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Flying Between the Genders: Organizational Citizenship Behaviours and Turnover Intentions Among Turkish Airlines Pilots[1]

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Abstract

This research aims to examine the relationship between organizational commitment and intention to quit among male and female pilots working in the airline industry. Given the critical role pilots play in aviation, understanding whether gender has a significant impact on these dynamics is one of the objectives of this study. The study also aims to guide airlines in developing effective interview techniques when hiring pilots who exhibit organizational citizenship behaviours (OCB) and could potentially reduce future intentions to quit. These objectives were pursued through surveys measuring the five dimensions of OCB and intention to quit. These surveys were administered to pilot unions and airlines across Turkey, resulting in 484 responses, of which 3 were invalid. The findings indicate statistically significant relationships between gender, OCB, and intention to quit female pilots were found to have lower intentions to quit and displayed higher levels of citizenship behaviour compared to their male counterparts. Limitations of the study include the predominantly male sample, biases arising from self-reported data, a cross-sectional design, and the research's focus on the Turkish airline culture. Despite these limitations, the findings offer important insights into HR strategies for developing OCB and creating gender-related strategies to reduce pilots' intentions to quit. This study presents new perspectives on the gender dynamics of Turkish airline pilots, a rarely discussed topic in aviation literature. It highlights practical implications for HR practices in retaining pilots and deepens the discussion of OCB in male-dominated sectors and cultural contexts.

Key Words: Organizational Citizenship Behaviors (OCB), Quit Intentions, Gender Differences, Gender Dynamics, Aviation and Human Resources.

JEL Classification: D23, J16, J53, O15.

Cinsiyetler Arasında Uçmak: Türkiye'de Hava Yolları Pilotlarında Örgütsel Vatandaşlık Davranışları ve İşten Ayrılma Niyetleri

Öz

Bu araştırma, havayolu sektöründe çalışan erkek ve kadın pilotların örgütsel bağlılıkları ile işten ayrılma niyetleri arasındaki ilişkiyi incelemeyi amaçlamaktadır. Pilotların havacılıkta kritik bir rol oynaması nedeniyle, cinsiyetin bu dinamiklerde önemli bir etkisi olup olmadığını anlamak bu çalışmanın hedeflerinden biridir. Çalışma ayrıca havayollarına, örgütsel vatandaşlık davranışları (ÖVD) sergileyen ve gelecekte işten ayrılma niyetini azaltabilecek pilotları işe alırken etkili mülakat teknikleri geliştirme konusunda rehberlik etmeyi hedeflemektedir. Bu amaçlara, ÖVD'nin beş boyutunu ve işten ayrılma niyetini ölçen anketler aracılığıyla ulaşılmıştır. Bu anketler, Türkiye genelindeki pilot sendikaları ve havayolu şirketlerine uygulanmış ve 484 geri dönüş alınmıştır; bunlardan 3'ü geçersiz sayılmıştır. Bulgular, cinsiyet, ÖVD ve işten ayrılma niyeti arasında istatistiksel olarak anlamlı ilişkiler olduğunu göstermektedir: Kadın pilotların işten ayrılma niyetleri daha

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düşük ve erkek meslektaşlarına kıyasla daha yüksek vatandaşlık davranışları sergiledikleri görülmüştür. Sınırlılıklar arasında örneklemin büyük ölçüde erkek ağırlıklı olması, kendi beyanlarına dayalı verilerden kaynaklanan önyargılar, kesitsel bir tasarım ve araştırmanın Türk havayolu kültürüne özgü olması bulunmaktadır. Bu sınırlamalara rağmen, bulgular ÖVD'nin geliştirilmesine ve pilotların işten ayrılma niyetlerini azaltmak için cinsiyetle ilgili stratejilerin oluşturulmasına yönelik İK stratejileri açısından önemli sonuçlar ortaya koymaktadır. Bu çalışma, Türk havayolu pilotlarının cinsiyet dinamiklerine ilişkin, havacılık literatüründe nadiren ele alınan bir konuya yeni bakış açıları sunmaktadır. Pilotların elde tutulmasını sağlama açısından İK uygulamaları için pratik çıkarımları vurgulamakta ve erkek egemen sektörlerde ve kültürel bağlamlarda ÖVD tartışmasını derinleştirmektedir.

Anahtar Kelimeler: Örgütsel Vatandaşlık Davranışları (ÖVD), İşten Ayrılma Niyeti, Cinsiyet Farklılıkları, Cinsiyet Dinamikleri, Havacılık ve İnsan Kaynakları.

JEL Sınıflandırma: D23, J16, J53, O15.

INTRODUCTION

Airline companies, which are globalizing and simplifying their market entrances, strive for efficiency and productivity in order to strengthen their competitive position in the industry. Airline expenses are primarily concentrated in two areas: fuel and human resource costs. Studies have been conducted that explore how transported fuels can be reduced in a way that does not endanger safety (Chang, 2021; De Oliveira et al., 2023; ICAO, 2015; Moor, 2022). There is no single, binding international regulation for fuel requirements, but there are internationally recognized standards, primarily outlined by the International Civil Aviation Organization (ICAO), which national civil aviation authorities adopt and enforce as regulations. According to ICAO's Annex 6, Part I (ICAO, 2018), airlines are required to carry sufficient fuel for each flight to account not only for the planned route but also for contingencies such as delays, diversions, and emergencies. This includes an allowance for fuel to an alternate airport if a diversion is needed, additional fuel to cover unforeseen delays, and a reserve amount to ensure safe landing even if unexpected conditions arise. The logic behind minimizing the amount of extra fuel carried is based on efficiency: the more fuel an aircraft carries, the more it burns to carry that additional weight. However, given the ICAO standards adopted internationally, airlines are required to adhere to similar fuel planning practices, which generally leads to consistent, regulated allowances for extra fuel across the industry. This approach ensures a balance between operational efficiency and safety, prioritizing adequate fuel reserves while minimizing unnecessary fuel burn.

