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One of the Barriers that Female Architects Face in their Career Development: Glass Ceiling Syndrome

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Abstract
The society bring the perception that the construction industry has a male-dominated structure. Considering the employment rates in the sector especially after the education period, it is seen that there are losses in the number of female architects. This situation may female architects face obstacles such as wage inequalities, inflexible working conditions, establishing work-family balance, and choosing between work and family life. These obstacles are generally defined by the concept of "glass ceiling". In this study, the perception of glass ceiling in the career development of female architects who work in the construction industry is examined. Accordingly, a survey was conducted on female architects working in architectural design offices and other (supply companies, etc.) that the perception of glass ceilings differed in two different organizational structures were analysed according to the survey results.
Keywords: female architect, glass ceiling, barrier, construction industry

Kadin Mimarlarin Kariyer Gelişimlerinde Karşilaştiklari Engellerden Biri: Cam Tavan Sendromu

Özet
İnşaat sektörü ile ilgili genel yargı erkek egemen bir yapıya sahip olduğudur. Mimarlık hizmet alanı özelinde ise; özellikle mimarlık eğitim döneminden sonra sektörde çalışan kadın mimar sayısındaki azalma bu düşünce ile ilişkilendirilebilir. Bu durum; işe alımda kadın çalışanlara karşı tutum, ücret eşitsizlikleri, esnek olmayan çalışma koşulları, iş-aile dengesini kurma ve iş yaşamı ile aile yaşamı arasında seçim yapma gibi pekçok faktörle ilişkilendirilebilir. Kadın çalışanların çalışma yaşamını doğrudan etkileyen bu faktörler önemli ölçüde kariyerlerinde engel teşkil etmektedir. Bu engeller genel olarak "cam tavan" kavramıyla tanımlanmaktadır. Bu çalışmada, inşaat sektöründe çalışan kadın mimarların kariyer gelişimlerinde engellerden biri olan cam tavan algısı incelenmektedir. Bu doğrultuda mimari tasarım bürolarında ve inşaat firmarında çalışan kadın mimarlara anket uygulanmış, elde edilen veriler istatistiksel olarak incelenmiştir.
Anahtar Kelimeler: kadın mimar, cam tavan, engel, inşaat sektörü

1. INTRODUCTION

The glass ceiling is a metaphor that defines an artificial barrier although it has no valid justification. It is encountered in minorities within the group depending on density of female/male in working environment. The glass ceiling concept, which was first used by Hymowitz and Schellhard in the report published by the Wall Street Journal in 1986, is defined as "*barriers faced by women who attempt, or aspire, to attain senior positions (as well as higher salary levels) in corporations, government, education and non-profit organizations.*" (Lockwood, 2004). This concept defines the challenges women face in their career developments (Cook & Glass, 2014). In addition, the talents and achievements of

women in business life are not taken into consideration, but only on the roles and prejudices imposed on their gender. Hence women cannot take part in senior management due to invisible barriers (Karaca, 2007). Weyer (2007) defined the concept of glass ceiling as evaluating it from a broader perspective as the difficulties faced by women while trying to rise in their sector (Weyer, 2007). With this perspective, the fact that the construction industry includes general judgment as male-dominated due to its specific working condition decreases the possibility of women taking an active role in this sector (Özçelik, 2010). On the other hand according to Nimo, Wood & Collison (2019), this judgment regarding the construction industry is a barrier to women's preferred to this sector (Nimo *et al*., 2019). When looking at the historical process too, it is seen that the construction industry has a male-dominated structure. The construction industry has begun to be seen as a male-dominated sector with especially the impact of industrialization. Hence women, started to take place in jobs such as plan monitoring and preparing specification in the construction industry toward the end of the 19th century. On the other hand married women leave from such jobs was creating that perception unmarried women can this jobs (Caven, 2006). Similarly Nimo *et al.* (2019) claim that women taking a break from their business life for personal decisions such as getting married and having children make it difficult for them to re-enter the sector. This situation starts the "Leaky pipeline" struggle with glass ceiling perception (Figure 1). The "Leaky pipeline" in Figure 1 describes the process experienced by women who cannot stay in the construction sector for various reasons after the education phase (Worrall, Harris, Stewart, Thomas & McDermott 2010). According to this, women experience difficulties if they take a break from their career development after the education process in line with their personal decisions and then return to the sector.

