

# IPA of Communication Experience of Women Leaders in Collaborative Meetings in Software Engineering Teams

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## ABSTRACT

**Context:** Software development is an inherently collaborative activity, where interactions among team members are crucial for project success. Concurrently, studies have explored the relationship between gender and communication, especially in organizational contexts, involving the participation of women as a mitigating factor for communication and organizational problems in development teams. Their results indicated that, although the presence of women was considered less relevant compared to team experience and size, qualitative data emphasized their significance. However, there is still a significant gap regarding the experiences of women leaders facing communication challenges during collaborative meetings in software development teams. **Objective:** Therefore, the aim of this research is to investigate the experiences of women leaders in collaborative meetings of software development teams, focusing on the communication challenges they face. To achieve this objective, **Method:** we opted to employ a methodology underexplored in the field of software engineering: Interpretative Phenomenological Analysis (IPA). This approach focuses on deeply understanding the nuances of experiences lived by these five women leaders, seeking to comprehend not only the superficial aspects of interaction but also the underlying meanings attributed by them to these experiences. Through IPA, we conducted a meticulous analysis of the challenges narrated by the participants, as well as the strategies they adopted for effective communication during collaborative meetings. This data was carefully grouped, allowing the identification of gaps in the literature and providing valuable insights for possible future research in the field of software engineering. **Results:** Preliminary findings reveal various communication challenges faced by them, including pressure to prove competence, lack of recognition and validation of their contributions, dominant attitudes from male managers, and resistance to change. **Conclusion:** The results highlight the need for interventions to support and value female leaders, as well as promote more flexible and responsive management. It is suggested that future work delve deeper into these issues, and, to this end, research questions are proposed to guide further investigations.

## CCS CONCEPTS

• **Software and its engineering** → *Programming teams.*

## KEYWORDS

IPA, Communication challenges, Collaborative meetings, Women leaders, Software Development Teams

## 1 INTRODUCTION

Collaboration is integral to software development, involving information exchange, coordinated efforts, and joint planning, all pivotal for project success. Recent studies have delved into gender dynamics in communication within organizational contexts, highlighting women's roles in alleviating communication and organizational challenges within development teams. For instance, Kuwana et al. [21] devised an integrated design model for computer-supported meeting environments, facilitating collaborative software development. Similarly, Bohmer et al. [4] explored smartphone utilization in corporate meetings, discovering that smartphone applications can enhance user interaction, particularly in business settings. Lantz [22] examined the potential of Collaborative Virtual Environments (CVEs) in supporting meetings among geographically dispersed experts, noting their task-oriented nature and efficiency in facilitating remote collaborations. Additionally, Grassi et al. [14] proposed an approach to incorporating emotional feedback in agile retrospective meetings, enabling the identification of developers' sentiments associated with team activities, thereby enhancing team reflection and discussion.

Furthermore, Kohl and Prikladnicki [18] conducted a qualitative study and concluded that gender-diverse workplaces are likely to have better idea exchange, better decision-making, creativity, and innovation. However, there are still serious issues regarding women's participation in the industry, where they have to exert extra effort to be heard, recognized, or promoted, especially when they are underrepresented [17]. Although previous studies have explored the challenges of women in leadership roles [2, 13, 17, 31], and the gender communication dynamics [7, 8, 27], there is still a lack of understanding of the interaction between gender, leadership and communication dynamics within software development teams, especially in meetings collaborative. The collaborative essence of

software development underscores the significance of decisions and interactions among team members, directly impacting both community well-being and project success, where the costs of poor communication in the corporate world reach US\$ 37 billion [28]. Therefore, it is crucial to consider the broader context of gender communication and leadership during collaborative meetings in software development teams.