There are many studies on improving human resources performance and reducing costs. Academics, especially those focusing on management and organizational studies, have researched employee performance (Harvey, 2007), job satisfaction (Rast and Tourani, 2002), organizational commitment (Mathieu and Zajac, 1990; O'Reilly and Chatman, 1986), positive emotional sense, and various other factors that have the potential to improve important business drivers (Lee, 2007). As research regarding how to reduce staff turnover increased and various reasons for the phenomenon were found, the cost to lower turnover continued to rise. Researchers play an important role in understanding the behaviours of individuals working in organisations and in preventing high staff turnover rates that cause negative consequences for organizations. Considering the substantial time required for airline personnel to be trained and to gain experience and the high turnover rates in this sector, it is important to understand the behaviour of airline pilots (Sancharan, 2013) and determine new human resources strategies to reduce turnover intentions among pilots.

Despite the critical nature of their roles, pilots have been relatively understudied in the context of organizational behaviour, making it imperative to address this research gap and explore how gender may influence key behaviours such as organizational citizenship and turnover intentions.

This study is intended to answer the following research question: Does gender play a role in the organisational citizenship behaviours of pilots working in the airline industry and their intention to quit the job? These factors are particularly important in this field because while the technologies and services provided to passengers are easy to be copied by other airlines in the sector, this is not the case with improved OCB and reduced or controlled retention.

1. LITERATURE REVIEW

The existing body of literature on OCBs and turnover intentions has largely focused on general corporate environments, with limited attention to high-stakes industries such as aviation. Previous studies have shown that gender differences in OCBs can significantly influence organizational outcomes, with women generally exhibiting higher levels of altruism and conscientiousness (Smith et al., 2010; Williams & Shiaw, 1999).

However, the aviation industry, characterized by its unique operational challenges and high stress levels, presents a distinct environment where these dynamics might play out differently. This study builds on the work of Vey and Campbell (2004) and expands it by focusing on pilots, a group that has been underrepresented in OCB research.

1.1. Organisational Citizenship Behaviour

Aristotle highlights the natural inclination of humans toward civic engagement by asserting, "A person who does not participate in the order of the state is either a monster or a god." (Aristotle, 2014). This idea underscores the inherent responsibilities of individuals within society. Singla (2009) expands on this, noting that citizenship is not merely a legal status but a dynamic interplay of rights and duties, where active participation becomes essential for societal functioning. While citizenship behaviours are important for the development of a society or country, in organizational citizenship, instead of society or country, there is commitment to an organization and more effort and job performance are seen than the written expectations of the organization. There is no compulsion or expectation governing the internal performance of employees; these behaviours are based completely on people's own choices (Yücel & Taşçı, 2007).

Organisational behaviour refers to the activities of individuals and groups in an organisation (Organ and Bateman, 1986; Mert et al., 2020). While performing their duties, individuals in an organization communicate with other employees and groups, try to influence others, cope with stressors, make decisions and fight or argue with others (Organ and Bateman, 1986). These behaviour patterns vary between organisations based on the conditions therein and the personalities of the individuals. Although there are different classifications and denominations of such behaviours in the literature, the five dimensions of organisational citizenship behaviours put forward by Organ (1988) are discussed in this study but the statistical data will be based on overall OCBs.

Altruism, in organisations involves behaviours where individuals assist colleagues without expecting anything in return, such as offering help, cooperating, and providing interpersonal support. In the aviation sector, several studies underscore the significance of altruism as part of Organisational Citizenship Behaviours (OCBs). For example, Vuong, Hieu, and Huyen (2024) demonstrated that altruistic behaviours significantly enhance job performance in aviation. Similarly, Accra and Odinioha (2014) highlighted how altruism contributes to organisational adaptation, while Odinioha (2015) examined the relationship between OCBs and corporate resilience in the domestic aviation sector in Nigeria, concluding that altruism fosters organisational resilience. Incorporating these studies would provide a more comprehensive understanding of the role of altruism in enhancing job performance and resilience in aviation organisations.

Courtesy, conscientiousness or compliance demonstrates that employees accept the organisation's rules, regulations and procedures (Podsakoff et al., 2009). Organ (1988) described conscientiousness as a high level of duty ethics and awareness, which is expressed when employees working in the organization are willing to exert the effort to realise and even go beyond expectations (Ölçüm - Çetin, 2004).

Sportsmanship, gentleman ship or sportsmanship has attracted more attention than other forms of behaviour in the literature (MacKenzie et al., 1993; Walz and Niehoff, 1996; Podsakoff et al., 2000). Organ (1990) defines this as the willingness to tolerate unavoidable inconveniences. Podsakoff et al. (2000) state that those who have the ability to handle the imposition of work without complaining also exhibit a positive attitude, even when things are not going well. Sportsmanship has been defined as not being bothered when one's own suggestions are not accepted, along with a willingness to sacrifice individual interests for the sake of the group.