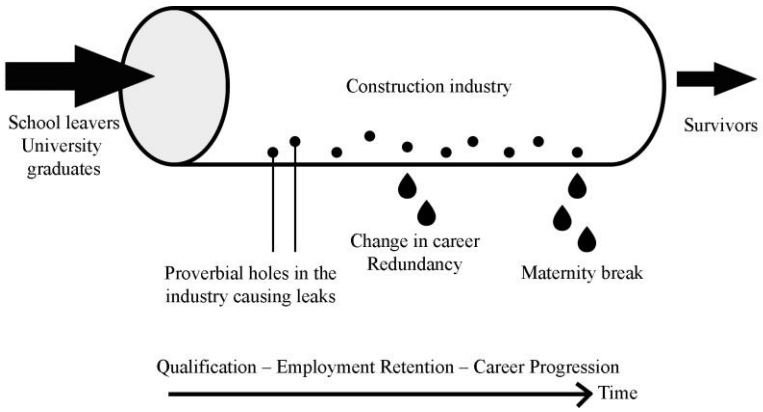

Figure 1: "Leakey pipeline" for the construction industry. Adapted from Gurjao, (2017) and Nimo et al. (2019).

It was concluded that 79% of women and 73% of men who participated in the *Women in Architecture* survey of *Architects' Journal*, in the context of the discipline of architecture, saw the architectural profession as extremely male-dominated (URL1). On the other hand according to 2004 data of RIBA, while ratio of women who studying architecture to men is 38%, this ratio decrease to 14% in the context of qualified architect (Caven, 2006). At the same time, in the study conducted by Dostoğlu & Erkarslan (2019), based on the number of people registered in the Chamber of Architects and the graduates of 10 different universities, a loss of approximately 27% has been found in the number of female architects who enrolled in the Chamber of Architects after graduation (Dostoğlu & Erkarslan, 2019). This situation is an indication of female architects who study architecture education is stayed in the background and restricted in the business life compared to male. In addition, the study suggests that although there were 51% female architects in the Chamber of Architects in 2018, the proportion of female architects who have registered offices is 32%, that of female architects working under building supervision is 36%, and that of female architects working as construction site chiefs is 38% (Dostoğlu & Erkarslan, 2019). Based on these findings, it can be concluded that the proportion of female architects taking an active role in the construction sector has decreased.

It is obvious that female architects are blocked in corporate hierarchy depending on many reasons. One of the barriers is glass ceiling perception. It has been encountered few studies the context of construction industry and/or architecture discipline during this study. In this article, female architects' "glass ceiling syndrome perception" who take part in the construction industry is searched with female architects' perspective. Therefore a survey was prepared to be implemented to female architects who working in the construction industry's different corporate fields. The data obtained from the field study were analysed statistically. The findings and conclusions of the article are considered to be important in terms of contributing to the relevant literature.

2. GLASS CEILING IN LITERATURE

The glass ceiling concept is described as artificial barriers that make the point that professional experts want to reach invisible (Morgan, 2015). However, many researchers (e.g., Morgan, 2015; Lockwood, 2004; Cook & Glass, 2014) consider the concept of glass ceiling as the limitations faced by female employees in working life, depending on the characteristics of the working environment.

The glass ceiling syndrome can feed from women's personal situations and perception and attitude arising from some social dynamics within the organizational structure (Yıldız, Yıldız & Arslan, 2018). Mathur-Helm (2006) demonstrated that the glass ceiling phenomenon, which is accepted as a legend by many, is a real fact and is fed by organizational culture, policies and strategies as well as individual factors (Mathur-Helm, 2006). Ersarı, İşcan & Naktiyok (2016), suggest that as the functional / integrative features of organizational culture increase, women's career barriers decrease (Ersarı *et al.,* 2016).

Perceiving the glass ceiling syndrome as an obstacle encountered in the institutional hierarchy remains insufficient. The concept of glass ceiling, where many individual, organizational and social factors can be effective, expresses the artificial obstacles encountered in career steps. According to Crampton & Mishra (1999), one of the most important factors affecting the career lives of women is the gender role they adopt in society, unlike men. Despite similar identity structure the faced obstacles differentiate career developments; in high-income jobs in the business life male employees is preferred instead of female employees. Additionally advancement criteria as assessment, networking and succession planning are designed and improved by men (Cotter, Hermsen, Ovadia & Vanneman 2001). The gender role enables determination of which profession or position is female job and which is male job. This situation can cause women to misinterpret their instinct and encounter their own barriers in their career steps. Lack of mentors, sexist roles learned in the socialization processes and role conflict faced in work-family life shape women's requests for work life (Örücü, Kılıç, Kılıç, 2007). Rather than sacrificing from family responsibilities, the person refuses the best working positions (Crampton & Mishra, 1999; Liff & Ward, 2001) or take part less strategic positions in lower paid employment (Wirth, 2001). The woman considers herself as a mother/wife primarily and avoids requirements such as business trip and working long hours (Karaca, 2007).

