Glass Ceiling Paradox and Women's Career Progression: A Case of Female Employees in Colombo Port, Sri Lanka

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Abstract

Despite the increasing participation of women in the workforce, their representation in decision-making positions on the corporate ladder has been slow and remains a worldwide concern. One of the primary reasons behind this concern has been identified in the literature as the theory of the 'Glass Ceiling'. On the other hand, with such enormous strategic potential, more involvement and contribution of women in all economic sectors, particularly the maritime and ports industry in Sri Lanka is much needed. However, Sri Lanka has a lower rate of women's participation in the maritime sector compared to other countries in the world which highlight the need for further investigation into this issue. Therefore, the current research aimed to explore the effect of the Glass Ceiling theory on Women's Career Progression in the Sri Lankan port sector. The study used a quantitative approach and surveyed 108 executive-level female employees in Port of Colombo using a structured questionnaire. The data was analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS. The results revealed that Individual, Family, and Organizational factors negatively impacted Women's Career Progression, while Cultural factors had a positive impact. Furthermore, the study found that the Glass Ceiling has a 77.8 percent influence on the Women Career Progression among executive-level female employees working under the Sri Lanka Ports Authority. These findings highlight the need of addressing Individual, Family, Organizational, and Cultural factors to promote female upward mobility in the maritime and port industry in Sri Lanka.

Keywords: Glass Ceiling, Sri Lankan Port Sector, Women Career Progression, Women in Maritime

INTRODUCTION

Women are now more prevalent than ever in a wide range of occupations around the world. Many opportunities have been opened for women in the workforce ever since the Industrial Revolution began in Europe when factories came into being. Nonetheless, many research studies (Burke and Vinnicombe, 2005; Smith, Caputi, and Crittenden, 2012; Xiang, Ingram, and Cangemi, 2017; D'sa *et al.*, 2023) in recent decades reveal that, despite the stereotype of women, a growing number of females, especially those with professional training, have been entering the paid labor force since the 1970s with a focus on career progression. Currently, the traditional roles have changed, with more women taking on the job of family breadwinner and men starting to include maintaining the home and raising children among their obligations. Although there are advancements in female employment, institutional biases and widespread societal standards continue to prevent women from moving up the corporate ladder. In other words, women around the world continue to face extra barriers to employment, and once employed, to obtain decision-making roles and professions in specific industries or with specific characteristics. Gender difference has emerged as the most crucial factor to concentrate on in order to achieve workplace equality since women are seeking more equality than ever.

According to the International Labour Organization (2019), women are underrepresented in management roles across all geographic areas, where Asia & the Pacific region had a very low proportion of female managers (19.97 percent) when compared with the other regions. For the past few decades, this underrepresentation and the slow rise of women in leadership positions on the corporate ladder have been a source of contention around the world. This gender imbalance in leadership roles has been well-documented and acknowledged by various studies and reports in countries such as Australia (Still, 2006; Maginn, 2010; Maginn *et al.*, 2018), the United Kingdom (Morley, 1994; Wearing and Bob, 2004; Thomson, Graham and Lloyd, 2008), Russia (O'Brien & Wegren, 2015), US (Fassinger, 2008; Varma, 2018), China (Tan, 2008; Xiang, Ingram and Cangemi, 2017), South Africa (Mathur-Helm, 2006; Booysen & Nkomo, 2010), France (Barnet-Verzat & Wolff, 2008; Jellal, Nordman & Wolff, 2008), etc. In addition, according to Sri Lanka Labour Force Survey Annual Report 2021, the rate of

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women serving as senior officials, directors, and managers of organizations is lower than the rate of men (2.3 percent), and the percentage of women working in managerial roles is still lower than that of men (19.5 percent) (Department of Census & Statistics, 2021). As stated above, there is substantial empirical evidence to support the assertion that women are significantly underrepresented in leadership positions in Sri Lanka, as well as in many other countries around the globe.

One of the primary reasons behind this concern has been identified in the literature as the theory of the **'Glass Ceiling'** (Cotter *et al.*, 2001). It describes the invisible and contrived barriers that have kept women from rising to positions of senior management and even higher levels of leadership in the business sector. In this analogy, the ceiling is made of glass because it is not a typical optical barrier and a woman is able to peer through it. According to Grout, Park, and Sonderegger (2009), a woman might not be aware of its presence, until she shatters through the Glass Ceiling and climbs to a higher position on the career ladder on her own.

Undoubtedly, there is a gender gap in the maritime industry because it is one of the major male-dominated industries where stereotypes against women still exist is the shipping and port sector (Pastra, 2021). Previous studies have found that the proportion of women who work in the seaports is still lower than that of men in many nations (OECD, 2019; Massachusetts Maritime Academy, 2020; WISTA, 2020; German Shipowners' Association, 2021; MPA Singapore, 2023). However, in Sri Lanka, women participation made up only about 2 percent of the maritime industry (Ranaraja, Hassendeen & Gunatilaka, 2016). Since there is strong evidence that Sri Lanka has a lower rate of female engagement in the port industry than the other nations, it emphasizes the need for research to determine the root causes of this issue.

In addition, numerous studies (Bombuwela & De Alwis, 2013; Gunawardena, 2016; Madumali & Jayasundara, 2019; Weerarathna & Hapurugala, 2019; Kuruppuarachchi & Surangi, 2020; Hussin *et al.*, 2021; Thiranagama, 2021) have been attempted to discuss the Glass ceiling based on diverse industries (i.e. Banking, Telecommunication, Apparel, Logistics, Aviation, Tourism, Construction, and Service, etc.) through Multiple Regression Analysis using SPSS software. However, no research—national or international—has been done on how the Glass Ceiling theory affects Women's Career Progression in the port industry. Therefore, the current researcher intends to fill the particular research gap. Therefore, the core objective is to explore the effect of the Glass Ceiling on the Career Progression of female employees in the Sri Lankan port sector.

