

MSc. Thesis - Women in Product

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Abstract

This paper examines career development of female software product managers and their perspectives. Qualitative interview inquiry research was conducted with over 20 participants with diverse backgrounds. Through the women's lens we describe their journeys and challenges they had to face during their careers. We have identified nine categories which were subsequently divided into 3 main themes of Attracting Talent, Retaining Talent and Developing Talent. We delve deep into the personal stories, decision and choices these females faced. Ambiguous role definition and development opportunities, pressures from societies and companies' environment perceptions, management support, and the Glass Ceiling are all prevalent aspects that influence female software product management career development. The study contributes to software product management and career development studies by providing potential research areas to voice the needs of the role and its impact on organizations.

Research is what I'm doing when I don't know what I'm doing...

Werner von Braun

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Chapter 1

Introduction

Software product management has seen a rise in adoption with the digitalization and globalization of products. In a 2019 survey, LinkedIn ranked Product Management as one of the most promising jobs of the year, with a 29% year-on-year growth in job openings (Pattabiraman, 2019). Backgrounds of people in product management range from people transitioning from engineering positions, marketing, sales, support, and CEOs themselves. Yet even with this variety of backgrounds, the IT gender gap - phenomenon describing women's under-representation in the IT workforce is still present and affecting individuals and society.

Product management is mainly positioned on the technical side of the organizational structure. Because of this, reason PM profession is male-dominated. Current research shows that the equality of women in IT roles is still skewed, and the ratios are getting worse the higher we go up the corporate ladder. Diverse hiring in an overall male-dominated role such as PM is a low priority, and progress toward gender equality remains slow. "Product management is the discipline and business process that governs product from its inception to its delivery" (Ebert and Brinkkemper, 2014). Software product management is an extension of product management processes and it is specific to software development of digital products.

The new digital world increased the demand for PMs and expanded the demographics of the customer base. Digital products are now available worldwide in a matter of seconds. From that fact, we can deduce that the development of products meant for customer consumption should become more diverse. A digital product is a software-enabled product or a service that offers some form of utility to a human being. Not every digital product is purely software - it can be a combination of physical and digital formats. Some of the prominent examples of gender disparity in digital products include Uber's favorite ride-sharing service, which was introduced in 2010 but did not add an emergency call feature until 2018, and did not allow users to report safety concerns via the app until 2019 (DiBiasi, 2020). A range of diversity (racial, gender, sexual orientation, etc.) in employees with different perspectives are needed to influence a digital product's development fairly. Are there enough diverse product managers out there developing products we use every day? What influences people to consider a product development career? Suppose the products produced with little diversity can harm their utility. Should we, as a society, not advocate more for attention to help minorities in these roles ensure representation?

Ebert (2007a) states "Product management is an important part of any organization."

Albeit mostly ambiguous and underrepresented in the organizational structure. Rapid digital adoption created a spawn of several industry-driven educational courses and programs dedicated to teaching PM practices' practicalities - primarily focused on an agile way of working in software development. We understand that product management core processes (or procedures) are necessary to any modern organization. Yet, we do not seem to have any institutionalized body of knowledge in academia. Its definition is fragmented and remains a debate between researchers.

Pragmatically product managers job is to ensure the product's success. They use various metrics to measure and monitor the success. From customer satisfaction, customer base, gross margin, revenue churn, etc. Any product's performance is dependent on the capability of the product manager (Ebert, 2007a). Few studies have proved a link between the role of product management and success rates of projects or firm's performance. "Companies win or fail depending on their product managers" (Christensen and Anthony, 2004; Cooper et al., 2004; Cooper, 2006; Davis, 2013; Ebert, 2007a; Gorchels, 2012; Lehtola et al., 2005).

Diversity in technological fields is critical because of several reasons: (a) different perspectives (b) drives innovation, (c) increases empathy in people, (d) companies perform better, (e) retain employees better (f) have more engaged employees. Understanding of the following terms can be crucial to any discussion of diversity, and thus they are defined as:

Inclusion - "the act or practice of including and accommodating people who have historically been excluded (as because of their race, gender, sexuality, or ability)" (Merriam-Webster, 2021a)

Gender Diversity - "gender diversity is an equitable or fair representation of people of different genders. It most commonly refers to an equitable ratio of men and women but may also include people of non-binary genders." (Sytsma, 2006)

Gender neutrality - it represents policies, language, social structures, gender roles, and social institutions (roles, or identity) which do not differentiate people by sex or gender (Puckering, 2019)

What shapes the career development of diverse product managers? The research question has evolved over multiple iterations of research within the product management field. Professional experience in the industry and interest in diversity issues in the 21 century has motivated me to study these three topics' overlap. I was particularly interested in the women's stories and experiences to identify commonalities and struggles they go through every day and understand how those factors influence their decisions about their careers. Therefore, a qualitative research inquiry was chosen to investigate the problem of diversity in product management. The research aim is supported by a research gap in academia. While diversity and career development studies have received enough attention, software product management-oriented studies, on the other hand, are sorely lacking. The issue might be linked to the ubiquity of the role within companies or a lack of a stable definition. Some of the research is done by privately held companies. To the best of my knowledge, no studies investigate the career development of diverse product managers, the importance of gender diversity in this role in the company, and how they are developing. Considering the diversity angle, I should note that the study focuses on gender diversity. Other forms of diversity are not included in the investigation. I do acknowledge the existence and importance of different types of diversity. This research has been limited to interviewing women who are in a software product management role.

This thesis uncovers three overarching themes-Attracting, Retaining, and Developing factors of diverse product management talent in an organization developing digital products. I describe and explain the themes with nine nested categories that showcase the differences between ob-

served subjective realities (of our participants) versus existing theories (in their domains-e.g., diversity or career development). These categories present potential areas for further research into the problem of diversity in the digital world. Ambiguous role definition and development opportunities, pressures from societies and companies' environment perceptions, management support, and the Glass Ceiling are all prevalent aspects that influence female SPM career development. I have identified these categories with the semi-structured interview-based qualitative inquiry with a social constructivism lens to elevate the participants' voice and their individual stories. The research has an abductive exploratory design that started with a small initial literature review for validity followed by data collection, processing, and analysis. After analysis, I referred back to the literature review to explain my findings and uncover more insights. I have gained familiarity with the topics and have seen parallels to women's experiences in other technology-oriented roles; in addition to that, I have seen issues that were particular to the software product management topic and gender-specific issues in career development. The unclear definition of roles and responsibilities with the unique position of SPMs in the companies' internal and external boundaries make it particularly complicated for women to understand and chart their careers in this field. In addition to that, the companies' environment and society's perceptions put pressure and expectations on them, which results in lower retention or career switches. These are essential topics to investigate and develop in future research. Diversity in the SPM role in the modern world is paramount for un-bias, fair digital products and, in general, to reflect its consumers' diversity. The world is changing. Technologies are influencing more parts of our lives. We must ensure that their development reflects equality and inclusion of all. And currently, it is not. Through this study's results, I hope that communities of diversity and software product management will discuss and expand on this research further.

Chapter 2

Literature Review

2.1 Introduction

The research question: What shapes the career development of diverse software product managers?

The research question informed me about the topics that I will be reviewing for the literature review. Since this is abductive research, I have started with a limited literature review and then expanded on the study. I was collecting more data points, and specific themes began to rise.

I shall present relevant parts of the extant literature from three topics - Diversity, Career Development, Software Product Management, and some of their subtopics. This chapter aims to present the existing literature to the reader in a coherent manner that will help understand the findings and how they relate to the realities of the industry.

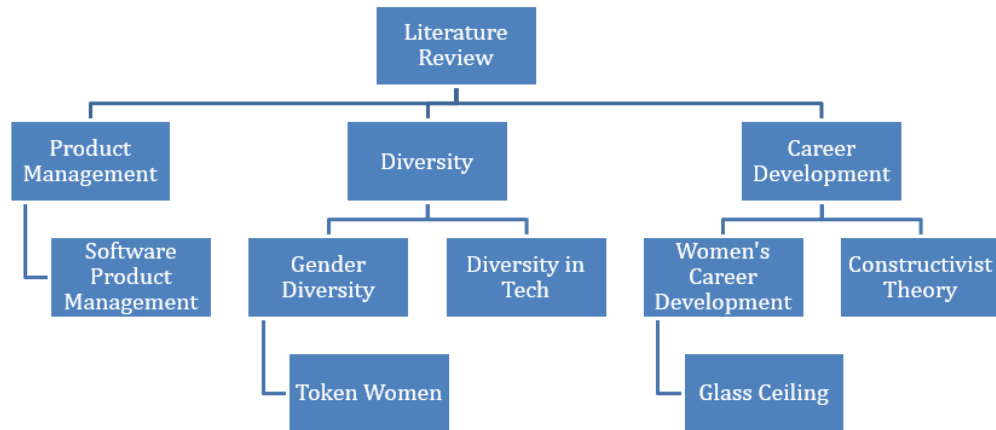


Figure 2.1: Literature Review

The figure above presents an overview of the main concepts that I will be covering in this chapter.

2.2 Diversity and its effect on Organizations

The construct of diversity has been defined in many ways(Qin et al., 2014). It is necessary to clearly define the criteria under which you are looking for differences in the analysis of populations while there are so many variables(Qin et al., 2014). In my research, I zeroed in on gender as the primary topic.

Businesses that focus on diversity and inclusion frequently struggle to meet their objectives (Dobbin and Kalev, 2016). After a lot of empirical research on the subject the literature agrees that there is no silver bullet for this problem (Dobbin and Kalev, 2016). However, we can see some promising results from recent studies. Harvard research Charlesworth and Banaji (2019) released a statement: "We know that explicit social attitudes and beliefs can change over time. New data from nearly 6 million respondents shows that implicit (and explicit) attitudes/beliefs about minority groups can and do improve over the long-term period (sexuality, race, skin tone, and gender roles). Moreover, this change is widespread across most demographic groups, suggesting it is a consequence of large-scale cultural shifts."

There are plenty of internal logics, cultures, and complexities, to an organisation and the contextual issue is an important factor(Pedulla, 2020). While no comprehensive solution exists, we continue to examine and seek understanding of this topic. Nevertheless, it is not easy to achieve gender and racial diversity and equal opportunity initiatives within technology organi-

sations around the world. Despite a significant number of initiatives over the last few decades, women continue to be underrepresented in the IT industries. This thesis adds to that body of knowledge by focusing on female SPMs. There is no body of knowledge that focuses primarily on diversity in product management role. I review research from adjacent studies with an aim to find parallels with my data.

A broad body of evidence indicates that diversity is associated with better outcomes, not that it causes success(Phillips, 2017). However some generalizations can be made, the results from these studies show that diversity indeed aids creativity and innovation(Phillips et al., 2006). When we are around people who are alike, we all seem to think the same (Phillips, 2017). Where there is conflict with people of a different social status, we do our best to understand their viewpoints (Phillips, 2017). The general homogeneity of a group influences the group's ability to remain alert and conscious, while the heterogeneity of a group encourages mental diversity(Phillips, 2017).

2.2.1 Gender Diversity

Hewlett et al. (2008) research finds that: "if we could, as a society, cut female attrition in science, engineering, and technology by 25%, we would add 220,000 highly qualified workers to the labor market." If so much valuable, top-level, high-value work is required in the global economies, that is worth making everyone aware of the need to rally around diversity(Hewlett et al., 2008). The result would be beneficial for all, regardless of gender.

At this time, the research on the effect of board gender diversity on the overall business performance is incomplete (Reddy and Jadhav, 2019). Similarly, research on the effect of gender quotas on company success is mixed(Reddy and Jadhav, 2019). Women directors are underrepresented and in response, some countries have introduced quotas to facilitate the hiring of female directors (Reddy and Jadhav, 2019).

Reddy and Jadhav (2019) states: "Studies on gender diversity had their theoretical underpinning mainly from management literature. The often-cited theories include human capital theory, social identity theory, social network and social cohesion theory, resource dependency theory, and agency theory."

2.3 Career Development

The significance of peoples' vocation has been clearly illustrated by a broad variety of sociological and psychological research (Denmark and Paludi, 2007). Anything we do in our profession has an effect on our social situation, self-esteem, and our economic status (Denmark and Paludi, 2007).