The special roles given to women and men in some occupational groups is one of the factors affecting the glass ceiling syndrome (Yıldız *et al*., 2018). Kolade & Kehinde (2013) argue in their article, women face barriers to entry to the sector and their career developments despite women have necessary knowledge, skills, competence, education and experience to perform effectively and sufficiently in the construction industry. In addition, the study examined the effects of glass ceiling syndrome on women's career development in the construction industry (Kolade & Kehinde, 2013). The findings of survey of employees in a construction company in Nigeria show that there is gender equality in terms of employment and career development opportunities, but low female participation in the construction industry starts with education and continues throughout the recruiting process. In addition, the study presented the view that flexible working hours will help reduce the stress levelby reducing the workload and thus encourage the participation of women in the construction

industry. Another emphasis of the study is taken precaution that can head off slang use and harassment and supported to balance between work and family (Kolade & Kehinde, 2013).

In the study conducted within the scope of the UK construction industry by Dainty, Neale & Bagilhole (1999), the combination of the pressures created by the difficult working environment and the anger of male managers creates a discriminatory work environment for women (Dainty *et al*., 1999). In the construction industry, it has been argued that women's careers are unlikely to progress at the same level as men until the male culture becomes moderate. In the study conducted by Worrall et al. (2010), it has concluded that the sexist attitudes, behaviours and perceptions encountered in the sector and inflexible working conditions are the main obstacles, based on the data obtained from the survey study applied to female workers in the UK construction industry. According to the study, inflexible working hours and deterioration of work-life balance cause problems (Worrall *et al*., 2010).

Bilbo, Bigelow, Rybkowski & Kamranzadeh (2014) argued that female construction project managers who are married and have children are negatively affected in terms of their salaries, as a result of the survey they applied to female project managers working in the construction sector (Bilbo *et al*., 2014). This situation forces women who work in the construction industry to make a choice at the point of family life- career development. Dainty, Bagilhole & Neale (2000), argued that the discriminatory approaches applied by male actors in the construction sector lay the groundwork for a competitive environment (Dainty et al., 2000). Özçelik (2010) proposes that the main barriers for women who work in Turkey in the construction industry sector are irregular working hours and situation of having children (Özçelik, 2010).

According to the study conducted by Adeyemi, Ojo, Aina & Olanipekun (2006), it has been aimed to create quantitative data on the participation of women in the construction sector by applying a survey to male and female employees in a certain construction company. Accordingly the ration of female employee in the sector to male employee has been determined as 16,3% and it has been seen that the women choose office environment rather than to building site environment in the context of company that was made survey and interviews (Adeyemi *et al*., 2006).

Sánchez de Madariaga (2010) has examined situation of women in architecture and urban planning. In this study, which deals with the example of Spain, the reasons behind the professional integration of female architects have been researched. It has been emphasized that female architects faced discouraging behaviour and it has been suggested that the glass ceiling phenomenon, which limits their professional career, is lowly related to their personal qualities or professional values. It has been argued that it is necessary to raise the low level of representation of women in the profession, especially at the upper levels and to take policy measures to increase their presence in the field of architecture and planning and only individual efforts will be insufficient (Sánchez de Madariaga, 2010).

3. RESEARCH METHOD

Women encounter obstacles in the business life. In addition to the efforts to balance work-life, the responsibilities imposed by society reinforce the struggle of women in business life. In this paper "the glass ceiling syndrome perception" has been evaluated with female architects' perspectives who work in Turkey in private sector. In this context, a survey study has been conducted intended for female architects who work in architectural design offices and other (supply companies etc.). In the form prepared for the survey study, questions/statements have been included to determine the demographic characteristics of the participants and their perceptions of glass ceiling syndrome. The literature (Çetin, 2011) has been used for the questions/statements in the survey form.

