

Exploring the Relationship Between Intercultural Sensitivity, Intercultural Communication Apprehension, and Perceived Stress Among Cabin Crew

Kabin Ekiplerinde Kültürlerarası Duyarlılık, Kültürlerarası İletişim Kaygısı ve Algılanan Stres Arasındaki İlişkinin İncelenmesi

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ABSTRACT

Intercultural sensitivity, communication apprehension, and perceived stress are critical factors for cabin crew, given their ongoing interaction with culturally diverse passengers. The aim of the study was to examine the relationship between intercultural sensitivity, communication apprehension, and perceived stress among cabin crew. Data were collected from 405 cabin crew members in Türkiye using a survey method and an online questionnaire. The questionnaire included a sociodemographic form as well as the intercultural communication apprehension scale, intercultural sensitivity scale, and perceived stress scale. The findings indicated that cabin crew demonstrated a high level of intercultural sensitivity ($=4.1466$) while exhibiting low levels of perceived stress ($=2.1262$) and communication apprehension ($=1.7146$). Among the sociodemographic variables examined, only gender was found to impact stress and communication apprehension significantly. Furthermore, the effects of intercultural sensitivity on stress ($\beta = -0.264$) and communication apprehension ($\beta = -0.789$) were reinforced. Additionally, perceived stress was found to mediate the relationship between intercultural sensitivity and communication apprehension (95% BCA CI [-.079, -.023]). Training programs designed to enhance intercultural sensitivity and reduce stress should be implemented for cabin crew, considering the direct role of sensitivity in reducing communication apprehension and the mediating role of stress.

KEYWORDS

Aviation, Cabin Crew, Intercultural Sensitivity, Intercultural Communication Apprehension, Perceived Stress

ÖZ

Uluslararası uçuşlarda farklı kültürlerden yolcularla sürekli iletişim halinde olduklarından kültürlerarası duyarlılık, kültürlerarası iletişim kaygısı ve algılanan stres kabin ekipleri için önemli faktörlerdir. Bu çalışmanın amacı, kabin ekiplerinde kültürlerarası duyarlılık, iletişim kaygısı ve algılanan stres arasındaki ilişkinin incelenmesidir. Bu çalışmada, tarama yöntemi kullanılarak ve çevrimiçi anket aracılığıyla Türkiye’de görev yapan 405 kabin memurundan veri toplanmıştır. Ankette sosyodemografik bilgi formu ile birlikte kültürlerarası iletişim kaygısı, kültürlerarası duyarlılık ve algılanan stres ölçekleri yer almıştır. Bulgular, kabin ekiplerinin yüksek düzeyde kültürlerarası duyarlılık ($=4.1466$) sergilerken düşük düzeyde stres algısına ($=2.1262$) ve iletişim kaygısına ($=1.7146$) sahip olduğunu; bununla birlikte, yalnızca cinsiyet değişkeninin stres ve kültürlerarası iletişim kaygısında anlamlı bir farklılığa yol açtığını göstermiştir. Ayrıca, kültürlerarası duyarlılığın stres ($\beta = -0.264$) ve iletişim kaygısına ($\beta = -0.789$) etkisi pekiştirilmiştir. Algılanan stresin, kültürlerarası duyarlılık ile iletişim kaygısı arasındaki ilişkide aracı bir rol oynadığı tespit edilmiştir (95% BCA CI [-.079, -.023]). Kabin ekipleri için kültürlerarası duyarlılığı artırmaya yönelik eğitimler ve stresi minimize etmeye yönelik programlar, duyarlılığın iletişim kaygısını azaltmadaki doğrudan rolü ile stresin aracı rolü göz önünde bulundurularak uygulanmalıdır.

ANAHTAR KELİMELE

Havacılık, Kabin Ekibi, Kültürlerarası Duyarlılık, Kültürlerarası İletişim Kaygısı, Algılanan Stres

Makale Geliş Tarihi / Submission Date		Makale Kabul Tarihi / Date of Acceptance	
10.01.2025		07.04.2025	
Atıf	Tuncal, A. (2025). Exploring the Relationship Between Intercultural Sensitivity, Intercultural Communication Apprehension, and Perceived Stress Among Cabin Crew. <i>Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi</i> , 28 (1), 163-179.		