LITERATURE REVIEW

Glass Ceiling

The term 'Glass Ceiling' is a condition that prevents certain individuals from advancing their careers and upward mobility, particularly if they are members of marginalized groups such as women and racial or ethnic minorities (Morrison, 1987). In other words, it refers to circumstances where a qualified woman's advancement within an organization's structure is halted at a specific level. "Glass Ceiling" is one of the best metaphors for addressing the employment gaps between men and women in the workplace (Burke & Vinnicombe, 2005). Today, the phrase Glass Ceiling refers to a barrier that prevents women from achieving managerial positions despite their qualifications and accomplishments and this barrier is invisible but essentially unbreakable (Gunawardena, 2016). Various methods for conducting previous scientific research and the term's widespread use in the media have resulted in an abundance of different interpretations of what a "Glass Ceiling" is. Previous scholars stated that the term Glass Ceiling refers to the imperceptible barriers that prevent women from achieving the highest levels of leadership (Morrison, 1987; Davidson & Cooper, 1992; Lyness & Thompson, 1997). In addition, the Glass Ceiling issue highlights the intangible and artificial hurdles that prevent women executives from occupying positions of high management that are brought about by individual attitudes and organizational biases (Virginia, 2007).

The study by Morrison (1987) found that in terms of psychological, emotional, or intellectual characteristics, there aren't many fundamental differences between men and women. According to the study, the Glass Ceiling was primarily created by three restrictions on what was expected of women. The first restriction was that women were supposed to be powerful without exhibiting traits associated with men. The second restriction was that they were supposed to accept tasks and responsibilities while remaining obedient to rules, and the third restriction was that they were expected to be pushy but not demand fair treatment. Morrison and colleagues also noted that the Glass Ceiling affected women as a community and not individually (Morrison, 1987). According to Virginia (2007), women with aptitude and skill can recognize their potential, but these Glass Ceilings keep them from achieving the desired senior roles. A Glass Ceiling in the workplace is essentially a sign of social and economic gender inequality and it explains the scenario in which the logical question of why women are not progressing to higher managerial positions as men do has no objective solution. It asserts that there is a natural disparity between how organizations operate and how society as a whole is structured (Virginia, 2007).

"The Economic Theory of Glass Ceiling" introduced by Grout and his colleagues interprets two strongly believed and competing hypotheses for the Glass Ceiling effect that are now under discussion, as well as to a lesser extent in academic literature (Gunawardena, 2016). One explanation is that there are actual gender differences as a result of this. According to a widely held belief, women tend to be less committed to their jobs than males since they are more prone to take professional vacations or quit their jobs altogether due to family obligations. As a result, they are worth less as an employee. This explains why their employers approach them differently (Grout, Park & Sonderegger, 2009). The other explanation argues that what has been seen is only consistent with gender discrimination. The study's findings support the claim that there are no meaningful differences between men and women. Women would demonstrate the same level of work devotion if treated the same as males. Differential treatment (such as lower wages) brought on by organizations is thought to be the source of observed disparities in commitment, and vice versa (Grout, Park & Sonderegger, 2009).

Many researchers (Davidson & Cooper, 1992; Burke & Vinnicombe, 2005; Benschop, Brouns & Benschop, 2009; Al-Manasra, 2013; Bombuwela & De Alwis, 2013; Hensman & Thasika, 2019) have pinpointed causes for the glass ceiling's existence. According to Afza and Newaz (2008), there are five key factors that affect the glass ceiling, including management perception, work environment, work-life

conflict, sexual harassment, and organizational policy. (Afza & Newaz, 2008). According to a study carried out by Maheshwari (2012), there are three basic categories of Glass Ceiling as global barriers, including organizational, societal, and individual barriers (Maheshwari, 2012). According to Kapuarachchi and Surangi, the existence of the Glass Ceiling has three primary causes and nine secondary factors. These are personal (lack of higher education, self-rejection, family issues), organizational (lack of support, sexual harassment, gender discrimination), and societal (lack of support, sexual harassment, gender inequality) (environmental pressure, matter of gender, Sri Lankan culture) (Kuruppuarachchi & Surangi, 2020). Furthermore, according to a study by Bombuwela and De Alwis (2013), variables pertaining to the glass ceiling should fall into four categories as Individual Factors, Family Factors, Organizational Factors, and Cultural Factors.

According to Bombuwela and De Alwis (2013), Individual factors refer to a person's unique qualities and characteristics that may hinder their competitiveness in comparison to others. These factors can include a lack of confidence, specific personal traits, and difficulty in self-promotion, which can impede career progression. Notably, women may be more significantly affected by individual barriers, as they often face challenges related to confidence, emotional control, and societal perceptions of physical toughness. These factors, along with inherent physical differences, can create disadvantages for women as they strive to advance in their careers (Bombuwela & De Alwis, 2013). In addition, Bombuwela and De Alwis (2013) stated that personal obstacles are the most compelling reason for female career advancement. According to research carried out by Kiaye and Singh (2013), upon obtaining top positions within the company, men foils were more attractive in social networking activities than their female counterparts. Family factors show the impact that relationships, child care, and housework have on employees' ability to advance their careers. Earlier studies suggest that the degree of work/family conflict experienced by female managers needs to be reduced in order to further boost their career upward mobility (Jayawardane, 2015; De Silva, 2018; Madumali & Jayasundara, 2019). There is a barrier for women in balancing two roles simultaneously, where those who have, a career is required to fulfil both work and family responsibilities at the same time. This creates a challenge for women as they strive to fulfil their responsibilities in both domains and can negatively impact their career progression (Shakil Ahmad, Fakhr, & Ahmed, 2011). Organizational barriers coming from organizational structure and practices have an impact on organizational policy and management style with regard to employee growth and are defined as the extent to which employees hold their employer accountable for their underperformance (Bombuwela & De Alwis, 2013). A study by Acker (2012) indicated that organizations play an active role in reinforcing gender distinctions, power dynamics based on gender, and the male-dominated societal norms that govern gender roles, in both paid and unpaid work. Cultural factors are barriers that are seen as a reflection of how the general public perceives the differences in behaviour and personality between men and women based on gender (Bombuwela & De Alwis, 2013; Hussin *et al.*, 2021). It has been made possible for this topic to progress since organizational culture is more varied and dynamic nowadays. It contributes to defining personality and encompasses the wide characteristics of core values and beliefs, ethics, as well as policy (Gunawardena, 2016).