Recognizing the scarcity of investigations in the area of software engineering, we also opted to employ a methodology that remains underexplored: Interpretative Phenomenological Analysis (IPA) [10]. Unlike thematic analysis [5], which primarily focuses on identifying recurring themes across a dataset, IPA allows for a more nuanced and individualized examination of the personal experiences narrated by the participants. This approach enables a deeper understanding of the subjective perspectives of these leaders, shedding light on the unique challenges they face and the specific strategies they employ for effective communication during CTEEP meetings. By delving into the lived experiences of the participants, IPA provides rich, detailed insights that thematic analysis might overlook, thereby offering a comprehensive view of the complexities involved in leadership communication within the context of software engineering.

This study is equally relevant for mentoring women who are in the early stages of their careers and aspire to leadership positions in software development teams, offering them a deeper understanding of the potential challenges they may encounter when taking on such roles. Additionally, we can provide insights and strategies for established leaders in their careers, helping them face and overcome communication challenges during collaborative meetings. Also, there is an opportunity for technology companies to implement initiatives aimed at improving this specific field. Therefore, the objectives of research on the participation of women leaders in collaborative meetings can be outlined as follows:

*RQ1: What challenges do women in leadership roles face in collaborative software development team meetings?*

*RQ2: What strategies do these women leaders use to overcome such challenges, aiming to promote good communication in collaborative software development team meetings?*

## 2 METHODOLOGY

Phenomenological Analysis, a prevalent qualitative methodology, offers profound insights into individuals' interpretations of their social encounters. Interpretive Phenomenology, also known as *hermeneutic* or *existential phenomenology*, emphasizes understanding and interpreting phenomena's meanings embedded in daily life [11, 32]. Gadamer [12] underscores the role of preunderstandings or prejudices in shaping interpretation, highlighting participants' co-creation of meaning. This approach uncovers hidden implications through participants' narratives and researcher reflexivity. In light of these considerations, drawing on the methodological guidance provided by Eatough and Smith [10], we opted to employ Interpretative Phenomenological Analysis (IPA) as the research approach

to understand the experiences of women leaders participating in collaborative meetings.

### 2.1 Interview Questions

In the journey of hermeneutic phenomenological research, scholars navigate the "hermeneutic circle," transitioning from initial biases to a deeper understanding of participants' lived experiences [26]. Personal experiences in the field and insights from previous interviews with women leaders informed the formulation of semi-structured interview questions, ensuring alignment with the phenomenon under investigation [23]. Critical reflexivity guided the development of the interview guide, acknowledging the researchers' presuppositions [9]. The interviews, conducted online, began with questions about the team and personal experience, fostering participant comfort and rapport [34]. Participants freely shared their experiences, aided by intentional ignorance to uncover personal perspectives [33]. The semi-structured format allowed flexibility, ensuring new themes were captured [26]. Following the interviews, verbatim transcriptions were obtained, enabling thorough analysis. This approach, aligned with IPA principles, facilitated participants' direct engagement with significant phenomena, enriching the research process [10]. Overall, the methodological rigor employed, from interview preparation to data analysis, ensured a comprehensive exploration of women leaders' experiences in collaborative meetings.

### 2.2 Analysis

The research methodology employed in this study aimed at ensuring robust data accuracy and reliability. Verbatim transcription of interviews using FireFlies<sup>1</sup> was followed by a thorough review process, incorporating video analysis to rectify any interpretation discrepancies. MAXQDA<sup>2</sup> facilitated individual examination of interviews, considering participants' personal experiences within the research context. To facilitate replication and verification of the results of this study, we provide a replication package containing interview transcripts, codes and analytical memos. This material can be accessed at the following link: <https://github.com/camilasarmiento/sbes/>.