Many hypotheses over the years have been developed to understand the career growth process. There was a period when the focus of various theories was placed on "searching for skills that fit job requirements," but today the emphasis is on creating a career paths for long-driven, lasting fulfilment. Recent theories emphasise the importance of finding work that gives meaning to each stage of life (LoveYourCareer.org, 2021).

When you have to put food on the table and somewhere to live, allowing them to get some additional work or assistance becomes more important than taking the chance for their life's dream career (LoveYourCareer.org, 2021). Ultimately, individuals who have fulfilled all of their

basic human needs, however, are able to engage in professional and creative endeavours that offer both development and meaning (LoveYourCareer.org, 2021).

Because of the nature of qualitative inquiry research we highlight career theories related to constructivism. A person's understanding is constructed by their own concepts, principles, experiences, and beliefs (Reddy and Jadhav, 2019). The Career Construction Theory (Savickas, 2005) was particularly fitting to this study.

Social constructionism: individual's knowledge and beliefs about self and others is understood in relation to social or other external forces.

Career Construction Theory & Life Design The career construction theory (Savickas, 2005) is built on Super's theoretical framework and extends beyond scores on tests and allows counsellors to examine a client's stories.

LoveYourCareer.org (2021) states key concepts:

"Self-construction: individuals develop from childhood where they first begin as actors, then agents, and finally authors of their lives and careers. Career adaptability: evolved from Super's concept of career maturity; it involves assessing the concern, identifying the developmental tasks, and exploring skills, and resources needed to resolve the tasks. Four dimensions of career adaptability include:

- Concern: acknowledging planning and optimism for future career options; this is opposite of indifference, apathy, or pessimism.
- Control: ability to take control over one's own career choices; this differs from indecision, confusion, procrastination, and impulsivity.
- Curiosity: process of becoming inquisitive about interests and alternatives rather than unrealistic beliefs about self and the environment.
- Confidence: increased self-efficacy or belief in career success; the alternative is career inhibition."

2.3.1 Women's Career Development

The literature reports: "Within the women's career development literature, external barriers to optimal vocational outcomes include such variables as sexual harassment, lack of mentors and role models, socioeconomic disadvantage, educational and workplace discrimination, prejudice related to race, ethnicity, gender, sexual orientation, and disability, and occupational stereotyping." (Noonan et al., 2004a)

Moreover: "Internal barriers include multiple role conflicts, skill deficits, underestimation of capabilities and poor self-efficacy expectations, low outcome expectations, and constrictive gender role socialization (Lindstrom et al., 2012)" (Noonan et al., 2004c; Smith, 2007).

Exploring and understanding these barriers is fundamental for this study. They proved to be building blocks for my research Noonan et al. (2004b) points out: "Swanson and Witke (1997) (Swanson and Witke, 1997) and (Lent et al., 2000) and have described specifically how coping efficacy, dispositional affect, and outcome expectations shape the way in which an individual perceives self and the environment in the career development process, and thus can act as barriers in this process."

"The study is part of the National Study of Women's Achievement (Fassinger, 2002) , a qualitative exploration of the career development of more than 100 prominent, diverse women in

the United States, including African American and Caucasian women (), lesbians (Hollingsworth et al., 1997), Asian American women (Prosser, Chopra, & Fassinger, 1998), and Latinas (Gomez et al., 2001). ” (Noonan et al., 2004b)

Few researchers: (Gomez et al., 2001; Hollingsworth et al., 1997; Richie et al., 1997) ”thus far have suggested predominantly nonlinear career paths and exceptional ability to turn challenges into opportunities, extensive experiences with oppression (e.g., racism, sexism), notable perseverance in the face of challenges, intense dedication to work, especially work contributing to social change, reliance on internal standards of judgment, a wide variety of familial, cultural, educational, and sociopolitical influences, extensive use of supportive relationships, myriad strategies for stress and multiple role management, and a predominance of women who have been leaders and pioneers in their fields or workplaces”. (Gomez et al., 2001; Richie et al., 1997, see) (Noonan et al., 2004b)

Noonan et al. (2004b) describes qualitative approaches as: ”particularly appropriate when investigating understudied populations (Fassinger, 2001; Hackett, 1997; Morrow and Smith, 2000), because existing theory and measures may be questionable or inadequate.”

It has only been since the 1960s in the Western world that women’s work has been taken seriously at least in some segments. (Denmark and Paludi, 2007) More than half of the workforce is made up of women and it is vital that we utilize this resource. A lot of software development work in the computer industry is still gets done by men. So far, this gender inequality has done a great deal of damage to diversity in the workforce. When it comes to technology related fields, businesses are having a hard time keeping women despite getting them to their professions. Women’s advancement has a direct impact on their quality of life and restricting their options by negatively impacting their career choices. Glass Ceiling Effect refers to such ”invisible” impacts: ”that militate against women’s access to top decision-making and managerial positions in an organisation, whether public or private and in whatever domain” (for Gender Equality, 2020a).

Today’s culture can no longer recall the dawn of computer programming, which was once thought to be an all-female trade, during the ’60s to ’70s.(Eveleth, 2013) It was only a few decades ago that women were denied or found unsuitable for any positions not connected to ”the kitchen”. In its 1976 issue, *Cosmopolitan* magazine published an article titled “The New Career Girls,” pointing out that working in the computing sector was now an outstanding option for young women, and gave several benefits over other occupations that existed at that time. (Eveleth, 2013)

2.4 Software Product Management

Product management started in the 1930s when Procter and Gamble realised that they needed a specialised business role (Eckles and Novotny, 1984; Lysonski, 1985; Sands, 1979; Wood and Tandon, 1994). The role of product manager has an interesting development curve. Created first to be responsible for the entire development, production and marketing of a single product line, and then in the 1970s to be replaced by multi-functional teams that took over responsibility for the entire product life cycle and essentially replaced individual product managers.(Katsanis et al., 1996). This meant that many professionals had been broken into specific functions, which opened up career opportunities for more-specific occupations. (Roach, 2012) During the 90’s we are starting to see a rapid rise in technological advancements and innovation – particularly

in the San Francisco area and the rise of software development. Agile development and software creation in general revived the role of the product manager.

While many of today's large corporations don't comprehend the true scope of product management, it is important to remember that they also struggle to successfully execute it.

Maglyas et al. (2011) notes "Software product management (SPM) offers tools and practices for achieving business goals of a company as well as for increasing the predictability and profitability of software product development. Despite the importance of this topic, the studies of SPM have thus far been fragmented. Still, most of the papers had only hypotheses and theories that were not empirically confirmed or the confirmation was based on a small set of cases. The existing knowledge of software product management consists of small and unconnected pieces. even traditional SPM studies are fragmented. "

To begin a scientific study in a field that doesn't have agreed-upon definitions is overwhelming. It was inferred from a study-based evaluation that there was a lack of consensus on the meaning of SPM (Maglyas et al., 2011). Van de Weerd et al. (2006b) states that "the existing frameworks are immature and require additional research. There is no overstatement of the significance of doing software product management studies.

The importance of conducting studies in software product management cannot be overestimated because To put it another way, SPM offers capabilities for launching products and potentially increase companies competitive advantage(Maglyas et al., 2011).

Software product management (SPM) is "the discipline and business process governing a product from its inception to the market or customer delivery and service in order to generate the largest possible value to a business" (Ebert and Brinkkemper, 2014). For example Ebert (2007b) shows "An empirical investigation of the projects in the industry suggested that focus on software product management allows the company to reduce cycle time in the business unit by 36% compared to the initial estimation. SPM also has a positive impact on delays and quality which, according to the same study, can be improved by 80% with product management practices".

The key advantages of SPM are increasing profitability and company target achievement goals over the life of the software project (Van de Weerd et al., 2006a). Software product management is key to helping the company to achieve and retain competitive advantage by developing market practises(Kittlaus and Clough, 2009). "In fact, it's more accurately described as a range of activities (and behaviours) in constant flux, which are becoming the centre of value creation in modern companies"(Jawhar, 2020).

"That is why we need to rethink what and why we build things. Since the people making these future decisions will be product people, we have an obligation to think about and develop that talent beyond foundational mechanics and performance so that they're more equipped to start building a better future." (Jawhar, 2020)

Because product managers will make the future decisions, we have a responsibility to think about more than about results and mechanics. That is why we need to get back to the issue of whether we design and create things, all together. Because our potential product leaders will be responsible for deciding on innovations, we have a responsibility to ensure they represent the whole world.

2.5 Overlap of these three topics

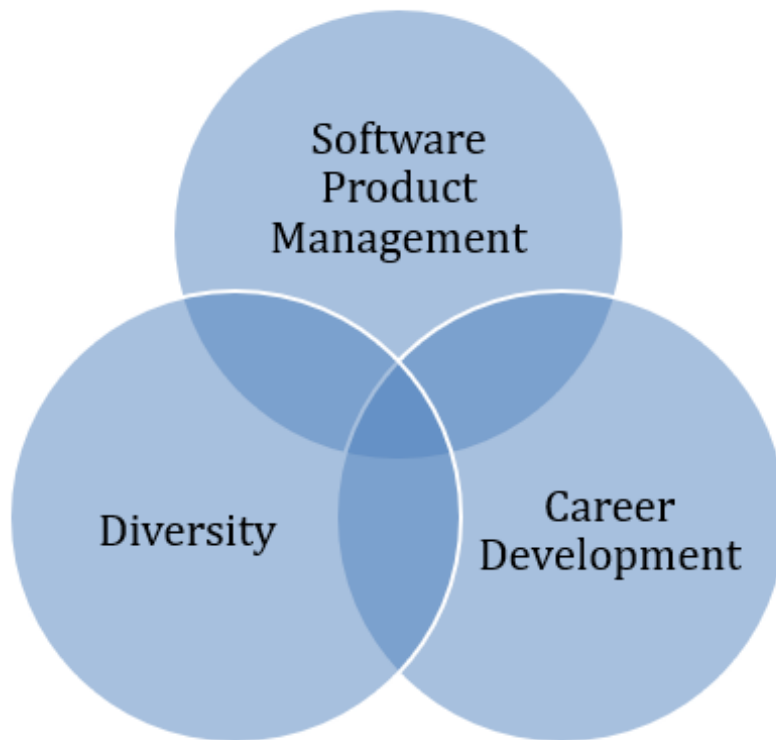


Figure 2.2: Venn diagram of our research topics

We are filling in the gap with preliminary qualitative data on the three topics we have uncovered. My research participants are right in the middle of the Venn diagram. All of these issues present specific problems, and in the next section, we will observe the reality from their point of view.

Chapter 3

Methodology

3.1 Introduction

The following section describes my methodological choices and their application in my research. I shall explain how my choices of research philosophy, approach and strategy have practical implications on my designing and conducting my research. For this study to be taken seriously, it must be shown why the decisions were made(Crotty, 1998).

The study is a qualitative interview-based research with constructivist orientations. Qualitative research inquiries have a myriad of processes. It is crucial to note the qualitative inquiries are performed in the analysis for concerns about the rigour of academic research and proper methodology(Blustein et al., 2005). "Nearly 40% of Career Development qualitative studies fail to report which qualitative method or approach was used. My reasoning for choosing qualitative method "it is pivotal in expanding the horizons of issues and problems within vocational psychology (p.352)"(Blustein et al., 2005).

As a constructivist study I emphasise participants' feelings, ideas, concepts, and perceptions of words and events(cdi, 2012).

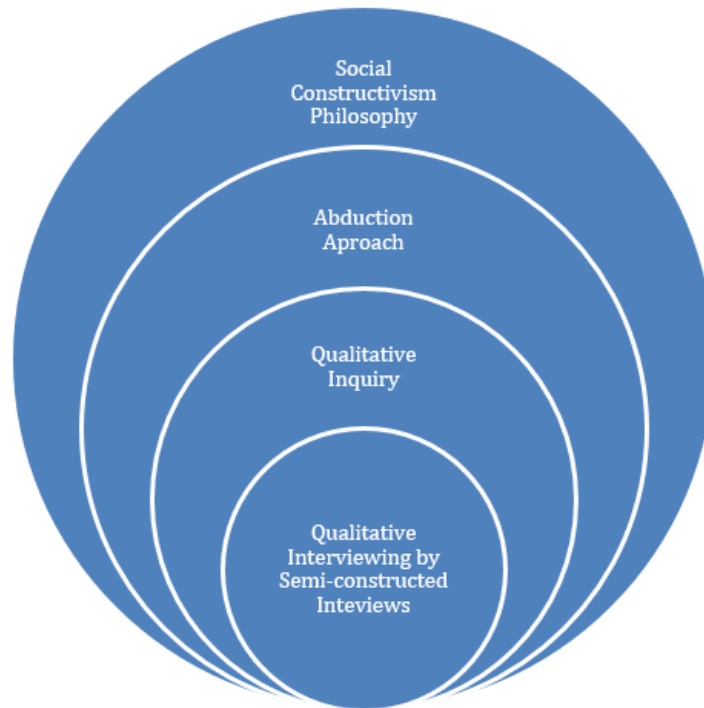


Figure 3.1: Overview of my research methodology ‘onion’ – Inspired from Saunders 2015

The methodology section is designed to best reflect the rationale behind my methodology decisions. I discuss my philosophy, strategy design, sampling rationale, data collection, data analyses, ethical considerations, methodological limitations and quality criteria respectively.