4.1 Sample

Architects are employed in five different ways as offices that giving architecture service, general contractor construction firms, companies providing materials and other services to the construction industry, public institutions operating in branches related to building production and academic institutions providing architectural education (Özçelik, 2010). Within this distinction, considering the differentiation of the construction industry in terms of operation and management, it is possible to group it into private and public sector. For instance, while public interest is observed in public institutions unlike companies in the private sector with profit-making purposes, the efforts of companies in the private sector to survive in an intense competitive environment stand out (Gökdeniz, 2017; Kaya, 2008). In this study, the sample has been restricted with female architects who working in private sector as considered this distinction. Therefore female architects working in architectural design offices and other (supply companies, etc.) constitute the target audience. Female architects working in public and academic institutions have been excluded.

3.2 Data Collection and Analysis Method

Survey used as data collection method in the study. Random sampling method applied in the survey study. Data obtained from participants in the survey study analysed. While the demographic characteristics of the participants were evaluated categorically, 5-Likert type scale was used to determine the perception of glass ceiling (5= strongly agree, 1= strongly disagree).

3.3. Profiles of Participants

The data regarding the participant profiles prepared based on the data of survey study conducted within the scope of the study have been given in Table 1. When Table 1 is examined, 32% of female architects serving in the private sector are 17-26 years old, 46% are 27-36 years old, 14% are 37-40 years old, and 7% are 47-above in the age group. When the data are examined according to the marital situation of the participants, 43% are married, 56% are single (unmarried/divorced). 73% of the participants have answered the question, whether intended for they have children, 25% have reported that they have not children while 66% have children. When educational situations of the participants are examined, it is seen that they graduated from master degree mainly. In addition 64% of the participants have 1-5 years, 24% have 6-10 years, 12% have 11-20 and more years professional experience. From 154 participants have been got answer intended for educational situation. Activity time in their working corporation of 56% of participants is 1-5 years, 23% is 6-10 years, 16% is 11-20 and more years. When the activity fields of participants are examined, it is seen that 84% are female architects working in architecture offices and 16% in other (supply companies, etc.).

Table 1: Profiles of participants.

		TOTAL	
Profiles of participants		**n**	**(%)**
Age	**17-26**	54	32
	27-36	76	46
	37-46	23	14
	Over 47	11	7
	TOTAL	**173**	**100**
Marital situation	**Married**	76	43
	Single (unmarried/divorced)	97	56
	TOTAL	**173**	**100**
Having children	**Yes**	48	66
	No	25	34
	TOTAL	**73**	**100**
Educational situation	**Undergraduate**	118	77
	Postgraduate	36	23
	TOTAL	**154**	**100**
Professional	**1-5**	106	64

experience	**6-10**	40	24
	11-20 and more	20	12
	TOTAL	**166**	**100**
Service time in corporation	**1-5**	89	56
	6-10	37	23
	11-20	26	16
	Over 21	8	5
	TOTAL	**160**	**100**
Corporate activity field	**Architecture office**	**143**	84
	Other (supply companies, etc.)	**30**	16
	TOTAL	**173**	**100**

4. RESEARCH FINDINGS

The scale that used to measure intended for glass ceiling perception of female architects working in the construction industry has been given in Table 2. The statements in the scale in Table 2 have been encoded as GC1, GC2, … GC16. The levels of glass ceiling perceptions of the participants have been analysed as statistically based on the survey data. For this, the arithmetic mean values of the answers given by the participants to each question / statement based on the Likert scale have been calculated, and the findings regarding the perception levels of the glass ceiling have revealed by comparing them with the evaluation criteria (Göktaş; 1996) given in Table 2.

Table 2: Score ranges used in the evaluation of the data.

		Score ranges	**Evaluation criteria**
1	Strongly disagree	1,00 – 1,79	Very little level
2	Disagree	1,80 – 2,59	Little level
3	Neutral	2,60 – 3,39	Medium level
4	Agree	3,40 – 4,19	High level
5	Strongly agree	4,20 – 5,00	Very high level

Firstly, for the "glass ceiling perception scale" used in the study, reliability analysis has been applied. The Cronbach Alpha coefficients have been evaluated in the reliability analysis. The scale between the values of $0.00 \leq \alpha \leq 0.40$ is not reliable in evaluating the Cronbach's Alpha (α) coefficient. The reliability of the scale is low between $0.41 \leq \alpha \leq 0.60$. The scale is quite reliable between $0.61 \leq \alpha \leq 0.80$ values. Between $0.81 \leq \alpha \leq 1.00$, the scale is highly reliable (Özdamar, 1999). The reliability coefficient of the scale used in the study has been found as $\alpha = 0.892$. This value shows that the scale used in the study is highly reliable.

