm in meetings when I'm the only girl. I'm running things and they . . . go to me for things. I think they see how organized I am. And so, I don't see it in a bad way at all.

Hernandez reflected on being used to being the only women in her environment, and adapting. She also noted being the only Latina in her class:

"Out of 100 plus computer engineering majors, there were four women in 97; in our graduating class, there were only two women. I think that I knew it was going to be all men. I was used to dealing with only men. I had been doing sports for so long and played in men's leagues. I was just used to competing with men.

Luisa, who has never really felt she fit in at her current role, has learned to use her voice and be accepted and recognized for her ability to be the voice of the marginalized. She has leveraged resources to be a part of the solution by writing a paper to her employer about the disconnect between what the organization's objectives were for diversity to what was actually happening. She adapted in her new role and found her voice while remaining true to herself.

Maria noted being somewhat of a tomboy, which likely afforded her some acceptance with her male colleagues. Maria considered herself as not girly, and having similar interests as her male coworkers. Her hands-on approach and ability to work alongside her team has provided her with the authenticity and acceptance needed to excel in her role.

Several of the participants noted being used to being around males and having to compete on their terms. They learned to convey their differences as an asset, such as being structured, taking notes, being analytical, and multi-tasking.

The women noted honing their craft often afterhours and becoming more technical by challenging themselves. They quickly fit in by finding similar interests. However, this was accomplished by not being too girly in this environment, guarding their true self to fit in, and avoiding harsh criticism and still being authentic.

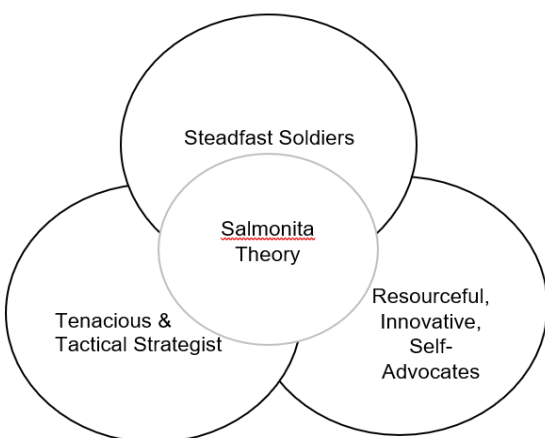
## **Summary**

Ultimately, the final outcome of the data emerged from the themes reflected in Figure 11. These themes merged into what I call the Salmonita theory. Kelt salmon are Atlantic salmon who have already spawned and are recovering before they migrate back out to sea. Unlike Pacific salmon, Atlantic salmon do not all die after spawning. Kelt salmon have a 30% survival rate and are approximately 5 to 10% female. This corresponds to these participants, who charted unknown territory fighting a battle upstream to realize their dream of a career in IT, even though the field was different from others in their family. Most have learned to survive with few to no resources, little encouragement and against a current of discouragement. This Salmonita theory describes their journey of swimming upstream, without the influence and resources that their male counterparts, or women of other cultures, have the luxury of partaking in. They learned to promote their skills and be their own advocate while strategically being heard and not being

considered arrogant. All of these individuals started their academic programs where there was a very low representation of women, and some with no Latinas in their programs. This low representation continues to exist. In many cases, participants were the only women to graduate their program with a degree in IT. They achieved self-actualization with minimal resources, lots of self-reliance, and learning to be their own advocates. They were steadfast soldiers, tactical and tenacious strategists, and resourceful, innovative, self-advocates. The three themes that emerged and converged formed the Salmonita theory (Figure 12).

**Figure 12**

*Salmonita Theory*



Steadfast Soldiers comprised two categories: overcoming considerable challenges and the battle to prove worth. Participants overcame considerable challenges to realize their dreams and goals. They learned and continued to rise above obstacles, such as being 9 months pregnant and barely able to fit into a desk while finishing their degree, a pandemic with daycares closed, and balancing crying baby and projects. They had to overcome discouragers along the way, which sometimes led to self-doubt. These women were unwelcomed by male peers and professors in college, telling them to quit and that they did not belong, and being ignored in group projects.

They suffered loss of family members and mistreatment by bosses, in some cases by family. Despite the environment and oppression, they rose above these challenges. But the challenges did not stop there. They had to fight harder than their male counterparts to prove their worth and value in order to earn a seat at the table. This led to them needing to be overprepared while being under paid in comparison to their male coworkers. Being twice as knowledgeable as their peers in the industry was not sufficient: they had to be 10 times as prepared and to know their craft beyond doubt, just to be slightly heard.

The need to be tactical, tenacious, and strategic stemmed from realizing that there were preconceived notions about them, coupled with the role expectations imposed by family and society. The Tactical and Tenacious Strategist theme comprised two categories: calculating risks and walking a fine line. These women had to assess and reassess the room and operate at a level above certainty before they spoke. They were perceived as problematic and unknowledgeable before they said a word. They all noted having to know and assess their audience. This assessment determined when and how they would speak. Often, if they felt they would not be heard, they leaned on male coworkers to voice operational concerns. Their concern was more about the quality of a project and less about receiving credit for their skills. Many participants noted they had to be very careful in what they said and how they said it. Too confident, and they would be perceived as arrogant. Not confident enough, and they would be perceived as uncertain and ignorant. As wives and mothers, many took the lead in the operation of their households. This created a constraint in their career opportunities, as their working roles had to provide flexibility and they chose paid leave in lieu of pay and advancement. They also had to find a way to connect with their co-workers in forms other than happy hours and outside work events.



Resourceful, Innovative, Self-Advocates comprised two categories: learning to forge their own paths and fast adapting to new environments. Many of the women did not have the financial resources to support their college aspirations, so they looked into internships and local programs. Some did not have parents with a college education, leaving them to fend for themselves in terms of securing finances and counseling towards a degree. They learned to do more with less by finding ways to study after hours, create networks, and utilize programs for recruiting and interviews. Many commented on how they had to learn to be their own advocate. However, this seemed to occur mostly after someone pointed out their abilities and skills to them. It was as a seed planted that was rarely watered, yet still flourished despite the harsh climate. Yet once someone, even if it was a single teacher, directed them towards their abilities, they were steadfast in achieving their goals. Many of the women had moved often early in their lives and had learned to adapt to different environments. In some cases, moves were so often they had to adapt quickly and learn how to make friends fast. This, coupled with being lowly represented in college, prepared them for the lack of demographics in their career. They learned to fit in by honing their skills and being hands on, which allowed them to retain their authenticity.

I called this theory Salmonita theory. Just like the salmon that fight upstream to lay their eggs, these women fought uphill battles to realize their dreams. The journey was not easy, but all were confident in their outcome. While the challenges they faced might have been slightly different, the lack of support and encouragement, and the low representation of their demographic, was similar throughout this study.

Almost all the women noted money and the misconception of what a career in IT looked like as being underlying factors for their low representation in this industry. Cultural norms of

marianismo played a part in their career paths and in navigating family. They strategically navigated their words, when and how to speak. Their true self was displayed to an extent for authenticity, yet guarded at times. LatCrit provides the cultural perspective of the need for Latinas to have community and connection, as when Martha built a community away from home, while Luisa noted not being able to speak Spanish. Hernandez reflected on just now feeling able to feel comfortable sharing her culture. The interesting outcome of this research was how these women navigated Bandura's (1994) self-efficacy matrix. These women have seemed to reach self-efficacy, despite the lack of positive performance outcomes and verbal persuasion throughout college and career. This further supported the concept of their resilience, strength, and self-efficacy.

## Chapter 5: Summary and Discussion

The findings were reviewed against the theories briefly addressed in Chapter 2: Conceptual Framework, with additional theories identified throughout the process of formalizing themes. This helped to assess the variation in factors as viewed through the perspectives of Latinas. While the theories apply to many demographics, Chicana Feminist Epistemology, in conjunction with the findings of this study, provided the nuances in motivators and discouragers as experienced by the participants, Latinas. The theories considered within the themes are briefly described to provide context and establish the relationship between each theory and emerging theme. The research questions outlined in this study were to provide motivators and barriers for Latinas working in IT. Through synthesis of theories and data analysis from interviews the conclusions to the research questions were achieved.

### **Question 1. What Assets and Liabilities do Latinas Bring with Them That Promote or Constrain Their Ability to Accelerate Their Careers in IT?**

All of the participants obtained their degrees and advancement in demographics with low representation creating a self-driven environment. This allowed them to rise up as their own advocate while navigating as a chameleon through a male dominated industry which also included low representation for them. Many women noted having to work harder than their male counterparts to be noticed or get promoted which speaks to their perseverance. Self and others are noted as constraints and discouragers.

Sub Question 1a: What understandings do Latinas in IT careers have that enable or restrain their advancement? Almost all the women were involved in mentorships, female IT groups, and organizational leadership programs. All participants noted positive benefits from this participation. Many gained valuable insight from these programs, being mentored and mentoring. Almost all the women noted working through imposter syndrome. They experienced

overwhelming obstacles, the largest being self-doubt. However, this was overcome by just a single encourager pushing these women towards believing they could succeed.

One theme that supported these findings was tactical and tenacious strategists. The participants determined early their strategic position, balancing culture and capabilities. They were innovative in how they interacted with their peers, and constrained in their leadership. While they accomplished organizational objectives similar to their male counterparts, despite constraints they learned to lead from behind, strategizing mission accomplishment.

I present theories in conjunction with findings and data for this question.

### ***Tactical and Tenacious Strategists***

***Corporate Strategy Model.*** Strategy has multiple variances and definitions. I choose Grant's (2010) definition to review and compare findings against Latina's perceptions. According to Grant, strategy is the means by which individuals or organizations achieve their objectives.