Conscientiousness, humility or courtesy is the voluntary adoption of thoughtful and respectful behaviour that prevents work-related problems for others (Allison et al., 2001). According to Terzi (2011), it is the employees' ability to identify situations that may cause problems for other employees in advance, act proactively to solve the problem that may occur, find solutions, or help prevent the problem before it occurs.

Civic virtue, another behaviour defined by Organ (1988) is civic virtue. There are also translations made as organizational virtue in the Turkish literature (Yıldırım and Keskinkılıç – Kara, 2018; Turan et al., 2019; Akbolat et al., 2017; Köse et al., 2003). Behavioural characteristics of civic virtue include performing tasks that are beneficial for the image of the organization, participating in training or information meetings that are encouraged but not obligatory, and actively participating in the organization's meetings, although the employee is not obligated to do so (Podsakoff and MacKenzie, 1994).

1.2. Intention to Quit

Although the latest technologies, superior and improved management systems, databases and electronic systems are necessary for the successful organizations, the main factor in ensuring organizational success is still the quality of the human resource of the organization (Kaya, 2013). To achieve this success, staff turnover is one of the most costly and difficult

human resources problems that organizations face globally (Rizwan et al., 2014). Staff turnover, which can incur additional costs that can reach 20% to 213% of an organization member's salary depending on the employment position and industry (Boushey and Glynn, 2012), is not only a significant "material" cost but also a loss of skills, inefficiency and substitution. It includes intangible or simply "hidden" costs associated with costs (Lashley and Chaplain, 1999; Davidson et al., 2010). Because, besides the costs that can be calculated in monetary terms such as recruitment costs, training costs and so on, lost experience is given as an example of costs that cannot be calculated materially (Lashley, 2000; Davidson et al., 2010).

The high rate of staff turnover in organizations can create a dysfunctional turnover situation. High turnover rate not only reduces the performance of the employees but also decreases the performance of the organization (Ahmed et al., 2016) and increases the new recruitment process and training costs (Chen et al., 2011). This also leads to damaged image of the organization (Highhouse and Hoffman, 2001) and may cause the organization not to find sufficient number and quality staff in the future periods or in the staff recruitments to be made to prevent the high turnover rate. It will take time for organizations to restore their image, and it will cause them to increase the wages and other opportunities offered to new staff to increase the attractiveness of the organization. In addition to causing additional costs for organizations, having to rearrange the salaries of existing personnel will cause financial performance to decline and lose its advantage in the market, if any. According to a different view, the newly hired individual may be more qualified and perform better than the individual lost due to personnel turnover (Brown et al., 2007). This can enable organizations to make profits with new and highly motivated individuals and different wage scales. However additional consideration should be given as training new pilots will take longer time the office staff.

From the point of view of airlines, the long procurement process time may cause operational disruptions. The fact that the training processes take a few months for some airlines and that these training processes are carried out by the instructor pilots currently flying as line pilots forcing them to return to simulator environment which causes lack of line pilots for flights.

The expense of a skilled pilot's staying in the organization will rise as he obtains experience and allowing a certain and planned turnover rate of pilots from their organization can be positive for the economic performance of the organization.

Hypotheses

> **H1:** There is a negative relationship between organizational citizenship behaviours (OCB) and intention to quit.

> H1a: There is a negative relationship between altruism and intention to quit.

> H1b: There is a negative relationship between conscientiousness and intention to quit.

> H1c: There is a negative relationship between courtesy and intention to quit.

> H1d: There is a negative relationship between sportsmanship and intention to quit.

H1e: There is a negative relationship between civic virtue and intention to quit.

H2: Female pilots exhibit more organizational citizenship behaviours than male pilots.

H2a: Female pilots exhibit higher levels of altruism than male pilots.

H2b: Female pilots exhibit higher levels of conscientiousness than male pilots.

H2c: Female pilots exhibit higher levels of courtesy than male pilots.

H2d: Female pilots exhibit higher levels of sportsmanship than male pilots.

H2e: Female pilots exhibit higher levels of civic virtue than male pilots.

H3: Female pilots have a lower intention to quit than male pilots.

2. METHODOLOGY

The target population of this study is 7,020 pilots who hold an airline transport pilot rating in Türkiye (Yıldırım, 2021). These pilots were surveyed to explore the relationships between organizational citizenship behaviours (OCB) and turnover intentions. A total of 484 questionnaires were initially collected; however, 3 were excluded due to inconsistencies or incomplete responses, resulting in 481 valid responses. This sample is statistically representative of the target population. Using a 95% confidence level and a 5% margin of error, the required sample size for a population of 7,020 was calculated to be approximately 365 using Cochran's formula for sample size determination:

$$n = \frac{Z2 \cdot p \cdot (1 - p)}{e^2}$$

Where:

Z=1.96 (for a 95% confidence level),

p=0.5 (maximum variability assumed for a conservative estimate),

e=0.05 (margin of error).

This sample size is statistically representative of the target population based on a 95% confidence level and a 5% margin of error. Using Cochran's formula for sample size determination, the required sample size was calculated as approximately 365, making the achieved sample size of 481 robust and exceeding the threshold for reliability.