Findings regarding the levels of the glass ceiling perception of participants have been given in Table 3. When the Table 3 is examined, it is seen that female architects perceive the (GC1) "For women to be successful, they must sacrifice their home and family responsibilities." ($\bar{x}$=4,05), (GC2) "Women's long working hours are not welcome in private life." ($\bar{x}$=3,74), (GC3) "For career development, women must sacrifice family life." ($\bar{x}$=3,71), (GC4) "The occasional interruption of women from working life for reasons such as birth prevents their career plans." ($\bar{x}$=3,62), (GC5) "Women are exposed to gender discrimination in business life." ($\bar{x}$=3,59), (GC6) "Women who are likely to be mothers are difficult to hire." ($\bar{x}$=3,49) statements as a high level of obstacle.

Table 3: Participants' level of participation in questions / statements regarding glass ceiling perceptions.

Code	Statements		Strongly agree	Agree	Neutral	disagree	Strongly disagree	Mean	standard deviation
GC1	For women to be successful, they must sacrifice their home and family responsibilities.	%	32	45,9	18,6	2,6	1	4,05	0,84
		n	62	89	36	5	2		
GC2	Women's long working hours are not welcome in private life.	%	23,2	4,2	26,8	6,7	3,1	3,74	0,99
		n	45	78	52	13	6		
GC3	For career development, women must sacrifice family life.	%	25,3	33	32	6,7	3,1	3,71	1,02
		n	49	64	62	13	6		
GC4	The occasional interruption of women from working life for reasons such as birth prevents their career plans.	%	22,7	34,5	27,8	12,4	2,6	3,62	1,05
		n	44	67	54	24	5		
GC5	Women are exposed to gender discrimination in business life.	%	18,6	29,9	44,3	6,7	0,5	3,59	0,88
		n	36	58	86	13	1		
GC6	Women who are likely to be mothers are difficult to hire.	%	17,5	31,4	36,1	12,4	2,6	3,49	1,00
		n	34	61	70	24	5		
GC7	Women are exposed to discrimination in matters such as salary, premium and status.	%	14,4	32	31,4	17	5,2	3,34	1,08
		n	28	62	61	33	10		
GC8	Career and job descriptions are defined in accordance with men's values and needs.	%	13,4	33	32,4	14,4	6,7	3,32	1,09
		n	26	64	63	28	13		
GC9	It is difficult for women to balance work-family.	%	18,6	26,8	28,4	18,6	7,7	3,30	1,19
		n	36	52	55	36	15		
GC10	Families think that the construction industry is not suitable for girls.	%	13,4	34	26,8	19,6	6,2	3,29	1,11
		n	26	66	52	38	12		
GC11	The working environment in the construction industry is more suitable for men.	%	16	26,8	29,9	19,1	8,2	3,23	1,18
		n	31	52	58	37	16		
GC12	Women are not included in the informal network of men.	%	7,2	35,1	30,9	22,2	4,6	3,18	1,01
		n	14	68	60	43	9		
GC13	Women need to work harder to rise.	%	12,9	22,2	24,2	29,9	10,8	3,04	1,21
		n	25	43	47	58	21		
GC14	Women cannot resist the difficulties of the business world as much as men.	%	9,8	21,6	29,4	21,6	17,5	2,85	1,23
		n	19	42	57	42	34		
GC15	Families think that architecture is not suitable for girls.	%	7,7	20,6	25,8	24,2	21,6	2,69	1,24
		n	15	40	50	47	42		
GC16	It is the duty of the man to support the house.	%	8,8	22,2	18	27,3	23,7	2,45	1,30
		n	17	43	35	53	46		

In the next section, hypothesis tests have been applied to investigate whether there is any relationship between the age, marital situation, having children, educational situation, professional experience, service duration, corporate field of activity criteria with the perception of glass ceiling of female architects. In hypothesis tests, Independent-sample t-test has been applied for comparison within the group and OneWay ANOVA has been applied for more than two group comparisons. SPSS package program has been used for this. The analysis results have been given in the Table 4. Significance values specified in Table 4 are less than 0.05, indicating that the hypothesis is accepted. In addition, it expresses that there is a significant relationship between the variables of age, marital situation, having children, educational situation, professional experience, service time and corporate field of activity and the items in the glass ceiling perception scale.

Tablo 4 Significance values for the participants' perception of glass ceiling.