Due to the pandemic and the labour intensity of qualitative research in a short span of the time available to research I have opted for simple yet effective interview-based research.

cdi (2012) notes: "Constructivists emphasize locating their data in context. Thus they may attend to the context of the specific interview, the context of the individual's life, and the contextual aspects of the study and research problem within the setting, society, and historical moment."

Neimeyer and Levitt (2001):" Constructivist approaches refer to an epistemological position in which knowledge is regarded as constructed.They are based on the assumption that knowledge is the result of constructive processes, and the consequence of this for the analysis of person situation-interaction is that these are constructed on the basis of experiences, i.e., the same context is seen and applied differently."

Reasoning	Departing point	Aim	Drawing conclusions
Abduction	Empirical observations	Developing new understanding	Suggestions

Table 3.1: Abductive approach overview de Brito and van der Laan (2010)

3.2 Research Philosophy

Due to the nature of the research question and the goal of understanding what shapes the career development of women's PMs I am following an abductive approach. To understand each participant's narrative and experiences I take an ontological assumption of existence of multiple realities. With the qualitative study I aim at attempting to report these realities and show them to the world. Evidence of this can be seen by using multiple quotes and different perspectives of individual. In this case I have noticed a spectrum of perspectives on the current state of women in the product management role (Crotty, 1998).

Subjectivism is dominant in the qualitative methodology. It provides an open license for subject interactions (e.g., interviews) and the subjective interpretation of data as part of qualitative research techniques (cdi, 2008).

Gergen (2001) states "there is no means of declaring that the world is either out there or reflected objectively by an 'in here' (p. 805)." The constructionist has no interest in science's concept of universal and transcendent truths. Different communities have their own unique ways of thinking that have proven valuable contributions, and therefore are necessary (cdi, 2008).

3.2.1 Social Constructionism

cdi (2008) notes: "In qualitative research, social construction brings into specific focus three significant relationships: the researcher's relationships with the subjects of research, with the audience, and with society more generally."

It was important for me to investigate the participants' work environments in order to learn as much as I could about their stories. I'm making an epistemological assumption – I'm trying to get as close to the source of information as possible. I'm conducting interviews and discussing their experiences without judgment.

To place myself in the study – I accept that the essence of this study is value-laden by my interpretation of truth. I have consciously combated this prejudice through self-reflection journal entries.

However, in order to build a trusting atmosphere for participants to share their stories – as this is a sensitive research subject – I conducted semi-structured interviews that gave me the opportunity to respond to new details or directions that flowed through the discussion and to get more specific – in-depth, valuable information from the participants.

Because there is a lack of similar research in the field of product management, I have opted for an abductive approach with little literature and hypothesis analysis to keep my discoveries impartial and unbiased by established theories from adjacent fields (career development, feminist studies, etc.).

Even if an abductive inference can not be as powerful, it can still be an extremely useful tool. When we try to arrive at an explanation, we are enlarging the range of possibilities. We are granting ourselves a margin of error by sticking with tried-and-true explanations (alm,

2008).

3.3 Research Strategy

We have structured the semi-structured interview guide with questions that are categorized in 3 main themes – Attracting Talent, Retaining Talent, Developing Talent. This forward thinking has been introduced in order to construct an interview guide with subsequent analyzes in mind.

The questions were structured to speak about their career development stories from a range of angles in order to capture a more holistic understanding. We wanted to give them enough opportunity (more than once) to share their perspectives.

The participants were permitted to say whatever they felt was important and useful about their stories in order to protect their feelings.

Seeing as people may be hesitant to express their true feelings, there is an extremely important need for people to create a space of mutual non-conditional confidentiality, and increasing the confidence level among participants.

It's important in these interviews to establish trust between the interviewer and the participant – that why some parts of the interview are not included as they referred to personal stories and relationship building between the two.

3.4 Research Design

The research design serves as a general framework for my approach to answering our research query.

I have devised semi-structured interviews with nine questions that help us comprehend and describe the participants' careers and their motives for choosing them.

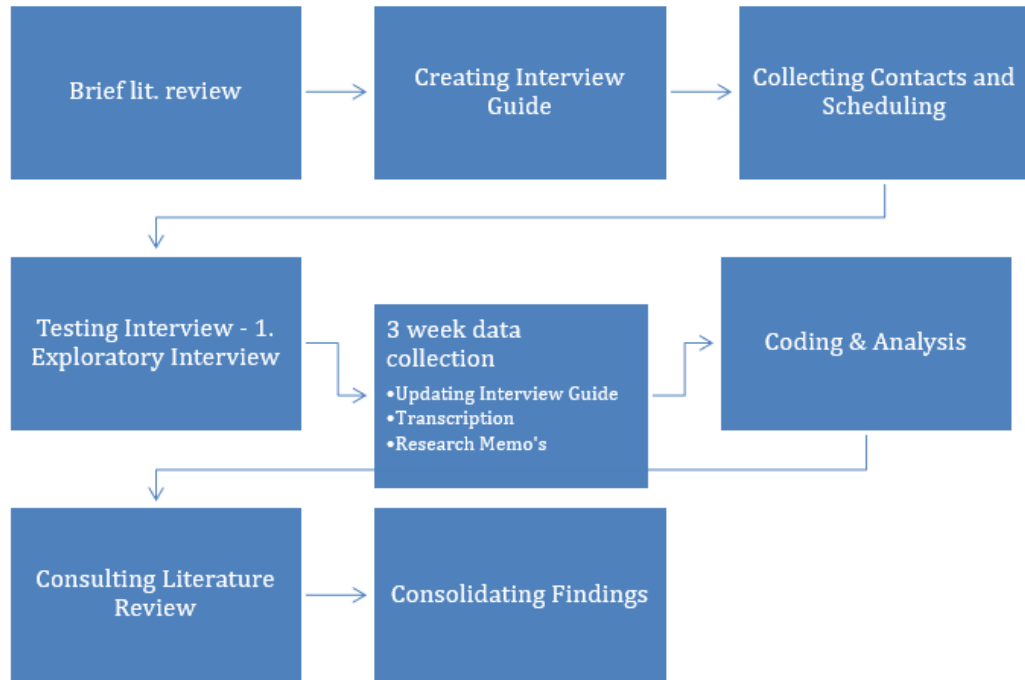


Figure 3.2: Research Process

Our goals, which stem from our research question in three key themes, are as follows.

Objective number one: Understanding how did the women get into product management roles in their lives. Did they experience any struggles? What were the most pivotal moments in their PM careers?

Objective number two: How do they feel about their current positions? What do they consider when they think about their career aspirations? How is the organization influencing its decision?

Objective number three: Do they have the freedom and options to develop in their field? Is there something blocking them? What are the companies doing or not doing to help them in realizing their potential?

Our research design is meant to fulfill exploratory research. Exploration is essential in this form of investigation (Saunders, 2019).

An exploratory study is especially useful if you wish to explain your understanding of a topic, problem or phenomenon, such as if you are unsure of its exact nature (Saunders, 2019).

There are a variety of ways to carry out exploratory research. My method was to perform in-depth individual interviews and link to the related literature. Due to the study's experimental nature, the questions were relatively unstructured, and we frequently deepened our discussions by forming and sharing feelings about our experiences. Some interviews proved to be of higher

quality based on the participant's contributions. Exploratory research has the advantage of being versatile and adaptable to change. After the first few interviews, we refined the questionnaire and maintained the initial three key themes framework to ensure comparability. At the beginning of the study, our assumptions and priorities were broad and fragmented. The researchers then narrowed as we progressed through the analysis.

My main goal was to explore individuals' career journeys, what they experienced, and their views on it. To show what people go through in their professional lives.

My literature review search strategy consisted of keywords and phrases: "Product management"; "Software Product Management"; "Diversity"; "Career Development"; "Women"; "IT". The actual literature searches were conducted continuously since it is an abductive approach to research.

3.5 Sampling Rationale

Our target population for this research consists of all women in product management roles around the world. Since we don't know the number of the whole population, we have decided to use non-probability sampling techniques. We are conducting qualitative interviews with a sample of 21 women in a software product management role.

The most common form of data collection techniques used in exploratory and qualitative is using non-probability sampling (Books, 2020). This conforms to our strategy of gaining an initial base understanding of a smaller and underrepresented population.

At the beginning of the data collection, we tried the Voluntary response sampling method by creating posts on relevant social media platforms to attract our participants. The platforms used were Facebook Groups, Linked-In, and Reddit Sub-reddits. This approach, however, hasn't yielded many results. We then applied a combination of Convenience and Purposive sampling. I first contacted participants by directly messaging them on the professional social media platform Linked-In. To ensure a fair and representative sample as possible, we targeted people who fall into different population subgroups. Our subgroups are:

- Demographic variance
- Race representation
- Stages of career development
- Stages of product management seniority role
- Different industries - all in Software Product Development

3.6 Data Collection Methods

Initial data collection consisted of literature review and primary data (experiences, stories, questions) raised in the community.

Due to Covid-19 regulations, all our interviews were conducted over video-conference software based on the participants' preferred choice. Zoom and Google Meet apps used. The

#	Nickname	Lang	Duration	Date
1	Nicole Jones (Niki)	ENG	01:17:09	2021-01-13
2	Rachel Robinson	SK	01:17:10	2021-01-14
3	Samantha Moore	ENG	00:43:17	2021-01-14
4	Stephanie Williams	ENG	01:00:17	2021-01-15
5	Elizabeth Davis (Ilsa)	ENG	00:46:25	2021-01-15
6	Amber Martinez	ENG	00:57:05	2021-01-18
7	Sarah Blaese (Sadie)	ENG	00:43:22	2021-01-20
8	Jessica Wilson (Jessie)	ENG	01:03:39	2021-01-21
9	Ashley Miller	ENG	01:06:12	2021-01-21
10	Jennifer Brown (Jennah)	ENG	00:32:25	2021-01-21
11	Amanda Taylor (Manda)	ENG	00:39:42	2021-01-27
12	Brittany Smith (Brit)	ENG	00:23:33	2021-01-27
13	Melissa Jackson (Lissa)	SK	00:48:32	2021-01-28
14	Emily Johnson (Emmy)	ENG	00:50:16	2021-01-28
15	Kelly Thompson	SK	00:54:28	2021-01-29
16	Heather Thomas	ENG	00:44:52	2021-01-29
17	Megan Anderson (Meg)	ENG	00:43:03	2021-01-29
18	Andrea White (Anda)	SK	00:52:17	2021-01-29
19	Danielle Martin (Dannelle)	ENG	00:21:46	2021-01-29
20	Lauren Garcia	ENG	00:46:41	2021-02-05

Table 3.2: Anonymized table of Interviews conducted

video call was the best choice available and made it possible to see and respond to participants' emotions and body language (to a limited extent). Just one of the participants remained without access to the camera to respect her privacy. Access to participants was a long process that involved multiple steps in reaching out, describing the research's intent, and arranging appointments in various time zones.

We have expected several "field issues," for example, rescheduling, participants not responding, or not showing up. We have tried to eliminate these issues by making a surplus of invitations and increasing the data collection period by one week to accommodate participants' time restrictions.

Transcripts of the interviews are not included in this study. They contain confidential information and identify information about the participant. They contain personal stories of sensitive context and relationship building between the researcher and participant. I share anonymized information with no identifiable information through examples of my data analysis methods application and the Findings chapter. I conducted interviews in two languages - Slovak and English.

This process was complex and dynamic.