Career progression

According to previous literature, there are significant differences between career development and career progression. Career progression refers to the corporate hierarchical ladder, whereas career development refers to an employee's obligation to advance or develop their career on their own. (Thomas, 2018). While career progression entails moving to higher positions, acting strategically, and focusing on predetermined goals when moving up the corporate ladder, career development entails an integral improvement in skills and talent, specifically by converting skill to expertise, and a transformative mindset that focuses on how to achieve goals. In essence, professional advancement or growth comprises predetermined workplace milestones and goals toward which a person must diligently work to better himself. It is a technique for advancing from a lower to a higher position according to skills and experience. On the other hand, the process of personal transformation that follows the training and the growth, learning, and experience that help achieve goals in the new role is known as professional development (Weerarathna & Hapurugala, 2019).

Through a methodical, quality management strategy, career development or working advancement is used to match an employee's goals with the objectives of a business. According to Maslow's hierarchy of needs, career mobility, which includes enhancing career development based on performance appraisals, merely provides self-esteem and motivation by enticing employees to take advantage of opportunities to apply for better jobs and achieve self-actualization after meeting organizational goals (Hussin *et al.*, 2021). However, the results of the previous studies indicate that women have a significantly harder time advancing their careers than males do since they have to choose job and family life over their education and professional development. Some professional women found this situation difficult because they had to decide between pursuing their job goals and focusing on their parenting responsibilities (Hussin *et al.*, 2021).

CONCEPTUAL FRAMEWORK

The main research idea is centred on the conceptual framework proposed by Bombuwela and De Alwis (2013), where the Glass Ceiling (GC) is composed of four dimensions - Individual Factors (IF), Family Factors (FF), Organizational Factors (OF), and Cultural Factors (CF) - which are considered as the independent variables while Women Career Progression (WCP) is regarded as the dependent variable of the study. Drawing on prior literature, the current researcher identified Career Focused (CrF), Family Support (FS), and Attitudes towards Organization (AtO) as indicators of the dependent variable, which will aid in measuring Women's career progression (Afza and Newaz, 2008). Figure 1 provides a visual representation of the hypothesized causal relationships between the variables.

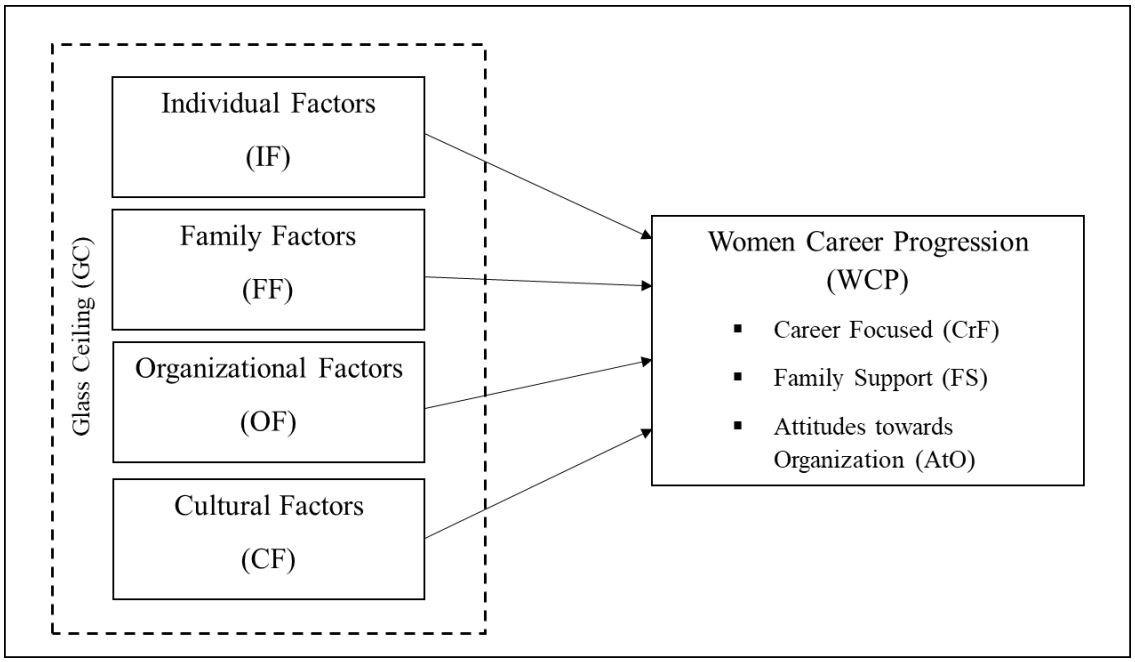

Figure 1: Conceptual framework

Source: Developed by the author based on (Bombuwela & Alwis, 2013) and (Afza and Newaz, 2008)

3.1 Hypotheses

Individual Factors and Women Career Progression: According to Bombuwela and De Alwis (2013), Individual factors are the personality traits and features of a woman that cannot make her stand out from other women, such as her low level of confidence, her distinctive traits, and her inability to market herself. Contrarily, women have a significant impact on character and qualities, including a lack of confidence and difficulties controlling their emotions. As a result, this made it harder for women to succeed in their careers. In addition, Smith, Crittenden, and Caputi (2012) suggested that women tend to display nurturing, loving, and supportive behaviour, while men typically exhibit qualities that are deemed essential for succeeding in top positions, such as self-confidence, assertiveness, autonomy, and power. The findings of Kiaye and Singh's (2013) study indicate that male individuals were perceived as more attractive in social networking contexts and were more likely to be appointed to higher-ranking positions within companies than their female counterparts. Consequently, men tend to hold a more prominent presence in senior management roles in the corporate world compared to women. In addition, women who lack the necessary abilities, character traits, and mindset to succeed in top positions need to be motivated and self-assured, which are crucial traits for securing those positions in an organisation (Cross, 2010). According to Smith, Crittenden, and Caputi (2012), women behave in ways that are nurturing, loving, and supporting whereas men exhibit traits that are crucial to winning the top job, such as being self-assured, assertive, autonomous, and powerful (Smith, Caputi and Crittenden, 2012).

