harder to eliminate the negative bias that being a mother carried in the workplace at that time. She also mentioned having a paid maternity leave, albeit a shorter amount of time than the unpaid time under the Family Medical Leave Act.

> *I had a lot of limitations…I only had 6 to 8 weeks paid time off. And I think that now it's more accepting to take a nice long maternity leave…When we had our kids 23 years ago, we worked even harder so that no one would have ever said, oh, she had a, she became a mother now and she's not going to be committed.* (Participant 3)

A workplace that offers a challenging job with variety, and where growth opportunities are apparent, is essential for motivation to stay with a company. The exception to the rule is when family priorities (young kids, being sole wage earner) trump the individual needs. Whereas performance-based culture and performance-based salaries seem a little more transparent now, career growth seemed still like a struggle. Participants were generally satisfied with their success, but some of the growth aspects seems to be a guess. For example, as this relates to reputation, some cited navigating politics as a barrier. Those who made the choice to go part-time often spoke of the assumed career growth options limiters, whether in the form of lack of promotions or lack of the best projects. Still others emphasized the changes in their schedules they made when having children. This theme had the most variable data. Everyone talked about the importance of growth, but no clear recipe seems to exist. Women STEM professionals ideally want to be employed in a challenging job while ensuring their priorities as a parent and spouse are met. They want to continuously grow.

Additional Data Collected

Non-Linear Participants

Tip: Avoid back-to-back headings without any text in between. To fix this, write a short introduction for the section.

Four of the 20 participants had non-linear careers. A non-linear career path is defined in this study as a career path where the participant left the STEM workplace for more than 26 weeks and then returned to continue working in a STEM field. As this data set is small, future research may be required to further validate the data collected in this study.

Three of the four participants left and came back because of deciding to stay home with children. All three of these participants were engineers. All three transitioned as part-time workers at some stage as part of easing their transitions. The fourth participant lost her position as result of downsizing and took 6 months off before returning to work. She was in science and was full-time her entire career.

There were no differences in what motivates linear participants versus non-linear participants. The responses of non-linear participants reflected the selective codes and theoretical codes with regards to motivation to stay in STEM. As with all of the study participants, the non-linear participants emphasized family priorities. The non-linear participants did emphasize workplace policies, relationships with their direct manager, and staying connected to their network as factors that helped ease their transition back.

Two participants that left and came back emphasized their priorities and values they shared with their husbands in having one parent at home when the children were young. One of these engineering professionals left and came back twice, the second time being away for seven years before returning to work full-time.

They both emphasized their satisfaction with their life and shared a common-spirited sentiment that women can have a challenging STEM career and be fulfilled as a parent too. Similar to linear participants, the participants acknowledged that their family and career choices impacted their ability to move up the corporate ladder at the same pace as some of

their peers, but expressed no dissatisfaction despite expressing making career sacrifices. They saw their career sacrifices as choices they made because they wanted to, not because the opportunity was not there.

> *(you know) I think it's good to see the girl, (you know) the young girls coming up through the ranks and you hear people want to have it all. You can have it all. But sometimes you have to put things on a scale of priorities. You can have all of it but maybe not a hundred percent of all of the time, you know? And my 100% may be a lot different than another person's hundred percent. And balancing and making sure that you stay happy and (you know) that not everything's going to work right all the same time. Women need to understand that you can set the balance depending on the situations in your life and your interest.* (Participant 9)

Another non-linear participant shared her perspective on opportunities with work and balancing home priorities.

> *The whole thing about glass ceilings and all that. I just, in my personal situation I didn't see it. I feel like the reason I didn't move up as fast as others, (you know) men my age, is because I made the choice to stay at home and be with my kids. Which I'll never regret. You just have to make the right decision for you at the time. And we are smart women, and we can make opportunities*. (Participant 20)

Participant 4 shared that there was really no question that she would come back to work after having children either time. She mentioned that her support structure at home helped with the decision.

> *I thought I would definitely come back to work. I just, I like it. But if I came home and had to do 100% of the cooking and cleaning and taking care of the kids and*

picking them up and dropping them off and all that?...I would definitely be limited to what I could do at work. (Participant 4)

Participant 11's reason for leaving and coming back was different from the other three non-linear participants.

My entire team was outsourced. So I was pounding the pavement looking for another job. And at that time I realized I really didn't want to pursue a career in the same industry. I have to go back to work because I need benefits. (Participant 11)

Three of the four non-linear participants came back to the same company or same parent company. There were two items mentioned by at least half of the participants that helped their transition back. One was keeping her network alive while she was out of work, and another was being able to come back to work part-time at first.

I took two leaves. In both cases, I was working, (where) I think I was working for the same manager. But he made it very easy. He was very flexible. Let me have some flexibility to kind of return back to work part-time and then eventually to full-time. (Participant 4)

One participant joked that when she was called by her company to come back for a temporary and part-time assignment, she never planned to still be working for them, now full-time. She emphasized that part of the reason she felt confident coming back was that she was coming back to a network that she knew and that knew her work. A key component of her coming back was that she kept the network with this company alive while she was not working there.

I always kept in touch with the <company> after I left. And then when there was an opportunity where they said hey, do you want to come in and work for two weeks and

help us out? …And I took it, and I tell several people it's been the longest two weeks of my life. That was back in (the early 90s)…. I was going back to a company and to colleagues that I knew. I knew how they worked. I knew what their expectations were. And they knew me. I was going into a very comfortable zone. (Participant 9)

Similarities and Differences Across Demographics

There were some trends in age groups and in STEM Profession Types where the data may prove interesting for further research. There seems to be a factor, either in society or in the workplace, that changed within the past 25 years that helped women integrate their life and work priorities better. This trend is potentially more prevalent for Engineering and Science professionals, although the data set is relatively small. The motivations later in participants' careers included a split between professional types. Again, the data set to compare is relatively small, making this an option for future research.