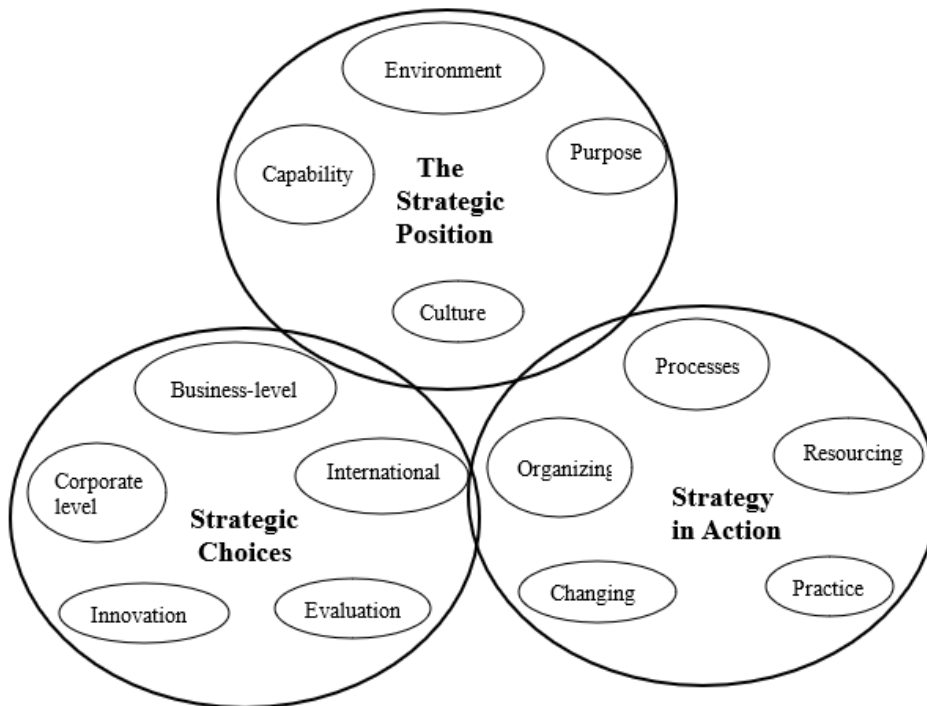
M. L. R. Smith, known as the professor of strategic theory, has established several elements that were developed based off the concept of the military decision-making process (Smith & Stone, 2011). These elements have created a model for strategic decision making in various environments and are applicable any time the need for decision making, with positive and adverse consequences, exists. Despite lacking formal or military training during the time of making their decision to go into IT, these Latinas developed strategic thinking skills that aided their ability to navigate and succeed in an unfriendly environment. Faced with adversaries and discouragers, they considered their options and determined the best decision in order to "produce the 'correct' or maximum outcome for the actor" (Smith & Stone, 2011). This subliminal

undertone of how to strategically navigate expectation was evident in participants, despite their having a supportive partner or parent at times.

An additional consideration of strategy for corporations is the Corporate Strategy model developed by Whittington et al. (2020). This model introduces the elements of strategic position, strategic choices, and strategy in action. Influenced by several leading strategy theorists, such as Michael Porter, Alfred Chandler, Henry Mintzberg, and Peter Drucker, the three strategic elements encase the framework of the Corporate Strategy Model. Figure 13 provides a visual of the corresponding factors to the three elements that are fundamental to the model.

**Figure 13**

*Corporate Strategy Model*



Tenets of this theory as it pertains to corporate strategy are as follows: culture and environment enveloped in strategic position, innovation from strategic choices, and resources from strategy in action. To expand the culture, position, resources, innovation, and thereby capabilities and strategy of an organization, companies would benefit from increasing and developing diversity within their ecosystem. By inviting Latinas to the table, the methods, resources, and innovation they have cultivated to succeed in what can be considered a hostile and volatile market can be harnessed and utilized by organizations to further adapt to future and current trends, making them more sustainable in dynamic and unhospitable environments.

These Latinas chose similar approaches to achieving success in an unwelcoming field. They developed an understanding of the environment, learned when and how to engage their audience, and calculated how to engage their teams to provide memorable interactions. Latinas developed solutions to issues, with minimal resources and adapting to various environments. These women not only strategized interactions but developed a methodology for meeting family expectations while advancing their career. They maneuvered adherence to culture and career requirements, navigating within the confines of family beliefs, through strategy, determination, and innovation.

***Greene's Resilience Theory.*** The concepts that are considered resilience in Greene's (2002) resilience theory is outlined below:

- is a biopsychosocial and spiritual phenomenon
- involves transactional dynamic process of person-environment exchanges
- encompasses an adaptational process of goodness-of-fit
- occurs across the life course with individuals, families, and communities experiencing unique paths of development

- is linked to life stress and people's unique coping capacity
- involves competences in daily functioning
- may be on a continuum-a polar opposite to risk
- may be interactive, having an effect in combination with risk factors
- is enhanced through connection or relatedness with others
- is influenced by diversity including ethnicity, race, gender, age, sexual orientations, economic status, religious affiliation, and physical and mental ability
- is expressed and affected by multilevel attachments, both distal and proximal, including family, school, peers, neighborhood, community, and society; consequently, resilience is a function of micro-, exo-, mezzo-, and macro factors
- is affected by the availability of environmental resources
- is influenced by power differentials.

The definition of resilience being affected by the availability of environmental resources can be considered in a new manner. Latinas created a new dynamic to this perspective, as they found resources outside their environment. Despite not having the same access to support as their male counterparts, these women forged their own way in unwelcoming environments, developing the resources they needed, education, community, and strategic communication, often through friendly male peers. They learned to survive, being one of two or the only women in the room. They not only adapted to the family and career expectations of a Latina in IT, but they did so by developing methods for survival in harsh environments.

All participants had to overcome challenges such as negative professors, financial difficulties, family expectations, unwelcoming peers, and lack of support by partner or parents.

Many of the participants noted having to work harder for their grades and to prove their worth. This battle did not stop in the academic sphere, but continued throughout their careers.

Camela tactically balanced obtaining financial resources, college loans and grants, against future earning potential so that one did not negate the other. Other strategic interactions were when her boss pulled her off a project, despite her abilities. She remained professional with her boss and ultimately, noted that her boss “came to me; she’s like, I need your help. I need you to finish this project because the other guy couldn’t finish it.” Despite mistreatment she used this opportunity to finalize the project and showcase her abilities. She mitigated not seeming too aggressive by saying “I don't think that’s the right way; or No, I'm not understanding your thought process there. Help me walk through it” when she did not agree with her team. Her style with her team included effective team communication and interactions, brokering participation: “You just have to learn to communicate with your audience, and your audience has to learn and has to be willing to communicate with you.” Her strategy to realizing goals was “don't give up because it is challenging; you can do it.”

Chloe overcame challenges through the strategy of “pushing myself and motivating myself.” She advocated for other women to join the industry by employing a strategy for them to consider cyber, outside the stereotypical norms, by saying “if you've got the skills, if you've got the drive to do these analytical things to just pick things apart and solve problems, you could be a really good fit for this” and helping them to realize there are many ways to get into cybersecurity. She also utilized the fact of being the only woman in the room, her natural wiring, and others’ view of her as being the organized one because she was a woman. She turned that into a positive because she brought a unique skillset to the group.



Hernandez attempted to become more strategic in her approach by expanding her point of view, learning

about the other countries [in] this developing economy and how they do things; so I was looking at it from their point of view, or how are emerging markets doing things, and looking at as an opportunity to experience something different than the same way [as] the couple [of] years prior.

This seemed to be a recurring theme, as she also recognized and considered the limited resources of the have-nots and how they responded to make things work.

Maria also commenting on balancing work and a newborn during the pandemic, when daycares were closed. I have experienced the same expectation in my family, having been the primary parent responsible for sick days, field trips, and school drop-offs and pick-ups. This further supported the variance of societal roles between genders.

Camela, Hernandez, Luisa, Maria, and Mikasa noted having to be strategic in how they communicated in order to be heard. Luisa would tell other developers how to fix a bug so that her boss would also hear the solution. Maria said she had to be 10 times more prepared when she spoke, because she would only be heard once. Camela said she strategically navigated the fine line between being agreeable with her team and expressing her objections. This allowed her to gain credibility the next time around. Hernandez considered herself a “calculated risk taker,” noting her ability to be strategic about the risks and choices she made. Mikasa was strategic in how she treated her team in a positive way. This was so her team felt cared for rather than a deliverable.

## **Question 2. How do Internal and External Elements of Culture and Identity Influence Latinas in IT?**

Culturally, the majority of women did receive pushback from family, who misunderstood what a career in IT looked like. Misrepresentation of work requirements, flexibility and income

potential led many family members to disagree with the level of effort these women put into their careers and degrees. Greater emphasis was put on the degrees with prestige such as a doctor or lawyer. False representation on television seemed to influence parents and family as to what a career in IT was. However, all women seemed to find a career in IT more flexible and financially rewarding than their peers in other professions.

Sub question 2a: Were the aspects of gender role fully embraced, integrated, or abandoned? Participants reported that gender roles were embraced in terms of family. Many of the women with family noted obtaining positions with “flexibility” or “leave” that suited their family needs or desire to travel. Most of the participants noted being “not girly,” a “tomboy” or into “sports,” which afforded them the ability to blend, like a chameleon, in a male-dominated environment. This also indicated that acceptance of the cultural and stereotypical roles of women were not fully embraced.

Sub question 2b: Were these influences viewed in relation to cultural beliefs and practices? Many of the women did hold close the cultural expectation to have children first and career second. These views were exhibited in both culture and practice, as none of the women’s mothers had a degree in IT or worked in computers. As previously noted, family obligations and flexibility to adhere to those obligations had to be prioritized over career and pay. While cultural beliefs were not abandoned, these women learned to adapt them to meet the expectation of culture and the desire for a degree in IT.

One emergent theme that supported these findings was resourceful, innovative, self-advocates. Participants achieved self-efficacy, promoted change, planned for the future, and persevered within the cultural constructs of their femininity, navigating a power distance for their demographic without exceeding the Uncertainty Avoidance (UA), noted in Hofstede’s cultural

dimensions theory, of their organization and culture. They found a way to achieve basic fulfillment that adhered to societal and cultural expectations, balancing self-preservation and mission adherence.