	Age (sig.)	Marital situation (sig.)	Having children (sig.)	Educational situation (sig.)	Professional experience (sig.)	Service time in corporation (sig.)	Corporate activity field (sig.)
GC1	0,955	0,154	0,925	0,573	0,795	0,905	0,977
GC2	0,251	0,525	0,164	0,654	0,605	0,600	0,067
GC3	0,439	0,464	0,587	0,605	0,133	0,212	0,935
GC4	0,319	**0,050**	**0,041**	0,957	0,603	0,858	**0,018**
GC5	0,621	0,883	0,957	0,296	**0,050**	0,596	0,069
GC6	0,874	0,524	0,596	**0,045**	0,967	0,221	**0,026**
GC7	0,943	0,330	0,978	0,162	**0,047**	0,667	0,193
GC8	0,541	0,621	0,601	0,853	0,093	0,482	0,383
GC9	**0,050**	0,822	0,587	0,606	0,399	0,746	**0,042**
GC10	0,304	0,375	0,255	0,457	0,962	0,301	**0,027**
GC11	0,368	0,786	0,522	0,200	0,659	0,168	**0,020**
GC12	0,449	0,865	0,555	0,638	0,197	0,121	**0,034**
GC13	0,194	0,952	0,289	0,335	0,728	0,191	0,873
GC14	**0,036**	0,967	0,316	0,091	0,676	0,341	0,237
GC15	**0,018**	0,786	0,610	0,197	**0,037**	**0,052**	**0,001**
GC16	0,192	0,356	0,037	0,096	0,560	0,671	0,125

When the findings obtained from the hypothesis tests are examined in the Table 4, it is seen that (GC9) "It is difficult for women to balance work-family", (GC14) "Women cannot resist the difficulties of the business world as much as men", and (GC15) "Families think that architecture is not suitable for girls" statements are in significant relationship with age variable. The findings according to both of marital situation and having children variables are in the direction of having significant relationship with (GC4) "The occasional interruption of women from working life for reasons such as birth prevents their career plans." statement. It has been determined that there is a significant relationship between the educational situation and the statement (GC6) "Women who are likely to be mothers are difficult to hire" regarding perception of glass ceiling.

When the relationship between the participants' professional experiences and perception of the glass ceiling is examined, the findings show that there is a significant relationship between (GC5) "Women are exposed to gender discrimination in business life", (GC7) "Women are exposed to discrimination in matters such as salary, premium and status" and (GC15) "Families think that architecture is not suitable for girls". The p value of service time variable and (GC15) statement has been obtained as close the limit. The findings show that female architects are affected at different level who work in architecture office and other from (GC4) "The occasional interruption of women from working life for reasons such as birth prevents their career plans", (GC6) "Women who are likely to be mothers are difficult to hire", (GC9) "It is difficult for women to balance work-family", (GC10) "Families think that the construction industry is not suitable for girls", (GC11) "The working environment in the construction industry is more suitable for men", (GC12) "Women are not included in the informal network of men" and (GC15) "Families think that architecture is not suitable for girls" statements.

CONCLUSION AND DISCUSSION

The male-dominated structure of the construction industry is stratified in different scales and restricts the roles of female employees. This stratification is felt at different levels in certain section of the sector. The layers that female employees feel at different levels prevent them from rising in the corporate hierarchy and cause the glass ceiling syndrome. In this study, the perception of "glass ceiling syndrome" has been investigated from the perspectives of female architects in the construction industry. For this purpose, a survey has been conducted to apply to female architects working in different corporate fields of activity in the construction sector, and the data obtained from the field study have been analysed statistically.