3.6.1 Forms of Data

The interview was recorded with the participant's permission. Coming back to the recording allowed us to reflect and evaluate sections based on new information from theories. These

recordings were then transformed into transcripts, edited into the final version of the transcripts, and prepared for analysis. Another type of data form in our research consisted of several types of documents - reflection journal entries, researches memo's and participants' professional profiles.

All these data types helped us gain a holistic view of the information gathered and place it into socio-economical contexts.

All data is stored on a password-protected SSD on the researchers' workstation in a database that organizes the information according to its characteristics.

3.7 Data Analysis Methods

Our first steps were familiarizing ourselves with coding methods from *The Coding Manual for Qualitative Researchers* (Saldaña, 2013). Analysis is the process of discovering regularities in data and determining why they were present in the first place (Bernard, 2017). "Coding is thus a method that enables you to organize and group similarly coded data into categories or "families" because they share some characteristic – the beginning of a pattern" (Saldaña, 2013). Saldana guided our coding process and informed our next steps when moving from first cycle coding to second and transforming codes into categories.

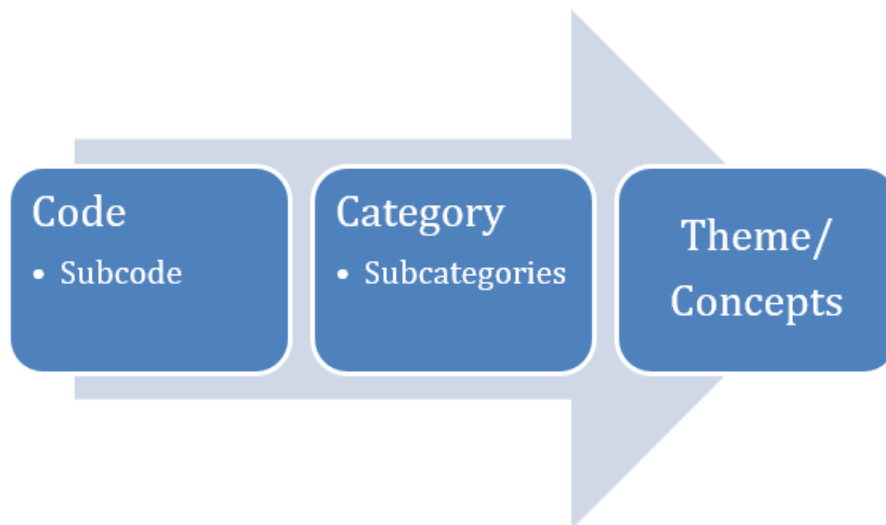


Figure 3.3: Process of Abstraction during data analysis

Coding is one way of evaluating data; it is not the best way or the "only way" to interpret qualitative data (Saldaña, 2013). There are no hard-and-fast rules to coding. It's an exploratory problem-solving method without complex formulas or algorithms (Saldaña, 2013).

"A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2013).

We have conducted both manual and computer coding. Keeping a coding journal and written research notes helped us specifically for interviews in the Slovak language (we have not transcribed those (4 interviews) – we have coded and analyzed it – and then translated the relevant passages). We were still left with over 17 hours of interviews to transcribe and analyze, even after excluding the Slovak interviews. To assist in this step and make a vast volume of data manageable using CAQDAS software: NVivo. The introduction of new software meant getting familiar with the instructions and complex functions of the software. NVivo was used to process edited transcripts through case classification and coding methods. Cleaning the data by editing was the first step to prepare the data to be analyzed. That consisted of cleaning irrelevant information like ice-breaking questions, goodbyes, or disruption from the environment during the interviews.

Every interview is considered a case which is an analytical unit for the software program. I have classified cases based on descriptive information (demographics, basic information – this step is appropriate because we have multiple participants with different backgrounds). This was the first coding method used on the dataset. It provided us with essential participant information for future management, reference, and context for analysis and interpretation. Figure below demonstrates a classification sheet with a list of attributes visually.

Person - Nicknames	Children	Gender	Higher level education - University	Industry	MBA	Marriage	Nationality	Position (prod Seniority)	Years in Product	Years working
Ashley Miller	No	Female	Yes	Computer Si	No	N/A	Unassigned	Unassigned	Unassigned	Unassigned
Megan Anderson (Meg)	N/A	Female	Yes	Information	Yes	N/A	Unassigned	Product Manag C-level	6	20
Lauren Garcia	N/A	Female	Yes	Internet	No	N/A	American	Product Manag Mid-seniority	3	11
Samantha Moore	Yes	Female	Yes	Marketing &	No	Yes	Chinese	Product Owne Senior	15	17
Stephanie Williams	No	Female	Yes	Computer Si	Yes	No	Israeli	Product Leade Senior	6	13
Melissa Jackson (Lissa)	N/A	Female	Yes	Computer Si	No	N/A	Slovakian	Product Manag Mid-seniority	Unassigned	Unassigned
Kelly Thompson	N/A	Female	Yes	Unassigned	No	N/A	Slovakian	Product Manag Mid-seniority	Unassigned	Unassigned
Heather Thomas	No	Female	Yes	Consulting	No	Yes	American	Product Manag C-level	12	24
Jennifer Brown (Jennah)	N/A	Female	Yes	Computer Si	No	Yes	Danish	Product Manag Senior	4	11
Amanda Taylor (Manda)	N/A	Female	Yes	Computer Si	No	N/A	German	Product Manag Associate	4	9
Rachel Robinson	No	Female	Yes	Computer Si	No	No	Slovakian	Product Manag Senior	Unassigned	Unassigned
Danielle Martin (Dannelle)	N/A	Female	Yes	Financial Ser	Yes	N/A	Unassigned	Product Manag C-level	7	13
Elizabeth Davis (Iisa)	No	Female	Yes	Luxury Good	No	Yes	Israeli	Product Manag Mid-seniority	6	10
Brittany Smith (Brit)	N/A	Female	Yes	Computer Si	Yes	N/A	South African	Product Manag Mid-seniority	6	6
Amber Martinez	Yes	Female	Yes	Human Resc	No	Yes	Unassigned	Director of Pro-C-level	6	17
Emily Johnson (Emmy)	Yes	Female	Yes	Internet	No	Yes	Italian	Product Manag Senior	6	14
Sarah Blaesé (Sadie)	N/A	Female	Yes	Computer Si	Yes	N/A	Chinese	Product Manag Senior	4	7
Nicole Jones (Niki)	Yes	Female	Yes	Information	No	Yes	American	Product Manag Senior	9	13
Jessica Wilson (Jessie)	N/A	Female	Yes	Biotechnology	Yes	Yes	American	Digital Product Senior	4	11
Andrea White (Anda)	N/A	Female	Yes	Computer Si	No	N/A	Slovakian	Product Manag Mid-seniority	Unassigned	Unassigned

Figure 3.4: Anonymized participants attribute table

As I became familiar with the data and different types of methods, I have applied several “generic” coding methods in combination to see what the data would reveal. After the Attribute coding I have applied exploratory coding method - Holistic coding (coding chunks). Holistic or “lumper” coding helped me initially to assign a code to a larger piece of text that was part of a narrative (Saldaña, 2013). It has also divided the transcripts into sections which needed more detailed coding. Then I continue with using Initial coding incorporating In vivo, Emotion and Process coding. In Vivo coding helped us keep and honor “the voice” of the participant and uses words and short phrases in their own language(Saldaña, 2013). It provides us with more in-depth information.

Table 3.4 shows examples of In Vivo coding on an extract of an interview.

Saldana (2012) describes Emotion coding as: “emotions recalled or experienced by the participant or inferred by the researcher. It provided insights into the participants perspectives, worldviews and that is what we are investigating in this study”.

Additionally we have used other Initial coding methods like Process coding which connotes:

Methods	Reasoning
Grammatical Method	
Attribute Coding	(for all data as a management technique)
Exploratory Methods	
Holistic Coding	(for all data as a “grand tour” overview)
Elemental Methods	
Initial Coding	(for interview transcripts as a method of
In Vivo Coding	attuning yourself to participant language,
Process Coding	perspectives, and worldviews)
Affective Methods	
Emotion Coding	(same as Elemental Methods)
Theme-ing the Data	
First to second cycle coding method	
Eclectic coding	(for refining First Cycle choices)
Second cycle coding methods	
Focused Coding	(for categorization of coded data as an
Axial Coding	initial analytic strategy)

Table 3.3: Overview of all coding methods, their short description, and reasoning why they were used - inspired by (Saldaña, 2013)

”observable and conceptual action in the data” (Saldaña, 2013). In this case it can be seen when we extract participants actions/ interactions and consequences of their decisions regarding their career development.

These three methods concluded the first cycle of coding and became bases for tentative categories.

In this example, we showcase how the process of Eclectic coding. This experiment was an excellent demonstration of how no one seems to grasp the role of a product manager. I describe this notion in more detail in the Findings section.

Following the Initial coding stage and refining and re-coding through Eclectic coding we moved into the Second Coding Cycle.

Saldana (2012) states: ”Second Cycle coding methods, if needed, are advanced ways of reorganizing and reanalysing data coded through First Cycle methods. Before categories are assembled, your data may have to be re-coded because more accurate words or phrases were discovered for the original codes; some codes will be merged together because they are conceptually similar; infrequent codes will be assessed for their utility in the overall coding scheme; and some codes that seemed like good ideas during First Cycle coding may be dropped altogether because they are later deemed “marginal” or “redundant” after the data corpus has been fully reviewed (Silver and Lewins, 2014)”.

During the Second coding cycle - as guided by Saldana (2012) - we have developed a better sense of categories, themes, concepts and theories. After three first interview codes, we had over 300 codes, and we moved into the process of theme-ing the Data and trying to see patterns. These codes were then organized into over 20 categories, synthesized into three major overarching themes discussed in detail in the Findings section.

Next I applied Focused coding method to find the most frequent codes that had conceptual

I would say that it my role evolved because the first time I was hired my role was product owner.	“ROLE EVOLUTION” [Descriptive Code] “PRODUCT OWNER” [Descriptive Code]
And I think that product ownership is really important when you have a larger development team,	“product owner vs product manager” [Versus Code]
because it is mostly about owning one outcome of 8 or maybe more teams. But the outcome of those teams and my role was actually more product management because I was also managing the full portfolio of products and new ideas and making a business case.	“my role was actually more product management” [In Vivo Code] “MANAG-ING” [Process Code] “PRODUCT PORTFOLIO” [Descriptive Code] “NEW IDEAS” [Descriptive Code] “MAK-ING BUSINESS CASE” [Process Code] “REALIZATION” [Emotion Code]
Validating assumptions and then starting development. So, I actually approached my manager and I said that I think I have the wrong title. I would wanna be called by my role	“VALIDATING ASSUMPTIONS” [Descriptive Code] “APPROACH-ING” [Process Code] “MANAGEMENT” [Descriptive Code] “WRONG TITLE” [Descriptive Code] “TAK-ING ACTION” [Process Code]
which is a product manager. So, we had a conversation. I send some articles and I said:	“PRODUCT MANAGER” Descriptive Code “SEND-ING SOME ARTICLES” [Process Code]
Look this is the definition that I found. Please do some research.	“DEFINITIONS” [Descriptive Code] “RESEARCH” [Descriptive Code]
He also did some research and said	“RESEARCH-ING” [Process Code]
Yes, you are right. it is actually what you are doing, and it is a better definition of your role.	“ACCEPTANCE” [Emotion Code] “BETTER DEFINITION” [Descriptive Code]
So, I think six or seven months and I actually changed my title to product manager	“WAIT-ING” [Process Code] “CHANG-ING TITLE” [Process Code] “PRODUCT MANAGER” [Descriptive Code]
And, uh, it was something that I wanted so that I also have a good career path because while product ownership is really a great title	“SOMETHING I WANTED” [In Vivo Code] “GOOD CAREER PATH” [Descriptive Code] “GREAT TITLE” [Descriptive Code]
we are a start-up so there is not really another product person than me.	“START-UP” [Descriptive Code] “NO OTHER PRODUCT PERSON” [Descriptive Code]
So, I would wanna be called by my role and I kind of understood broadly	“MY ROLE” [In Vivo Code]
and that was important for me. So, I tackled it	“IMPORTANT TO ME” “IMPORTANCE” “TACKLED CHALLENGE”

Figure 3.5: Eclectic coding method example

Um, but in certain organizations, it was just	
You do realize you're the only woman at the	"YOU REALIZE" "ONLY WOMAN"
table of all men with all men, and that's	"THAT'S WEIRD"
weird. And then sometimes they do look at	"LOOK AT YOU DIFFERENTLY"
you differently that way. There is a lot of	
going out after work with the boys at the	"THE BOYS"
pub, and some of those conversations aren't	"SOME OF THOSE CONVERSATIONS"
quite what you'd like to be involved in or	
hear about. So, I don't know if it's specific to	"DON'T KNOW IF ITS SPECIFIC TO PRODUCT"
product, but I would just say as being a	
woman in business, there's definitely	"WOMEN IN BUSINESS"
discrimination still there.	"DISCRIMINATION"

Table 3.4: In Vivo coding method example

similarities. (Saldaña, 2013) That process allowed us to look for just the number of mentions and not necessarily higher abstractions and concepts. That was done by Axial coding method which: "extends the analytic work from Initial Coding and, to some extent, Focused Coding" (Saldaña, 2013). The abstraction process was not as straightforward as it seems from definitions. It required constant re-evaluation and refinement to settle upon categories that made sense and were not "forced" on the dataset.