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INTRODUCTION

Culture is defined as the beliefs, values, ideals, skills, traditions, and social structures that are adopted in daily life by individuals (Sue, 1981). Interactions among individuals with diverse cultural backgrounds give rise to the concept of intercultural (James, 2008). The aviation industry, with its workforce and customer base comprising individuals from diverse cultural backgrounds, serves as a unique context where the harmonious management of intercultural differences is critical (Başçı, 2019). Within this dynamic framework, cabin crew serve as frontline employees who engage directly with customers in airline operations (Albrecht, 1992; Wirtz & Johnston, 2003). Cabin crew are required to possess a high level of intercultural sensitivity and communication competency to enhance satisfaction during flights (Kim & Prideaux, 2003). The enhancement of intercultural communication skills is shown to positively impact individual professional performance, as well as contribute to strengthening the brand image and competitive advantage of airline companies (Wang et al., 2012). Consequently, it is crucial for airline companies to prioritize the enhancement of cabin crew's intercultural competencies to ensure enhanced customer satisfaction and operational efficiency (Wirtz & Lovelock, 2016).

Intercultural communication is a significant competency that allows individuals to adapt to the environment in intercultural contexts, promote creative problem-solving in multicultural settings, and enhance satisfaction in intercultural relationships (Ting-Toomey & Chung, 2005). This competency refers to the interaction process influenced by various cultures among individuals. However, this process may present challenges due to various barriers. Stereotypes and prejudices are among the primary obstacles (Marshall, 2015). Additionally, fear or uncertainty when communicating with individuals from different cultures may lead to intercultural communication apprehension (Gudykunst, 1995; Neuliep & McCroskey, 1997). Factors such as language skills, emotional expression styles, and differences in verbal and non-verbal communication methods contribute to this apprehension (Ata, 2019). Addressing this apprehension necessitates fostering an interest in foreign cultures and reducing uncertainties in the communication process (Gudykunst, 1995; Lu & Wan, 2012). Such challenges emphasize the necessity for individuals to comprehend cultural differences and develop strategies tailored to these differences. The success of intercultural communication is contingent not only on linguistic alignment but also on the accurate interpretation of cultural contexts, non-verbal codes, and cultural transitions (Martin & Nakayama, 2010). Even in situations where the sender and receiver share a common language, the message becomes more meaningful when the cultural context is understood. However, if the language used is not the receiver's first language, the sender may assume the receiver possesses cultural contextual knowledge. In such situations, linguistic discrepancies and deviations in cultural context have the potential to hinder effective communication (Warren, 2017).

Cultural values, norms, and social roles play a critical role in the context of intercultural communication, which may result in varying perceptions and misunderstandings (Kartarı, 2016). The effectiveness of intercultural communication is influenced by a variety of factors, including individuals' language skills, cultural awareness, and variations in communication methods (Spencer-Rodgers & McGovern, 2002). While cultural values and norms influence the success of communication, linguistic structures, behaviors, and attitudes used in the communication process may vary depending on factors such as gender, age, education level, social status, and intimacy (Selçuk, 2005). The development of competencies in this field can help individuals overcome intercultural communication apprehension and cultivate a greater understanding of cultural differences (Ilie, 2019; Iswandari & Ardi, 2022).

Intercultural communication apprehension refers to the fear or unease associated with real or anticipated interactions with individuals from different cultural or ethnic groups (Neuliep & McCroskey, 1997). Berger and Calabrese (1975) emphasize that a lack of sufficient knowledge about others during initial interactions increases uncertainty and complexity in social contexts, thus raising apprehension among individuals involved. This phenomenon becomes more prominent in intercultural settings, where cultural differences introduce an additional layer of novelty and unpredictability (Gudykunst, 1995). Uncertainty in such contexts can obstruct effective communication (Gudykunst, 2005; Kassing, 1997). Communication apprehension is recognized as a critical determinant of communicative behavior (Lin & Rancer, 2003; McCroskey & Richmond, 1987, 1991). Elevated levels of apprehension tend to restrict individuals' openness, making it challenging for them to adapt to unfamiliar cultural environments (Gudykunst & Nishida, 2001; Neuliep & Ryan, 1998; Tominaga, Gudykunst, & Ota, 2003).