The sample consisted of 73 female pilots (15.17%) and 408 male pilots (84.83%) and 238 single pilots (49.48%) and 243 married pilots (50.52%), providing sufficient variation for analysing the influence of gender and marital status on OCB and turnover intentions. Globally, the representation of female pilots remains low but has shown a gradual increase. As of recent years, only 4% to 6% of airline pilots worldwide are women, with variations based on region and airline-specific data. For instance, in 2021, the International Society of Women Airline Pilots (ISWAP) reported that 5.8% of pilots across surveyed airlines were women (International Society of Women Airline Pilots, 2021). While the percentage of female pilots responding to the questionnaire was higher than the general industry proportion

in Türkiye, where it is approximately 6%, this reflects a slightly overrepresented female sample in the context of the aviation industry.

The questionnaire measured OCB and intention to quit, alongside demographic variables. It incorporated aviation-specific validation questions to ensure data integrity, such as cross-checking participants' self-reported qualifications and flight experience against regulatory requirements. Participants whose responses failed these checks were excluded. The research has been approved by Anadolu University Publication Ethics Committee protocol number 35987.

To measure OCB, the study utilized the 19-item Organizational Citizenship Scale, originally developed by Vey and Campbell (2004) and Williams and Shiaw (1999), and adapted into Turkish by Basım and Şeşen (2006). This scale was selected for its comprehensive coverage of OCB dimensions—altruism, conscientiousness, courtesy, sportsmanship, and civic virtue—as conceptualized by Organ (1988). These dimensions are particularly relevant for aviation professionals, as they assess behaviours beyond formal job requirements that enhance organizational effectiveness. The scale's psychometric robustness has been demonstrated in previous studies, including its high reliability (Cronbach's Alpha values ranging from 0.931 to 0.977 in this study) and validity in Turkish contexts (Basım and Şeşen, 2006) with Cronbach's Alpha values ranging from 0.77 to 0.87 for individual subscales and an overall reliability of 0.94. The use of this instrument in numerous studies (e.g., Buluç, 2008; Aslan, 2009; Tuna et al., 2012; Çınar et al., 2013; Avcı, 2015; Tekin, 2018; İpek and Özbilgin, 2019) further underscores its robustness and suitability for the Turkish context.

In this study, the responses to the 5-point Likert-type scale—ranging from (1) never to (5) always—enabled a nuanced analysis of OCB behaviours. The instrument was particularly well-suited to the research objectives, as it allows for comprehensive measurement of pilots' contributions beyond formal role expectations, thereby addressing the study's aim of linking OCB to intentions to quit within this unique occupational group.

The Intention to Quit Questionnaire, originally developed by Cammann et al. (1979) and translated into Turkish by Kitapçı et al. (2013), was employed to measure participants' turnover intentions. This scale was specifically chosen for its alignment with the research objectives, as it directly measures an individual's propensity to leave their current job—a critical variable for understanding workforce stability within the aviation sector. The instrument's selection is justified by its robust psychometric properties and its widespread use in both national and international research contexts. The scale has demonstrated strong reliability, with Cronbach's Alpha coefficients reported as 0.87 in its original form and 0.85 in its Turkish adaptation by Kitapçı et al. (2013). The 5-point Likert response format, ranging from (1) strongly disagree to (5) strongly agree, allows for clear differentiation in participants' turnover intentions, providing the nuanced data needed for this study's analysis. Moreover, the scale has been successfully applied in several recent studies in the Turkish context (e.g., Yıldız-Bağdoğan and Gürer, 2019; Sağır, 2020; Yakut, 2020; Yağcı and Avcıkurt, 2020), further validating its relevance and applicability. These studies confirm the scale's reliability and its effectiveness in capturing variations in turnover intentions across diverse professional groups. Given its demonstrated reliability and validity, the Intention to

Quit Questionnaire is well-suited for the current research, which aims to explore the relationship between organizational citizenship behaviours and intentions to quit among Turkish airline pilots.

A data analysis was performed using SPSS software. Reliability analysis confirmed strong internal consistency for both scales, with Cronbach's Alpha exceeding the threshold of 0.70 for all dimensions. Descriptive statistics highlighted significant differences in OCB dimensions based on gender and marital status. Female pilots consistently scored higher across all five OCB dimensions, with the largest differences observed in civic virtue (female mean = 4.65, male mean = 3.84). Married male pilots exhibited the lowest OCB scores, reflecting potential challenges in balancing family obligations with professional responsibilities.

Pearson correlation coefficients revealed significant negative relationships between OCB dimensions and intention to quit. For example, altruism showed strong negative correlations with turnover intentions ($r = -0.792$ for single males and $r = -0.742$ for single females). Sportsmanship and civic virtue also exhibited significant negative correlations across all groups, underscoring their importance in mitigating turnover risks. Regression analysis further highlighted the predictive power of OCB dimensions, particularly altruism and sportsmanship, in reducing turnover intentions.

The independent samples t-test was employed to compare OCB scores across genders and marital statuses. The results indicated significant gender differences, with female pilots consistently scoring higher across all dimensions. For example, the t-test for altruism yielded a t-value of 5.176 ($p < 0.001$), with a mean difference of 0.739 between female and male pilots. A one-way ANOVA was conducted to analyse marital status differences, revealing significant variations in OCB scores, particularly among males. Both the Shapiro-Wilk test and Levene's test confirmed the assumptions of normality and homogeneity of variances for these analyses.

