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Exploring Challenges Faced by Women in Their Professional Development in the Construction Industry: The Case of Chile

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Abstract

In the context of the construction industry in Chile, the presence of women has historically been limited—i.e., approximately 12% of participation. Despite efforts to increase female participation in recent years, various barriers persist that hinder their development in construction. To leverage the existing challenges faced by women in the Chilean construction industry, interviews were conducted with industry professionals, and a qualitative analysis was performed to identify existing challenges in Chile and recommendations to deal with such challenges. We found that existing challenges can be classified into three professional development stages: entering the sector, retention, and advancement in women's professional careers. The results reveal that women working in the construction industry face biases and stereotypes that negatively impact their recognition and professional advancement. Furthermore, women were much more aware of challenges compared to men, for instance, entrenched machismo in the workplace, the social burden associated with motherhood, and their effects on women within this industry. Ultimately, this is a construction sector problem and not a problem with the women in the industry; thus, we all need to participate in the solution to this problem, men and women alike.

Keywords: construction; women; professional development; challenges; qualitative analysis



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1. Introduction

Since the 1990s, the participation of women in the construction industry has gained increasing importance in developed countries. This shift has led to a rise in research focusing on the challenges faced by women in a predominantly male environment. However, entrenched stereotypes and gender behaviors persist, challenging the perception of equity [1].

Women have been steadily and increasingly joining the labor force in Chile in recent times. Since the 1990s, there has been greater participation of women in paid jobs and the formal market. However, despite the global average of 53% female labor force participation [2] and 54% in Chile, in the construction sector, women rarely exceed 10% of the total

employees. In the specific context of Chile, this figure reaches only 7.7% [3]. Although construction has historically been a male-dominated field, during global crises, where there has been a greater need for labor, women have shown that they can be an integral part of the workforce in this industry [4]. The low participation of women in the construction industry, despite their increasing presence in the labor force, is a crucial aspect to analyze. This phenomenon gains greater relevance due to the persistent labor shortage in the sector, both globally and in the specific case of Chile [5].

Although research on women's participation in the construction industry has advanced, existing studies have primarily focused on developed countries such as Australia [6], the United States [7], and the United Kingdom [8]. However, in South America, research on this topic remains limited [9]. In the Chilean context, concerns about female participation in the construction industry have emerged in recent years. Organizations such as the Chilean Chamber of Construction (CChC) and the Ministry of Women (MINMU) have implemented programs like "In Construction, There Are Women and We Want More" by the CChC to promote the inclusion of women in this sector. However, the lack of an in-depth analysis of the factors contributing to the low interest or attrition of women in the industry may limit the positive impact of these measures. It is essential to thoroughly understand the context to avoid potential adverse consequences of the proposed initiatives.

Given the context discussed above, this study focuses on the career trajectories of professional women in the construction industry; thus, the professional development of women in construction is divided into three stages: entry into the sector, retention, and advancement. Each phase presents unique challenges, some of which may overlap or be more relevant at specific stages. To address the challenges in the professional development of women in the construction industry in Chile, interviews with industry professionals, both men and women, are conducted. Then, interviews are qualitatively analyzed to identify the perceived challenges in women's entry, retention, and career advancement, and recommendations about how to face such challenges.

2. Literature Review

The existing literature reveals various difficulties that affect the entry, retention, and advancement of women in the construction industry. The following sections describe these barriers during each of the three stages. In turn, these three stages are proposed by the authors to capture the professional development of women in the construction industry. The stage of entering involves the first professional experience of women in construction, i.e., women obtaining their first job in construction; this stage may be related to a low level of experience in the construction industry. The stage of retention involves maintaining women participating in the construction industry in the positions they are holding. This stage may be related to an intermediate level of experience in the construction industry. Ultimately, the stage of advancement involves the process in which women are promoted to management positions in construction with high decision-making responsibilities. This stage may be related to a high level of experience in the construction industry. Context about the Chilean construction sector is provided to better contextualize the region of the study.

2.1. Challenges Faced by Women in Their Professional Development in the Construction Industry

Firstly, it is crucial to highlight the limited understanding of the construction industry that prevails in society, which generally contributes to a negative perception of the sector [4,7]. There is a persistent misconception that this field involves strenuous physical labor, relying on brute strength, without recognizing the diversity of trades and technical and professional careers associated with the industry. This lack of awareness extends to

secondary education, where insufficient information prevents construction from being seen as a viable option for study or employment [9]. Furthermore, during the academic training of female students, teachers and faculty members tend to be mostly men, creating an internal barrier where same-gender role models are scarcely present [10]. This misinformation is not only a consequence of disinterest but is also reinforced by the distorted image of the sector conveyed by family members, teachers, and career advisors [11].

Moreover, women face additional challenges in seeking to balance personal and professional life, exacerbated by the persistent cultural expectation that they should be responsible for both childcare and household tasks [8,9,12]. This imbalance of responsibilities, where women invest more than twice the time as men in these tasks [13], further complicates the reconciliation of family life with the work culture of the construction industry. Consequently, many women who study construction-related fields do not end up working in them, as construction jobs demand significant personal sacrifices [10]. It is acknowledged that in this sector, long working hours are valued, and employees who can work more to expedite project timelines are considered exemplary [14].

Additionally, the construction industry in general offers limited, if any, flexible employment options, whether in terms of part-time work, complementary schedules, or flexible hours [6,8,9,15]. This rigidity makes it difficult for women who perform the role of mothers, a responsibility that still persists in society, to participate in the industry. This obstacle is exacerbated for women who lack a support network or the means to hire help for childcare [16].

Similarly, gender discrimination poses significant barriers in the construction industry, affecting women at every stage of their careers, from job applications to seeking promotions [9,11,12]. Women's skills are often undervalued in their roles, requiring constant demonstrations of competence [17].