H1: Individual Factors have a negative impact on Women's Career Progression in the Sri Lankan port sector

Family Factors and Women's Career Progression: According to Holton and Dent (2016), the family issues raised in the literature have not significantly changed throughout the years. The difficulties faced by women trying to balance work and family responsibilities as well as the negative opinions and prejudices regarding working mothers have been established across a variety of professions, sectors, and countries (Hussin et al., 2021). Relationships, child care, and housework all have an effect on a female worker's ability to advance in their profession, as evidenced by Family factors. The level of work and family life conflict experienced by female managers should be reduced in particular among the aspects of the Glass Ceiling taken into account in earlier studies in order to further increase their career upward mobility (De Silva, 2018; Madumali & Jayasundara, 2019). Numerous studies have established that working part-time creates career disadvantages for women and that derogatory perceptions and biases toward working mothers are prevalent across various occupations, industries, and countries. In addition, women face significant challenges when trying to balance their work and family responsibilities (McIntosh et al., 2012). This creates a challenge for women as they strive to fulfil their responsibilities in both domains and can negatively impact their career progression (Shakil Ahmad, Fakhr, and Ahmed, 2011). According to Bombuwela and De Alwis (2013), it appears that many women find it challenging to manage their domestic responsibilities, such as childcare and housework, while also dedicating time to their careers.

H2: Family Factors have a negative impact on Women's Career Progression in the Sri Lankan port sector

Organizational Factors and Women's Career Progression: The Organizational factors that cause hurdles to the advancement of female career journey at an institution are explained in this dimension. A study by Bombuwela and De Alwis (2013) stated that the impact of organizational impediments resulting from organizational structure and practices on corporate policy and management style is highly impacting on employee career growth. For organizations to function better, women's subjective professional success must be maintained. This is because contented workers are more productive than unhappy ones (Sharif, 2015). According to Acker (2012), in both paid and unpaid work, organizations actively contribute to the reinforcement of gender differences, power dynamics based on gender, and the male-dominated social norms that define gender roles. Ansari (2016) revealed that due to gender role beliefs, management tends to view women as

less committed to their careers than men. This perception is based on the assumption that women are more likely to prioritize parenting responsibilities over work, and therefore, lack the flexibility to work additional hours. Furthermore, even independent women are frequently underestimated by management, and those who reject offers that would require them to leave their families are seen as lacking career ambition. (Ansari, 2016).

H3: Organizational Factors have a negative impact on Women's Career Progression in the Sri Lankan port sector

Cultural Factors and Women's Career Progression: Cultural factors are seen as a reflection of how the general public perceives the differences in behaviour and personality between men and women based on gender (Hussin et al., 2021). According to Kamberidou (2020), norms, beliefs, culture, and religion, and not just entrepreneurial actions, increase and compound gender inequality and gender inequities. Women in patriarchal civilizations of wealthy nations confront more sociocultural challenges than the multitasking maelstrom. Additionally, García and Ruth (2018) asserted that social and gender issues are cultural and behavioural characteristics that place greater emphasis on authority, leadership style, and stereotypes than on the organizational rules at hand. According to Kamberidou (2020), cultural beliefs, customs, and religion also contribute to gender disparity and inequities, which are not simply brought on by organizational practices. Women encounter significant socio-cultural barriers, particularly in patriarchal societies of developed countries. The family or immediate social environment often imposes limitations on women's participation in public events, which hinders female entrepreneurship and leadership (Kamberidou, 2020).

H4: Cultural Factors have a negative impact on Women's Career Progression in the Sri Lankan port sector

METHODOLOGY

Since the variables can be measured by numeric values, the research design of the study was the quantitative method. In other words, the investigation is primarily concerned with collecting and analysing quantitative data (Saunders & Bezzina, 2015). The approach to theory development of the study was Deductive as the researcher used a theory utilized by previous researches and it is a common practice in testing theories, which is the process of deducing a specific law-like inference (Kuosa, 2011). In this research, the primary data was collected directly from the study participants through the use of structured questionnaires. Meanwhile, the secondary data was gathered from a variety of sources, such as reports, academic publications, and other publicly available sources.

The personnel most at risk from the Glass Ceiling threat are females, who face more insurmountable obstacles while moving from executive to management levels in the corporate hierarchy. Therefore, the target population of the study was 154 female executives who were employed by the Sri Lanka Ports Authority (SLPA) in the port of Colombo. From the target population (154), the sample size was estimated according to a table proposed by Krejcie and Morgan (1970). After consulting the Krejcie and Morgan sample size determination table, it was determined that the appropriate sample size for the study was 108 with a 95% confidence level and a 5% error estimate. Simple Random Sampling (SRS) technique which is the most basic and often used probability sampling method was utilized to select the appropriate sample for this study.