### ***Resourceful, Innovative, Self-Advocates***

Bandura's Self Efficacy. Bandura's Self Efficacy theory outlines one's perception of the ability to successfully accomplish and perform a given task (Betz, 2000). There were four main elements in this theory that impact self-efficacy judgments, as follows:

- Performance Outcomes: Positive and negative experiences can influence the ability of an individual to perform a given task. If one has performed well at a task previously, he or she is more likely to feel competent and perform well at a similarly associated task (Bandura, 1977).
- Vicarious Experiences: People can develop high or low self-efficacy vicariously through other people's performances. A person can watch another perform and then compare their own competence with other individual's competence (Bandura, 1977). Betz (2000) later elaborates on this as vicarious learning or modeling.
- Verbal Persuasion: Self-efficacy is influenced by encouragement and discouragement pertaining to an individual's performance or ability to perform (Redmond 2010).
- Physiological Feedback: People experience sensations from their body and how they perceive this emotional arousal influences their beliefs of efficacy (Bandura, 1977).

These four elements of self-efficacy made me wonder how Latinas in an environment with low representation achieved self-efficacy without the connection of seeing themselves in others who looked like them in their environment.

The lens of Latinas was applied to this theory. Bandura's theory generalized how self-efficacy was achieved and perceived. The elements to obtain self-efficacy varied based on gender and ethnicity. While self-efficacy may be a factor that was necessary for both Latinos and Latinas, how women perceive and achieve self-efficacy can vary from their male counterpart. Latinas can be considered more relational in their nature, which provided an additional layer into how they prioritized actions towards self-efficacy. The necessity for both self-efficacy and relational factors weighed more heavily in engagement for Latinas than their Latino counterparts (Denner et al, 2014). An additional understanding of how Latinas in IT achieve self-efficacy would be taking into consideration the variance of cultural expectations when compared to that of other women in the field.

Bandura's (1994) self-efficacy theory helped to develop the connection between people's perception of their abilities and their performance. If they believe they can, they will perform with excellence. Unique to this Latina demographic were the many discouragers in their paths, that it took only one individual to believe in them, and that they were unstoppable in learning to find resources and methodologies in how to navigate obstacles and challenges in both education and career.

Despite receiving primarily negative feedback on performance outcomes, experiencing a lack of verbal persuasion, and the negative physiological feedback of being women and being made to feel like they did not belong in IT, these women found self-efficacy. They did not experience college or career the same as their male counterparts of the same ethnicity or even those of the same gender. Emotional support from peers was limited. Self-sustainment was uniquely a mix of confidence and self-doubt. Despite their inner and outer battles, participants

achieved self-efficacy in a journey unique to them and outside the confines of Bandura's (1994) theory.

Bandura's (1994) theory cites three behavioral consequences of perceived self-efficacy:

- approach versus avoidance behavior;
- quality of performance of behaviors in the target domain;
- persistence in the face of obstacles or disconfirming experiences.

These women refashioned their approach to education and work to avoid behavior that resulted in nonresponsive outcomes from their peers, professors, and management. They learned to excel in the quality of their performance, noting having to work harder than their male counterparts in academia and employment. They learned to capitalize their own efficiency to achieve maximum results with limited resources. Their persistence and diligence navigating unwelcoming environments with limited resources provided an adaptable and robust underpinning to their current careers and leadership styles.

While Bandura's (1994) theory does not provide the granular or specific understanding of this demographic, understanding the underpinning framework of achieving self-efficacy and recalibrating it through the lens of Latinas can help to identify how Latinas are coached, receive feedback both implicit and explicit, and perceive modeling in their homes, schools, and internal performance indicators. By filtering Bandura's theory through marianismo and Chicana feminist epistemology, "la fuerza potente" or "powerful force" used by Gil and Vasquez (1996), understanding Latinas' perception of what self-efficacy looks like can be identified enveloped within cultural expectations. In this study, participants reported that self-efficacy was achieved in the workplace despite the lack of vicarious learning or modeling, performance accomplishments, or social persuasion. All participants noted being one of two or the only Latinas in their

department and many reported not seeing Latinas in leadership. Additionally, participants continued to perceive that they could handle their roles without positive reinforcement, normally a necessity according to Bandura's (1994) self-efficacy theory; almost all participants noted negative interactions with superiors and male coworkers. Self-modeling versus vicarious modeling occurred for all participants, who noted challenging themselves when faced with difficult IT tasks and learning afterhours to "hone their craft." Additionally, Chicana feminist epistemology could be seen in the different ways the participants interpreted self-efficacy, success, organizational expectations in environments with little to no resources, representation, or encouragement. For example, many of the participants noted perceiving a job well done when a system or software product was operating. Their perception of a job well done was not embedded in performance reviews, which many felt were skewed.

***Hofstede's Cultural Dimension Theory.*** Hofstede's (2001) theory originally outlined four basic dimensions: power distance, uncertainty avoidance, individualism, and masculinity. Long-term orientation, a fifth dimension, was added, based on independent research in Hong Kong. Additional analysis from Michael Minkov (Hofstede & Minkov, 2010) resulted in a sixth dimension, indulgence versus self-restraint, being added. Table 4 further describes these six dimensions.

The theory is often used in conjunction with cross-cultural communication. Additionally, Hofstede's cultural theory explains the influence on Hispanic culture in American managers. It expands the narrative that people of different cultures vary greatly in attitudes and beliefs (Hofstede, 2001). This further elaborates on the notion that Bandura's theory of self-efficacy is not a one size fits all as culture and gender provides variations of how this is achieved. Hofstede further identifies motivation being a larger problem for managers in regards to motivation.

It has been established there is minimal representation of Latinas in IT based on the 1% demographic in that industry. Many of the participants noted having minimal to no representation in leadership throughout their careers in IT. With minimal representation, this supports the concept that upper management and leadership in IT would have difficulty understanding the motivational factors constraints against uncertainty avoidance, individualism, masculinity, and indulgence versus self-restraint of the Latinas that report to them considering likely gender and culture are different. Further there has been established a direct correlation between employee motivation and effectiveness of performance.

These women also learned coping mechanisms to survive in an unwelcoming environment with little support. Of the participants at least two noted having teen parents that could not comprehend the college path much less in IT, whereas six of the women noted not having the financial means their peers did. Despite the lack of financial and emotional support they persisted with resources they created and developed outside the ecosystem they were born into and raised in. They are not just resourceful they are resilient and innovative forming their own resources for survival.

Despite the disconnect and lack of understanding and motivation, these women found a way to self-motivate. They set a path to advancement and learning by charting their own course with little to no assistance from leadership. They became their own advocates and self-motivators. They bartered leave for pay, obtained raises and promotions. They created their own communities achieving their own modified version of UA, individualism, and long-term orientation within the construct of their masculine/feminine societal norms within their culture yet still finding the balance of indulgence and self-restraint. They learned to become their own advocates, respectfully navigating gender roles, power distance, and UA. Many of the

participants established a dual tolerance level system for their supervisors, gauging when it was okay to contribute and speak freely about issues and when they had to contribute discretely. Some participants experienced periods of isolation, becoming ostracized from their teams, after superiors felt threatened by their abilities and/or deemed them arrogant when they spoke up. In response, participants learned to contribute to and achieve team goals by discretely meeting with other team members, contributing and assisting in problem resolution behind the scenes. This connected Hofstede's (2001) theory to the participants in this study, who established two tolerance levels for power distance: what was acceptable for their male peers, and what was acceptable for them.

**Table 4**

*The Six Dimensions of Hofstede's Cultural Dimension Theory*

Dimension	Description
Power Distance	Societal acceptance or tolerance levels of the distribution and inequality of power.
Uncertainty Avoidance	Acceptance or tolerance level of people's desire to change the way they work or live (UA) in comparison to known systems (UA).
Individualism	Describes the prioritization of personal needs and goals versus that of a group/clan/organization.
Masculinity/Feminine	Different rules for men and women in masculine societies.
Long-term orientation	Perspective on planning for future, perseverance values vs past and present oriented
Indulgence versus self-restraint	Basic fulfillment to enjoy life vs regulating through strict social norms gratification

Also related to Hofstede (2001), participants' perception of indulgence looked different to their male counterparts' and spouses' perceptions. Participants had to prioritize leave and



acceptable levels of pay over promotions and salary to ensure adequate time off to care for family. Chicana feminist epistemology explained the distinctions of these women's navigation in the IT industry, which were embedded in their experiences and the cultural understanding of their expectations.

Camela noted that her middle school teacher selected her for a STEM program, which served as a catalyst for her to pursue her degree in IT. Being a product of teen parents, she had to construct a path to the financial resources needed to obtain her degree, which included balancing a young family and at times strenuous scholastic expectations. This decision was later supported by her spouse, and she was discouraged and considered not completing her degree in IT. Later in life, Camela recognized that her career choices encompassed leveraging leave over salary and promotion, as she was the primary caregiver for their children. Even though she was highly talented and had strong abilities, she also had to traverse the lack of financial resources. She noted only three encouragers throughout this journey. Yet, despite not having a large motivator pool, through patience, collaboration, and learning how to be heard, she progressed to a leadership role in IT that encompassed both the role she wanted coupled with the pay and leave she desired. Her current leadership role had accomplished self-efficacy without much support and representation, yet she still reached back to others to provide support.

Chloe used the technical skills she has absorbed along the way and incorporated her writing skills with research to hone her skills. She reflected on her inner ability to "know strengths, like strategy, critical thinking, organizing" to lead her onto another technical path. Through research, asking questions, and self-learning, she was able to get up to speed on changes within her team and her role when she returned from maternity leave. She achieved self-efficacy, despite being in the only female in her organization and not having others in her environment

like her. She reached back by participating in organizations supporting women in IT and advocating for more women in her company and in IT.

From a young age, Hernandez's father was a catalyst. However, she experienced discouragers by being the minority in not only ethnicity but gender through her education and career. Like the others, she needed but one ember of hope to continue to maintain her career path in IT. Despite being one of four women and the only Latina in the IT program, she completed her degree. She figured out how to pay for college through scholarships and "leverage[d] the facility like the offerings there, extra tutoring and mentoring and so forth" to find other ways to integrate herself in college and obtain resources not readily available to her. She noted asking "for people's input, [to] take it under advisement but that doesn't mean that I have to take everything they say to heart." She considered herself a "calculated risk taker" and noted that "75% of the times I take a risk; it helps build me up to somewhere better." She owned the fact that "nobody's ever going to accuse me of being incompetent or soft spoken or submissive, and feminine" yet that is her superpower, and she recognized she had come into her own.