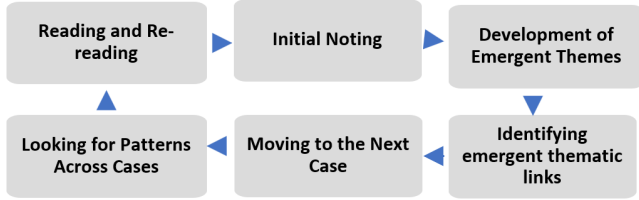
The interpretive phenomenological analysis framework, grounded in Gadamer and Heidegger's philosophical perspectives, guided the analytical process, following the methodological rigor outlined by Eatough and Smith [10]. This phase enabled the exploration of unique participant idiosyncrasies and shared characteristics, enhancing the understanding of women leaders' collaborative meeting dynamics in software development teams. The research findings were enriched through insights derived from the interpretive analysis process, detailed in Figure 1. The steps included reading and re-reading to familiarize with the material, initial noting of observations, developing emergent themes by identifying patterns, searching for connections between themes, moving to the next case, and finally looking for patterns across cases to map interrelated themes.

This phase emphasizes the significance of the hermeneutic circle [32], wherein the interview unfolds from a whole into parts, later converging into a new whole near the analysis's conclusion. Further, the process aimed to trace the relationship between emerging

<sup>1</sup><https://fireflies.ai/>

<sup>2</sup><https://www.maxqda.com/>

**Figure 1: Data analysis process**



themes. This process is flexible, and not all emerging themes will necessarily be incorporated. Reassessment of theme importance may prompt revisiting of transcripts. During this phase, all relevant and significant themes highlighting participants’ experiences are grouped into collections. Moving forward with the study, the investigation passes through each participant, adhering to the previously outlined procedures, which revealed distinct idiosyncrasies among participants in addition to shared overarching characteristics.

### 2.3 Sampling and Participants

Phenomenological studies, guided by Interpretative Phenomenological Analysis (IPA), typically involve small, intentionally selected samples to manage data volume effectively [16, 24]. Five female leaders with extensive collaborative meeting experience were selected. Sampling methods included convenience and referral-chain (snowball) techniques [3]. Anonymity was maintained, with demographic data represented in Table 1. Notably, one participant offers diverse public and private sector experience, contrasting with others exclusively from the private sector.

**Table 1: Profile of Participants**

Participant	Age	Time experience	Team size	Organization size
1	35-44	05-10	05-10	> 2000
2	25-34	05-10	05-10	> 2000
3	25-34	02-05	02-05	> 2000
4	35-44	>10	20-150	> 2000
5	25-34	02-05	02-05	1-49

## 3 RESULTS

The personal experiences women of software development team leaders were analyzed individually in the context of communication during collaborative meetings. The conclusions derived from all interviews were compared and aggregated by thematic fields to achieve a more comprehensive and representative understanding. In summary, the objective was to address each theme and subtheme, providing a comprehensive view of the obtained results. The table 2 compiles the elements most frequently mentioned in the dialogues, providing a basis for the discussion that follows. In which, the biggest common challenges among participants during collaborative meetings were: feelings of frustration and inferiority, especially when their contributions were undervalued in comparison to men colleagues; experiences of sexism, including being ignored or having your ideas rejected; need for points of support, often relying on male colleagues to make their voices heard; and constant pressure to prove their competence. Concerning the strategies women

leaders adopt, the assertiveness in imposing against prejudice and support for organizational initiatives that promote gender equality and the appreciation of their contributions stand out.

**Table 2: Summary of data analysis across cases.**

Challenges in professional interactions					
	P.1	P.2	P.3	P.4	P.5
Feelings	✓	✓	✓	✓	✓
Sexism	✓	✓	✓	✓	✓
Support Points	✓	✓	✓	✓	✓
Need to Prove Technical Competence	✓	✓	✓	✓	✓
Lack of Autonomy	✓	✓	✓	✓	X
Harassment	✓	✓	✓	✓	X
Entrenched management	✓	X	X	✓	✓
Strategies for dealing with challenges					
	P.1	P.2	P.3	P.4	P.5
Adaptation	✓	✓	✓	X	X
Intuitive mediation	✓	X	X	✓	✓
Barrier removal	✓	✓	✓	✓	X
Gain team trust	✓	✓	✓	✓	X
Team integration	✓	✓	X	X	X
Mutual Female support	✓	✓	X	✓	✓
Speaking out against prejudice	✓	✓	✓	✓	✓
Organization initiatives	✓	✓	✓	✓	✓