A standard questionnaire developed by Bombuwela and De Alwis (2013) was utilized as the survey instrument to collect the data from female executive-level employees. A and B were the two sections of the questionnaire. In Section A, biographical information about the respondents was obtained to build a profile of the sample group in terms of marital status, age, educational attainment, and service duration. Part B contained 35 questions based on the four Glass Ceiling dimensions and the three Women's Career Progression dimensions to assess the Glass Ceiling and Women's Career Progression. The questionnaire is administered using a Five Point Likert Scale, with Strongly Disagree at one extreme of the spectrum and Strongly Agree at the other (Allen & Seaman, 2007). However, in the present study, to align with the methodology, several modifications were made to the original questionnaire. Specifically, certain questions were rephrased and some items were gathered together to form a separate section in order to evaluate the data using the PLS-SEM model. These modifications were made to enhance the questionnaire's suitability for the present study and ensure that the items of the questionnaire were relevant and specific to the study's context. Despite these modifications, the core constructs and themes of the original questionnaire were retained to ensure continuity with previous studies and facilitate the comparison of results.

In Tables 1 and 2, the independent variables (IF, FF, OF, CF) and dependent variables (CrF, FS, AtO) have been identified with the indicators that were useful in measuring the relevant variables. The indicators selected below are obtained from the studies carried out by Bombuwela and De Alwis (2013) and Afza and Newaz (2008).

Table 1: Constructs and indicators of Glass Ceiling

Constructs	Operational Definition	Indicators
Individual Factors (IF)	This reflects the degree to which personal obstacles that each person faces impact the outcome (Bombuwela and De Alwis, 2013)	Self-underestimation Dependence of others Punctuality Decision-making ability Team spirit Empathy

Family Factors (FF)	This refers to the degree to which relationships in life have an impact on an employee's performance (Bombuwela and De Alwis, 2013)	Work-life balance Prioritizing family requirements Professional commitments Managing leaves Distance to workplace Opinion on night shifts
Organizational Factors (OF)	This represents how much organizational hurdles resulting from organizational structure and procedures have an impact on the growth of the employees. (Bombuwela and De Alwis, 2013)	Gender-biased organizational structure Gender inequality Unfair promotion practices Lack of challenges Opportunities Gender discrimination
Cultural Factors (CF)	This relates to the degree to which values and traditions affect employee progression (Bombuwela and De Alwis, 2013)	Opinions of the society Discrimination and harassments Stereotypical beliefs of the society and organizational culture

Source: Developed by the Author based on (Bombuwela & De Alwis, 2013)

Table 2: Constructs and indicators of Women's Career Progression

Construct	**Operational Definition**	**Indicators**
Career Focused (CrF)	This refers to a worker who is motivated to advance or succeed in their career (Afza and Newaz, 2008).	Searching for better opportunities Work experience & specialized training Self-evaluating skills & competencies
Family Support (FS)	This demonstrates how supportive family members are of a woman's professional accomplishment. Those who have strong or supportive families are able to balance work and family obligations while still advancing their careers. (Afza and Newaz, 2008).	Manage work-home demands more effectively Appreciated by family Family Support for the career development
Attitude towards organization (AtO)	This refers to employee perceptions of the working environment. Individuals that have positive thoughts about the company they work for stick with it and advance their careers there. (Afza and Newaz, 2008).	Wish to take challenging & visible assignments Supportive environment to work Work as team players

Source: Developed by the Author based on (Afza & Newaz, 2008)

The researcher evaluated and analysed the data acquired through Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS version 4.0.9.1 software. In PLS-SEM, there are two types of models: The measurement model and the Structural model where those models are estimated concurrently. The measurement model is assessed in the first stage, followed by the estimation of the structural model, which is known as the two-stage procedure. In the iterative estimating procedure, the residual variance is minimized while the explained variation in the endogenous variables is maximized (Shmueli *et al.*, 2019).

RESULTS AND DISCUSSION

Descriptive results

Out of the received responses, all the responses were completely filled. Therefore, the total complete responses ended up with 108 respondents, giving 100 percent of the response rate of completely filled questionnaires. In accordance with the age distribution table of the sample respondents, only 1 respondent is below the age 24, representing 1 percent of the respondents. 27 percent of respondents belong to the age category of 24 to 30 years, 24 percent of respondents were in the age category of 38 to 44 years while 10 percent of the respondents are above the age of 45. In relation to marital status, only 34 respondents are single, representing 31 percent of the respondents. 68 respondents belong to the married category while 4 percent and 2 percent of respondents were in the category of divorced and widowed respectively. In addition, 23 percent of the respondents (25 observations) in the sample have completed a diploma while 37 percent of the individuals in the group have completed a bachelor's degree. 12 Female executives representing 11 percent of the sample have completed a master's degree while 31 respondents who are representing 29 percent of the sample have completed some sort of professional qualification. Furthermore, only 25 respondents have 3-7 years of work experience,

representing 23 percent of the respondents. 31 respondents belong to the 7-10 years category while 28 percent and 20 percent of respondents were in the category of 10-15 and above 15 years category respectively.

Reliability and Validity

The consistency and stability of data or measurements through time, among several observers, or various methodologies are referred to as reliability. To establish the indicator reliability, each of the outer loadings should be 0.7 or higher, and the t-statistics should be greater than 1.96 when using a two-tailed t-test with a significance level of 95%. Three items, IF7 (0.308), OF6 (0.310), and WCP9 (0.273) which had an indicator reliability lower than 0.7 were removed from the model before going for further analysis. Other than those three items, all the other outer loading values were higher than 0.7 and their t-statistics were higher than 1.96. In addition, all the p-values were all less than 0.05, indicating that the values of outer loadings and their t-statistics are statistically significant.