Motherhood is perceived negatively, becoming an obstacle to career advancement and relegating women to roles with less responsibility [11,18]. Gender discrimination also manifests in horizontal segregation, confining women to certain trades less influenced by male culture, such as cleaning, finishing work, or office jobs [19]. Vertical segregation prevents women from reaching leadership roles, offering fewer opportunities for advancement compared to their male counterparts [9,19]. The "macho" culture contributes to hostile behaviors from coworkers, superiors, and even subordinates, and instances of harassment, creating a tense and unsafe work environment for women seeking to excel in the industry [7,8,17].

The ongoing struggle against the mentioned barriers can generate a significant level of stress, as it involves continuously confronting prejudices and inappropriate behaviors that hinder professional development, compounded by inherent industry pressures [11,18].

Furthermore, another determining factor in women's careers in this sector is the pronounced gender pay gap, which, although present across various industries, is magnified in construction, reaching approximately 23% in the United States [12]. Experiencing one or several of these obstacles has a negative impact on women's job satisfaction in the construction sector [4,7], generating feelings of discouragement that can lead to disinterest in the industry. This lack of interest, over time, translates into a desire to leave the field, resulting in the "leaky pipeline" effect. This phenomenon indicates that although a higher percentage of young women may initially be attracted, many leave the construction industry during the early years of their careers. As a result, the number of women in the construction sector has remained virtually constant in recent decades, impacting not only the workers but also companies that lose resources invested in their training.

Finally, it is crucial to acknowledge the limited presence of female role models in senior leadership positions in the construction industry. Women, especially young or newly

integrated ones, lack female figures who can provide them with confidence, support, and hope for growth in the sector [7].

Table 1 shows a summary of barriers present in women’s professional careers in construction, detailing at which stage each barrier is present (i.e., entering, retention, and advancement). These three stages aim to capture the evolution of professional development among women in the construction sector, and as such, capture the challenges that they may face throughout these stages.

Table 1. Summary of barriers present in the industry according to the literature.

Barriers	Entering	Retention	Advancement
Labor flexibility	-	[9]	[6,9,16]
Work–life balance	[10]	[4,12]	[6,11,16]
Vertical segregation (glass ceiling)	-	[8,9]	[7,9]
Horizontal segregation (glass walls)	-	[8]	-
Stress		[8]	[11]
Gender discrimination	[17]	[9,12]	[6,9,11,16]
Job satisfaction	-	[12]	[16]
Poor industry image	[11,18]	[9]	[9]
Work schedules	[12]	[8]	[6,16]
Lack of role models	[10]	[6,15]	[6]
Industry knowledge/early interest	[11]	[12]	-
Harassment/hostility	-	[8,15]	[7,11]

2.2. Context of Chilean Construction

After identifying the barriers described in the academic literature, it is crucial to analyze the specific reality of construction in Chile. Given that each region has its own peculiarities and unique challenges, this analysis will allow us to more deeply understand the reasons behind the low interest, limited retention, and insufficient progress of women in the Chilean construction industry.

Women have made significant strides in the Chilean labor market, steadily integrating into the formal workforce in recent decades [20]. Today, they are experiencing some of the highest employment rates in recent times (post-pandemic), reaching up to 43.2% of the total workforce in the country during the last period [21]. However, there is still much to be done in the construction industry, where a predominantly male culture persists. In Chile, women only represent 7.7% [3] of the workforce in the construction industry. Moreover, the sector is facing a labor shortage that has been increasing in recent years. By 2021, a shortage of at least 70,000 people was projected [5], making it difficult to find labor and/or qualified professionals for the job. This ultimately translates into increased production costs, as work pace slows down, the timely completion of projects is compromised, and budgets are lowered. Additionally, the construction sector is the industry with the highest labor turnover rate, at 51.3% [22].

The above is concerning not only for the construction sector but also for the country’s economy, as it is one of the largest industries in Chile, employing 768,524 people [22] and contributing approximately 5.9% to the country’s GDP [23]. Therefore, a stagnation in its production would have economic repercussions for the country.

This underscores the importance of encouraging women to enter the sector and retaining those who have already shown interest in the Chilean construction industry. Failing to do so would mean disregarding a significant portion of the existing workforce.

To address this, an analysis of the challenges faced by women in the construction sector at various stages of their careers is proposed, aiming to establish relevant measures to reduce these barriers and advance the professional development of women in the industry. Additionally, according to a study conducted by the Chilean Chamber of Construction, a gender wage gap exists in the construction industry, reaching 17.9% in professional roles and 20% at the technical level [24].

In Chile, there are programs aimed at advancing female participation in the construction industry led by the Chilean Construction Chamber (CChC), such as the “Women Build” award, which, in partnership with the Chile Mujeres Foundation, seeks to highlight and boost women’s involvement in the industry. This initiative recognizes outstanding stories, showcases female talents and contributions to the sector, and acknowledges companies for their advancements in gender equity. However, there is a lack of comprehensive studies evaluating the difficulties or barriers that women face within the industry. Therefore, efforts to include women may become counterproductive if the underlying issues preventing women from entering, staying, and advancing in their careers in the industry are not properly understood. Moreover, it is crucial to understand and highlight regional differences, as significant disparities in female participation in the industry exist even within the same country [25,26].

3. Methods

This section outlines the rationale behind the selection of research methods employed to address the challenges faced by women throughout their professional careers in the construction industry in Chile. Interviews were performed for qualitative analysis to explore the experiences of interviewees about challenges faced by women in Chilean construction and recommendations to face such challenges. Given the limited literature about women’s challenges in construction in the Chilean context, the authors of this study believe an exploratory approach supported by a qualitative analysis was the most appropriate approach to this study.