For the investigation of the phenomenon in question, two essential themes were outlined: *Challenges in Professional Interactions, and Strategies for Dealing with These Challenges*. We detail the essence of the phenomenon in the subsequent subsections, where the sub-themes are organized under each main theme. This approach provided a deeper understanding of the communication challenges faced and the strategies adopted by women leaders during collaborative meetings in software development teams.

### 3.1 Challenges in collaborative meetings

This group focuses on the specific obstacles that women leaders face during collaborative meetings when professionally interacting in software development teams. From the verbatim transcripts, 119 significant statements related to the challenges in collaborative meetings of software development teams were identified. These statements were categorized into subthemes to provide a detailed understanding of the phenomenon. The following sections will delve into each of these subthemes, as presented in Table 3.

**3.1.1 Feelings.** In collaborative meetings of software development teams, two recurring feelings stood out in different contexts: frustration and a feeling of inferiority, especially in moments when participants had their opinions invalidated in comparison to male colleagues: "(...) *having your decision compared by experience or by gender is actually a little frustrating, because you’ve hit the same key several times (...) sometimes it’s also because you’re woman, sometimes not, but... It’s a little frustrating*" (P.5, Pos. 9).

**3.1.2 Sexism.** During interactions within collaborative meetings, multiple cases of sexism emerged in the interviews, especially concerning communication and recognition of women’s contributions.

**Table 3: Challenges in collaborative meetings.**

Code	Frequency	Percentage
Feelings	38	32%
Sexism	23	19.3%
Support points	19	16%
Need to Prove Technical Competence	19	16%
Lack of Autonomy	08	6.7%
Harassment	08	6.7%
Entrenched management	04	3.3%

Evidence includes reports of directors completely ignoring participants' remarks, showing disinterest and lack of consideration: "*(...) me explaining, speaking, I don't know what, and the director, Looking at nothing, not even caring about me*" (P.1, Pos. 17).

**3.1.3 Support points.** The leaders also highlighted several reports about the need for support systems in different forms to be heard during collaborative meetings, one of which is male support: "*(...) you have to have support points there... it's a guy, a person who will be there and will help you exert influence, give you a voice*" (P.1, Pos. 12).

**3.1.4 Need to Prove Technical Competence.** The interviews also pointed out the need for women leaders to exert more effort and constantly prove their competence: "*(...) all the time we have to prove ourselves*" (P.2, Pos. 6).

**3.1.5 Lack of Autonomy.** There were experiences with managers that limited the leaders' autonomy, imposing restrictions on how the group should be led and in collaborative meetings with management and clients included blocking their suggestions: "*(...) whenever I was with the client I was never able to speak, I always had to pass the matters on to my manager first and if I pointed out something in the meeting to the client, I would see it, they would come to me. and say, but you forgot to tell me this, I had an obligation to tell him beforehand, so he could go over it*" (P.2, Pos. 15).

**3.1.6 Harassment.** The leaders also shared experiences of harassment faced during their participation in collaborative meetings within software development teams. One participant described a situation in which she was subjected to intrusive stares: "*(...) You know, the person measuring you, staring at your \*\*\**" (P.1, Pos. 18).

**3.1.7 Entrenched management.** During collaborative meetings, leaders mentioned the difficulty and resistance encountered when dealing with management personnel who have been in their positions for a long period. They describe these individuals as having an antiquated or backward mentality regarding management, suggesting a resistance to change or the adoption of new practices, which is characteristic of entrenched management: "*(...) individuals who have been in management for a long time (...) they have a certain difficulty or a greater resistance (...) I faced a lot of challenges*" (P.1, Pos. 7).