"One of the ultimate goals during Axial Coding (along with continued qualitative data gathering and analysis) is to achieve saturation – "when no new information seems to emerge during coding, that is, when no new properties, dimensions, conditions, actions/interactions, or consequences are seen in the data" (Noonan et al., 2004c) p. 136." (Saldaña, 2013)

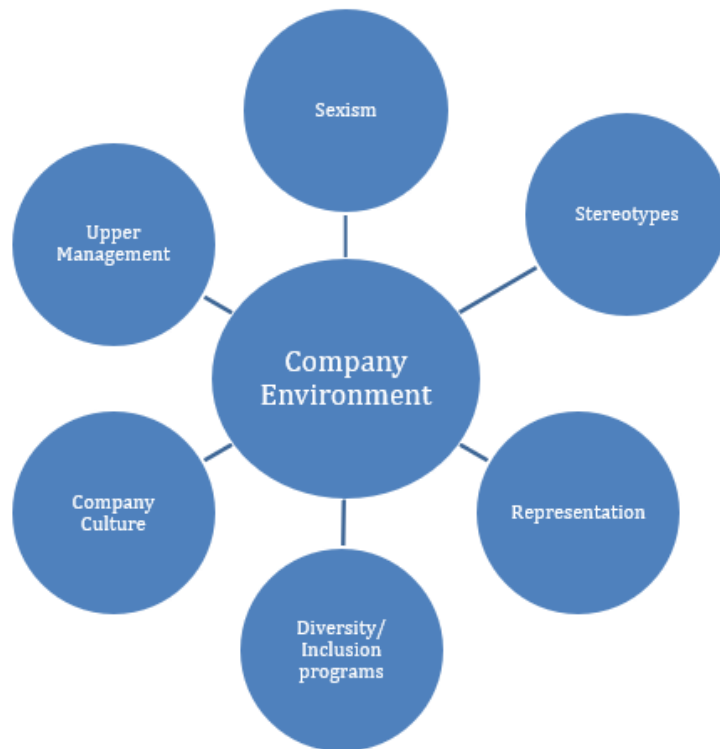


Figure 3.6: Axial coding method example - grouping Open codes into a Category

The themes represent not only categories but also the stages of career development of Women PMs. We start at the beginning of the career – its junior position, and as the participant moves into more senior roles, we shift to the Retaining and Developing theme to better understand which decisions participants took and why. This understanding sheds light on their experiences and their interpretations of them.

These three themes became the headings, and their significant categories became the sub-headings.

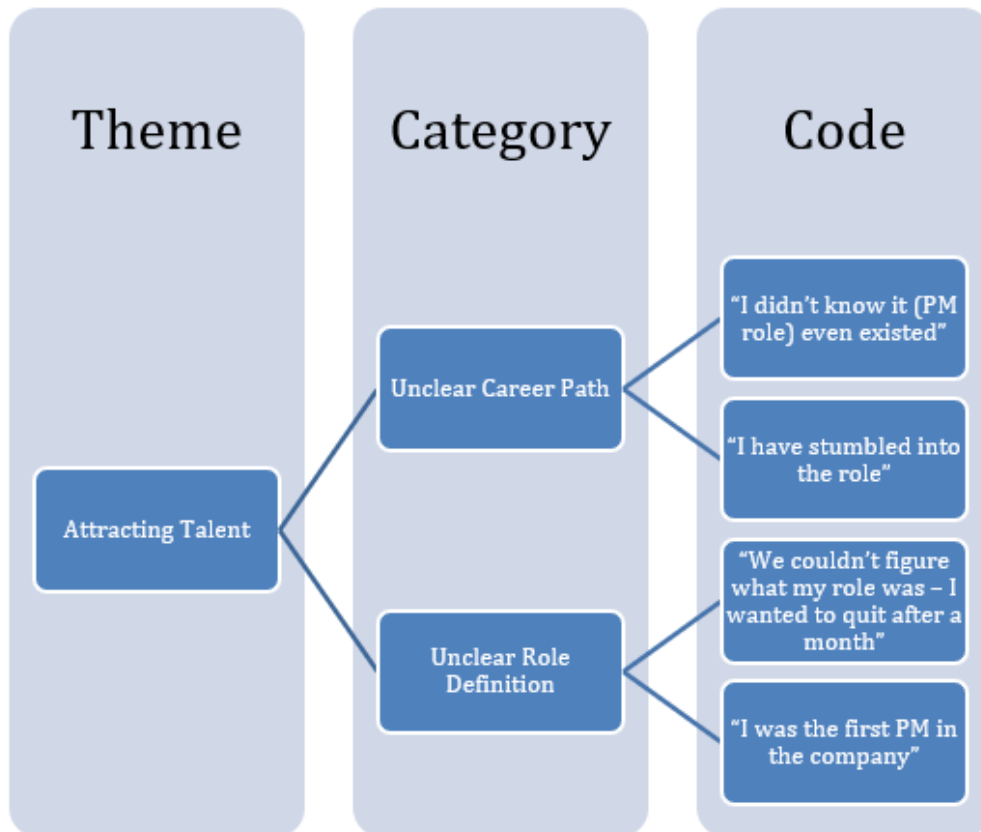


Figure 3.7: Example of Theme creation

Some interpretive leeway is unavoidable in qualitative data analysis—imagination and innovation are, in fact, crucial to bring new and different insights to the data (Saldana, 2012).

Locke (2007) remind us that: "our ultimate analytic goal is not just to transform data, but to transcend them – to find something else, something more" (Saldana, 2012).

Noonan et al. (2004c) says: "One of the ultimate goals during Axial Coding (along with continued qualitative data gathering and analysis) is to achieve saturation – "when no new information seems to emerge during coding, that is, when no new properties, dimensions, conditions, actions/interactions, or consequences are seen in the data". I have kept that in mind and when a category was saturated I moved to exploring the next one. The volume of the dataset allowed for the creation of a lot of categories and subcategories. I present a few of these to showcase how I analyzed and understood the categories and their interrelationships.

3.8 Ethical Considerations

To ensure ethical handling and processing of the data points, we have constructed a Data Collection Consent Form, which was presented to every participant and explicitly highlighted that the information shared is confidential and anonymized for the study. All the participants have the right to request to have their data deleted at any time. We have also explained the nature and aim of the study.

Since the study is on diversity and its impact on individuals' career development, there was a high possibility of talking about sensitive experiences during the interviews. The respondents were encouraged to share their emotions and perceptions of realities in-depth (or as much as they were comfortable to share). Experiences of women in technology are usually anecdotal or very vague. The Glass Ceiling Effect is a perfect example of talking about "invisible" barriers and how we as a society shy away from discussing these topics that might make us or the audience uncomfortable. However, it is important to give voice to these stories and show that they are not invisible.

Due to the nature of the topic, we have taken great care in designing the study to reflect safety and privacy. We have followed The Danish Code of Conduct for Research Integrity with three principles - Honesty, Transparency, Accountability - in all research phases.

Refer to the Interview Guide and Data Collection Consent form in appendix A and B.

3.9 Methodological Limitations

The nature of qualitative research is long and complicated. Ultimately it would be best to use a mixed research method to combine our qualitative findings and then test them quantitatively. The time frame and the size of the data set, and the time-consuming tasks related to a qualitative inquiry made that non-feasible.

In this study, I have learned to carefully navigate sensitive data collection to the best of my abilities. Confidentiality and fair handling of the data processed was some of the highest priorities. All participants were informed and handed a data collection consent form informing them of the study's goal, handling of their data, and their rights.

Self-reported data or single researcher study also provide a limitation - since this is a single research study, a single individual performs a risk of researcher bias as the gathering of data and analysis. Qualitative research with interviews is heavily value-laden and can contain bias. I have tried to eliminate this bias by reflection journal entries, research memos, and supervisors' discussions.

3.10 Quality Criteria

The methodological choices were chosen to most be the most appropriate for exploring the aforementioned research areas. Only academic papers were used to verify academic quality and reliability. In the rest of the study, any statistics or cited statements were produced by a recognized organization and had a clear purpose for the research. Hence, the essence of reliability for qualitative research lies with consistency.

Quality Criteria	Definition	Demonstration
Credibility	Has research achieved intimate familiarity with the setting or topic? Do the categories cover a wide range of empirical material? Are there strong logical links between the data and argument and analysis? Has the research provided enough evidence for your claims?	Credibility is demonstrated through over 20 hours of rich interview data. The data was then analyzed extensively through coding methods. Our findings are rooted in the data.
Originality	Do the categories offer new insights? Does the analysis provide a new conceptual rendering of data? What is the social and theoretical significance of this work?	The originality is demonstrated through the overlap of three topics of diversity, career management and software product management. These categories have never been grouped together for research. This brings new understanding for the workforce in the intersection.
Resonance	Do the categories portray the fullness of the studied experience? Have you revealed both liminal and unstable taken for granted meanings?	Resonance was achieved by staying true to the voices of the participants through the data analysis. Some of the categories were shared with the participants and they have resonated with the experiences.
Usefulness	Does your analysis offer interpretations that people can use in their everyday worlds. Do your analytic categories suggest any generic processes? Can the analysis spark further research in other substantive areas? How does your work contribute to knowledge? How does it contribute to making a better world?	Usefulness is demonstrated by identifying and describing areas of interest for further research in our topics. Categories mentioned in the findings are shared among the participants therefore creates a sense of understanding between people that fall into diverse product managers category. Our findings suggest that raised awareness, information sharing, and development of measurable goals could improve diversity in PM.

Figure 3.8: Modified table Based on the Quality Criteria listed in (Charmaz, 2006) p.182-183

Chapter 4

Findings

4.1 Introduction

In the previous chapter, I have provided an overview of the methodological choices. The following chapter showcases my empirical findings from the analysis of the interviews and researchers' memos. The themes and categories are presented in a taxonomy structure where their categories are grouped without any inferred hierarchy (Saldana, 2012).:

Attracting Talent Theme	Retaining Talent Theme	Developing Talent Theme
- Unclear Career Path	- Company's Environment	- Unclear Career Progression
- Lack of Talent	- Token Women	- Glass Ceiling Effect
- Technical Knowledge Barrier	- Perception Gaps	- Management Support

Table 4.1: Overview of the final themes and major categories

The process of data analysis and creation of the three main themes was not linear. The themes came together after an iterative process of reflection and code-weaving. Each of the themes represents how I have categorized the data and am presenting it to the reader in a cohesive manner. These categories are one way to interpret the data. I have defined these themes based on my perception of the facts and analysis. They are grouped to represent the participants' realities and what they voiced in the research.

This chapter aims to explain the reality that women product managers face every day and how that affects their careers. The results from this research could benefit individual people to shed insights into women's overall experiences in SPM; career counselors to help guide potential talent; HR personnel to better understand their employees' needs, and expand the academic body of knowledge within the field. The three categories are based on these applicable definitions:

- "Attracting talent is about acquiring the people and capability you need now and in the future through both redeploying internally and sourcing externally" (Academy, 2020a).;
- "Retaining Talent is about creating the right environment to engage your talent to deliver

Example quotes coded into this category:*"I have coincidentally got into the role" - Amanda**"Didn't know what it was" - Samantha**"It was a natural transition" - Nicole**"Didn't necessarily wanted to go into Product"- Rachel**"I have stumbled into the role"- Amber*

Table 4.2: Unclear career path quotes

their best and reach their potential, while remaining in your organisation" (Academy, 2020c).;

- "Developing Talent is about the talent management activities designed to maximise the potential of individual employees to meet current and future demands" (Academy, 2020b).