3.1. Sampling and Data Collection

Data was gathered through 19 semi-structured interviews with professionals actively engaged in or holding roles within the construction industry in Chile. Each interview was structured into three sections. The first section focused on identifying the profile of the interviewee, while the second aimed to explore and analyze the individual challenges encountered in their professional development. The final section concentrated on the interviewee’s perceptions regarding their professional growth within the industry. Important to note, at the beginning of every interview, consent from every interviewee was obtained.

The interviews were obtained using convenience sampling [27] and snowball sampling techniques [28]. Snowball sampling involves asking the same interviewees for recommendations about other people to be interviewed that might be a good fit for the study, and as such, growing the sample size like a snowball. The convenience sampling approach was used as the sample of interviewees were required to have experience working in the construction sector. The main selection criterion was established for interviewees, aiming to include individuals with a minimum of two years of professional experience in the construction industry, actively engaged or previously active in this sector, preferably women or men that have experience working with women in construction to ensure experience regarding women challenges in the construction sector. Interviewees had experience ranging from 3 to 42 years, with an average of 12.5 years.

Professionals were contacted via email and telephone, and interviews were primarily conducted remotely. Interviews took place between January and June 2023, with an average

duration of 25 min. A brief explanation of the topic was provided, outlining the research objectives. Open-ended questions were used to encourage discussion on participants' opinions and experiences regarding the challenges women face in their professional careers in construction. Examples of the questions include

- Are you familiar with programs aimed at advancing gender inclusion?
- Do you perceive having faced difficulties in your professional development?
- What initiatives do you believe are important for attracting more women to the construction sector?

The data collection process continued until reaching the saturation point of interviews, where new interviews no longer provided additional insights [29–31], which, for our study, was 19 interviews. Furthermore, the size of the data collected for this study is within a comparable range with similar qualitative studies in the construction field that conducted interviews (e.g., $n = 8$, [30]; $n = 12$, [32]). Additionally, Table 2 provides a summary of the main characteristics of our interviewees.

Table 2. Characterization of interviewees.

	Gender	Position	Experience (Years)	Profession
1	M	Cost Control	3	Civil Construction
2	F	Project Analysis—independent	5	Civil Construction
3	M	Quality Control	7	Construction Engineer
4	M	Project Manager	35	Civil Construction
5	F	Technical Works Inspector	4	Civil Construction
6	M	General Manager—Owner	42	Civil Construction
7	F	Technical Commercial Manager	8	Civil Engineer
8	M	Consultant—Individual	9	Risk Preventionist
9	M	Site Manager	34	Civil Construction
10	M	Contractor—Owner	9	Civil Construction
11	M	Senior Engineer	11	Geotechnical Engineer
12	M	Independent—Project Management	8	Civil Construction
13	F	Industrial Preventionist	7	Risk Preventionist
14	F	Prevention Department Manager	7	Risk Preventionist
15	F	Sustainability Engineer	12	Environmental Engineer
16	F	Head of habitat development area	8	Civil Construction
17	F	Management Control and Budget	19	Civil Construction
18	F	Field Manager	7	Construction Engineer
19	F	Head of Prevention Department	4	Risk Preventionist

Note: Reported genders included female (F) and male (M).

3.2. Qualitative Analysis

Once the data collection process was completed, all interviews were transcribed and then reviewed and coded. The qualitative analysis involved a coding process starting with a thorough review of all responses to identify predominant ideas expressed by participants and ultimately breaking down ideas into excerpts that are classified into multiple categories and subcategories [33]. The coding of the excerpts followed an inductive approach in which categories and subcategories are topics that emerged from the responses [33,34]. An iterative process is followed to integrate all emerging topics and conceptualize them into categories and subcategories. Our analysis identified two main topics behind interviewees'

responses: challenges faced by women and recommendations to deal with such challenges. These topics led to the two coding dictionaries, as shown in Tables 3 and 4. Each coding dictionary has the subcategories found with their corresponding definitions and an example of the code to facilitate their understanding. Two researchers were involved in the coding process to deal with disagreements in the coding process. As minor disagreements were encountered during the coding process, no intercoder reliability was evaluated. In general, both researchers coded results in similar ways, and during the comparisons between them, disagreements were resolved to obtain the coding dictionaries presented in this study.

Table 3. Coding dictionary of challenges of women in the construction industry in Chile.

Category/Stage	Subcategory	Definition	Example
Entry	Gender pay gap	The percentage difference between men's and women's earnings relative to men's wages.	"... it is still possible to observe discrimination or wage disparities between men and women." (#10)
	Work–Life Balance	The balance between a worker's professional and personal life.	"... When I did my internship, I realized that working on-site was challenging to balance with family life. At a young age, I understood that fieldwork was not for me." (#2)
	Machismo	A form of gender-based discrimination characterized by male dominance.	"... I have heard supervisors say that they do not want women, regardless of how qualified they are, simply to avoid issues with the workers." (#3)
	Maternity	The status or circumstance of a woman who has become a mother, or the likelihood of this occurring.	"... Hiring a woman and having her arrive late because her child was sick is complicated. The industry operates with tight schedules and budgets, creating a problem ..." (#4)
	Paternalism	The tendency to apply authority and protective behaviors typical of a traditional father figure to other social relationships, such as political or workplace settings.	"... There is no discrimination; it's more about the concern regarding the male workers who don't know how to behave around women." (#9)
Retention	Employment discontinuity	A temporary or permanent disruption in the career path marked by periods of unemployment or significant changes.	"... After finishing a contract, it's difficult to find work again." (#17)
	Harassment	To pursue, harass, monitor, or seek physical proximity to another person without their consent or desire, in an intrusive and persistent manner.	"... even sexual harassment is often overlooked because it becomes normalized. That's why I don't like working in the field." (#19)
	Machismo	A form of gender-based discrimination characterized by male dominance.	"... There is still a big difference in communication. For example, I can't get angry or be too energetic, because I'm seen as hysterical, while my male colleagues yell and treat the staff poorly, and they're considered a 'good boss'." (#7)
	Gender pay gap	The difference in earnings between men and women expressed as a percentage of male wages.	"... A man is recognized as if he has 10 years of experience just for being a man." (#5)
	Paternalism	The tendency to apply forms of authority and protection typical of the father figure in a traditional family to other social relationships, such as political, workplace, or other contexts.	"... If one of us scolds them, it feels like their mother is scolding them, but when a man does it, he can curse at them, and nothing happens." (#18)