Luisa navigated through family objections and members saying "she's going to be back in a week because she doesn't know how to do anything" by employing other family members to help with her goal to go off to college. She learned to leverage relationships during college for tutoring to "figure out how to bring you up to speed" for courses she struggled with. After dropping courses that would put her further behind, she had to "gain an exception" to take classes dropped, in addition to an intense course load to continue her degree path in IT. For her entry into the IT job world, she helped to form a "study group and started interviewing each other" to prepare. While at a big IT firm, she researched and asked questions on how to advance, noticing she was being left behind in pay and promotion for her skill set. She brought in her

“higher level peers to support and talk to” her manager and eventually received her promotion and pay adjustment. But it continued to be a theme for Luisa to have to leverage relationships to obtain much earned and deserved recognition. She has gained a position in big IT that reached back to help create an understanding of diverse groups and attempted to secure and maintain those employee relationships.

Maria early on learned the value of networking and where “my passion and focus” was in college. She found it important that her “peers were building relationships.” She utilized resources, such as professors who served as advocates for the students to help them not only in their education but careers offering. They became her “business advocates, written me so many recommendation letters and interview coaching, interviewing.” She “networked, job shadowed” to be sure this was what she wanted. Through these resources she found that these “relationships have taken them into their careers.” She has learned to balance career and parenthood during COVID, which created a unique challenge once daycares closed. She reached back to do panels and talks for organizations promoting women in IT locally. She wanted to be that voice that spoke to people like her. She achieved self-efficacy by balancing the expectations of the competing resources of family and work through communication with her spouse of the “roles that are played out” and encouraging the interaction of a “supportive team.”

Martha moved far from home after college. While she craves community, she has learned to forge her own community where she now lives, developed through former coworkers. In grad school, a professor asked her to do paid research. She then capitalized on programs and internships for grad school, ultimately obtaining her PhD. She recognized the value of sponsors and mentors throughout her career, realizing the benefits of pairing junior and senior individuals on a team. She did this on her team. As a result of the loss of her father at 13, she had an unstable

childhood. This created a path of self-reliance in response to the instability in her own family. She belonged to resource groups to support those with the same ethnicity and gender as herself. She has achieved self-efficacy through “proving self-worth by obtaining a PhD and working for big companies.”

Mikasa did not have the financial resources for a degree change or an extensive degree path. She obtained financial resources through “research and internships” to realize her career in cybersecurity. She developed and still maintains her “core network,” employed among various IT organizations. Throughout her career she has utilized “support groups” and “leadership courses” that were provided through her employer. She employed these tactics in her current leadership role, strengthening her leadership abilities and confidence despite extremely low representation in her field.

Five of the women noted being treated poorly in college and in their careers by male peers, and being made to feel like they should find another career. All women faced obstacles of negative feedback in their pursuit of a career in IT, yet all have become leaders in their trade, and all have participated in a reach-back program to help other women and those of the same ethnicity in this field. Unique to this demographic was their ability to achieve self-efficacy within harsh environments that did not provide the positive influences one would expect for acquiring self-efficacy in accordance with Bandura’s (1994) theory.

With regard to resilience theory, despite not seeing a financial path towards college, Camela, Luisa, Chloe, Maria, Martha, and Mikasa forged their paths towards higher education. Camela had to be resourceful in coordinating studies, classes, and a small child. Hernandez was resourceful in how she learned to continue in her career while also planning for the possibility of startups going under. Maria had to be resourceful in how she fulfilled the responsibilities of her

workload while caring for her young children at home during the pandemic. Martha, having moved away after college, has created her own community, which she realized was much desired. Many of the participants have found community with peers from education and previous employers. Maria created networks and relationships that would help her during a time when she had to rebuild her career. Mikasa took advantages of the classes and programs offered by her employer to be a better leader who was caring and provided great care for her team. Early in her career, Camela ensured her job had the leave required to ensure she had the resources to care for small ill children.

### **Question 3. How Might Latinas Construct and Draw From Their Reflection and the Crafting of Their Stories?**

All but one participant requested individual interviews to maintain anonymity. Many were concerned about the political backlash that might occur as they shared intimate details of their previous and current workplaces. However, the common thread throughout their stories was the catalyst of at least one mentor telling them they could, and so they then believed in themselves. They felt that, if more Latinas received this type of encouragement and the myth of what it takes to be successful in IT was debunked early on, they would see more Latinas in this industry.

Sub question 3a: What coping mechanisms did Latinas use to navigate through gender and cultural expectations throughout a career in IT? All of the women learned to capitalize on their unique abilities as strategic communicators, steadfast soldiers, chameleons, and survivors to be resourceful and move up in their careers. Their ability to orchestrate resolution of issues while not being heard bolstered their ability to strategize and accomplish things with few resources and little support.

This study not only indicated the nuances used by Latina in navigating through culture and new world expectations, but how to do it in an environment outside the cultural norms of acceptance in IT. Unique to these women was that they not only had to navigate the same variances of cultural acceptance as their White women counterparts, but also the variance in gender expectations of their Hispanic male counterparts. They also had to overcome obstacles unique to them and had to work harder in school and career for the same or less grade and pay. These women have proven to be steadfast soldiers by recognizing and utilizing “la fuerza potente.” They focused on winning the war by choosing their battles.

A theme that emerged from the data in consideration of this question was steadfast soldiers. These women were persistent in not only their education within this field, but in achieving their own goals and the mission of the organizations they worked for. Despite not being heard, they learned to find their voice and ultimately be heard.

### ***Steadfast Soldiers***

**Marianismo.** The term marianismo was first coined by Stevens (1973). The construct of marianismo was further developed by Gil and Vasquez, who created the 10 mandamientos (commandments) that explain the expectations of Latinas, which provided a set of Latino cultural values wrapped into this term. The mandamientos further expand on how cultural values and gender expectations for Latinas are merged into new world self-esteem. This gave the understanding and connotation of Bandura’s self-efficacy through the lens of Latinas. Gil and Vasquez (1996) interviewed several women in their book, *Maria Paradox*, across several Latin cultures that produced the same or similar interpretations of these cultural expectations to assist Latinas in navigating achievement of self-esteem in a more modern world within old-world cultural expectations. Additionally, this theory references “la fuerza potente,” which refers to

Latinas finding a force from within. This seemed to be true of the participants I interviewed regarding cultural and family expectations, education, and finding their voice and force.

The commandments, put in the simplest and most self-explanatory form, are:

Don't forget your place as a woman

Don't give up traditions

Don't be an old maid, independent, or have your own opinions

Don't put your needs first

Don't wish anything but to be a housewife

Don't forget sex makes babies, not pleasure

Don't be unhappy with your man, no matter what he does to you

Don't ask for help

Don't discuss your personal problems outside the house

Don't change.

Based on marianismo and machismo, perceptions of the Latin culture can be perceived to place the needs of men before women. Reviewing a more updated analysis of the term still compartmentalizes women in subservient roles in the Hispanic culture, catering to the needs of their male counterparts (Nunez et al., 2016.) Understanding how the participants in the studies navigated through cultural influences and career aspirations helped to better comprehend how successful Latinas incorporated cultural expectations.

A component of Marianismo that stressed how critical the role of a Latina is in being the primary family caregiver further delineated in the Hispanic culture that a woman's career was second to family and considered a choice, while for men career was the primary choice (Castillo et al, 2010). These dimensions were filtered against the female cultural norms for Latinas.

Additionally, answers towards expectations of personal goals, societal rules, and changing perceptions of cultural gender expectations were examined throughout the study.

Through the influence of marianismo, it can be perceived how many career and educational aspirations for Latinas are directed (Gil & Vasquez, 1996). Understanding how Latinas successfully navigated through the mandamientos in STEM, specifically IT, will assist future generations to apply these techniques in other career aspirations. By utilizing marianismo and further expanded on with Chicana feminist epistemology, general tenets from Bandura's and Hofstede's theories were examined through Latinas' ways of knowing.

Another facet of marianismo is the belief that preservation of personal relationships without conflict is the responsibility of Latinas (Castillo & Cano, 2007). This concept was examined against how the participants encountered indifference and conflict. The participants interviewed provided unique methods, which seemed to be self-adapted, of how they circumnavigated conflict and obstacles. For example, participants asked questions about leave and flexibility of schedules in order to assess if the new role would allow for time off to care for family. Despite the multiple challenges of being ignored, misunderstood, and unwelcomed, almost all were leaders to some degree in IT. These women negotiated amicable relationships in the face of conflict, while still gaining influence, confidence, and respect, and operating within the expectation of compliance and composure as defined by marianismo (Pina-Watson et al., 2014). These women did not back down, and they remained steadfast in their career aspirations, gently moving the needle forward through persistence and persuasion. They learned when to remain steadfast and how to ensure actions taken, while not many, were towards positions of power. Chicana feminist epistemology provided the understanding of how their "fuerza potente" was found when they achieved the position, salary, and flexibility necessary to adhere to aspects



of culture and profession, such as acquiring the pay scale their male counterparts had in addition to several weeks of leave, and a leadership position in IT. They discovered how to find success while forming their understanding of mandamientos within the IT environment.

**Chicana Feminist Epistemology.** This theory is grounded in the life experiences of Chicanas acknowledging choices for Chicanas looks very different for their male counterparts and female counterparts of different ethnicities. Patriarchal epistemology was not adequate for this study as it focused primarily on white working-class males overlooking females' experience. This was also true of Liberal feminist scholarship, which did not recognize the differences in culture that created a separate array of options for Latinas. These theories were a generalization, and provided a lack of consideration and specificity of the needs for a demographic such as Latinas. Chicana feminist epistemology provided the tailored understanding to further explore and comprehend Latinas' life experiences.