There were seven participants, who, when asked about hostile environments, answered that they experienced hostile environments generally in their early career, but did not view their current work environment as hostile. Every participant who answered in this fashion was at least 25 years into their career. No other participant interviewed agreed that the environments being hostile early in their career was more the norm than the exception.

Each STEM professional type represented in the response that early in their career, a hostile environment was the norm, with Engineering having the highest response with 3, Science second with 2 and both Math and Technology with 1. Table 3 includes these results, comparing responses with those who did not experience a hostile environment or who have

Table 3

Summary of Results on Experiencing a Hostile Environment

STEM Profession Type	Total Years in STEM
Experienced hostile environment early in career	
Engineering	25-30
Science	25-30
Engineering	25-30
Technology	>30
Science	>30
Math	>30
Engineering	25-30
Never experienced hostile environment in career	
Math	15-20
Math	15-20
Technology	20-25
Engineering	15-20
Engineering	10-15
Technology	10-15
Engineering	>30
Observed hostile environment in pockets of industry or company sub-cultures	
Science	>30
Technology	10-15
Math	15-20
Engineering	10-15

Tip: Limit a table to a single page.

experienced a hostile environment in industry pockets or subcultures. There was no vignette mapped during open coding for two participants that directly correlated to one of the categories in the table. All of the participants who expressed career sacrifices being needed to maintain a work-life balance were Science and Engineering professionals at least 25 years into their careers.

When asked about motivations that changed over the course of their career, the professionals that leaned more towards compensation as a motivator were Engineers. The professionals that leaned more towards culture were Math and Technology professionals. Science professionals were motivation by both compensation and culture later in their careers. References to the impact of politics were made only by participants who spent time working in large companies.

Support at Home

Several participants emphasized that a factor in enabling their success in the workplace is a strong home support structure. Some emphasized their personal relationships with sisters, brothers, fathers, or spouses who were also in STEM careers and the camaraderie that offered them in their personal lives when discussing work.

> *My family was very supportive. (you know) I have to credit my parents. They had six kids, three girls and three boys and they never treated the girls any different than they treated the boys. And so (you know) when my sister and I both said we were going to math majors, that was perfectly acceptable to them.* (Participant 2)

A few participants stated during the interview that they were surprised there was not a question on support at home because their husband's support was a key factor to them.

> *I have a very supportive husband…we balance both of our careers.*

And I think that that's an absolutely huge contributor to whether women stay working or stay dedicated to their fields and dedicated full force, is what's their support structure like at home. (Participant 7)

One participant mentioned that maternity leave and staying home when the kids were young was not a huge consideration for her because of the flexibility of her husband's career.

My husband stayed home when the kids were little. Every time I would take my maternity leave and then he would take off up to a year because he could do that. (Participant 12)

Societal Factors

Other data that transpired as a result of questions in changes over time in the workplace were very specific to changes roles of women and men in society. Societal factors that have influenced the environment both at home and at work for women to pursue and stay in challenging STEM careers may be an area for future research.

I think the men in the technical engineering environment have come a long way to respecting women when they come back part-time or even full-time with kids. And now that the roles at home are changing, I think men have a better idea what it takes to work outside of the home but still maintain the level of family that all families need and kids need today. (Participant 9)

One participant reflected during the interview that perhaps as women were having children later now, they had time in the workplace to demonstrate their value early.

I was 9 years into my career before I even got married. And 12 years in when I had a child. So at that point, it's probably harder to hang it up when you've already had success. And you see the earning potential. (Participant 18)

Conclusions

This chapter contains the results of the analysis, connects the analysis back to the research questions, and demonstrates consistency of the analysis with grounded theory methodology. Twenty participants were interviewed for this grounded theory methodology study. Interview questions were structured to understand what factors contribute to motivating the modern woman to stay in STEM professions long term. All participants were women with a minimum of 10 years of experience in STEM professions. Four of the 20 participants had non-linear careers, as defined in this dissertation as a career path where the participant left the STEM workplace for more than 26 weeks and then returned to continue working in a STEM field.

Consistent with grounded theory methodology, there were three levels of analysis, open coding, selective coding, and theoretical coding. Forty two codes emerged from open coding. Constant comparison analysis was exercised using mind-mapping and NVivo 10 software to discover nine selective codes, emerging into categories from the open codes. Additional constant comparison analysis was used to discover the relationships between and within the open and selective codes, leading to five themes. The five themes resulting from this study summarize the contributing factors that motivate women to stay in STEM professions long-term: (a) Interest in STEM is the Constant as Individual Needs and Priorities Change, (b) Direct Manager Influence on Development is Critical, (c) Performance-Based Workplace Policies and Culture are Continuously Sought, (d) Moving Towards a No-Bias Workplace Remains Important, and (e) The Career Growth Path at Life's Crossroads Remains a Challenge.

Briefly summarize the key findings.

There were no differences in the factors that contribute to a woman's decision to persist in STEM professions via a linear career path versus a non-linear career path. Additional data on the similarities and differences discovered across demographics, how support at home contributes, and what societal factors contribute are also found in this chapter. While great strides have been made in creating good opportunities for women in STEM, it is evident in the research results that there is variability in how participants manage career growth while managing family priorities. Chapter V includes the summary for the critical analysis and discussion on the five themes.

Bridge to Chapter V.

Tip: The length of Chapter IV varies, depending on the type of study and nature of the data.

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