Table 3. Cont.

Category/Stage	Subcategory	Definition	Example
Retention	Mansplaining	A situation in which a man explains something to a woman that she actually understands or knows, in a condescending and paternalistic manner, unjustifiably assuming that she does not know it.	“... They generally discriminate because they think we have less knowledge.” (#7)
	Maternity	The status or circumstance of a woman who has become a mother, or the likelihood of this occurring.	“... They punish motherhood, even though it doesn’t affect your work performance.” (#15)
	Horizontal Segregation	Women tend to concentrate in certain sectors of activity and specific occupations.	“... In construction sites, the preference for male leaders persists wrongly, despite the fact that gender does not influence the ability to effectively lead a team...” (#5)
	Work–Life Balance	The balance between a worker’s professional and personal life.	“... For instance, in Spain, the postnatal period has been equalized for men and women, so companies can no longer use the excuse of not hiring women because of pregnancy” (#19)
Advancement	Maternity	The status or circumstance of a woman who has become a mother, or the likelihood of this happening.	“... Many women who have made their way have become mothers at a very late age for this reason, to be able to reach managerial positions. They work hard and postpone motherhood...” (#13)
	Machismo	A form of gender-based discrimination characterized by male dominance	“... There is a lot of competition, and it’s difficult to stand out, especially because it’s a male dominated environment...” (#14)
	Work–life balance	The balance between a worker’s professional and personal life.	“... To grow, you have to work hard, and in many cases, give up your personal life...” (#6)
	Vertical segregation	Differential access between men and women to occupations and job positions, sectors, and occupational categories.	“... They put obstacles in the way of my advancement within the company because I was a woman (my management)...” (#18)

Table 4. Coding dictionary of recommendations for challenges faced by women in the construction industry in Chile.

Category/Stage	Recommendation	Description	Example
Entry	Promote the industry for women	To disclose all the areas in which women can develop within the construction industry.	“... Vocational guidance programs. The sector is very broad; one can be a contractor, a site supervisor, there are countless roles one can perform in this industry” (#6)
	Make the salaries known	Recommendations related to informing about the salaries of different roles in the construction industry.	“... Show the economic benefits of the industry, which pays better than others...” (#10)
	Show more female role models.	Recommendations aimed at showcasing both female and male role models when presenting careers associated with the industry.	“... Invite both female and male roles related to construction in schools or in the early years of university...” (#1)

Table 4. Cont.

Category/Stage	Recommendation	Description	Example
Entry	Career advice for women	Advice and/or recommendations directed at women.	"... Don't be afraid, don't worry about what others will say or how you will do it, or how you will learn it. Everything in life is learned..." (#8)
	Courses and/or vocational training schools.	Recommendations related to technical courses or training for women in construction.	"Technical institutes and training centers that encourage women to learn activities related to construction..." (#4)
Retention	Maternity benefits.	Recommendations related to support and integration plans during maternity leave.	"... For example, women returning from maternity leave could have a more comfortable/private space for breastfeeding..." (#12)
	Flexible working hours.	Recommendations related to flexibility in arrival and/or departure times	"... flexibility to finish tasks at home or extend the departure time." (#2)
	Career advice for women	Advice and/or recommendations directed at women.	"The most important thing is to approach the work with humility. I've come across women who arrive very defensive, and in the end, that works against them." (#9)
	Eliminate gender pay gap	Narrow/eradicate the existing gaps.	"The salary increases, because it is still seen that there is discrimination or a salary difference if you are a man or a woman, and they don't truly measure your competencies." (#15)
	Promote the same evaluation parameters for men and women	Evaluated under the same parameters, whether it is met or not. Not based on assumptions (maternity).	"... That it be evaluated with the same standard, not with a different parameter (between men and women)." (#11)
	Educate and instill values, and promote respect	Educate from an early age with values, promoting respect and eradicating machismo.	"... Re-educate our society, as it's a matter of values that come from home." (#1)
	Protect women against sexist behavior/harassment	Effectively penalize all inappropriate behavior at work.	"... also protect when sexist situations arise, penalize them, and be firm in that regard." (#17)
Advancement	Create/promote women's groups in construction	Creating groups where experiences can be shared, and everyone can collaborate to face challenges.	"Implement a program for women leaders." (#18)
	Career advice for women	Advice and/or recommendations directed at women.	"Dare to take on managerial positions, believe in yourself and in your ability to do a good job." (#9)
	Promote gender policies	Impose gender quotas.	"... a law or regulation that requires gender parity, a gender quota..." (#5)
	Equality of parental rights	That maternity and paternity leave be equal for both men and women, so that there are no differences when choosing whom to hire or who to assign higher responsibility positions.	"... In Spain, the paternity leave period has been equalized for men and women, so companies can no longer use the excuse that they won't hire women because of pregnancy..." (#19)

This study includes three categories related to the stages in which women face challenges throughout their careers in construction in Chile and the corresponding recommendations to deal with them: entering, retention, and advancement of their careers in the construction industry. The entry stage is understood as a stage in which a person is

attempting to enter the construction industry (e.g., seeking his/her first job). The retention stage is understood as a stage in which workers are established in the construction sector and are aiming to develop a career in the construction industry. Finally, the advancement stage is understood as a stage in which workers are experienced enough to be considered for promotions in their careers in the construction industry.