## 3.2 Strategies for dealing with challenges

In this group, we explore the strategies that women leaders adopt to address the challenges identified in professional interactions.

From the verbatim transcripts, 119 significant statements related to the strategies adopted or suggested by leaders in collaborative meetings of software development teams in the face of challenges were identified. These statements were categorized into subthemes to provide a detailed understanding of the phenomenon. The following sections will delve into each of these subthemes, as presented in Table 4.

**Table 4: Strategies for dealing with challenges in collaborative meetings.**

Code	Frequency	Percentage
Speaking out against prejudice	40	33.6%
Organization initiatives	26	21.8%
Mutual Female support	14	11.8%
Team integration	10	8.4%
Gain Team Trust	09	7.6%
Adaptation	08	6.7%
Barrier removal	07	5.9%
Intuitive mediation	05	4.2%

**3.2.1 Speaking out against prejudice.** When asked about how they dealt with gender biases during collaborative meetings, women leaders in software development teams reported various approaches, including assertiveness, resignation and resilience. One participant expressed this resignation when describing her experience: "*(...) I couldn't accept it 100% quietly. There came a time when I got saturated, I put my opinions on the table, but they were never heard. So, it's very complicated for a woman, no matter how much she shouts, shouts, if she's in a misogynistic space, that shout is like silence. It won't work, it won't succeed*" (P.2, Pos. 36).

**3.2.2 Organization initiatives.** The interviews also highlighted the importance of initiatives and policies implemented or proposed to facilitate the professional interaction of women leaders in collaborative meetings of software development teams. Participant 01 emphasizes the need for security provided by the organization in cases of problems, highlighting the importance of feeling legally supported: "*(...) Sometimes, it doesn't mean it works 100% (...) That's the feeling I have. Like, man, if it goes wrong, I'll go there, report it, and go all the way. This security isn't just my security. It's security the company provides*" (P.1, Pos. 49).

**3.2.3 Mutual Female Support.** The participants also reported mutual support among women, highlighting female companionship to promote equality and empowerment. The leader emphasizes the significant difference between receiving support from a woman compared to receiving support from a man: "*(...) very different for a woman to have another woman supporting, helping, than actually having a man. Because I think the woman explains much better. She explains better, she is more communicative, she has more details about things. So, for a woman, to learn from another woman, I think it's fantastic*" (P.2, Pos. 35).

**3.2.4 Team Integration.** The interviews underscore the significance of team integration and support within the leadership context. This not only underscores how effective collaboration and mutual

commitment within the team can facilitate the leader's role but also how the team tends to act in her favor during collaborative meetings: "*(...) and every time, the team was always on my side*" (P.1, Pos. 22).

**3.2.5 Gain Team Trust.** Within collaborative development team meetings, team trust was also cited by leaders as a strategy to promote a collaborative environment. Moreover, Participant 01 indicates the importance of gaining the team's trust to influence opinions and decisions within collaborative meetings, even in moments where team members do not fully understand the situation or the subject under discussion: "*(...) 15 people go after her, people don't even know what's happening, but they'll say, it's wrong, it's wrong, Participant 01 said it's wrong*" (P.1, Pos. 21).

**3.2.6 Adaptation.** Leaders also adopt strategies to adapt to the work environment and overcome challenges to feel included. Participant 01 reports a change in colleagues' perception after adopting a more familiar and informal attitude, being treated as a "partner" or "bro": "*(...) I became one of the guys to be part of the group (...) So, they stopped seeing me as a woman and saw me as a partner, bro. Even grabbing and hitting on the arm, you know? The greeting. And then, how are you? Like how a man does with a man*" (Pos. 17).

**3.2.7 Barrier removal.** The leaders also reported on promoting the removal of communication barriers within collaborative meetings with the development team at certain collaborative moments. Participant 01 emphasizes the importance of adopting an agile approach: "*(...) there are bureaucracies that I need to follow (...) but removing things that don't need to exist along the way, that hinder the flow of work*" (P.1, Pos. 6).