The Chi-Square Test was used to examine the association between gender and marital status. This test was appropriate as both variables are categorical, and it helped determine whether there was a significant relationship between these factors. The results showed a significant association ($\chi^2 = 33.819$, $p < 0.001$), suggesting that gender distributions vary significantly across marital statuses.

Visualizations were created to enhance the interpretation of results. Bar charts illustrated average OCB scores by gender and marital status, while a heat map of Pearson correlations highlighted the strongest relationships between OCB dimensions and turnover intentions. These visualizations provided clear insights into the study's findings, emphasizing the critical role of altruism and civic virtue in reducing turnover intentions.

Figure 1. Average OCB Scores by Gender
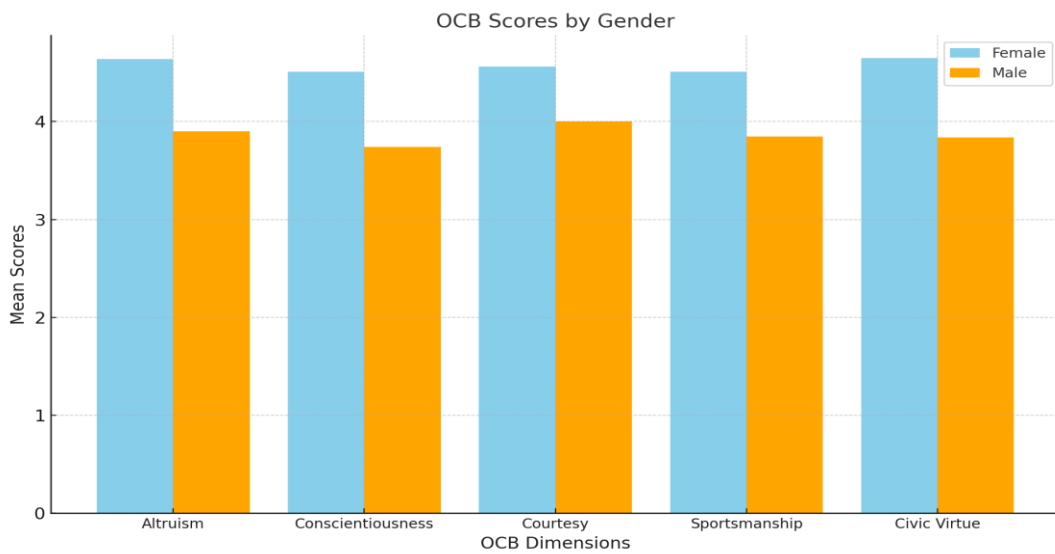
The chart illustrates the average scores across the five OCB dimensions for male and female pilots. Female pilots consistently scored higher in all dimensions, with the largest gap in Civic Virtue and Altruism.

Figure 2. Correlation Between OCB Dimensions and Intention to Quit
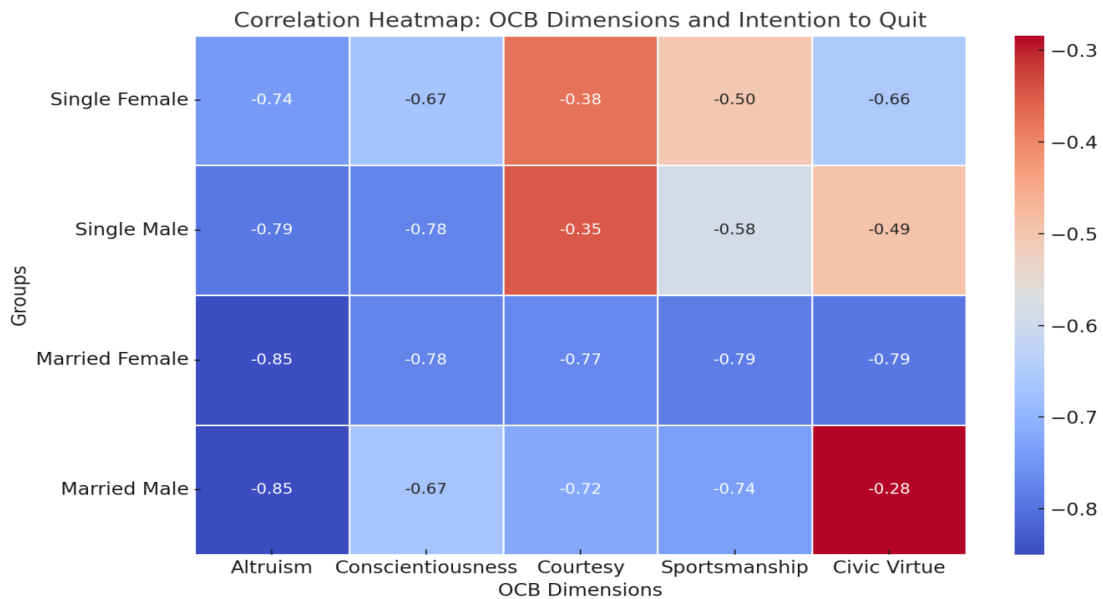
The heat map visualizes the strength of correlations between individual OCB dimensions and intention to quit, highlighting the negative relationships, particularly for Altruism and Sportsmanship, across all demographic groups.