Ultimately, once the coding dictionaries are completed, two different types of frequencies are calculated: total responses and unique responses. Total responses indicate how many times a topic was mentioned, and unique responses indicate how many interviewees mentioned each topic. The counting of frequencies was performed using the software QDA Miner Lite.

4. Results

Two coding dictionaries were developed in this study (see Tables 3 and 4). The first dictionary refers to challenges faced by women throughout their careers in construction in Chile (see Table 3), and the second dictionary refers to recommendations to deal with challenges faced by women throughout their careers in construction in Chile (see Table 4). Each dictionary includes definitions for each challenge and recommendation, and an example to facilitate their understanding, introduced verbatim by one or more of the interviewees (indicated as # within parentheses in the tables).

The process of building the coding dictionaries is followed by a quantification of the frequency of responses by interviewees. Two metrics are used to evaluate the responses coded from the interviews: the frequency of unique responses captures the number of interviewees who referred to a specific category/subcategory, and the frequency of total responses indicates the number of responses that a specific category/subcategory received. Important to note, the importance of the category/subcategory does not necessarily relate to the number of excerpts coded for each category/subcategory, and instead, it captures the awareness of such category/subcategory by respondents [35].

The main objective of this study was to identify challenges women experience throughout their professional careers in three key phases: entry, retention, and advancement, within the context of the construction industry in Chile. Additionally, efforts were made to formulate recommendations and suggestions aimed at mitigating these challenges faced by women in these critical stages of their professional development. The frequencies of challenges mentioned by the interviewees are reported in Table 5, which presents categorized results based on the phase in which these challenges were reported. It includes how frequently these challenges were mentioned (total responses) in interview responses and the number of interviewees who identified these challenges in their responses (unique responses).

Furthermore, with the aim of analyzing differences in perceptions between men and women and verifying whether there is a greater understanding or awareness of the issues present or if different difficulties are observed, frequencies were analyzed based on the gender of the respondents, as presented in Table 6.

Table 5. Frequency of challenges according to career development stage.

Category/Stage	Subcategory	Total Responses (Unique Responses)
Entry	Gender pay gap	1 (1)
	Work–life balance	1 (1)
	Machismo	6 (6)
	Maternity	5 (4)
	Paternalism	2 (1)
	Total	15 (13)

Table 5. Cont.

Category/Stage	Subcategory	Total Responses (Unique Responses)
Retention	Employment discontinuity	1 (1)
	Harassment	5 (3)
	Gender pay gap	5 (3)
	Work–life balance	3 (3)
	Machismo	34 (13)
	Horizontal segregation	10 (6)
	Maternity	5 (3)
	Paternalism	2 (1)
	Mansplaining	1 (1)
Total		66 (19)
Advancement	Vertical segregation	3 (3)
	Work–life balance	1 (1)
	Machismo	2 (2)
	Maternity	5 (4)
	Total	11 (10)
Total		92 (19)

Table 6. Summary of frequency of challenges exposed according to respondents' gender and career development stage.

Category/Stage	Subcategory	Men	Women
		Total Responses (Unique Responses)	Total Responses (Unique Responses)
Entry	Gender pay gap	1 (1)	-
	Work–life balance	-	1 (1)
	Machismo	4 (4)	2 (2)
	Maternity	3 (2)	2 (2)
	Paternalism	2 (1)	-
	Total	10 (8)	5(5)
Retention	Employment discontinuity	-	1 (1)
	Harassment	1 (1)	4 (4)
	Gender pay gap	-	5 (3)
	Work–life balance	-	3 (3)
	Machismo	3 (3)	31 (10)
	Horizontal segregation	9 (5)	1 (1)
	Maternity	-	5 (3)
	Paternalism	-	2 (1)
	Mansplaining	-	1 (1)
Total		13 (9)	52 (10)
Advancement	Vertical segregation	-	3 (3)
	Work–life balance	-	1 (1)
	Machismo	-	2 (2)
	Maternity	-	5 (4)
	Total	-	11 (10)
Total		23 (9)	68 (10)

Below, Table 7 displays the frequencies of each recommendation. It indicates the frequency that recommendations were mentioned (total responses) in interview responses and the frequency of interviewees referring to each category in their responses (unique responses).

As performed previously, responses were classified according to male and female genders in the case of recommendations. This was performed with the aim of highlighting

the awareness among interviewees about the importance of necessary changes to advance a more gender-diverse industry. These findings are presented in Table 8.

Table 7. Frequency of recommendations expressed according to career development stage.

Category/Stage	Subcategory	Total Responses (Unique Responses)
Entry	Career advice for women.	6 (3)
	Courses and/or vocational training schools.	4 (3)
	Promote the industry for women	9 (8)
	Make the salaries known	5 (3)
	Show more female role models	6 (4)
Total		30 (19)
Retention	Maternity benefits	4 (2)
	Eliminate gender pay gap	4 (3)
	Create/promote women's groups in construction.	2 (2)
	Flexible working hours	3 (2)
	Promote the same evaluation parameters for men and women.	2 (2)
	Educate and instill values, and promote respect	5 (3)
	Career advice for women.	7 (6)
	Protecting women against sexist behavior/harassment.	3 (2)
Total		30(19)
Advancement	Equality of parental rights.	3 (2)
	Promote gender policies.	3 (2)
	Career advice for women.	7 (6)
	Total	13 (10)
Total		73 (19)

Table 8. Summary of frequency of recommendations expressed according to respondent gender and career development stage.