Lopez (2003) considered that the "race-gender experience framework" was vital for interpretation of the influence these experiences had on a young person's educational outcome (p. 13). This consideration was important when considering motivators for recruiting Latinas towards degrees in the IT industry. Chicana researchers like me can also provide the understanding necessary to deconstruct experiences in relation to academics across specific factors, such as gender and ethnicity (Calderón et al., 2012).

Chicana feminist epistemology is an embedded understanding of the life experiences of Chicanas (Latinas). Participants understood and acknowledged how their opportunities and resources differed greatly to that of their male counterparts and White women. Chicana feminist epistemology provided the framework to capture the conceptualization of cultural intuition and the unique viewpoints of these women. Chicana feminist epistemology employed a tailored

understanding of this specific demographic, Latinas, that offered another version outside the traditional paradigms that often exclude or distort their experiences (Delgado, 1998).

By introducing myself as the researcher and instrument in a constructivist grounded theory approach, the experience of the participants was better analyzed in a social research construct, which provided a deeper, more empathetic, and relatable understanding of emotional struggles. To better expand on understanding marginalized demographics such as Latinas, it is essential for institutions of higher learning to improve on how these voices and experiences are encapsulated for better analysis (Rocah et al, 2016). How better to implement this process and the level of understanding necessary to identify issues of this demographic than by introducing a researcher who shares the same gender, race, culture, career barriers, family expectations, and experiences.

These women had to fight for what they wanted, yet had to do so in a peaceful manner. They were not afforded the luxuries of their male counterparts, such as financial and emotional support. Many noted having to know when and how to speak to their peers in order to be heard. They all seemed to find similar ways of adapting to low representation and encouragement. Their experiences of discouragers and unwelcoming environments were a common thread throughout. This provided the unique perception, aligned with Chicana feminist epistemology, of not only survival but ascension in their field.

Camela recalls having to defend her decision to participate in a STEM program in high school against the “discouragement just from [her] peers.” She also defended against a family that did not quite understand the value of college. Despite family and friends being discouragers of her academic journey, she understood, based on her socio-economic status as a child, that it would be difficult for many in her neighborhood to comprehend the value of college. But she

also knew college was the key to overcoming financial barriers. She developed a plan, disregarded naysayers, and obtained her degree. But there was more. Camela had to overcome interactions with difficult bosses and teammates. She won the war by choosing her battles and through being “a little more aware of who your audience is” and “how you’re presenting yourself.” She understood that, even if you were right, if “your coworkers are not willing to do their part as far as being a team, then you’re always going to be on the losing battle.” When working on projects, she “give[s] [her] opinion” but has learned to be agreeable with the team direction. When the project was not successful, she utilized that opportunity to be heard, solidifying her knowledge and experience. “That way they can remember the next time, you know what you’re not doing.” She gained more ground this way because it helped her team to “remember the next time” and served as “a reminder” of the value of her input. This provided the recognition of her abilities throughout the organization and among her team.

Chloe learned to win the battle within herself, overcoming imposter syndrome and negative self-worth, when she started on her career path. She noted having had managers, directors, and a vice president able “to see things about myself” that “was harder for me” to see. She overcame the war within herself through what she calls an “awakening” that allowed her to “say no . . . [and] try everything and have new experiences” in her career. Obtaining her degree in English, she did not withstand the same discouragement in college as the other participants. However, once in IT, she noted having to ask questions of different people and getting different responses. When she received “pushback” she would “go to somebody else.” That experience taught her to be “scrappy” and “use all [her] resources” to accomplish her goals. Her struggles seemed more to be within IT, landing a career in a direction she had not thought of before college. However, her platform was to fight to be the voice of other females looking to get into

cybersecurity, a subsection of IT. Being the only female in her company she was “trying to get some more females” into her current organization.

Hernandez noted being “scrappy” and having to navigate through an unsupportive life partner while she tried to get on in her career. This left her stronger and with a keener ability to not settle for less than what she wanted in life. She also referenced how she combatted negative aspects in college. Despite being in male oriented environment, she positioned herself through programs and work study roles that afforded her the resources to win her war, her degree in IT.

While Luisa had to battle her mother to go off to school, her most recent career battles continued to show her endurance as a steadfast soldier. Luisa recalled staying within a certain position level far longer than her peers and having to reach out to advocates within the company to fight for her promotions, which came more easily to her male peers. However, she overcame this battle, with an unequivocal Yes from “the promotion committee.” But this conflict seemed to be a recurring theme throughout her career—not being valued or heard. When it came to system fixes, her manger disregarded her input, so she would “grab a friend” to tell her manager what needed to be fixed “and [then] he would listen.” She recalled an incident of being put on a performance plan. She responded by agreeing “Yah, you’re right . . . kept working like always . . . [and] not changing a thing.” In her follow up review she was commended for the improvement and for “speaking up in meetings . . . [and] doing so wonderful,” despite not changing anything. She commented on being noticed and “graded” by her manager “because someone told you that you had to,” and so she was seen for her true ability. Additionally, coming to the United States, she recalled not only having to fight against the bias against women but also against her ethnicity. She fought against the stereotypes of women engineers using her ability and personality. She ended 2020 by resigning, only later to be asked to reconsider and being placed

in a role that promoted diversity. This was a huge win in her personal career, and in the battle from being excluded for her diversity to being recognized and utilized to advocate for others.

Maria's biggest and most successful win was her overcoming an incident that cost her a career in an organization she loved. She fell from being in an up-and-coming database role to selling laptops at a big box store. She overcame unwanted sexual advances without creating a stigma for herself. Maria rebuilt her life with a newborn at hand while struggling with an identity crisis. She leaned back on the peer network she had built during college to reemerge in a new organization. She has successfully been promoted in her latest career path. However, she attributes that to being more prepared than others, observing her audience, listening, and analyzing when to speak by seeing

who's around me. I have to listen. In every room that I walk into I have to listen before I say anything. I need to know who's in that room. When I get a meeting invite, I look at who's there. I want to know how high up this is going. I want to know who's paying attention to this [and] will stay quiet in some rooms [and by being] 10 times more prepared when I do speak up. I need to make sure all of my ducks in a row because I might only get that ear once."

On the family side of things, she battled around balancing "motherhood" and "family life" and "gender roles."

In order to realize her dream, Martha had overcome "toxic men" in college, including male peers and professors, strained financial resources, having lost her father at age 13, and family discouragers saying "proud of you though not as smart as a boy." She overcame current battles by "keeping Project Management teams accountable; day-to-day execution tasks." Her personal growth and ability to overcome personal challenges stemmed from a "growth mindset, [being] open to feedback from others, understanding areas of growth, and taking steps to address." In her leadership role she has overcome battles and can "now can be self."

Chloe, Hernandez, Luisa, Maria, and Martha recalled dealing with negative professors and peers. Martha said that male peers were “toxic.”

### **Conclusion of the Study**

Early on I had this preconceived notion that culture was what was hindering Latinas in IT. I had to abandon that early on, once I started hearing the same thing over and over. It was not that their parents did not want them to try hard or new things, but if they were going to travel that path, to do it with purpose and prestige. Mikasa confirmed that notion and added “They don’t know you can make the same money [as] a doctor without the debt.” This insight might change the prestige meter of IT for Hispanic parents, if they knew. Mikasa said that the “barriers are money for college and the idea that this type of work is too hard for women, location is in some basement, and requires 4 years of college.”

The other preconceived notion I had of this industry was of it clashing with cultural expectations. But that can be mitigated. Mikasa said that “As [a] female, don’t be afraid of having family in mind. At least in her field [it is] more doable, more flexibility, can log in from home and work. Everything is easier to manage. Don’t discourage yourself in family planning.” Latinas do not have to trade career for culture. They just need to know that both can coexist.

According to Martha, one key to success in acceptance was “awareness of others.” Latinas determined how others perceived them and drew from that. They mitigated the negative, and corrected course quickly because they knew their time might be limited. As a Latina they were scrutinized harder and had to work within that framework. However, this feeling was likely felt by all women in IT. Many of these women said that they exploited the positivity, uniqueness, and strength Latinas possess. And they were comfortable asking for help. Camela, Chloe, and

Mikasa discussed feelings of imposter syndrome. Yet they overcame that and became subject matter experts in their craft and now leaders in their industry.

These women showed up with fewer resources, 9 months pregnant, and without family support, but they did it. They were the cactus in a garden. They required few resources, as they made their own, and received little attention. They grew and succeeded in the toughest soil and scorching environment. They only needed one seed planted, telling them they could so they will. They were survivors. When they did not have, they fought for it. Some dealt with unplanned pregnancies and DWIs and had to work their way back up the ladder, and they did.

### **Recommendations for Engaging Latinas**

This final section is my love letter about Latinas with instructions to Latinas and organizations on why and how to engage a Latina. It goes beyond the concepts of what is holding Latinas back and provides focus for employers as to why they should care and what they should do. This section discusses not only insight and recommendations for employers but conclusions and recommendations to employers followed by a summation of this experience. But first, this section provides a call to action and insight for employers on understanding Latinas so they might harness their abilities and power in IT.

If you hire a Latina, she will be loyal, honest, and hard working. However, her loyalty must be earned for her to remain. The minute someone else recognizes and acknowledges her as the gem she is and offers a role that aligns with her sense of self efficacy and family, she will leave. Latinas can be calculated but have learned to leverage how to get things done within the constraints and confines of a white man's world. They are intelligent and efficient, able to get things done within budget and constraints. The duality of a Latina is that she is a fierce and steadfast soldier who operates with precision and excellence and is enveloped in the soul and

compassion of a leader who has learned to lead from behind with limited to no resources. These women give of their time to mentor and be a part of groups to help other underrepresented people find a place at the table. Latinas walk a tight rope between compliance and confidence. They know the diversity challenges they face and, often, the desire of many of their peers to see them gone. Some of these women were replaced after one disagreement, while they experienced seeing their male counterparts having several disagreements and still holding on to their jobs. Latinas only need to hear from one person that they can do it and they will get it done. Latinas have learned the art of war and if their voice is not heard directly, they have learned to speak through peers to accomplish the objectives of the team, even if others get recognized, because they care more about what is right than about recognition. Latinas will be the bridge that closes the gaps between a poor manager and a quality product, because their search for excellence surpasses any altercation. It does not take much, just a small candle in the sea of darkness, to inspire them. Even if they do not fully believe in themselves, if someone tells them to keep going, they will. However, once they believes they can, any discouragement will serve as fuel to the fire that was so discretely lit before.