In the section that aims to collect demographic information; gender, marital status, number of children owned, date of birth, flight school, income level, type of aircraft flown, number of years working in the company, total work experience, the status of captain pilot, city of residence, airline company and captain upgrade if they had received any were asked. The questions that are asked other than the gender were mainly aimed to verify the accuracy of the information provided. For example, if someone who graduated from a civil aviation

school and is 32 years old claims to have been flying as a captain for 10 years and has been working as a pilot for 11 years, or if they say they have flown with SunExpress airlines and currently on type A350 aircraft, such information would be considered invalid causing the specific data to be invalid. According to civil aviation requirements, specific years and flight experience are needed to become a captain. Additionally, SunExpress airlines only operates B737 aircraft. However, in this article only the basic demographic difference (Male / Female & Single / Married) have been discussed. Therefore, any other demographical data which are questioned were not discussed in the research.

Data analysis was conducted using SPSS software, employing various statistical tests to evaluate the significance of gender differences and the relationships between organizational citizenship behaviour (OCB) and intention to quit. Independent Samples T-Test was used to compare the mean OCB scores between male and female pilots. Since gender is a categorical variable with two levels and OCB is continuous, the independent samples t-test was appropriate. The assumption of normality for the OCB scores was assessed using Shapiro-Wilk tests, and the assumption of homogeneity of variances was tested using Levene's test. Results showed that both assumptions were met. A one-way ANOVA was employed to compare OCB scores across different marital statuses (single, married, etc.). This method is suitable when comparing means from more than two independent groups. The assumptions of normality and homogeneity of variances were verified prior to conducting the analysis. The Chi-Square Test was used to examine the association between gender and marital status. This test is appropriate because both gender and marital status are categorical variables, and it helps to determine if there is a significant relationship between these two variables. Due to the significant gender imbalance in the sample, the Mann-Whitney U Test was applied as a non-parametric alternative to the t-test to ensure that the results were not skewed by the unequal distribution of male and female pilots. This test does not assume normality and is suitable for ordinal data or when there are unequal sample sizes. The internal consistency of the scales used in the study was assessed using Cronbach's Alpha. For the OCB scale, Cronbach's Alpha values ranged from 0.931 to 0.977 for female and male pilots, indicating excellent reliability across the groups. For the intention to quit scale, the Cronbach's Alpha values were higher for females (0.992 to 1.000) but somewhat lower for males (0.844 for single, 0.895 for married), suggesting strong reliability for female participants, but more cautious interpretation is needed for male participants. A power analysis was not conducted prior to the study. However, the sample size of 481 respondents after exclusions is considered sufficient to achieve a power level of 0.80, which is generally acceptable for the tests used. Effect sizes (Cohen's d for t-tests and partial eta-squared for ANOVA) are reported in the results section to assess the magnitude of the differences and the practical significance of the findings.By addressing these areas, future research can provide more comprehensive insights and contribute to the development of effective HR strategies in the aviation industry.

3. FINDINGS

The demographic findings of the study are as in Table 3.

Table 3. Information On Gender and Marital Status of The Participants

Variable (Gender)	Frequency	%	Variable (Marital Status)	Frequency	%
Female	73	15	Single	238	49
Male	408	85	Married	243	51

The gender distribution, with 84.8% male respondents, reflects a male-dominated industry. This percentage, however, indicates the gender distribution in the research population rather than the entire aviation sector. While the marital status distribution is balanced, the low female representation (15.2%) raises challenges for statistical generalizability. Alternative statistical techniques, such as propensity score matching or weighted analysis, could address such imbalances and reduce potential biases in gender comparisons (Rubin, 2001). Future research should consider oversampling female pilots or incorporating longitudinal designs to better analyse gender trends in OCBs over time.

The measurement of OCB was conducted using 19 questionnaire statements across five dimensions: altruism (items 1–5), courtesy (items 6–8), sportsmanship (items 9–11), conscientiousness (items 12–15), and civic virtue (items 16–19). While the self-reported nature of the data provides valuable insights, it introduces the possibility of social desirability and response biases, particularly in hierarchical environments like aviation. Studies indicate that respondents in such settings may report higher OCB levels to align with organizational expectations or gendered norms (Podsakoff et al., 2003). Mixed-methods approaches, such as interviews or peer reviews, could mitigate this limitation and enhance data reliability.

Table 4. Averages of OCB and Intention to Quit by Gender and Marital Status

Gender	Marital Status		OCB	Int. To Quit	Gender	Marital Status		OCB	Int. To Quit
Female	Single	Average	4.5739	1.2712	Male	Single	Average	3.8671	2.0559
		N	59	59			N	179	179
		St. Dev.	0.41367	0.86320			St. Dev.	1.04930	1.52240
		Min.	2.51	1.00			Min.	1.57	1.00
		Max.	5.00	5.00			Max.	5.00	5.00
	Married	Average	4.5183	1.5714		Married	Average	3.3462	2.7889
		N	14	14			N	229	229
		St. Dev.	0.62540	1.12035			St. Dev.	1.15629	1.56085
		Min.	3.01	1.00			Min.	1.35	1.00
		Max.	5.00	4.67			Max.	5.00	5.00
	Total	Average	4.5632	1.3288		Total	Average	3.5747	2.4673
		N	73	73			N	408	408
		St. Dev.	0.45711	0.91708			St. Dev.	1.13908	1.58464
		Min.	2.51	1.00			Min.	1.35	1.00
		Max.	5.00	5.00			Max.	5.00	5.00

According to Table 4, female pilots consistently exhibit higher OCB scores and lower turnover intentions than their male counterparts. Single female pilots reported the highest OCBs and the lowest intention to quit, whereas married male pilots demonstrated the lowest OCBs and the highest intention to quit. These findings align with Hypotheses H1–H3, confirming the strong influence of gender on both OCB and turnover intentions.