Category/Stage	Subcategory	Men	Women
		Total Responses (Unique Responses)	Total Responses (Unique Responses)
Entry	Advice for women.	1 (1)	5 (2)
	Courses and/or trade training schools.	3 (2)	1 (1)
	To make the industry known.	4 (3)	5 (5)
	To disclose remunerations.	2 (2)	3 (2)
	Show more female referents.	3 (2)	3 (2)
Total		13 (9)	18 (10)
Retention	Maternity benefits.	1 (1)	3 (1)
	Wage gap.	4 (3)	-
	Create/promote women's groups in construction.	1 (1)	1 (1)
	Schedule flexibility.	-	3 (2)
	Promote the same evaluation parameters for men and women.	-	2 (2)
	Train/ Educate with values and promote respect.	3 (1)	2 (2)
	Advice for women.	1 (1)	6 (5)
	Protecting women from sexist behavior/harassment.	-	3 (2)
Total		10 (7)	20 (10)
Advancement	Equal parental rights.	-	3 (2)
	Promote gender policies.	2 (1)	1 (1)
	Advice for women.	4 (3)	3 (3)
	Total	6 (4)	7 (6)
Total		29 (9)	45 (10)

5. Discussion

The results from this study illustrate the level of awareness of interviewees regarding the challenges women face in the three professional phases identified for this research—i.e., entry, retention, and advancement in the Chilean context (see Tables 5 and 6). Additionally, recommendations to face existing challenges were leveraged from the interviewees' responses (see Tables 7 and 8).

5.1. Challenges Faced by Women in Construction

Regarding the challenges associated with starting a professional career (i.e., entering), two issues stand out: maternity and machismo (see Table 5). In the first case, interviewees mention experiencing or witnessing situations where concerns arise when hiring women for a specific position and potential conflicts with male workers due to sexist or misogynistic attitudes. There is also a perception that women will likely assume family responsibilities at their home, especially maternity. This prejudice is based on historical and stereotypical conceptions deeply rooted in Chilean society about the traditional role of women, contributing to the mistaken belief that women should not participate or cannot perform adequately in the construction industry ([9,17]).

In the second case, interviewees acknowledge the existence of machismo and a hostile work environment for women in the construction industry. They even admit that certain leadership positions show a preference for working with men, thereby creating a significant barrier for women entering the construction labor market. This preference demonstrates a gender bias entrenched in the sector, contributing to the difficulty women face in accessing job opportunities in this field. It is consistent with the impressions of interviewees. For instance, in this case, one of the interviewees reported the following: "... When I've had to hire while in leadership positions of large teams, they always ask if they can be men." This is aligned with the few findings in the Latin American region (e.g., [9]).

Interesting to note, among the interviewees, men were more aware of the challenges to enter the industry than women (see Table 6). We believe these results may emphasize that decision-making roles, for instance, during hiring processes, are typically performed by men in construction, so in this context, they may become more aware of the existing challenges for women. Otherwise, Lawson and Lips [36] specify that men have less reason to form negative impressions and favor supporting women to avoid social comparisons.

Regarding the most frequent challenges faced by women to be retained in the construction industry, machismo, horizontal segregation, maternity, wage gap, and harassment stand out (see Table 5), which are aligned with the existing literature around the globe (e.g., [1,9,11]). Concerning machismo, it is observed that interviewees are highly aware that it constitutes a significant challenge for women to be retained (see Table 5); in fact, it was the most frequent challenge when it comes to the retention stage for women. In this context, sexist comments or attitudes from both superiors and co-workers emerge as obstacles, questioning the feasibility of women advancing in their careers within the construction industry. For instance, an interviewee (#13) reported the following: "... I'm required to have more soft skills or more self-control than a man, I'm not measured by the same yardstick, I can't shout or get angry because automatically I'm hysterical, but a man can do it and no one will say he lost control, quite the opposite, they'll say he's strong-willed' ...". Of note, when looking at the challenge of machismo, our results show that women are much more aware of it than men (see Table 6). In line with [6,12], we interpret these results as showing that someone is more likely to report something when they are directly affected by it. For instance, regarding machismo in the construction sector, women are more aware of it and thus more likely to it compared to men, who are less likely to be affected by machismo.

When it comes to the challenge of maternity, notably, it was highlighted only by women in this stage of their professional development (see Table 6), suggesting it is a challenge only from the perspective of women among our interviewees. For instance, women who are mothers recount having to make decisions such as leaving traditional careers or reducing their workload. Many opt to work independently in the construction sector to better balance work demands with their responsibilities of motherhood. One of our interviewees reported the following: "... Motherhood is punished, even though it doesn't affect your job performance." According to the literature, a crucial factor in this scenario is the lack of specific maternity benefits and rights, as noted by Gurjao [4]. Moreover, our interviewees also discussed that women without children face constant questioning regarding maternity, feeling pressure to choose between their professional growth and the role of being a mother. This situation might not be exclusive to the construction industry but instead exists in Chilean society at large.