Gender-based obstacles conceptualized as glass ceilings restrict female architects in their career development process. In this study, the statements that variable in the glass ceiling perceptions of female architects who work in architecture design offices and other (supply companies, etc.) have been analysed. The study findings show that the "For women to be successful, they must sacrifice their home and family responsibilities" (GC1), "Women's long working hours are not welcome in private life" (GC2), "For career development, women must sacrifice family life" (GC3), "The occasional interruption of women from working life for reasons such as birth prevents their career plans" (GC4), "Women are exposed to gender discrimination in business life" (GC5) and "Women who are likely to be mothers are difficult to hire" (GC6) statements have a high influence on female architects. Previous studies enounce that inflexible working hours, inequality in wages, having children and conflicts that arise in balancing family-work life have greatly affected female who work in the construction industry (Worrall *et al*., 2010; Bilbo *et al*., 2014; Dainty *et al*., 2000, Özçelik, 2010; Adeyemi *et al*., 2006). The variables of marital status and having children related with the statement that stopping work life due to reasons such as childbirth interrupt women's career plans show that decisions in family life are affect negative. The correlation between marital status - having children variables and the statement that stopping work life for reasons such as birth are interrupt women's career plans indicates that the decisions made in family life have a negative impact on business life. In the same way, in the study conducted by Graft & Johnson (2005), it has been concluded that female architects who got married or became pregnant face the risk of losing their jobs. However, it is indicated that this situation is unconnected from the architectural profession (Graft & Johnson, 2005). In the study of Bilbo et al. (2014) has found that female project managers were married and had children, causing a negative effect on salary intake (Bilbo *et al*. 2014). Therefore in this study, birth etc. situations hindering career development can also be associated with wage intake.

It can be said that the fact that the professional experience variable is related to discrimination based on gender, salary and status is due to the fact that female architects have a different career progression than male architects. Although women and men are the same age and equal in experience, more activity is required for women to achieve the same status as men (Dainty et al., 2000). Professional experience and service time variables can be considered as an effort to exist in the sector. In this context, although female architects strive to exist in the sector, they do not consider architectural profession suitable for girls. But this case, as Özçelik (2010) mentioned in the study, with increase the number of girls receiving architectural education seen since the early 2000s in Turkey are in conflict.

Although architectural offices play a role at the beginning of the construction process and during the design phase, management and expertise (Özçelik, 2010). This situation causes different organizational structures to have different dynamics. When the findings regarding corporate activity areas are examined, it can be said that the different effects of the expressions having children, difficulty in balancing work-family life, the construction sector in general and the profession of architecture in particular are not suitable for girls and women are not included in the informal communication network of men (GC4, GC6, GC9, GC10, GC11, GC12, GC15) in different fields of activity are due to different dynamics of organizational structures.

As a result, this study examines the effect of the glass ceiling perception in the construction sector on female architects. In the context of the analysis and findings in the study, the view that the construction sector has a masculine structure regardless of the field of study is supported. However, the effect of some sexist attitudes, perceptions and behaviours in different organizational structures may also vary depending on the organizational structure. The limitation of this study is that the study does not include female architects working in the academic field and working in public institutions. In this study, it is aimed to shed light on other future studies about the obstacles faced by female architects in the construction sector in their career development.

REFERENCES

Aboagye-Nimo, E., Wood, H., & Collison, J. (2019). Complexity Of Women's Modern-Day Challenges In Construction. *Engineering, Construction and Architectural Management*, 26 (11), 2550-2565.

Adeyemi, A. Y., Ojo, S. O., Aina, O. O., & Olanipekun, E. A. (2006). Empirical Evidence Of Women Under-Representation In The Construction Industry In Nigeria. *Women in Management Review*, 21 (7), 567-577.

Bilbo, D., Bigelow, B. F., Rybkowski, Z., & Kamranzadeh, A. (2014). Effects of Family-Related Factors on Female Project Managers' Salaries in the Construction Industry in the United States. *International Journal of Construction Education and Research*, *10*(4), 255-267.

Caven, V. (2006). Career Building: Women And Non-Standard Employment In Architecture. *Construction Management and Economics*, *24* (5), 457-464.

Cook, A., & Glass, C. (2014). Above The Glass Ceiling: When Are Women And Racial/Ethnic Minorities Promoted To CEO?. *Strategic Management Journal*, *35* (7), 1080-1089.

Cotter, D. A., Hermsen, J. M., Ovadia, S., & Vanneman, R. (2001). The Glass Ceiling Effect. *Social Forces*, 80(2), 655-681.

Crampton, S. M., & Mishra, J. M. (1999). Women in Management. *Public Personnel Management*, 28(1), 87-106.

Çetin, A. (2011). Kadın Yöneticilerin Cam Tavan Algısının Cam Tavanı Aşma Stratejilerine Etkisi: Bursa İli Tekstil Sektöründe Bir Alan Araştırması. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, 49(33), 19-34.

Dainty, A. R., Bagilhole, B. M., & Neale, R. H. (2000). A Grounded Theory Of Women's Career Under-Achievement In Large Uk Construction Companies. *Construction Management & Economics*, *18*(2), 239-250.