If there is a Latina sitting next to you, know she had to work and fight twice as hard to get there. She had to prove she was smarter than her peers, more compliant, more determined, and more fierce than her male counterparts. She fought an uphill battle to get to the same seat that most men did not have to fight for. She is a Salmonita. She swam upstream, facing many challenges and obstacles, but made it. And to keep her seat at the table, she will work twice as hard, facing diversity challenges those other men and non-Latinas have never had to face. She is judged by how she looks and speaks from the minute she enters the room. She is exceptionally dedicated just for a chance to be heard. If she is lucky in an organization, her reputation will



precede her and she will have to spend less time working to earn the respect of her teammates, something that comes easy for her male counterparts, and will spend more time multiplying her efforts. She is tenacious and a fighter, checks everything twice, and does her due diligence, because she knows the preconceived notions against her. She knows that when she does something great, something excellent, there is a good chance it might be remembered, but if she does anything wrong it will never be forgotten. She will provide a roadmap of how to gain her trust and that of others, if you just listen. Often soldiers become leaders. While spending all that time fighting for herself, she is gaining skills and techniques on how to advocate for others. While Latinas enjoy peer groups, it really is the people who speak to their hearts that are treasured most. While many of these Big Techs companies have had programs that were helpful, ultimately it was the informal mentors and peers they confided in and trusted who inspired them.

### ***Comprehending Latinas***

How do Latinas feel in the workplace? With the recent pandemic, for a time everyone was required to wear a mask to go to the grocery store, mall, or doctor's office. However, when we get in the car the first thing that we do is take the mask off. This is what it feels like being a Latina in IT. They can still be themselves to an extent, but there is a layer, a mask, they wear that guards their most intimate feelings and thoughts. They are calculated and guarded in how they communicate. For some who like sports or were considered more of a tomboy, being around men is less of a challenge. For some it was a safe place. While they do not feel completely out of place, some obvious differences still require a slim layer of guardedness.

### ***Recommendations to Employers***

My advice to employers is, in order to increase diversity within your organization, you must provide the pay, environment, leave, and flexibility Latinas need, and their loyalty will

exceed your expectations. But do not just provide these motivators; market and communicate them in a way that is heard by Latinas. Chloe said, “the average tenure in IT at one company is 2½ to 3 years.” Her current tenure is now going on 5 years, and she plans to stay long term. She has been promoted several times. Her company offers the pay, leave, investment, and flexibility many people in the industry desire. Latinas need to see more of themselves in the IT environment in order to increase engagement and longevity. Luisa said, “when we relate to people that look like us, when people that speak to us people that have the same experiences, we can be like, ‘Oh, yeah, I went through that. And we have something to connect’.”

At your next Zoom or Teams meeting, look around the room. The individuals within the team who have the lowest representation in the room are the ones that had to work twice as hard to be there. And if there are any demographics missing within the room, make it your duty to make a seat for them. Make it your duty to fight for their right to have a seat at the table because they are worth it, and your entire organization will be the better for it.

### ***Recommendations For Latinas***

Do not give up! You have it within you to persevere through the toughest situation, to not only survive but to succeed. Do not be discouraged if you feel like your career aspirations or goals are not being supported by your village. My recommendation is to find a village that will sustain your soul as you navigate the path less traveled. Understand that a role in IT, being a Latina, and/or raising a family are not mutually exclusive. Many roles in IT actually support the ability for a Latina to be professionally successful, and whatever our culture says you need to be a primary caregiver for parents or children, financially sustainable, independent, and have flexibility and respect within your career. Know you are not alone. There are others like you throughout the world and the United States who might be a Zoom call away. Reach out to

organizations and their local chapters that exist primarily for women and/or Latinas, such as Latinas in Tech, Women of AFCEA (Armed Forces Communications & Electronics Association), WiCyS (Women in Cybersecurity), the SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science), and many more that provide the resources and support you need along this path. Know that if you are not being valued and respected where you are, respectfully speak up or step out; there are many other options as employers seek to fill gaps. Networking and finding your tribe in some of the organizations previously mentioned will help you to find a role or company that is a great fit. Recognize the value you bring to an organization, team, and family. If you walk into a room and you are one of few, or the only one, who looks like you, this just means you are more valuable as you are the only one with your distinct wiring and skillset. Know this and own it. Do not let your differences be a discourager, but rather allow them to encourage you to showcase your unique abilities and contributions. Finally, my call to action is to invite more women like you to have a seat at the table. Reach back to younger family members, friends, or programs to be that sounding board and support you so desperately needed when you started out in this industry.

### ***General Advice***

The concepts of leadership are known by many leaders yet practiced by few. I have read a ton of leadership theories. However, having been working for over 20 years, I see few leaders implementing the leadership theories they read about. Often the team I am on is adapting to the leadership style of the person in charge. However, Latina leaders will reach back and try to pull everyone forward, understanding and meeting their teammates where they are. They are collaborative, ask questions, earn the trust of their peers, and defend them. Mikasa said, “I care

about them [her team] individually, not just as a deliverable. If you value your team members, when you ask to push it, they won't care as much."

If you want a leader who is fierce, dedicated, humble, smart, caring, and that will force multiply the leadership within your organization, hire a Latina.

## **Summary**

The women interviewed for this study forged their own paths, surviving with limited resources within bitter domains. They learned to do so in an innovative and adaptive manner. They achieved self-efficacy within the confines of cultural and gender expectations. Despite having limited resources, such as time and availability, and working twice as hard as their male counterparts, they still made time to reach back and see that others could navigate through this journey with maybe just a bit more ease than they themselves experienced. Both in college and in IT positions, study participants faced challenges from many aspects, including receiving pushback from family, male students and professors in college, coworkers, supervisors, and at times their own self-doubt, as they struggled with imposter syndrome.

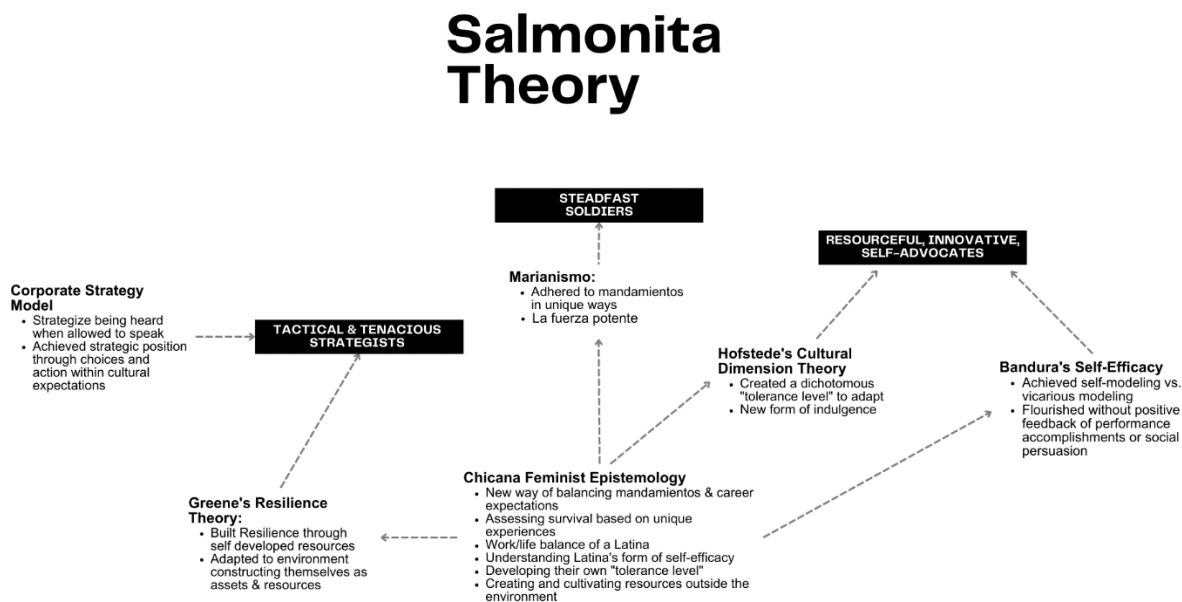
Participants developed their own modified way of achieving self-efficacy while grappling with the expectations of cultural preservation. They crafted their own strategies for survival in the IT industry, balancing the perception of being confident enough yet not too arrogant in their interactions with supervisors and male coworkers. This survival skill was honed with little investment from professors, supervisors, and coworkers. They learned to become tactical and tenacious strategists, developing themselves as a resource to become their own highly skilled self-advocates for promotions and much-deserved salary increases. These Latinas acted as "steadfast soldiers" by learning to carry the mission of the organizations forward without receiving support or recognition. This included using creative means to provide resources

covertly to colleagues to resolve IT issues, often without recognition. Without representation and lacking the encouragement that many of their male counterparts and some female counterparts of other ethnicities received, they learned to cultivate themselves and blossom in their careers, in what could be thought of as hardened soil. Ironically, for almost all participants it took only one interaction or memory to serve as the catalyst and seed planted to encourage them to explore a career outside the cultural and social norms for Latinas.

Theories such as marianismo, Bandura's self-efficacy, and Hofstede's cultural dimensions helped to build the foundation of what these participants achieved. However, Salmonita theory and Chicana Feminist epistemology both supported these theories and accounted for the gaps in literature that did not represent or comprehend Latinas. Theories cannot be applied from any woman's perspective; they must be adapted through the lens of a young Latina making career choices. Sylvia Acevedo, the first Hispanic and Latina to graduate with a master's from Stanford, noted that her choice of going into engineering stemmed from a young age, prior to high school, through her experiences as a Girl Scout (Acevedo, 2018).