**3.2.8 Intuitive mediation.** When asked about how the participation of women leaders could influence collaborative meetings in software development teams, the participants highlight the facilitation of communication and team integration. Participant 04 notes that women have a "*better perception of things that are left unsaid*" (Pos. 8) and possess a "*sense of not letting something that is being little, perhaps, repressed at the moment of speaking*" (Pos. 8).

## 4 DISCUSSION

In recent years, due to the mitigation of certain inequality factors, women have gradually disengaged from predominantly domestic roles and achieved significant accomplishments in the labor market [2]. Within this context, stemming from the premise of female underrepresentation in leadership positions, particularly within the field of software engineering and the observation, from previous studies, of the communication difficulties faced by women leaders in collaborative meetings, this research sought to identify, through the perceptions of women leaders in software development teams, the challenges encountered during collaborative meetings to communicate and the strategies employed by these leaders to overcome them. Consequently, in this section, we discuss the results obtained from the conducted phenomenological study, in terms of the proposed research questions (RQs).

In relation to **RQ1 which investigates which challenges women in leadership roles need to face in collaborative software development team meetings**, it is pertinent to highlight

that study participants share a widely held view that the main challenges in communication during collaborative meetings arise from interactions with managers and/or clients, mainly due to the lack of recognition of their contributions. It is noteworthy that two out of five leaders (P.2 and P.3) reported good communication conditions and a mitigation of feelings of inferiority in the current company, having faced more challenging experiences in previous organizations. It is also notable that both mentioned that their managers are women, which contributes to smoother communication. The association of this phenomenon can be examined in light of the Critical Mass Theory [19], which posits the need for three or more women on the board of directors to influence the dynamics of decision-making processes [29]. Studies indicate that reaching this critical mass can be particularly beneficial, promoting significant changes and enhancing corporate governance [20]. In this regard, it is relevant to investigate this theory in the specific context of software engineering.

In collaborative meetings of software development teams, frustration and feelings of inferiority were recurrent. In the field of software engineering, frustration is explored by Happe et al. [15] in a study involving 139 female students in software engineering, illuminating the frustrations they encountered and potential deterrents from the field. In this context, the investigation of frustration is also pertinent when female leaders are overlooked in collaborative team meetings in software development.

Similarly to the findings obtained by several researchers [6, 17, 31], the interviews unveiled several instances of sexism during collaborative meetings, particularly concerning communication and the recognition of women's contributions. Many participants felt disregarded by directors, signaling a lack of interest and consideration in listening to them. Additionally, there were reports of disparities in the reception of ideas, with women feeling they would be more heard if they were men. Female contributions were often less acknowledged, suggesting a dynamic where women's ideas were underestimated until expressed by men. Furthermore, male managers exhibited dominant and disrespectful behavior, such as assuming the final word in meetings and belittling women's knowledge. Derogatory remarks and interruptions during speeches were common, indicating a culture of undervaluing female leaders. In predominantly male environments, women's opinions were frequently overlooked, reflecting a gender discrimination dynamic. These instances of sexism undermine equal opportunities and contribute to an unequal and hostile work environment, especially during interactions in collaborative meetings.

Answering **RQ2 about what strategies do these women leaders use to overcome such challenges, aiming to promote good communication in collaborative software development team meetings**, it is observed that the female leadership in software development teams faces distinct challenges in a professional environment often dominated by men. In a scenario where gender biases can influence work dynamics and communication, the strategies adopted by these leaders play a fundamental role in promoting an inclusive culture and the effectiveness of collaborative meetings. Analyzing the narratives from the interviews, it is possible to identify a variety of approaches used by these leaders to overcome obstacles and promote effective communication.