Dainty, A. R., Neale, R. H., & Bagilhole, B. M. (1999). Women's Careers İn Large Construction Companies: Expectations Unfulfilled?. *Career Development International*, 4(7), 353-357.

Dostoğlu, N. T. & Erkarslan, Ö. E. (2010). Türkiye'de Kadın Mimarların Statüsü Üzerine Niceliksel Analiz. Dosya: Mimarlar Odası Ankara Şubesi Yayını, 19, 22-26.

Ersarı, G., İşcan, Ö., & Naktiyok, A. (2016). Kadın Ve Erkek Bakış Açısıyla Kadın Çalışanların Kariyer Engelleri Ve Örgüt Kültürü İlişkisi: Akademisyenler Üzerinde Bir Uygulama. Iğdır Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 1(1), 171-200.

Gurjao, S. (2017). The Changing Role of Women in the Construction Workforce, CIOB, Ascot, Berkshire.

Gökdaş, İ.,(1996). Bilgisayar Eğitimi Öğretim Teknolojisi. Ankara Üniversitesi, Sosyal Bilimler Enstitüsü, Eğitim Programları ve Öğretimi Anabilim Dalı, Ankara, 148s. (Yayınlanmamış Yüksek Lisans Tezi).

Gökdeniz, İ. (2017). Özel Sektör Ve Kamu Yönetiminde Kariyer Planlaması. *KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi*, 19 (32), s. 123-131.

Karaca, A. (2007). Kadın Yöneticilerde Kariyer Engelleri: Cam Tavan Sendromu Üzerine Uygulamalı Bir Araştırma. Yüksek Lisans Tezi, Selçuk Üniversitesi, Sosyal Bilimler Enstitüsü, Konya.

Kaya, H. (2008). Kamu Ve Özel Sektör Kuruluşlarının Örgütsel Kültürünün Analizi Ve Kurum Kültürünün Çalışanların Örgütsel Bağlılığına Etkisi: Görgül Bir Araştırma. *Maliye Dergisi*, 155, 119-143.

Kolade, O. J., & Kehinde, O. (2013). Glass Ceiling And Women Career Advancement: Evidence From Nigerian Construction Industry. *Iranian Journal of Management Studies*, 6(1), 77-97.

Liff, S., & Ward, K. (2001). Distorted Views Through The Glass Ceiling: The Construction of Women's Understandings of Promotion and Senior Management Positions. *Gender, Work & Organization*, 8(1), 19-36.

Lockwood, N. (2004). The Glass Ceiling: Domestic And International Perspectives. *Society for Human Resource Management*, 1-10.

Mathur-Helm, B. (2006). Women And the Glass Ceiling in South African Banks: An İllusion or Reality?. *Women in Management Review*, 21(4), 311-326.
Morgan, M. S. (2017). Glass Ceilings And Sticky Floors: Drawing New Ontologies. *Economic History Working Paper.*
Örücü, E., Kılıç, R., & Kılıç, T. (2007). Cam Tavan Sendromu Ve Kadinlarin Üst Düzey Yönetici Pozisyonuna Yükselmelerindeki Engeller: Balikesir Örneği, *Yönetim ve Ekonomi: Celal Bayar Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 14 (2), 117-135.
Özçelik, S. (2010). İnşaat Sektöründe Kadın Profesyoneller, Yüksek Lisans Tezi, Yıldız Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.
Özdamar, K., 1999. Paket Programlar ile İstatistiksel Veri Analizi 1. Kaan Kitabevi, Eskişehir.
Sánchez de Madariaga, I. (2010). Women In Architecture: The SPANISH Case. Urban Research & Practice, 3(2), 203-218.
URL 1: https://www.architectural-review.com/essays/why-do-women-really-leave-architecture (17.08.2020)
Weyer, B. (2007). Twenty Years Later: Explaining The Persistence Of The Glass Ceiling For Women Leaders. *Women in Management Review*, 22(6), 482-496.
Wirth, L. (2001). Women In Management: Closer To Breaking Through The Glass Ceiling, Women, *Gender and Work*, 239-249.
Worrall, L., Harris, K., Stewart, R., Thomas, A. & McDermott, P. (2010). Barriers to Women in the UK Construction Industry. *Engineering, Construction and Architectural Management*, 17(3), 268-281.
Yıldız, İ., Yıldız, H. N. & Arslan, F. (2018). A Case Study On Glass Ceılıng Syndrome Of Female Employees In The Informatıon Technology Sector. *Atatürk İletişim Dergisi*, (16), 99-112.