4.2 Attracting Talent Theme

This particular theme has risen from the data after comparing my own experience with almost all the study participants. Striking commonalities and similar origin stories were shared across all participants. The abstraction process and the theme's name were created after considering the main motivation behind the study and the problem the community is facing - a lack of diversity in product management roles. Now I will explain what the data has shown.

When we think about attracting talent into an SPM position in a company, we have to consider the job posting listing, which is the first contact the company has with potential talent. However, research shows that job listings are, in the majority of cases, an amalgamation or a direct copy of multiple similar postings found online. It could be really bad for the business if it fails to attract the right kind of talent. Job postings do not clarify the position enough, but they also demand credentials and expertise from generic job postings that are difficult to obtain in this specific area.

4.2.1 Unclear career path

In the interviews, the first round of questions was explicitly designed to understand how they have been introduced to the PM role (refer to Appendix A). Out of all the participants, only one knew the role definition before actively applying for the job. Previously, she did not realize that this career choice existed until she randomly discovered it on the work posting portal and decided that the term suits what she wanted to do professionally.

This problem arose as they were addressing their careers from the start to this point. Familiar origin stories contained role transition, an accidental discovery of the role, or being pulled in by someone in the industry.

One of the problems of an unclear career path is that PM roles are often hidden behind other titles, which we have seen in our data. Possibilities for a PM title range from Product Manager, Product Owner, Product Lead, not to mention roles that deviate entirely from "Product" like Project Manager, Agile Coach, etc. These titles do not necessarily relay the seniority level to

Example quotes coded into this category:

"proving your worth" - Stephanie
"Constantly being questioned" - Andrea
"lack of respect" - Heather
"perception of a skill gap" - Jessica

Table 4.3: Prove Yourself category quotes

others. A Product Lead could be either a junior and senior position. Moving further up in the career ladder, the titles are consistently more confusing. We can see titles: Product Principal, Senior Product Manager, Product Lead, Product Group Manager, Product Segment Owner, etc.

These titles make it hard to understand where in the organizational structure this role fits in and how the SPMs are supposed to reach these positions. We shall discuss career development in a later section of this chapter. Research shows that the employee's role title and definition are essential for the employee's quality of work and well-being. It brings clarity to the competencies and range of expected outcomes. One of our participants specifically requested to change her title and was met with resistance and hesitation from the management - even if the title represented her work competencies. This lack of interest and opposition from the management harmed the employee.

One might say that the title change does not make much of an impact. I would argue that for a SPM, it has high importance precisely because the job itself consists of boundary-spanning activities, and having the proper title sends a signal to other parts of the organization about SPM's responsibilities and value, thus encouraging their cooperation and respect.

Our participants show that they commonly had to explain to people in other departments the value they bring to the table. This phenomenon happens mostly in organizations where there is little to no product management structure in place. The surrounding departments did not understand and were not educated about the role. Emily has put it nicely in our interview: *"People know what Engineers do. People know what Designers do. People do not know what a product manager does.[...] "People don't know what you are doing when you are there, but when the role is missing you notice that something doesn't work"*

In addition to proving and explaining their role women, SPMs were commonly confronted with situations where they also had to prove their place due to them being women in a technical role in a male-dominated industry.

These various experiences may build a gender trust gap and instances of "The Impostor Syndrome" among new workers. Impostor syndrome is encountered by equal numbers of men and women (ANDERSON, 2016). In comparison to men, many women suffer from chronically self-doubt which hinders their growth (ANDERSON, 2016). Some of our participants have raised that might explain the likelihood of a lower female presence. For example, Amanda said: *"I feel women doubt themselves more than men ever does"* or Emily *"You have to have fake it till you make it attitude"*.

Example of experiences in this category*"being addressed after speaking up" - Kelly**"having to prove your subject knowledge even when you hold a degree in it" - Emily**"emitting valuable information from the development process" -Jennifer*

Table 4.4: Examples of Being undermined category

4.2.2 Lack of Talent supply

One of the other key points that were raised when discussing the participants' career journeys was their own experience of feeling the lack of women that apply for this type of position. They said that: *"we are celebrating when we get a female applicant."*

A few participants pointed out legislative quotas and how organization could promote women and other minorities in cases where the competence is similar or *slightly* lower. They strongly pointed out, however, that they do not promote hiring women for the sake of diversity. They adhere to the equality of opportunities, but the outcome solely lies in the hierarchy of shown competence and attributes that fit the company.

Some of the participants in larger organizations did mention specific programs to attract more women in their ranks. However, they do not see these changes happening in their organizations.

A common understanding seems to rise that women want to see more women in these positions and that representation and seeing women progress in these roles without **extreme** measures is wanted.

4.2.3 Technical knowledge barrier

Even though every participant in our study has a higher level of education (ranging from bachelor's degree to MBA and Ph.D.), a lack of technical knowledge or software development skills was a significant barrier for some of them.

These experiences are usually stamped from the coworkers' stereotypical behavior or genuine lack of hard skills. The perception is that men are more technical and capable in that area. Women experienced being undermined in favor of a male PM coworker. They were referred to work on the "cleaning" tasks in the development process. This *"old school"* thinking generates lack of respect for the person in the role and undermines their agency. Technical roles - which a SPM role is categorized as - have a reputation of being hard for women. They were designed to prefer "antisocial white males" with an aptitude for science. These perceptions do not help the overall image and competencies of the role in the company. Some might be deterred from entering such an environment because of that reason alone.

4.3 Retaining Talent Theme

In the next section, I will discuss my findings regarding what women experience while working in an SPM role for a few years. Three major categories have risen from the data. Firstly we will talk about the company environment. We specifically named this category environment and not culture as we see differences between these two terms.

Example of Subcategories of Company environment	Quotes
Discrimination	"I was being interrupted or talked over"
Sexism	"oh, there is definitely still sexism here"
Harassment	"there were instances where a man came into my office and yelled at me for no fault of my own"
Inappropriate behaviour	"looking back, it was completely inappropriate"
Stereotypes	"I was the one expected to take notes"
Exclusion	"I wasn't invited to meeting where I should have been present to make product decisions"; "I am noticing changes with age - oh yeah there are no women here, it's sad when you start to notice"; "my zoom calls are full of men- especially since we made another male hire"
Complacency	"They (other men) agreed with me, but they didn't do anything, they didn't say anything"
Comradery	"I miss having a female co-worker to share with"
Company efforts	"They do not care - it was bad"; "They are doing programs for changes - but we don't see the results"; "They care - they are very aware"
Doubts/ Self-consciousness	"it might be a personality thing"; "I think I might have been naive"
Gender Blindness	"I never thought about the fact that I am a woman as weird"

Table 4.5: Subcategories of Company Environment with quotes

"Company culture can be defined as a set of shared values, goals, attitudes and practices that characterize an organization." (BuiltIn, 2020) Company environment, in my definition, means everything the employee experiences in connection to their organization. It can be both positive and negative experiences. However, the company's environment cannot be entirely controlled as individual employees might not adhere to the company values or polite human behavior.

4.3.1 Company environment

When I have questioned the participants about the company environment regarding diversity and inclusion, I have received a spectrum of stories.

This category holds the most expected aspects that influence women's career development in IT. Identified subcategories for the Company environment categories are:

A fascinating note from the interviews was that the participants did not like and sometimes hated that their gender was being highlighted. Women generally agreed and were glad that the companies were making an effort. Still, they did not want to be considered a "diversity" hire. They advocated: *"We are not hiring this person because she is a woman. We are hiring her because she is competent.[...] lets not focus on the fact that I am a woman"*

We have identified two types of incidents of behaving inappropriately in the workplace: either it was instigated by an individual man or a group of men that were behaving inappropriately. Complacency was another subcategory that rose from the data - others have noticed. Still, they made no effort to change the behavior or call out the perpetrators. Inability to act in the face of these behaviors fuels a toxic and hostile environment to any individuals, not just women but also other minorities in the workplace.

Some of these experiences are detrimental to the state of the individual being targeted - which is a reason enough, but also the company itself in numerous ways. In a few instances, men were behaving discriminatory in the workplace by not sharing vital information, which hurt the organization's productivity. Some specifically did not invite women to meetings where they discussed topics that required their input as is defined in their role. This created intense feelings of exclusion.

4.3.2 Token Women

Tokenism definition: “the practice of doing something (such as hiring a person who belongs to a minority group) only to prevent criticism and give the appearance that people are being treated fairly” (Merriam-Webster, 2021b)

I have noticed that majority of the participants were in a “token” position in their department. They either did not notice any pressures to perform more than men in the same position, or were strangely “proud” to hold that title. This points to an interesting paradox of women voicing the need to see more females in their roles yet they also relish their own positions in the men’s community as “the only”. This does not mean however that they are not welcoming or wanting to attract more women into their midst.

Accompanying behaviour that I note was an indication of the participants changes to their behaviour over time when constantly being surrounded by male-dominated environment. Participants reported behaviours like: “dressing down” (assuming to not attract attention); alteration to their psyche - behaving more aggressively to match the tone of men in the room; letting comments slide to not raise issues in the workplace. Sarah notes *“you “need” to play a role to get into those positions (upper positions)”*.

Amanda expressed her opinion this way: “Favouring women or minorities if they are equal to other or just slightly under - if you don’t promote women and minorities into leadership positions then there is no representation in those leadership positions to ensure that further women and minorities are promoted in the future - white men is born 5 steps ahead - so sometimes you have to give a headway to the women to catch up - so there is equality in the future.”

4.3.3 Perception gaps

This category rose from the data by noticing how in perceptions of our participants, society majorly affected their behaviors. We have identified several perception gaps that explain some of the realities of the lack of women in the PM roles.

As I mentioned in the Technical knowledge barrier, society perceives that men are better at technical roles. As I demonstrated in the examples, women fight these kinds of assumptions daily. It can affect their confidence and self-efficacy, which is detrimental to any individual.

This confidence gap is fueled through societies expectations and stereotypes. Our participants themselves said: *“women lack confidence”* or *“they (women) question themselves more than men”*.

Interestingly enough, I have seen the participants make contradictory statements in their testimonials, for example: Amanda mentioned that she felt respected, however later in the interview she admits that she is discriminated for a promotion because she *might* leave for a maternity. This gender blindness sends mixed messages.

4.4 Developing Talent Theme

Developing talent in an organization is about the career management programs in organizations that help the employees realize their full potential or develop skills for their roles.

4.4.1 Unclear career progression

Product management, as mentioned in the literature review chapter, is a very distorted role. The caveats and nuances of the role depend on many different parameters from the type of product being developed, the company's stage, variety of industry, market needs, etc.

This affects companies in a significant way and at different levels (junior positions and higher). In data, we see that women struggle with role ambiguity problems on several fronts, and it is affecting their work.

This category links to the one in our first theme of attracting talent; however, it deserves its own space because it influences the future of product management development.

When talking about women's career aspirations, we have noted that they either wanted to progress into a more strategic role - away from execution, which is a natural progression for a SPM, or they wanted to lead their team of software product managers. There seemed to be a need to impart wisdom and teach and lead a new group of product managers. However, there are no clear steps on how to develop as a SPM.

Brittany says: *"There have not been many opportunities for upward movement into the upper positions in general - not to mention glass ceiling, especially since there was no HR person."*

It makes it harder to also recognize which seniority category they fall into. As mentioned previously, there are various titles: Senior product manager, Product Lead, Product Owner, Director of Product, Product Principal, Product Director, and sometimes Agile coach, People Manager, or Project Manager. This variety poses a lot of additional confusion to the role and how women look at their career development. The field is very immature and needs a lot of growth in this area.