Furthermore, a typical statistic to assess internal consistency reliability is Cronbach's alpha. Theoretically, the alpha value of each variable should be higher than 0.7 to have a higher internal consistency reliability in the outer model. Additionally, the value of composite reliability (rho_c) should be 0.70 or higher to consider a latent variable to have acceptable internal consistency reliability. On the other hand, the degree to which a measurement or a study design accurately captures or depicts the phenomenon it is intended to measure or investigate is known as validity. In the context of convergent validity, the Average Extracted Variance (AVE) is used to assess how closely an indicator of the constructs is connected to one another. The commonly used threshold value is 0.5, which denotes that the construct and the indicators are meant to measure at least 50 percent of the variance in the indicators. The below table provides a summary of indicator reliability (outer loadings and t-statistics), internal consistency reliability (Cronbach's alpha and composite reliability), and convergent validity (AVE) values of the study. Since all the values are higher than the common threshold values, it does indicate higher reliability and validity in the Measurement model.

Table 3: Indicator reliability, Internal consistency reliability and convergent validity

Construct		Indicator Reliability		Internal Consistency Reliability		Convergent Validity (AVE)
		Loading	*t*-statistics	Composite Reliability	Cronbach's Alpha	
Individual Factors (IF)						
IF1	Doubt in success when she is given a major task	0.849	22.901			
IF2	Faith in Gender Equality	0.789	12.779			
IF3	Dependency on others in assigned tasks	0.832	6.324	**0.903**	**0.873**	**0.572**
IF4	Punctuality in the office works	0.821	26.878			
IF5	Decision-making ability in employee relations	0.773	20.943			
IF6	Team spirit in the workplace	0.704	10.804			
IF8	Empathy toward the colleagues	0.801	30.892			
Family Factors (FF)						
FF1	Perception of marriage and career	0.783	23.847			
FF2	Having a work-life balance	0.888	10.555			
FF3	Prioritizing work over family requirements	0.735	14.171	**0.834**	**0.768**	**0.567**
FF4	Getting more leaves for family matters	0.851	22.901			
FF5	Distance to the workplace will hinder the career	0.721	12.779			
FF6	Opinion on the night shifts	0.731	16.324			
Organizational Factors (OF)						
OF1	Gender-biased organizational structure	0.800	18.156			
OF2	Gender inequality in the working environment	0.780	19.786			
OF3	Unfair promotion practices in the organization	0.766	18.494	**0.878**	**0.826**	**0.590**
OF4	Lack of challenging projects within the workplace	0.719	12.985			
OF5	Organization is encouraging women & increasing opportunities for them	0.772	18.668			
Cultural Factors (CF)						
CF1	Opinions of society on women's capability	0.885	46.143	**0.890**	**0.856**	**0.578**

CF2	Traditional gender roles and expectations within families	0.727	11.692			
CF3	Society believes that women are emotionally and intellectually unsuitable for management positions	0.771	13.058			
CF4	Stereotypical beliefs of organizational culture	0.861	17.165			
CF5	Sexist behaviour or harassment in the workplace	0.776	14.318			
CF6	Ideas or contributions were undervalued or dismissed due to the gender or cultural background	0.805	23.326			
Women Career Progression (WCP)						
WCP1	Searching for better job opportunities in the same organization	0.876	17.236			
WCP2	Wish to have a variety of work experience & specialized training	0.735	15.854			
WCP3	Self-evaluating skills & competencies with company requirements.	0.746	8.589			
WCP4	Manage work-home demands more effectively	0.718	13.208	**0.878**	**0.837**	**0.582**
WCP5	Appreciated by the family	0.731	10.790			
WCP6	Family is supporting the career development	0.814	19.508			
WCP7	Wish to take challenging & visible assignments	0.776	13.948			
WCP8	Have a supportive environment in to work	0.749	12.032			

Source: Developed by the author (2023).

Furthermore, Discriminant validity is the extent to which a measure does not measure (or excludes) other constructs. In Fornell-Larcker Criterion, the AVE of each construct should be greater than the highest squared correlation with any other construct. Table 4 illustrates the square root of AVE in bold on its diagonal along with the correlations between the constructs.

Table 4: Discriminant validity

	IF	**FF**	**OF**	**CF**	**WCP**
IF	0.756				
FF	0.712	0.752			
OF	0.652	0.702	0.768		
CF	0.636	0.721	0.606	0.760	
WCP	-0.525	-0.726	-0.739	-0.836	0.762

Source: Developed by the author

Multi-collinearity analysis

When two constructs have a strong correlation, it's assumed that they are measuring the same variable, which is known as collinearity (Hair *et al.*, 2019). Typically, a VIF value which is greater than 5 is considered to be a sign of significant multi-collinearity. The tolerance value, which is the inverse of the VIF, reflects the portion of the predictor variable's variance that is not explained by the other predictor variables in the model (Alin, 2010). Tolerance values that are less than 0.2 imply higher levels of multi-collinearity, whereas a tolerance value of 1 indicates the absence of multi-collinearity. Table 5 indicates the tolerance and VIF values obtained by SPSS software for four independent variables of the study: IF, FF, OF, and CF. Due to the fact that all the tolerance values were greater than 0.2 and all the VIF values were below 5, it revealed that the current model has no collinearity issues.

Table 5: Tolerance values & VIF

	Tolerance Value	Variance Inflation Factor (VIF)	Result
IF	0.213	4.701	No Multi-collinearity
FF	0.300	3.335	No Multi-collinearity
OF	0.451	2.219	No Multi-collinearity
CF	0.276	3.168	No Multi-collinearity

Source: Developed by the author

Path coefficient analysis

In Structural Equation Modeling (SEM), the path coefficient analysis is a statistical approach used to evaluate the direct and indirect impact of one or more predictor variables on a dependent variable. Table 4.4 shows the results of the path coefficient analysis which indicates the impact of four independent variables (IF, FF, OF, and CF) on the dependent variable (WCP). The hypotheses (H1, H2, H3, and H4) are stated for each independent variable, and Table 4.4 shows the beta coefficients, *t*-statistics, and *p*-values for each variable. The *t*-statistic and *p*-value evaluate the statistical significance, whereas the beta coefficient reveals the strength and direction of the independent variable's impact on the dependent variable.