Results in Relation to Hypotheses:

H1 and Sub-Hypotheses (H1a–H1e): Significant negative relationships were observed between OCB dimensions and intention to quit across gender groups. For example, altruism negatively correlated with turnover intentions ($B = -2.646$, $p < 0.001$) among single females. These findings support H1 and its sub-hypotheses.

H2 and Sub-Hypotheses (H2a–H2e): Female pilots scored higher than males in all OCB dimensions, including altruism (mean: 4.64 for females vs. 3.90 for males, $p < 0.001$). This supports H2 and its sub-hypotheses.

H3: Female pilots demonstrated significantly lower turnover intentions than male pilots (mean: 1.33 for females vs. 2.47 for males, $p < 0.001$), confirming H3.

4. DISCUSSION

The results of this study highlight notable differences in OCB and turnover intentions based on gender and marital status, with female pilots consistently exhibiting higher OCB levels and lower turnover intentions than their male counterparts. Notably, single female pilots demonstrated the highest OCB scores and the lowest intention to quit, while married male pilots reported the lowest OCB levels and the highest turnover intentions. These findings strongly support the study's hypotheses (H1–H3) and underline the influence of gender on organizational behaviour outcomes.

These patterns align with previous research. Zhang (2014) and Bahrami et al. (2013) identified similar gendered trends in OCB dimensions, with cultural and organizational factors playing a critical role in shaping these behaviours. Additionally, the glass ceiling effect in male-dominated industries, as noted by Heilman and Chen (2005) and Eagly and Carli (2007), may motivate women to display higher OCBs to counteract workplace biases and advance their careers.

Marital status appears to interact with gender to influence these dynamics, potentially reflecting differing priorities between single and married pilots. While married female pilots balance professional and personal responsibilities, which may slightly reduce their OCBs, married male pilots exhibit the lowest engagement levels, possibly due to competing pressures.

However, the self-reported nature of the data introduces potential biases, particularly in hierarchical aviation settings where responses may align with perceived organizational expectations (Podsakoff et al., 2003). To address this, future studies should incorporate qualitative methods, such as interviews or focus groups, to provide richer insights into the drivers of OCB and turnover intentions.

Broadening the scope of future research to examine contextual variables—such as cultural expectations, leadership styles, and workload—could enhance understanding of these gendered patterns. Furthermore, investigating the interplay of generational perspectives, regulatory changes, and organizational policies may offer a more comprehensive view of how diverse workforce dynamics evolve in high-stress environments like aviation.

5. CONCLUSION

The history of women in aviation is a hard-won story at the insistence of many brave and determined individuals who transcended the dominance of a male-oriented profession (Anderson, 2009). From Elise Raymonde de Laroche's aviation journey in 1910 to Türkiye's first female pilot Bedriye Tahir Gökmen in 1933, the progress of women in this field has been both inspiring and challenging. Sabiha Gökçen's trailblazing role as the first female combat pilot in 1936, followed by Alev Hottin's entry as a first officer in a commercial airline in 1993, reflects the slow yet persistent advancement of women in aviation. By 2020, women constituted only 3.9% of Türkiye's pilot population, comparable to global and U.S. trends, where female representation ranges from 5% to 10% (Yanıkoğlu et al., 2020; Lutte, 2019). Despite these advancements, women in aviation continue to face significant barriers, including stereotyping, lack of organizational support, and the glass ceiling effect (Germain et al., 2012).

This study aimed to explore the intersection of gender, marital status, and organizational behaviour in aviation, with a specific focus on how these factors influence OCB and turnover intentions. The findings reveal that female pilots, particularly single ones, demonstrate higher OCB levels and lower turnover intentions than their male counterparts. This suggests that women navigate workplace dynamics by exceeding performance expectations, possibly as a response to gendered biases. The study also highlights those marital responsibilities impact workplace behaviour, further emphasizing the need for nuanced organizational strategies that accommodate diverse workforce dynamics.

Table 5. Total airline pilots in Türkiye.

	AtlasGlobal[a]	Onur Air	Pegasus	SunExpress	Turkish Airlines
Total number of pilots	209	296	1108	635	4772
Male pilots	189	276	1056	608	4612
Female pilots	20	20	52	27	160
% of female pilots	9.5%	6.7%	4.7%	4.2%	3.3%

Source: Yanıkoğlu, Kılıç and Küçükönal, 2020.

Table 5 presents data from airlines employing both female and male pilots. Airlines excluded from the table either lacked available data or did not have any actively working female pilots at the time of data collection. It is crucial for the Turkish Directorate General of Civil Aviation (DGCA) to enhance its reporting and statistical analysis in the field of gender representation within the aviation sector. Currently, the only available source addressing this matter, as referenced in Table-5 (2020), is outdated and limited in scope. While this table remains essential to the article due to the absence of alternative data and its role in highlighting the male-dominated nature of the aviation industry, its inclusion underlines a significant gap in current data availability.