Personal career development can be very fulfilling, and it significantly influences lives. All of these uncertainties create unease, and it does not help the individual in their career development. How are the women supposed to move up the ladder if they do not know the steps? Danielle voiced her idea: *"Maybe if there is some guidance from someone who went through the experience - as an individual contributor, I would like role models, people to talk to, to have like a template I think these things would help facilitating."*

Ashley Miller mentions this in her journey: *"2-3 years ago product manager was not a very popular career path. The path is pretty lonely - unless you scale your product portfolio or product. Unless you know what exactly would help you move forward and have clear expectation of your career - I think its harder for you to decide that you wanna be a product manager - because maybe you thought you would need a computer degree science to be able to join this field. Which is not really the case. I think its definitely about problem solving and knowing some of the technicalities of working with developer."*

4.4.2 Glass ceiling effect

Definitions: Broken rung: *"'The broken rung' refers to the obstacles keeping women from advancement right at the start of the corporate ladder"* (Ltd, 2020).

Sticky floor: *"Expression used as a metaphor to point to a discriminatory employment pattern that keeps workers, mainly women, in the lower ranks of the job scale, with low mobility and invisible barriers to career advancement"* (for Gender Equality, 2020b).

Glass Ceiling: *"Artificial impediments and invisible barriers that militate against women's access to top decision-making and managerial positions in an organisation, whether public or*

private and in whatever domain” (for Gender Equality, 2020a).

Bamboo Ceiling: The bamboo ceiling, as defined by Jane Hyun, is a ”combination of individual, cultural, and organizational factors that impede Asian Americans’ career progress inside organizations.” (Hyun, 2005)

Concrete Ceiling: ”Concrete ceiling” not only restricts access to top-level positions but middle management positions. It is denser and not as easily shattered” (Network, 2018).

All these terms are, in a sense talking about the same phenomenon we see in women’s career development, especially in male-dominated fields (software development, engineering, technical, STEM, etc.). These phenomena happen in all types of industries - numerous studies show it in different fields - academia, science, engineering, etc.

Knowing about the Glass Ceiling phenomenon, I have included it in the questionnaire (refer to Appendix A). The participants were mostly aware of the Glass Ceiling Effect when mentioned, though the other terms were unfamiliar. This came to me as a little bit of a surprise as I assumed this would be a well-known topic to most of them. I have then explained the term and asked if any of the participants experienced something similar or seen it in their organization and what they have thought about it.

In our cases, we have noticed that either women knew about it but did not feel it affecting their career, did not know at all what it stands for and how to combat it, or knowing about it, not feeling it and then proceed to mention an experience that was a clear example of the Glass Ceiling Effect.

Range of answers to inquiries about the Glass Ceiling Effect:

- *“I feel that there is the glass ceiling if you go to executive management and I kind of hate it.” - Danielle*
- *“I haven’t felt it - if I have it probably wasn’t that obvious. I see men with less management experience being promoted over me. I had a one case where I thought it was a bit strange (hiding her face gesture). That was also a very male-dominated place. [...] it created a conflict later because he didn’t have enough managerial experience.” - Jennifer*
- *“I have never hear of this” - Lauren*
- *“waiting to be noticed for the hard work” - Kelly*
- *“women need to do more to gain authority” - Amanda*

Could we assume that more awareness for women and the business environment would help in recognizing the signs and subtle differences that might hinder women in their career progression into top management positions?

For example, a well-known assumption is that women do not negotiate as much as men or that they do not ask for promotions. I have seen this surfacing in our interview stories where a participant mentioned: *“yeah I continue to do a great job and I hope they notice it”*. Other participant were more adamant: *“there should be more authority for women especially in the product management space.”*

I have got the sense when talking about future career aspirations that women are not particularly looking forward to those. I have asked participants who brought this issue up why exactly they were not looking forward to that. *“I felt that they had to work much harder than men to just “keep” their positions not to mention advance.” - Sarah*

When prompted about their emotions about these issues, women responded: *"I am sad; it's unfair; it's bananas; unethical; frustrating; angry; disappointed."*

4.4.3 Management support

The majority of the women pointed out that management support is integral in their career development decision-making process. Lack of management trust and support were "red flags" that indicated to women that they would not consider that job offer even if it had other enticing benefits. For example Danielle Martin said: *"I interview my manager A LOT – for example 'what do you value?'. It is a deciding factor for me"*.

It was agreed by all of all participants that the organisation should devote some resources to educate managers on diversity and inclusion practices.

4.4.4 Chapter Summary

This study's findings describe situations that female PMs face every day in all stages of their career. We have shed light on their profession and uncovered that in addition to the categories we had mentioned above – unclear career path, lack of women coming into the industry, artificial technical barrier posed by companies, companies' environment, unclear progression with perpetuating glass ceiling, and management – their individual experiences inform their decision making in how they develop through their PM careers. The three main themes of Attracting, Retaining, and Developing were vital for understanding how they moved through their careers. I have demonstrated their journeys and explained their perceptions and how it influences their careers. Attracting more diverse talent is essential in building up the new digital age's product management role; we need more information and bring awareness to this profession from institutions and school systems. Companies continuously have to work on their environment and how inclusive and diverse it is to retain female PM talent; the product management role is complex enough without the added complications in the forms of a toxic environment, lack of representation, hidden barriers to role progression. In the end, all female PMs expressed their want to Develop their skills and give back to the community in the form of imparting their knowledge and lead younger generations of product managers. Management's support, acknowledgment of issues, and trust in their judgment proved to be an essential factor. The lack of it to be a red flag for women to decide if they want to progress further with their current company.

Chapter 5

Discussion

5.0.1 Introduction

This section will discuss and reflect on the findings in relation to the academic literature review. Based on the numerous findings in the previous section, I will present the most significant factors that influence female product managers' career development. This research has identified areas with the potential to change the status quo for the female product managers in an organization and bring more diversity and inclusion to their lives.

5.0.2 Attracting Women into Software Product Management

The most unique and striking point in the first theme was how our participants found themselves in product roles. The role of a software product manager is unknown. It deserves more limelight in the software development field and a career choice for graduates and people transitioning or thinking about a career switch. Product management skills criteria differ from company to company and from product to product. This is an advantage people with different backgrounds and perspectives can leverage to break into the career. People expect that technical roles are all about coding and technology, and complicated math; however, software development is still a people-oriented effort. It requires great coordination and soft skills. We need to raise awareness of the role and expand people's understanding of what value SPM brings to a company. As we have seen in our data, many times, it goes unnoticed.

The software product management role conflicts and ambiguity creates unnecessary confusion for the companies and individuals alike. To increase their employees' productivity and well-being, companies need to understand more about what is happening even before they hire new talent. From the research, I have seen the need to understand a product management role's ins and outs and how it fits into their company needs. Digital products have different requirements: sometimes they need more technical PM, sometimes more marketing and sales-oriented, and sometimes they need a mix of both worlds. This needs to be reflected in the job posting requirements and an open dialog after hiring if the role is unclear.

5.0.3 Example of Death by a Thousand Cuts

This famous figure of speech finely represents our findings for the second theme in the dataset about women's retention in a male-dominated industry. Losing women in technical roles do not seem to be a result of one major strike but a cumulative effect of good intended cuts that ultimately leave the role. This point seems to fit well with what we have seen in the data of how perceptions of other people, society, and the organization through comments, unconscious bias behavior, and underrepresentation could be potentially diminishing diverse talent retention.

Career Development efforts are important to the employees. We see a need for that and a signal that the employees would like to see more action from their organizations. The uncertainties the PMs feel are the same as the organization feels – they should be honest and open a dialog between themselves and create a good company environment. This kind of management support is much appreciated, and people are much more like to stay in those companies longer. One of the aspects that influenced female PMs when deciding between roles was the opportunity for career progression and professional development. They see themselves being passed over for promotion by men. They wonder what exactly was the problem that did not get them the position.

5.0.4 Surprising Contradictions

Last but not least, the theme of talent development contained unexpected results. Many participants were caught in contradictory statements that could potentially hurt their career progression efforts. Women feel respected and not experiencing Glass Ceiling Effect and then continue to explain their own experiences of hitting a barrier, not realizing the paradox. Sharing similar experiences and feelings among the community helps them be more aware of these issues and proactively develop their careers. Organizations like Women in Product and Advancing Women in Product seem to help raise awareness of some of the contradictory statements that I saw in the data.

Universities have started to offer some form of product management education (School, 2020), however they only focus on the application of SPM tools and frameworks. It might benefit them and the industry and educate potential software product managers to be prepared for everyday challenges they might encounter in the workplace and equip them to change the status quo if needed.

The software product management research area can benefit from seeing what women in these roles are experiencing and continue to research how a diversity of gender and other types of diversity impact the effectiveness of SPM practices in an organizational setting. Do diverse product management teams perform better? Do they produce more inclusive digital products? Should organizations start focusing on hiring diverse product managers to increase their competitive advantage? These are just some of the questions that arose from our reflections on these topics.

There is a great need to better understand the role that digital institutions play in product management, as a digital manager's work influences the lives of his or her product colleagues greatly. The result is that the team will gain a more detailed understanding of the product management role in a digital organization and its impact on the organization.

5.0.5 Limitations and Reflections

This study tells one side of the story. One of the apparent limitations is the missing voice of men and how they perceive diversity in the product management field. Or if they even think it is a problem. Exploring through the lens of men would be a fantastic addition to round out the perspectives and open a discussion of the gender gap in product management.

This study was focused on the individual stories and perspectives of women in the industry. To generalize our findings, future research needs to prove the importance of our categories and calculate their impact with quantitative testing.

Ironically as a sole researcher in this study, this brings up a significant limitation to the data's interpretations. I have mitigated the bias by applying reflection journal entries and research memos. Still, the role of a researcher and their conclusions are the product of one perspective. This could be mitigated by adding a team of researchers and having independent data analysis comparisons for coding methods.

Thinking back to the study's research design planning phase, I would allocate more time to data analysis because that was one of the most rewarding times spent, and I learned significantly from my participants. This research also brought up a lot of reflection on my personal experiences and how I look at my career, and what influences my decision-making.

Chapter 6

Conclusion

The beginning of the year 2020 shocked the world and changed our expectations on the way we work. More digital dependencies in our lives mean more digital product development with more complex and interwoven systems and technologies. Organizations need to be ready to facilitate such a demand with diverse and capable product management talent.

The objective of this exploratory study was to explain and describe what shapes the career development of female product managers in the software industry. I have identified and explored nine major categories that influenced the career development of the study participants. Applying careful qualitative semi-instructed interview-based research with a social constructivism philosophy ensures the participants' voices were interpreted concerning their reality and how they perceive their stories. The data analysis methods were chosen to complement the research design and provide the most relevant information available.

I have uncovered real stories and career journeys from over 20 women in the SPM industry. I have analyzed and cohesively explained their realities. These stories bring a voice to an otherwise ambiguous and the most misunderstood role in software development. I embrace the idea that career choices are based on the individuals' stories and experiences, which mold their requirements and considerations for future career and life development. To continue not to address the gender gap in this field could have detrimental outcomes to our society.

I hope that this research propels further research into the importance of diversity in software development and ensures more fair and un-bias product development.

Bibliography

The Sage encyclopedia of qualitative research methods. SAGE, Los Angeles, Calif. ;, 2008. ISBN 9781412963909.

Subjectivism, 2008.

Qualitative interviewing and grounded theory analysis. In *The SAGE Handbook of Interview Research: The Complexity of the Craft*, pages 347–. SAGE Publications, Inc, Thousand Oaks, 2 edition, 2012. ISBN 1412981646.

London Leadership Academy. Attracting Talent, 2020a. URL <https://www.londonleadershipacademy.nhs.uk/talent-management/attracting-talent>.

London Leadership Academy. Developing Talent, 2020b. URL <https://www.londonleadershipacademy.nhs.uk/talent-management/developing-talent>.

London Leadership Academy. Retaining Talent, 2020c. URL <https://www.londonleadershipacademy.nhs.uk/talent-management/retaining-talent#:~:text=Retaining>.

L.V. ANDERSON. Feeling Like an Impostor Is Not a Syndrome, 2016. URL <https://slate.com/business/2016/04/is-impostor-syndrome-real-and-does-it-affect-women-more-than-men.html>.

H Russell Bernard. *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman & Littlefield, 2017.

David Blustein, Alexandra Kenna, Kerri Murphy, Julia Devoy, and David Dewine. Qualitative research in career development: Exploring the center and margins of discourse about careers and working. *Journal of Career Assessment - J CAREER ASSESSMENT*, 13:351–370, 11 2005. doi: 10.1177/1069072705278047.