Based on the results presented in Table 6, the first three hypotheses (H1, H2, and H3) are supported, as the beta coefficients are negative and statistically significant as the *p*-value is less than 0.05. This suggests that there is a significant negative impact between independent variables IF, FF, and OF on the dependent variable WCP.

However, the fourth hypothesis (H4) is not supported, as the beta coefficient for the independent variable CF is positive, indicating a positive impact, but still, it is statistically significant at the 0.05 level (*p*-value = 0.000). This suggests that there is no strong evidence to support the idea that CF is negatively impacting WCP. Therefore, H4 has to be rejected with the current statistical evidence.

Table 6: Path coefficients

Hypothesis	Relationship	β	*t*-statistics	*p*-value	Result
H1	IF -> WCP	-0.402	3.286	0.001	SUPPORTED
H2	FF -> WCP	-0.292	3.425	0.001	SUPPORTED
H3	OF -> WCP	-0.541	5.467	0.000	SUPPORTED
H4	CF -> WCP	0.350	3.879	0.000	SUPPORTED

Source: Developed by the author

The percentage of variance in the dependent variable that is explained by the independent variables is depicted statistically by the coefficient of determination, abbreviated as R square (R^2) (Nagelkerke, 1991). Table 7 shows the summary statistics for the model, including the R^2 value, Adjusted R^2 value, Standard Deviation (STDEV), *t*-statistics, and *p*-value. According to the R^2 value of 0.778, the independent variables in the model account for about 77.8 percent of the variation in the dependent variable. This suggests that the model is a good fit for the data, as it is able to explain a significant portion of the variation in the dependent variable which is the Women Career Progression. In conclusion, it can be stated that approximately 77.8 percent of the variation in the Women Career Progression is explained by the Glass Ceiling. In other words, the Glass Ceiling has 77.8 percent influence on the Women Career Progression among executive-level female employees working under the Sri Lanka Ports Authority.

Table 7: R square

Model	R Square	Adjusted R Square	Standard Deviation (STDEV)	*t*-statistics	*p*-value
1	0.778	0.768	0.037	20.974	0.000

Source: Developed by the author

Figure 2 demonstrates the final model with the β coefficient values and R square value in the inner model while outer loading factors in the outer model. The R^2 value, which is represented by numbers in the WCP circle, indicates how much of the variation of the dependent variable is explained by the independent variables. The path coefficients in the inner model are the numbers that appear on the arrows. They describe how significantly one variable affects another. The weight of several path coefficients allows one to rank the relative statistical significance of each one. Therefore, in this model, Organizational factors have the highest negative impact on Women's Career Progression following Individual and Family factors respectively.

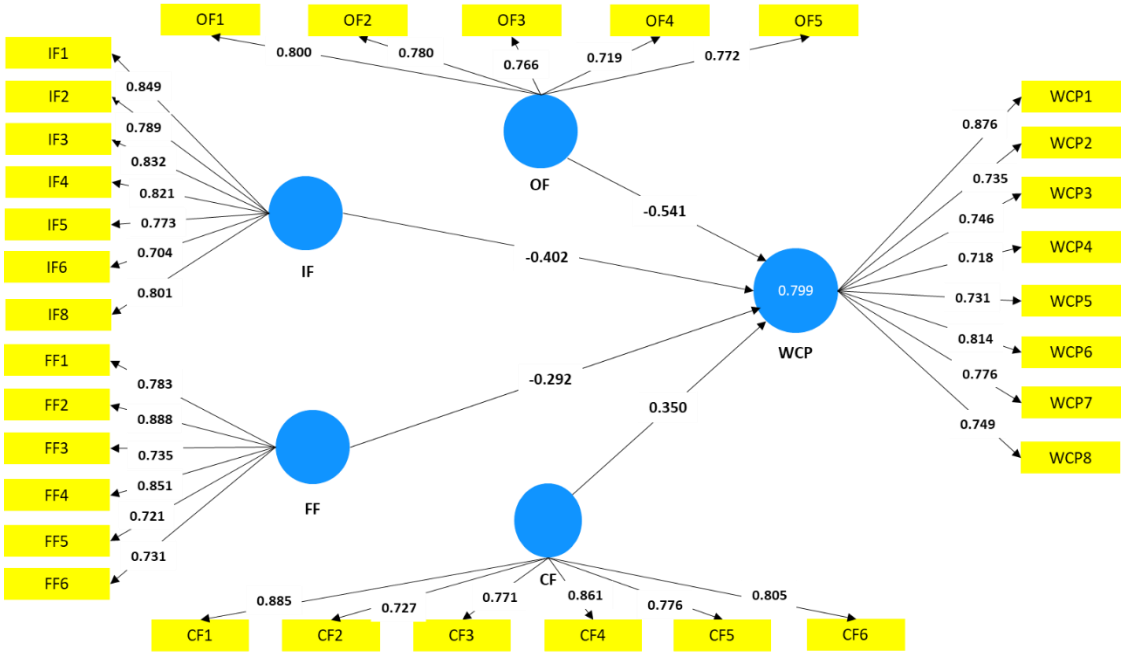

Figure 2: Path coefficients and R^2

Source: Developed by the author

Table 6 depicts, having a negative coefficient (-0.402) indicating that Individual Factors **(**IF) have a negative impact on Women's Career Progression (WCP) where it describes that increases in the IF variable are associated with decreases in the WCP. Additionally, H1 has *t*-statistics that are greater than 1.96 and *p*-values that are less than 0.05, which indicates that these results are statistically significant. H1 is thus accepted since the analysis provides enough supportive evidence to reject the null hypothesis at the 5% level of significance or the 95% level of confidence.

The coefficient value (β) of Family Factors (FF) is -0.292 which indicates that FF is negatively impacting on Women's Career Progression. Analysis indicates sufficient statistical evidence to accept the alternative hypothesis and is accepted at the 5% significance level or at the 95% confidence level since *t*-statistics are larger than 1.96 and *p*-values are less than 0.05.