If IT organizations want to have a more diverse population, they must learn to engage this demographic prior to college. Through strategy and perseverance, the women in this study achieved, and yet they represent only 1% of their demographic in IT. However, this number can be so much higher with the right strategy using the right lens at the right time.

Salmonita theory described their journey of swimming upstream, with limited influence and few resources, trying to survive once they were in the IT field. A visual of the theorized findings is displayed in Figure 14.

**Figure 14***Theorized Findings*

Salmonita theory highlighted not only the importance of understanding and enticing a unique demographic but recognizing the assets they bring. The participants in this study forged their own paths, adapted quickly, and overcome monumental challenges, in some cases starting over in their careers. To increase this dynamic demographic and maximize the benefits of a more diverse team, organizations must better understand how Latinas perceive their work and achieve their form of self-efficacy, long-term orientation, and individualism. Creating the environment that Latinas will thrive in creates a sense of cultural understanding and welcome, thereby allowing more to follow into the industry.

By comprehending how self-efficacy (Bandura, 1994) is achieved under the influence of culture (marianismo and Hofstede), and how Latinas adapt and strategize to attain levels of success (Chicana feminist epistemology), albeit under duress, corporate programs can

better formulate their hiring campaigns to meet and engage this dynamically growing Latina demographic.

### **Recommendations for Future Research**

I recommend an Action Research study that reaches out to younger Latinas in elementary school to plant that seed early on and provide a path forward at an early age, a program that will foster their growth in IT and measure their success rate by the number of young Latinas who start the program and those who finish and later obtain a career in IT. In that Action Research, a campaign to educate parents of the prestige and potential of a career in IT would also be needed. Additionally, employers could partner with these young Latinas, potentially in high school, to provide a path forward for a career in IT. This would allow a cultural and ability fit as the young Latina learns the organizational culture, and the organization learns from her. From the success or measure of a program along this vein, potentially we will see more Latinas in IT. And IT will be the better for it.

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## Appendices

## Appendix A

### Interview Guide

Below are the initial types of interview questions modified for each participant to promote flow of conversation to seem more natural. The questions are segmented by types of inquiry. Throughout the course of the interview additional questions of how the participant felt during specific experiences identified by the participant as either a positive or negative experience.

#### **Foundation (Insight into early systems development of resilience and coping mechanisms)**

Tell me about your family and home life:

Birth to Middle School

What type of student were you?

Were you interested in STEM or IT?

Middle School to High School

High School to College

College to Career

Today

#### **Motivators or Discouragers (Identification and ability to categorize of positive and negative experiences)**

Tell me about the catalyst for you into IT.

Participants were asked to identify Motivators and Discouragers at each stage of their life once pursuing an education or career in IT was identified.

#### **Perception and Resolution of Discouragement (Strategy development)**



How did discouragers make you feel?

What barriers did you face?

Do/did you feel like you can/could be yourself?

### **Resilience**

What coping strategies have you employed?

How did you navigate peer networks in low representation?

What was the ratio of women in IT classes in college?

### **Context of Low Representation**

What was the ratio of Latinas in IT classes in college?

What is the ratio of Latinas in your previous work environments?

What is the ratio of Latinas in your current work environment?

### **Participant's Perception of Barriers and Resolution**

Why do you think there is a low representation of Latinas in IT?

What do you think can be done to reduce the gap of low representation?

What are you doing or have done that might reduce the gap of Latinas in IT?

### **Encouragement/Advice for Future Latinas**

What advice would you give younger you while in middle or high school in regards to pursuing a career in IT?

What words of encouragement would you give the same younger you?

## Appendix B

### Story Worksheet

## This is My Story

We tell stories about our work, family, friends, life, influencers, and experiences. It is through these stories that we connect, discover, and learn about ourselves and how we interact with the world around us.

Our stories also reveal the lens that we see life through. This lens is shaped through motivators, (our cheerleaders/heroes), inhibitors (discouragers/villains), life events and experiences. This lens effects how we see ourselves in connection to others and identify lessons learned from life events, and experiences, whether good or bad.

Instructions and tips for writing your story.

Use the following pages to start the process of honestly looking at and building your story. You will segment your story into sections of your life like bookends. Major life events occur such as experiences in relationships with a parent, teacher, or friends, and life changing event such as a move from a childhood home, divorce, loss of loved ones, new school, exposure to the tech world, or job and career changes. This might create a start of a new chapter and ending the previous one. Chapters do not have to be neat and tidy such as every 10 years. Some can be longer while others shorter. The chapters represent seasons you went through so it could be segmented by education levels, marriage, children, changes in job or family dynamics, even aha moments or all these things. You will repeat the chapter writing process for each chapter.

Finally have fun with naming your chapters. The chapter names can be representative of what happened during that season but also in line with something that resonated with you during that time. For example, a chapter where you obtained your first exposure to IT or position in IT can be called "Becoming Wonder Woman." The important thing is you decide and define what each chapter looks like.

Feel free to share any and all details but not obligated to share anything.

Your candidness will help to identify key factors such as experiences/people where your journey might have been derailed or propelled and how you navigated through both. The goal is to help other younger Latinas navigate through pitfalls and learn to capitalize on those boosts in experiences.

## Season of Life

### Chapter #1

(Name this Chapter)

**Describe and write about your family in this season.**

**Who is in your family? | Where do you live? | What are your relationships like?**

**Who:**

**Where:**

**What:**

**What are your favorite memories from this season?**

**When do you feel special? | When are you successful? | A time you feel loved? | Who is in your corner?**

**What are some of the painful memories or challenges from this season?**

**How did others describe you then? How did you describe yourself then?**

**Who were your heroes during this time? Who were your villains during this time?**

**Greatest influencers good or bad?**

**What did you think of technology? How did family/friends/peers feel about it?**

I felt [                      ] during this season.

## Season of Life

### Chapter #2

(Name this Chapter)

**Describe and write about your family in this season.**

**Who is in your family? | Where do you live? | What are your relationships like?**

**Who:**

**Where:**

**What:**

**What are your favorite memories from this season?**

**When do you feel special? | When are you successful? | A time you feel loved? | Who is in your corner?**

**What are some of the painful memories or challenges from this season?**

**How did others describe you then? How did you describe yourself then?**

**Who were your heroes during this time? Who were your villains during this time?**

**Greatest influencers good or bad?**

**What did you think of technology? How did family/friends/peers feel about it?**

**I felt [                      ] during this season**

**Season of Life**  
**Chapter #3**  
**(Name this Chapter)**

**Describe and write about your family in this season.**

**Who is in your family? | Where do you live? | What are your relationships like?**

**Who:**

**Where:**

**What:**

**What are your favorite memories from this season?**

**When do you feel special? | When are you successful? | A time you feel loved? | Who is in your corner?**

**What are some of the painful memories or challenges from this season?**

**how did others describe you then? How did you describe yourself then?**

**Who were your heroes during this time? Who were your villains during this time?**

**Greatest influencers good or bad?**

**What did you think of technology? How did family/friends/peers feel about it?**

**I felt [                      ] during this season.**

**Season of Life**  
**Chapter #4 (optional)**  
**(Name this Chapter)**

**Describe and write about your family in this season.**

**Who is in your family? | Where do you live? | What are your relationships like?**

**Who:**

**Where:**

**What:**

**What are your favorite memories from this season?**

**When do you feel special? | When are you successful? | A time you feel loved? | Who is in your corner?**

**What are some of the painful memories or challenges from this season?**

**How did others describe you then? How did you describe yourself then?**

**Who were your heroes during this time? Who were your villains during this time?**

**Greatest influencers good or bad?**

**What did you think of technology? How did family/friends/peers feel about it?**

**I felt [                      ] during this season.**

My Story Snapshot

My Story Grid	Season of Life 1 Chapter Name	Season of Life 2 Chapter Name	Season of Life 3 Chapter Name	Season of Life 4 (optional) Chapter Name
People/ Places				
Favorite Memories				
Heroes				
Hard Times				
Villains				
Family Dynamics				

## Appendix C

### IRB Protocol



January 14, 2020

To: Mrs Diana Orozco

From: University of the Incarnate Word Institutional Review Board, FWA00009201

Diana:

Your request to conduct the study titled LATINAS IN IT: SHATTERING THE VIRTUAL WALL was approved by expedited review on 01/14/2020. Your IRB approval number is 20-01-001. You have approval to conduct this study through 1/14/2021.

**The stamped informed consent document is uploaded to the Correspondence section in the Research Ethics Review system. Please use only the stamped version of the informed consent document.**

Please keep in mind the following responsibilities of the Principal Investigator:

1. Conducting the study only according to the protocol approved by the IRB.
2. Submitting any changes to the protocol and/or consent documents to the IRB for review and approval prior to the implementation of the changes. Use the **IRB Amendment Request** form.
3. Ensuring that only persons formally approved by the IRB enroll subjects.
4. Reporting immediately to the IRB any severe adverse reaction or serious problem, whether anticipated or unanticipated.
5. Reporting immediately to the IRB the death of a subject, regardless of the cause.
6. Reporting promptly to the IRB any significant findings that become known in the course of the research that might affect the willingness of the subjects to participate in the study or, once enrolled, to continue to take part.
7. Timely submission of an annual status report (for exempt studies) or a request for continuing review (for expedited and full Board studies). Use either the **IRB Study Status Update** or **IRB Continuing Review Request** form.
8. Completion and maintenance of an active (non-expired) CITI human subjects training certificate.
9. Timely notification of a project's completion. Use the **IRB Closure** form.

Approval may be suspended or terminated if there is evidence of a) noncompliance with federal regulations or university policy or b) any aberration from the current, approved protocol.

If you need any assistance, please contact the UIW IRB representative for your college/school or the Office of Research Development.