The leaders emphasized the need for support systems to be heard in collaborative meetings. These supports include male colleagues, leaders, or subordinates to validate their contributions and voice their opinions. In the domain of software engineering, where gender disparities persist, particularly in leadership roles, it is essential to understand the dynamics of gender-based support systems in collaborative environments. Despite the importance of this topic, there is a notable gap in studies specifically focused on the dynamics of gender communication and support systems in the area of software engineering, especially in collaborative meetings.

One of the most prominent strategies in collaborative meetings is assertiveness. Female leaders express their opinions clearly and directly, confronting attitudes of disregard when necessary. Agumadu et al. [1], showed a significant relationship between assertiveness and social performance of women in Nigeria. The role of assertiveness among women is not widely discussed within the field of software engineering. Therefore, a more robust investigation into perceived assertiveness in collaborative meetings based on gender is warranted for the field of software engineering.

The adaptation strategies adopted by women leaders to navigate and overcome challenges provide significant insights into gender dynamics within collaborative software development team meetings. The necessity for women to adopt masculine behaviors for effective communication underscores the pressure they face to integrate into these settings. Utilizing the Interpretative Phenomenological Analysis (IPA) methodology allowed us to capture nuances that might be overlooked in thematic analysis, such as the need for leaders to alter their clothing or, corroborating Kohl and Prikladnicki [17] results, modify their tone of voice as strategies to enhance their perception and effectiveness, especially in meetings. These adaptations raise concerns about the erosion of female identities, as women are often compelled to suppress aspects of their authentic selves to be heard and accepted in these collaborative environments. Therefore, future research is essential to explore the long-term impacts of such adaptation strategies on the professional identities and communication of women leaders in collaborative meetings, in which all voices are valued and respected regardless of gender.

## 5 CONCLUSIONS

The analysis reveals challenges in collaborative software development team meetings, including the need for external validation and gender disparities that impact communication dynamics. Organizations must address these issues to promote equitable environments. Promoting recognition of female leadership and supporting organizational adaptability are essential to promoting inclusive and effective communication.

### 5.1 Future research directions

In order to guide future investigations, we present a series of research questions derived from the reflections resulting from the detailed data analysis. These questions highlight gaps in the area of software engineering that may be promising for further exploration of the topics covered. Therefore, we have the following questions:

- *What is the role of women's assertiveness in software development teams?*

- *What role do gender dynamics and stereotypes play in the neglect of women during collaborative meetings in the workplace?*
- *How does translating messages from technical team leaders to management influence the effectiveness of communication during collaborative meetings?*
- *How does the meeting format (remote or in-person) influence the effectiveness of communication and collaboration within software development teams?*
- *How does the presence of support points, such as colleagues or managers who validate their contributions, influence the permanence of leaders in companies?*
- *How can the presence of a female leader influence respect in communication with other women on the development team?*
- *How can the presence of women in senior management contribute to strengthening female technical leadership in software development teams?*

### 5.2 Reflexivity

Reflexivity in Interpretative Phenomenological Analysis (IPA), demands transparency regarding researchers' personal characteristics and biases. As the primary researcher, I am a woman and have worked as a tech leader in which she was able to provide unique and personal insights. Adhering to rigorous interview protocols mitigates bias risks, ensuring the integrity and relevance of the study's outcomes for academia and industry.

### 5.3 Limitations

Due to the nature of the phenomenological approach, the interview method is conducted through open-ended and investigative questions that help the interviewee delve into the description of their experiences. However, it may happen that research participants struggle to articulate their opinions, or that the interviewer inadvertently digresses. To mitigate these challenges, a questionnaire with guiding questions was established, providing support to the interviewer when new topics do not emerge organically from the participants' accounts.

The concept of transferability refers to the extent to which the results of a research study can be applied across different contexts [30]. While thematic and emerging understandings can be extrapolated to secondary and post-secondary contexts, it is crucial to highlight that generalization and transferability in hermeneutic research are not absolute. Instead, the validity of the research is measured by its ability to raise new questions and deepen the understanding of the phenomenon under study [25].

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