Another relevant challenge faced by women to be retained in the construction sector is work–life balance. This challenge is related to the previous challenge of maternity, as women are expected to take care of most, if not all, household chores, and as such, it becomes very difficult to balance working in construction and being in charge of everything at home. However, in line with [37], work–life balance also involves other types of relationships for women in the construction industry, such as interactions with their partners and caregiving responsibilities for other dependents (e.g., an elder in their family). Socially, it is observed that women more frequently assume this role compared to men. This phenomenon was exacerbated during the COVID-19 pandemic, where in Chile, the female workforce experienced a significant impact compared to males. According to data from the National Institute of Statistics INE (2021) [38], the female employment rate decreased by 13.1 percentage points over 12 months, while the decrease for males was 7.5% over the same period. These results highlight the disparate impact of the pandemic on genders and underscore the need for comprehensive approaches to work–life balance in the workplace. Aligned with these ideas, some interviewees reported the following: "... I think most women in this field choose between personal growth, professional growth, or growth with their partner or marriage ..." or "... I believe that work life balance is a very important issue, and construction is a sector where this doesn't exist for either men or women ..."

Regarding the challenge of horizontal segregation, the entrenched perception that women excel in administrative or document management roles seems to persist. This professional stigma relegates women to office-based tasks rather than assigning them to field roles [8]. Similarly, for manual laborers, women are often associated with finishing work, meticulous tasks, or cleaning, sidelining them from more physically demanding roles. This limitation poses a barrier for women seeking employment in the construction industry, as they are judged based on popular beliefs rather than their actual capabilities.

It is noteworthy that in Chile, labor regulations stipulate weight limits for lifting, with a maximum of 25 kg for men and 20 kg for women and individuals under 18 years old [39]. This regulatory framework aims to ensure safe working conditions by preventing excessive burdens. However, the stereotypical association of women with less demanding roles may contribute to underestimating their abilities, even when they comply with established regulations. For instance, some quotes from interviewees aligned with this notion are the following: "... And it's good that more women are entering construction because there's a shortage of labor, especially in finishing tasks where women have a lot of opportunity ..." or "... Women are more organized, so there are certain positions where women work quite well: technical office, quality control, assistant ...". Our results emphasize that there seems to be an expected profile of what a woman should do in construction in Chile, which is a problem. The authors of this study strongly believe each person should be evaluated

based on their skills and performance, and not based on stereotypes. Therefore, authorities and decision-makers should push for laws and protocols that protect workers from being judged based on stereotypes.

Regarding the advancement in the professional careers of women in construction, the main challenges mentioned by interviewees were maternity and vertical segregation (see Table 5), and similar to previous stages, mostly women were aware of these challenges (see Table 6). Similar to the influence of maternity in previous career stages of women, maternity seems to be highly linked to the numerous commitments associated with household responsibility roles, which is exacerbated due to societal expectations for women surrounding motherhood in Chile, where women take on a more active role in household responsibilities and childcare. This context poses a challenge for the few women who have remained in the construction sector and want to advance to higher roles in their careers. Some responses from interviewees emphasize this analysis as follows: "... Many women who have made their way have become mothers much later for the same reason, to reach the manager level, they go through a much more rigorous process of work, work, work and postpone motherhood further ... " (#16)

Along the same lines, there exists the challenge of vertical segregation among women in construction, which, consistent with what was proposed by [7], makes it more difficult for women to advance to higher-level positions in the construction sector. Furthermore, our results suggest that vertical segregation might somewhat be associated with motherhood, as decision-makers often perceive that mothers may not fully commit to work. There is a mistaken belief that once women become mothers, their priorities may shift, potentially compromising their work responsibilities.

Overall, our results illustrate a big problem in the construction sector in which the few women who decide to stay in the construction industry face multiple challenges to advance in their careers, and very often, many have to choose between their professional and personal lives. Of course, this should not occur to either women or men who participate in the industry. Of note, this is a call for the sector as, if these conditions persist, young talented women and men may choose other industries to develop their careers that allow better work–family balance.

5.2. Practical and Empirical Implications for Entering

Regarding recommendations aimed at women entering the construction sector, these primarily focus on sparking women's interest in the industry by providing detailed information about its diverse participation opportunities and available roles (see Table 7). Some interviewees suggest vocational guidance programs to encourage female involvement in construction and inform them about industry career opportunities, dispelling misconceptions and opening doors to various roles. One interviewee highlighted: "In the construction field, the possibilities are extensive. Not only can you take on traditional roles, such as contractor or Technical Inspector (ITO), but there are also roles in areas like sales and finance." Furthermore, it is crucial to disseminate detailed information about remuneration in the sector. Knowledge about salary compensation can serve as a motivator for women seeking job opportunities in the construction industry.

Another recommendation is to increase the visibility of female role models. The presence of female role models helps inspire and empower younger women, especially those who may have doubts about entering or advancing in the construction sector [6]. A higher participation of women in the construction sector will not only strengthen women's confidence in the industry but also send an external message that women are not only welcome in the sector but can also openly excel in their careers in the construction industry. Collectively, these initiatives can not only improve women's perception of their viability in

the construction industry but also increase their active and successful participation at all levels, thereby contributing to diversifying and strengthening the workforce in this field. Some interviewees suggested that universities could implement additional measures to foster women's interest in construction, addressing the misconception that construction is exclusively for men.

5.3. Practical and Empirical Implications for Retention

Regarding recommendations for women to be retained in the construction industry, the most frequent recommendation referred to giving career advice to women in construction (see Table 7). We interpret this result to mean that it is challenging for women to be a part of the construction sector, and as such, they can benefit from someone with more experience to guide them on how to navigate their career in this field. Furthermore, this might not be something exclusive for women, as men likely found someone to talk about challenges in their careers; however, we believe that in the case of men in construction, this might be performed more naturally due to having other male role models.

Another recommendation frequently provided by interviewees was the importance of incorporating training or educational opportunities to identify and address sexist behaviors. Educational initiatives would be crucial for retaining women already present in the construction industry. This approach aims to promote early detection of inappropriate attitudes, fostering a more conscientious and respectful work environment for all participants in the construction sector.