Sincerely,

Mary Jo Bilicek  
Research Compliance Coordinator  
University of the Incarnate Word  
(210) 805-3565  
[mbilicek@uiwtx.edu](mailto:mbilicek@uiwtx.edu)



## Appendix D

### Interview Request Email and Video Link

#### EMAIL RECRUITMENT

##### **Initial Email:**

Hello. My name is Diana Orozco and I am a PhD student at the University of the Incarnate Word located in San Antonio, Texas. I am emailing to ask for your assistance in forwarding this email to Latinas in your organization that might qualify to participate in this study:

Hello. My name is Diana Orozco and I am a PhD student at the University of the Incarnate Word located in San Antonio, Texas. I recently discovered that Latinas working in IT only represent 1% within the US. I was shocked to find that we are the lowest demographic represented in this industry. In a day and age where we and our daughters were programmed and told #metoo, equal rights and Si Se Puede, it surprises me that there has been little to no movement in increasing this number over the past six years.

I am looking to interview Latinas that were born and raised within the US, obtained a degree and currently working in IT. This research will be used to identify motivators, attributes, and obstacles you all have obtained or overcome. This study anticipates paving a way to increasing the number of Latinas in IT.

If you decide to participate, the initial survey will take approximately 2 minutes to complete and will inquire background questions about ethnicity, culture, and degree plans. Participation is completely voluntary, and your answers will be anonymous unless you wish to participate further in the second phase of the study in which you will be asked to at the end of the survey. You are free to decline to take this survey if you choose.

ELECTRONIC CONSENT: Please note your options. You may print a copy of this consent form for your records.

By continuing to the survey link in this email, this constitutes you “Agree” all the statements below are true:

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

If the statements above are not accurate, please do not participate in the survey link below. Your decision to not proceed to the survey link will constitute you “Disagree” with the any or all of statements above.

Completing and submitting this survey represents informed consent to participate in the research study. You may choose to opt out of the study at any time. To do so, you may refuse to complete the survey. To take the survey, please click on the link below and follow the directions. This survey will be available for your response until May 15, 2020.

<https://www.surveymonkey.com/r/L7DG8C6>

Please note there is no direct benefit that will accrue to you from taking this survey; however, your participation will contribute greatly to our knowledge and future insight to young Latinas seeking careers in IT.

If you have any questions, please do not hesitate to contact me at

dlorozco@student.uiwtx.edu.

For questions about your rights as a research participant or to discuss problems, complaints, or concerns about a research study, or to obtain information or offer input, contact the UIW Institutional Review Board (IRB) at (210) 805-3036. This research and survey tool has been approved by the UIW IRB (IRB # 20-01-001)."

Thank you for your consideration.

And Si Se Puede!

Diana Orozco,  
PhD Student

### **Second Email Request**

Hello. My name is Diana Orozco and I am a PhD student at the University of the Incarnate Word located in San Antonio, Texas. I come from migrant workers who birthed teachers and leaders that worked to provide opportunities for their children and grandchildren they never imagined

possible. All this to say I believe in the reality that we can help provide a path forward for future generations just like others did for us.

I recently discovered that Latinas working in IT only represent 1% within the US. I was shocked to find that we are among one of the lowest demographics represented in this industry. In a day and age where we and our daughters are being told #metoo, equal rights and Si Se Puede, it surprises me that there has been little if any movement in increasing this number over the past six years.

In this [video](<https://youtu.be/9YxZSzuowN4>) I am asking to interview Latinas within the US that obtained a degree and are currently working in the IT field. This research will be used to identify motivators, attributes, and obstacles obtained or overcome during your journey. This study anticipates paving a way to increasing the number of Latinas in IT.

Participation is always 100% voluntary. If you are interested in being part of this important study, please contact me via email at [[d.lozano.orozco@gmail.com](mailto:d.lozano.orozco@gmail.com)](mailto:[d.lozano.orozco@gmail.com](mailto:d.lozano.orozco@gmail.com)) for a 15 minute follow up to discuss the process further.

Thank you for your consideration.

Together we can resonate to future generations like us, Adelante, Si Se Puede!

Diana Orozco,  
PhD Candidate

### **Third Email Request**

Hi there!

I wanted to update you on this study that you were interested in participating in for Latinas in IT. It is still ongoing.

To give a brief update, I wanted to share personally what has created a bit of a delay in completing this study. Being in my first year at my current organization, I had no idea what DoD contracting looked like during the summer months ending in October. That coupled with major health issues my spouse incurred over the past few months put the brakes on interviewing. He was hospitalized in October and in a wheelchair for a bit but is now home and currently walking with a cane. After a few months of not having answers, two weeks ago he was diagnosed with a rare autoimmune disorder. We are hopeful for full recovery once he begins a focused treatment plan to his specific illness starting this week.

All that to say with work now at a manageable space and a definitive medical treatment plan ahead, I am ready to get cracking back at this study and now full steam ahead to make up for lost time.

In this email, I have provided a link to my calendar to schedule a time we can Zoom to go into the in depth interview. Times are based on CST and will be noted as such when you sign up.

Once you confirm a spot on my calendar be on the lookout for the confirmation email that will include a link to the "My Story" worksheet for you to review. The document can be downloaded.

The My Story worksheet serves as a tool to help you begin to frame your experiences to prepare for our discussion. In addition, I will be asking for unique experiences specific to you that you may have identified outside the worksheet. You can share as much or as little as you feel comfortable with. The document is not required to be completed, However, if you would like to complete and send my way please feel free to do so. I will be using pseudo names to protect your identity during our discussion as well as any notes, documents, and interactions. All documents and discussions will be kept confidential unless you specifically request otherwise.

Below is the link to my calendar as previously mentioned. I look forward to talking with you soon and learning more about your experiences.

<https://calendly.com/diana-lozano-orozco>

Your participation in this study is greatly appreciated and I feel necessary as we work together to pave the way for more Latinas in this industry.

Adelante!

Diana Orozco

## Appendix E

### Interview Consent Email

Please respond to the email below with your consent to participate in the study. A simple yes will do. Also remember anything we discuss will be kept entirely confidential unless you specifically request otherwise. I look forward to talking with you today at 4pm cst.

Hello. My name is Diana Orozco and I am a PhD student at the University of the Incarnate Word located in San Antonio, Texas. I recently discovered that Latinas working in IT only represent 1% within the US. I was shocked to find that we are among the lowest demographic represented in this industry. In a day and age where we and our daughters were programmed and told #metoo, equal rights and Si Se Puede, it surprises me that there has been little if any movement in increasing this number over the past 6 years.

I am looking to interview Latinas within the US, obtained a degree and currently working in IT. This research will be used to identify motivators, attributes and obstacles you all have obtained or overcome. This study anticipates paving a way to increasing the number of Latinas in IT.

Participation is completely voluntary, and your answers will be anonymous unless you request otherwise. Your responses are yours and you decide what you want shared or not. You are free to decline to take this survey if you choose.

ELECTRONIC CONSENT: Please note your options. You may print a copy of this consent form for your records.

By emailing me at [d.lozano.orozco@gmail.com](mailto:d.lozano.orozco@gmail.com), this constitutes you "Agree" all the statements below are true:

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

If the statements above are not accurate, please do not participate any further. Your decision to not proceed will constitute you "Disagree" with the any or all of statements above.

Contacting me via email represents informed consent to participate in the research study. You may choose to opt out of the study at any time. To do so, you may refuse to participate in the study. To participate, please email me at [d.lozano.orozco@gmail.com](mailto:d.lozano.orozco@gmail.com).

Please note there is no direct benefit that will accrue to you from participating in this research; however, your participation will contribute greatly to our knowledge and future insight to young Latinas seeking careers in IT.

If you have any questions, please do not hesitate to contact me at [d.lozano.orozco@gmail.com](mailto:d.lozano.orozco@gmail.com).

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information or offer input, contact the UIW Institutional Review Board

Thank you for your consideration.

And Si Se Puede!

Diana Orozco,  
PhD Student

## Appendix F

### Interview Consent Recording

At the beginning of each recording consent was requested of the participants and captured via the recording.

## Appendix G

### Interview Consent Form

#### **Consent Form for Online Survey**

Hello my name is Diana Orozco. I am a PhD student at the University of the Incarnate Word. You are invited to participate in a web-based online survey that will inquire into demographic information related to your culture and ethnicity, and your status as a current employee working in information technology (IT). This survey is meant to help identify possible participants for my (Diana Orozco) PhD research project that I will be conducting as part of my degree requirements as a student at the University of the Incarnate Word. The survey should take approximately 5 minutes to complete.

#### **PARTICIPATION**

Your participation in this survey is voluntary. You may exit the survey at any time without penalty and you are free to decline to answer any particular question you do not wish to answer. Your participation in the survey does not commit you to participating in my actual study. I will reach out and formally invite those that meet my criteria in a separate communication, following the survey.

#### **BENEFITS**

You will receive no direct benefits from participating in this research study. However, your responses may help contribute new knowledge about a specific demographic working in the IT field.

#### **RISKS**

There are no foreseeable risks involved in participating in this survey other than those encountered in day-to-day life.

#### **CONFIDENTIALITY**

Your survey answers will be sent to a link at SurveyMonkey.com where data will be stored in a password protected electronic format. Survey Monkey does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the survey.

At the end of the survey you will be asked if you are interested in participating in an additional interview by phone, in person, or email. If you choose to provide contact information such as your phone number or email address, your survey responses will no longer be anonymous to the researcher. However, no names or identifying information would be included in any publications or presentations based on these data, and your responses to this survey will remain confidential unless you specifically request for your responses to no longer remain confidential.

#### **CONTACT**

If you have questions at any time about the study or the procedures, you may contact me via mobile or text at 210-216-6800 or email [dlorozco@student.uiwtx.edu](mailto:dlorozco@student.uiwtx.edu), or you may reach my research supervisor, Professor Alfredo Ortiz Aragón at 210-863-6305 or



alortiz1@uiwtx.edu.

If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honored during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the investigator, you may contact the University of The Incarnate Word Institutional Review Board at 210-805-3565, or email [bilicek@uiwtx.edu](mailto:bilicek@uiwtx.edu).

**ELECTRONIC CONSENT:** Please select your choice below. You may print a copy of this consent form for your records. Clicking on the "Agree" button indicates that

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

☐ Agree

☐ Disagree

## Appendix H

### Scheduling Format

Calendly.com was used for scheduling interviews and delivering consent and Story Worksheet.