A negative coefficient (-0.541) indicates that Organizational Factors (OF) have a negative impact on Women's Career Progression (WCP) thus increases in OF variable are associated with decreases in the WCP. Additionally, H3 has *t*-statistics that are greater than 1.96 and *p*-values that are less than 0.05, which indicates that these results are statistically significant. Therefore, H3 is accepted as the analysis reveals enough statistical evidence to reject the null hypothesis at the 5% significance level or at the 95% confidence level.

Hypothesis H4, on the other hand, has a positive β coefficient (0.350), which suggests that increases in Cultural Factors are associated with increases in the Women's Career Progression thus CF has a positive impact on WCP. However, the *t*-statistic is still greater than 1.96 and the *p*-value is less than 0.05, which indicates the statistical significance, but has a positive β value, which describes that this hypothesis is not supported by the data. Therefore, the null hypothesis is accepted as the analysis does not reveal enough statistical evidence to accept the alternative hypothesis at the 5% significance level or at the 95% confidence level.

As the results suggest, Individual factors, Family factors, and Organizational factors had a negative impact on the Women's Career Progression while Cultural factors had a positive impact which led to rejecting its alternative hypothesis H4. However, Organizational factors had the strongest negative impact on Women's Career Progression while the impact of Individual and Family factors had a relatively low impact but still, they were statistically significant. The sub-objectives of the current study, which included determining the influence of independent variables (Individual, Family, Organizational, and Cultural factors) on the dependent variable (Women's Career Progression), were successfully achieved by utilizing the results of the path coefficient analysis.

CONCLUSION

In conclusion, it can be suggested that the employer and the employee have to contribute to shattering the Glass Ceiling. By understanding the Glass Ceiling factors and how they impact Women's Career Progression, employers and policymakers in the port sector can develop targeted strategies to work towards breaking down the Glass Ceiling, creating a more diverse and inclusive workplace while promoting the career advancement of women in the port industry. Regardless of gender, race, or ethnicity, employers have a duty to foster an inclusive work environment and offer equal opportunity to all employees. Organizations can also help women grow in their careers by offering training and development opportunities that support women in developing their leadership, teamwork, and decision-making skills. Organizations can deal with these issues by implementing measures like flexible work hours, maternity leave, and on-site childcare. This entails putting into action laws and procedures that support inclusion and diversity, granting equal opportunity for learning and development, and assuring ethical hiring and fair promotion practices.

At the same time, female employees also have a responsibility to advocate for themselves and take action to advance their careers. This can include seeking out opportunities for leadership and advancement, developing their skills and knowledge through training and education,

building strong networks, and challenging biases and stereotypes. Women may need to concentrate on enhancing their confidence and assertiveness, forming solid connections and networks, and looking for mentors and sponsors who can offer support and assistance in order to overcome these specific challenges. They might also need to prioritize their own professional objectives and speak out for themselves, especially in a workplace where males predominate. On the other hand, women may need to be upfront and honest with their partners and family members about their career objectives and the support they require to attain them in order to solve these family-related issues. They might also need to look for workplaces that provide flexible scheduling and family-friendly practices, as well as speak up for their own requirements at work.

According to Path Coefficient Analysis, Organizational factors had the highest negative coefficient β (-0.541) revealing that it has the strongest negative impact on the dependent variable which means the elements such as leadership styles, decision-making procedures, diversity, promotion practices, and inclusion programs that are related to the structure and policies of the organization.1 have the largest negative impact on the Women Career Progression in Sri Lankan port sector. Individual factors are indicated to have a negative coefficient β (-0.402) suggesting that Individual factors and Women's Career Progression have a negative relationship thus it has a moderate negative impact on Women's Career Progression in the Sri Lankan port sector. It reflects that the female employee's education, experience, abilities, and personality qualities affect their attributes and actions in career advancement moderately. In addition, Family factors have a negative coefficient β value (-0.292) and thus have a weak negative impact on Women's Career Progression in the Sri Lankan port sector. It mainly indicates that elements such as family duties and caregiving roles of the female community are hindering female career advancement. Female executives in Sri Lanka Ports Authority experience the Glass Ceiling through family factors, for instance, because they are penalized for taking time off to care for their families or have children and they are expected to adhere to traditional gender norms that put home before career. According to Path Coefficient Analysis, Cultural factors had a positive coefficient β value (0.350) revealing that it has a positive impact on Women's Career Progression in the Sri Lankan port sector. This result reveals that strongly set cultural stereotypes about women's duties and skills, standards about gender roles and talents have not appeared as a barrier in Sri Lanka Ports Authority thus female executives working under SLPA do not experience the Glass Ceiling based on the basis of Cultural factors. For instance, traditionally women may be perceived as being less physically capable of performing manual labor, which could restrict their access to particular career roles in the port sector. However, this factor does not apply to Sri Lanka Ports Authority since there are 10 female gantry crane operators currently employed by the SLPA in the port of Colombo which can be seen as a major breakthrough of female representation in the Sri Lankan port sector.

The scope of the current study was Sri Lanka Ports Authority in the port of Colombo which is the regulatory body of the Sri Lankan port sector. Therefore, future research studies can be done by expanding the scope of the study to include a larger sample size or focusing on more ports or terminal operators to increase the generalizability of the findings. In addition, the target population can also be expanded by including the managerial level female employees in the studies as they are well aware of the obstacles they faced when climbing up their career ladder. Another suggestion for future research is to use a different research method to provide a more comprehensive understanding of the research findings, such as combining qualitative and quantitative research methods. In addition, the study was conducted in the Sri Lankan port sector, hence it might not be applicable to other countries in the world. Further studies might look into the variations in Glass Ceiling and Women's Career Progression based on various cultures and locations as well as any regional-specific factors that may be unique to specific countries, which could be more explored in future research.

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