5.4. Practical and Empirical Implications for Advancement

Ultimately, recommendations aimed at women's advancement within the industry remain predominantly focused on giving career advice for women, gender balanced policies, and seeking parental rights (see Table 7). The issues about career advice and gender-balanced policies for participation and advancement are under the control of construction companies, so we can propose recommendations about them. However, when it comes to parental rights, this involves the personal aspects of each worker, and construction companies might have neither the attributions nor the responsibilities to address such a challenge. Instead, public policies on parental rights fall under the responsibility of the government, not only for the construction industry, but for all industries.

5.5. Challenges Throughout All Stages

It is interesting to note that machismo is one of the most recognized challenges at all stages of women's careers, indicating awareness among those involved in the construction industry. However, upon analyzing respondents' answers across these three stages, the suggested recommendations are predominantly personal advice, implying that women should persist and be resilient against machismo and sexist remarks towards them. In our opinion, the main problem with these results is that they place the responsibility on the minority (i.e., women) rather than addressing the problem itself. These results are evidence of the current problem that the construction sector faces, and that is the construction sector needs more education and professional development for men to promote a more gender-balanced industry. It is important to recognize that this is not only a women's problem, but also a problem with the construction industry; therefore, all participants, men and women, need to participate in solving this problem.

Another result that goes throughout all stages is the lack of recognition among men regarding the challenges women face in the workplace. Data shows that men less frequently mention certain issues, such as the gender pay gap, maternity, and harassment, which predominantly arise in the "stay" stage. This may indicate a lack of awareness about the magnitude of these problems. For example, while 100% of women interviewed identify

machismo as a challenge, only 33.3% of men acknowledge it. Additionally, it is noteworthy that no men reference challenges in the advancement stage, whereas women cite maternity as the primary difficulty at 45.5%.

Regarding recommendations, men and women in the construction industry seem to agree on some areas, such as the need to raise awareness about the industry and the importance of having female role models. However, there are areas where significant differences in opinion exist. While women emphasize the need for greater flexibility in working hours and prioritized attention to protection against sexist behaviors/harassment and machismo, men primarily focus on the perception of the gender pay gap. This disparity in results suggests that those who have not personally experienced certain challenges may lack a full appreciation of their impact and magnitude. Therefore, it is imperative to involve men in the industry's educational process, as they constitute the majority in this field. Only through genuine understanding and shared awareness can the necessary changes be generated to have a construction industry more friendly with the professional development of women.

5.6. Study Contributions

The theoretical contribution of this study is to propose a conceptualization of women's careers in construction through three stages: entry, retention, and advancement, with the corresponding challenges faced by women. In doing so, our study provides a better understanding of the challenges faced in the entry, retention, and advancement of women participating in the construction industry in Chile. Although multiple studies like this exist in the literature, they are focused on developed nations, whereas studies like this one, focused on a developing nation in the Latin American region, are very limited (e.g., [9]). Our findings can facilitate the conceptualization of the problem in the Chilean context and incentivize construction sectors from other nations in Latin America to start addressing this problem from an academic standpoint. As important as solving this construction sector challenge is to understand this challenge in a correct and scientific way, so authorities can make data-driven decisions.

In practicality, this study offers relevant information for designing and implementing future policies and programs aimed at advancing gender diversity in construction through the recommendations provided. These recommendations are a good starting point for the construction sector in Chile to address existing inequalities and challenges faced by women in the construction industry, considering options such as mentorship programs, leadership training initiatives, strengthening pay equity policies, awareness campaigns, and evaluating inclusive labor practices.

5.7. Limitations

This research has several limitations worth discussing. Primarily, the focus is exclusively on the context of the construction industry in Chile. Therefore, the results and conclusions may not be directly applicable or transferable to other regions or countries. Additionally, it should be acknowledged that this study concentrates on professionals within the construction industry, excluding the experiences of other stakeholders involved in the sector, such as company owners or government representatives. Another limitation to consider might be the limited sample size of this study, which consisted of 19 interviews. Nonetheless, it is important to highlight that previous research on barriers or challenges faced by women in the construction industry has also used comparable sample sizes ($n = 14$; [7], $n = 14$ [1], and $n = 10$ [11]).

Another limitation is that interviews are the primary source of information for the findings reported in this study, which was used to leverage our results, mainly from

interviewees' experience in the Chilean construction sector. Ultimately, a limitation of this study is that we related existing challenges faced by women exclusively to their gender, and we did not explore whether other factors may influence such challenges, such as age, socio-economic conditions, or educational level.

6. Conclusions

This study addressed the challenges that women face throughout their professional careers in the construction industry. Semi-structured interviews were conducted with 19 industry professionals, and the data obtained underwent a qualitative analysis to leverage experience from interviewees. Our results conceptualize existing challenges faced by women during their professional development with three stages of professional development: entry, retention, and advancement.

The results revealed that machismo is deeply rooted in construction in Chile, and it is one of the primary challenges women face when entering and staying in the industry. Additionally, it highlights that motherhood and vertical segregation are the main difficulties women encounter when wanting to advance in their careers; both concepts are intertwined due to the perception that women who are mothers do not fully commit to work, thereby limiting their ability to take on responsibilities. More importantly, we found that women were more aware of challenges, especially at the retention and advancement stages.

In terms of recommendations, promoting awareness and knowledge about available roles in the industry is suggested. However, this issue is not a women's problem; it is important to clarify that it is a construction sector problem, and as such, all participants must be involved in solving this issue. Therefore, education for all participants is key to solving this problem. Failing to openly address this issue perpetuates gender inequality in the construction industry and impedes progress towards greater inclusion and equity. Future research might dive deeper into existing challenges and compare whether these challenges are the same for all positions women hold in the construction sector. For instance, do women in the field and women in administrative positions face the same challenges?

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