Press Books. SCIENTIFIC INQUIRY IN SOCIAL WORK, 2020. URL <https://scientificinquiryinsocialwork.pressbooks.com/chapter/10-2-sampling-in-qualitative-research/>.

BuiltIn. Company Culture., 2020. URL <https://builtin.com/company-culture>.

Tessa E. S Charlesworth and Mahzarin R Banaji. Patterns of implicit and explicit attitudes: I. long-term change and stability from 2007 to 2016. *Psychological science*, 30(2):174–192, 2019. ISSN 0956-7976.

- Kathy Charmaz. *Constructing grounded theory: A practical guide through qualitative analysis*. sage, 2006.
- Clayton M Christensen and Scott D Anthony. Next generation product development: How to increase productivity, cut costs, and reduce cycle times. 2004.
- RG Cooper et al. Benchmarking best npd practices: Research–technology management; part i: January 2004. *Part II*, page 43, 2004.
- Robert G Cooper. Winning at new products: pathways to profitable innovation. In *Proceedings Project Management Research Conference, Montreal, Canada*, 2006.
- Michael. Crotty. *The foundations of social research : meaning and perspective in the research process*. Sage Publications, London, 1998. ISBN 0761961054.
- Alan Davis. *Just enough requirements management: where software development meets marketing*. Addison-Wesley, 2013.
- Marisa de Brito and Erwin van der Laan. Supply chain management and sustainability: Procrastinating integration in mainstream research. *Sustainability*, 2, 04 2010. doi: 10.3390/su2040859.
- Florence Denmark and Michele Antoinette Paludi. *Psychology of women: Handbook of issues and theories*. Greenwood Publishing Group, 2007.
- Madeleine DiBiasi. 5 Steps to Designing Better Digital Products for Women, 2020. URL <https://medium.com/swlh/5-steps-to-designing-better-digital-products-for-women-6162493fd974>.
- Frank Dobbin and Alexandra Kalev. Why diversity programs fail: and what works better. *Harvard business review*, 94(7-8):52–, 2016. ISSN 0017-8012.
- Christof Ebert. The impacts of software product management. *Journal of Systems and Software*, 80:850–861, 06 2007a. doi: 10.1016/j.jss.2006.09.017.
- Christof Ebert. The impacts of software product management. *Journal of Systems and Software*, 80:850–861, 06 2007b. doi: 10.1016/j.jss.2006.09.017.
- Christof Ebert and Sjaak Brinkkemper. Software product management—an industry evaluation. *Journal of Systems and Software*, 95:10–18, 2014.
- Robert W Eckles and Timothy J Novotny. Industrial product managers: authority and responsibility. *Industrial Marketing Management*, 13(2):71–75, 1984.
- Rose Eveleth. Computer Programming Used To Be Women’s Work, 2013. URL <https://www.smithsonianmag.com/smart-news/computer-programming-used-to-be-womens-work-718061/>.
- RE Fassinger. Diversity at work: Research issues in vocational development. *The intersection of race, class, and gender in multicultural counseling*, pages 267–288, 2001.

- RE Fassinger. Honoring women's diversity: A new, inclusive theory of career development. In *110th Annual Meeting of the American Psychological Association, Chicago, IL*, 2002.
- European Institute for Gender Equality. glass ceiling, 2020a. URL <https://eige.europa.eu/thesaurus/terms/1228>.
- European Institute for Gender Equality. sticky floor, 2020b. URL <https://eige.europa.eu/thesaurus/terms/1395>.
- Kenneth J Gergen. Psychological science in a postmodern context. *American psychologist*, 56(10):803, 2001.
- Maria J Gomez, Ruth E Fassinger, Joann Prosser, Kathleen Cooke, Brenda Mejia, and Jeanette Luna. Voces abriendo caminos (voices foraging paths): A qualitative study of the career development of notable latinas. *Journal of Counseling Psychology*, 48(3):286, 2001.
- Linda Gorchels. *The product manager's handbook*. McGraw-Hill, 4th ed.. edition, 2012. ISBN 9780071772983.
- Gail Hackett. Promise and problems in theory and research on women's career development: Comment on lucas (1997), richie et al.(1997), mccracken and weitzman (1997), rainey and borders (1997), and schaefers, epperson, and nauta (1997). 1997.
- Sylvia Ann Hewlett, Carolyn Buck Luce, and Lisa J Servon. Stopping the exodus of women in science. *Harvard business review*, 86(6):22–139, 2008. ISSN 0017-8012.
- MA Hollingsworth, MJ Tomlinson, and RE Fassinger. Working it “out”: Career development among prominent lesbian women. In *105th Annual Convention of the American Psychological Association, Chicago, IL*, 1997.
- J. Hyun. *Breaking the Bamboo Ceiling: Career Strategies for Asians*. HarperCollins, 2005. ISBN 9780060731199. URL <https://books.google.dk/books?id=VOGs9NXG0kAC>.
- Ayman Jawhar. Product Management Is Dead, 2020. URL <https://knowledge.insead.edu/blog/insead-blog/product-management-is-dead-15156?page=2\&page=1\&>.
- Lea Prevel Katsanis, Jean-Paul G Laurin, and Dennis A Pitta. How should product managers' job performance be evaluated in emerging product management systems? *Journal of Product & Brand Management*, 1996.
- Hans-Bernd Kittlaus and Peter Clough. *Software product management and pricing: Key success factors for software organizations*. 01 2009. ISBN 978-3642095702. doi: 10.1007/978-3-540-76987-3.
- Laura Lehtola, Marjo Kauppinen, and Sari Kujala. Linking the business view to requirements engineering: long-term product planning by roadmapping. In *13th IEEE International Conference on Requirements Engineering (RE'05)*, pages 439–443. IEEE, 2005.
- Robert W Lent, Steven D Brown, and Gail Hackett. Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of counseling psychology*, 47(1):36, 2000.

- Lauren Lindstrom, Robin M Harwick, Marcus Poppen, and Bonnie Doren. Gender gaps: Career development for young women with disabilities. *Career development and transition for exceptional individuals*, 35(2):108–117, 2012.
- Karen Locke. Rational control and irrational free-play: Dual-thinking modes as necessary tension in grounded theorizing. *The SAGE handbook of grounded theory*, pages 565–579, 2007.
- LoveYourCareer.org. Career Development Theories, 2021. URL <http://www.loveyourcareer.org/understand-yourself/32-career-counseling-tools/career-development-theories/26-career-development-theories>.
- Success Resources UK Ltd. The Broken Rung Keeping Women Off the Corporate Ladder, 2020. URL <https://successresources.com/uk/broken-rung-corporate-ladder/>.
- Steven Lysonski. A boundary theory investigation of the product manager’s role. *Journal of Marketing*, 49(1):26–40, 1985.
- Andrey Maglyas, Uolevi Nikula, and Kari Smolander. What do we know about software product management? - a systematic mapping study. 08 2011. doi: 10.1109/IWSPM.2011.6046201.
- Merriam-Webster. Definition of inclusion, 2021a. URL <https://www.merriam-webster.com/dictionary/inclusion>.
- Merriam-Webster. Definition of Tokenism, 2021b. URL <https://www.merriam-webster.com/dictionary/tokenism>.
- Susan L Morrow and Mary Lee Smith. Qualitative research for counseling psychology. *Handbook of counseling psychology*, 3:199–230, 2000.
- Robert Neimeyer and Heidi Levitt. *Constructivism/constructivist methodology*, pages 2651–2654. 01 2001.
- Work & Family Researchers Network. Concrete Ceiling, Definition(s) of, 2018. URL [https://wfrn.org/glossary/concrete-ceiling-definitions-of/\#:~:text=Definition\(s\)](https://wfrn.org/glossary/concrete-ceiling-definitions-of/\#:~:text=Definition(s)).
- Brigid Noonan, Susanna Gallor, Nancy Hensler-McGinnis, Ruth Fassinger, Shihwe Wang, and Jennifer Goodman. Challenge and success: A qualitative study of the career development of highly achieving women with physical and sensory disabilities. *Journal of Counseling Psychology*, 51:68–80, 01 2004a. doi: 10.1037/0022-0167.51.1.68.
- Brigid Noonan, Susanna Gallor, Nancy Hensler-McGinnis, Ruth Fassinger, Shihwe Wang, and Jennifer Goodman. Challenge and success: A qualitative study of the career development of highly achieving women with physical and sensory disabilities. *Journal of Counseling Psychology*, 51:68–80, 01 2004b. doi: 10.1037/0022-0167.51.1.68.
- Brigid M Noonan, Susanna M Gallor, Nancy F Hensler-McGinnis, Ruth E Fassinger, Shihwe Wang, and Jennifer Goodman. Challenge and success: A qualitative study of the career development of highly achieving women with physical and sensory disabilities. *Journal of counseling psychology*, 51(1):68–80, 2004c. ISSN 0022-0167.

- Kumaresh Pattabiraman. LinkedIn's Most Promising Jobs of 2019, 2019. URL <https://blog.linkedin.com/2019/january/10/linkedins-most-promising-jobs-of-2019>.
- David Pedulla. Diversity and inclusion efforts that really work. 2020.
- Katherine W. Phillips. How diversity makes us smarter. 2017.
- Katherine W Phillips, Gregory B Northcraft, and Margaret A Neale. Surface-level diversity and decision-making in groups: When does deep-level similarity help? *Group processes & intergroup relations*, 9(4):467–482, 2006.
- Emily Puckering. Charlize Theron Said Gender-Neutral Awards Categories Should Be Introduced, 2019. URL <https://twentytwowords.com/charlotte-and-george-write-adorable-mothers-day-card-to-granny-diana/>.
- John Qin, Nuttawuth Muenjohn, and Prem Chhetri. A review of diversity conceptualizations: Variety, trends, and a framework. *Human Resource Development Review*, 13:133–157, 06 2014. doi: 10.1177/1534484313492329.
- Sudheer Reddy and Aditya Mohan Jadhav. Gender diversity in boardrooms – a literature review. *Cogent Economics & Finance*, 7(1):1644703, 2019. doi: 10.1080/23322039.2019.1644703. URL <https://doi.org/10.1080/23322039.2019.1644703>.
- Beth Sperber Richie, Ruth E Fassinger, Sonja Geschmay Linn, Judith Johnson, Joann Prosser, and Sandra Robinson. Persistence, connection, and passion: A qualitative study of the career development of highly achieving african american–black and white women. *Journal of Counseling Psychology*, 44(2):133, 1997.
- David Roach. Product management as firm capability. 2012.
- J. Saldana. *The Coding Manual for Qualitative Researchers*. SAGE Publications, 2012. ISBN 9781446271421. URL <https://books.google.dk/books?id=V3tTG4jvgFkC>.
- Johnny. Saldaña. *The coding manual for qualitative researchers*. Sage, Los Angeles, Calif, 2. ed. edition, 2013. ISBN 9781446247372.
- Saul Sands. Is the product manager obsolete. *Business Quarterly*, 44(3):30–38, 1979.
- Mark N. K. Saunders. *Research methods for business students*. Pearson Education Limited, New York, 8. ed. edition, 2019. ISBN 9781292208794.
- Mark L Savickas. The theory and practice of career construction. *Career development and counseling: Putting theory and research to work*, 1:42–70, 2005.
- Harvard Business School. Product Management 101 & 102, 2020. URL <https://www.hbs.edu/faculty/Pages/item.aspx?teaching=207>.
- Christina Silver and Ann Lewins. *Using software in qualitative research: A step-by-step guide*. Sage, 2014.
- Diane Smith. Employment status of women with disabilities from the behavioral risk factor surveillance survey (1995-2002). *Work (Reading, Mass.)*, 29:127–35, 02 2007.

Jane L Swanson and Mary B Woitke. Theory into practice in career assessment for women: Assessment and interventions regarding perceived career barriers. *Journal of career assessment*, 5(4):443–462, 1997.

Sharon E Sytsma. *Ethics and intersex*, volume 29. Springer Science & Business Media, 2006.

Inge Van de Weerd, Sjaak Brinkkemper, R. Nieuwenhuis, and Lex Bijlsma. Towards a reference framework for software product management. 01 2006a.

Inge Van de Weerd, Sjaak Brinkkemper, R. Nieuwenhuis, and Lex Bijlsma. Towards a reference framework for software product management. 01 2006b.

Van R Wood and Sudhir Tandon. Key components in product management success (and failure). *Journal of Product & Brand Management*, 1994.