To address this, the DGCA should consider incorporating gender-related statistics into its periodic reporting. By doing so, researchers would be able to base their studies on up-to-date and comprehensive datasets. This enhancement would not only improve the reliability of future studies but also contribute to a more inclusive understanding of the dynamics within the Turkish aviation sector.

This research highlights the crucial role of female pilots in organizational dynamics. Women in male-dominated industries, such as aviation, often demonstrate higher levels of organizational citizenship behaviours (OCB) as a means of navigating workplace biases and demonstrating commitment to their roles (Heilman & Chen, 2005; Rudman & Glick, 2001). Findings from this study reinforce these observations, revealing that female pilots exhibit significantly higher OCB and lower turnover intentions compared to their male counterparts.

Additionally, differences in OCB and turnover intentions were observed between single and married pilots, underscoring the need for further exploration into how personal life stages influence workplace behaviour. Single pilots, regardless of gender, displayed higher OCB and lower turnover intentions compared to married pilots, potentially reflecting the impact of family responsibilities or differing external pressures on workplace engagement (Ng & Feldman, 2009).

The implications for human resources (HR) practices are significant. By strategically increasing the proportion of female pilots, airlines can enhance team cohesion, safety compliance, and customer satisfaction, as higher OCB levels are closely associated with improved organizational performance (Podsakoff et al., 2000; Martinussen & Hunter, 2017). Furthermore, targeted retention strategies, particularly for married pilots, could mitigate operational disruptions caused by frequent recruitment and training cycles.

Integrating gender diversity into HR practices offers more than equity—it serves as a strategic advantage. Diverse perspectives can foster innovative decision-making, particularly in high-pressure scenarios where adaptive solutions are critical (Singh & Winkel, 2012). Future research should explore correlations between gender diversity and safety performance, further emphasizing the broader organizational benefits of inclusive workforces.

While this study highlights the potential benefits of employing more female pilots, it also identifies areas for improvement. Addressing barriers such as the glass ceiling effect and conducting detailed investigations into the differences between OCB and turnover intentions across marital statuses are critical next steps. This research does not advocate for positive discrimination but aims to highlight the importance of equity and inclusion as key drivers of both individual and organizational success.

In conclusion, the findings underscore the vital contributions of female pilots to the aviation industry. By addressing structural barriers and fostering an inclusive workplace, airlines can unlock the full potential of their workforce, ultimately enhancing performance and safety in this high-stakes industry.

6. RECOMMENDATIONS FOR FUTURE RESEARCH

Future studies should prioritize expanding the diversity of pilot samples to include participants from various airlines, regions, and cultural backgrounds. The differing behaviors identified in studies such as Gao (2020) and Zhang (2014) highlight the need for more inclusive sampling to ensure findings are representative of the global pilot workforce. Additionally, incorporating generational perspectives, particularly from Generation Z, can

provide insights into the unique expectations and workplace behaviours of emerging pilot cohorts, which are underrepresented in current research.

Qualitative methods, such as interviews and focus groups, should complement quantitative analyses to provide deeper insights into the observed patterns of organizational citizenship behaviour (OCB) and turnover intentions. For instance, such approaches could elucidate the specific challenges married pilots face in balancing professional and personal responsibilities or reveal the motivations behind higher OCB levels among female pilots. These methodologies can uncover nuanced factors and interactions that are difficult to capture through surveys alone.

Work-life balance programs warrant further exploration as they have the potential to address some challenges faced by married pilots and enhance organizational commitment. Flexible scheduling, parental support initiatives, and spousal networks may reduce turnover intentions and promote higher engagement levels. At the same time, it is critical to recognize that controlled turnover can benefit airlines by introducing fresh perspectives and avoiding stagnation, necessitating a balanced approach in HR policies.

Gender-specific policies tailored to the unique needs of pilots are another key area for investigation. Mentorship programs designed to support women's career advancement can address the persistent glass ceiling effect, while flexible work arrangements can accommodate diverse family responsibilities. However, care must be taken to avoid creating perceptions of preferential treatment. Instead, these policies should aim for inclusivity and equity, fostering an environment where all pilots feel valued and supported. In regions with specific regulatory requirements, such as maternity leave, airlines must align their policies with local laws while promoting workplace harmony.

Cultural and regional contexts play a significant role in shaping workplace dynamics. Comparative studies examining how policies and practices impact pilots in different parts of the world can provide valuable insights into the effectiveness of HR strategies. Such research can also explore how organizational support mechanisms mitigate challenges faced by female pilots in male-dominated environments.

Another promising avenue for future research is the relationship between gender diversity and safety performance. Understanding whether diverse crews demonstrate enhanced teamwork and decision-making in high-stress scenarios could further justify initiatives to increase gender representation among pilots. Insights from such studies could reinforce the broader organizational benefits of an inclusive workforce.

Finally, retention strategies must account for the interplay of gender, marital status, and organizational dynamics. Spousal support systems, professional development pathways, and tailored benefits can address specific demographic needs without reinforcing stereotypes. These measures, coupled with rigorous empirical evaluations, can lead to more effective and equitable HR strategies, ultimately benefiting both employees and organizations in the aviation sector.

By addressing these areas, future research can contribute significantly to advancing our understanding of organizational dynamics in aviation, while simultaneously fostering inclusivity and improving workforce performance.

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