Intercultural sensitivity, defined as the ability to adopt appropriate and effective behaviors in intercultural communication, is the capacity of an individual to develop an emotional approach to understanding and appreciating cultural differences (Chen & Starosta, 1997). Furthermore, the ability to distinguish and experience cultural differences constitutes a significant component of this sensitivity (Hammer, Bennett, & Wiseman, 2003). Researchers across various disciplines emphasize the significance of intercultural sensitivity, including communication studies, education, and psychology. Studies demonstrate that intercultural sensitivity plays a critical role in fostering an effective and constructive communication process (Chen & Starosta, 1997; Graf, 2004; Olson & Kroeger, 2001; Rosen et al., 2000). Intercultural sensitivity, also referred to as intercultural competency, is regarded as a comprehensive set of knowledge, skills, and characteristics essential for individuals engaging in interactions within cultural contexts (Bennett, 1998). Individuals with intercultural competency are more likely to succeed in managing cultural differences and resolving strategic complexities. This competency represents a fundamental skill that facilitates harmonious interactions with individuals from diverse cultural backgrounds (Johnson, Lenartowicz, & Apud, 2006). It is regarded as a vital emotional process that facilitates effective intercultural communication among individuals from diverse cultural backgrounds (Mao & Hale, 2015). A positive attitude toward different cultures reduces communication barriers and enhances the quality of interactions (Alıcı, 2021; Chen & Starosta, 2000). Intercultural sensitivity is closely related to intercultural communication competency, which encompasses both verbal and non-verbal elements of communication. This is due to the fact that behaviors in one culture may carry entirely different meanings in another (Lee, 2015). Studies demonstrate that this competency supports effective communication across diverse cultural situations and serves as a critical resource for managing interactions with individuals from various cultural backgrounds (Ulrey & Amason, 2001).

Cabin crew members involved in flight safety and service processes within intercultural interactions face significant stressors arising from the demanding nature of the aviation industry. These include a high workload, irregular working hours, and long-haul flights. During long-haul flights, fatigue, biological disruptions, and time zone changes are common challenges (Lahti et al., 2007), while short-haul flights often lead to physical and mental exhaustion due to tight schedules (Bennett, 2003). Additionally, the high job demands and irregular working hours inherent in the profession contribute to physical and emotional fatigue, resulting in health issues, job dissatisfaction, and intentions to leave the profession (Chen & Chen, 2012; MacDonald et al., 2003). Stress experienced by cabin crew is further intensified when interacting with passengers from diverse cultural backgrounds. Variations in cultural norms, values, and interaction styles can lead to uncertainty and apprehension in intercultural interactions. Miscommunication or inappropriate interactions arising from cultural differences may lead to passenger dissatisfaction, thereby increasing the apprehension levels of cabin crew members (Gudykunst, 1993; Ulrey & Amason, 2001). To address such challenges, cabin crew members must develop advanced intercultural sensitivity and communication competencies to meet the diverse cultural expectations of passengers (Heracleous & Wirtz, 2010). Variations in service quality expectations across cultures may lead to passenger dissatisfaction (Sultan & Simpson, 2000). In such cases, undesirable incidents, such as passenger complaints, can exacerbate the stress and apprehension experienced by cabin crew members (Chen & Chang, 2005).

With globalization, the frequency and importance of intercultural interactions in the aviation industry have increased. Intercultural sensitivity, communication apprehension, and perceived stress are critical factors directly influencing the operational processes of cabin crew. The existing literature highlights the importance of understanding the relationships among these factors and their impacts in workplace settings. International flights serve as dynamic environments characterized by intensive communication dynamics between passengers and cabin crew from diverse cultural backgrounds. Given its strategic geographical location and rapid growth in the aviation industry, Türkiye has become a key player in international air transportation (Directorate General of Civil Aviation, 2023). Within this context, the intercultural sensitivity, communication apprehension, and perceived stress levels of cabin crew members are crucial for ensuring flight safety and passenger satisfaction. According to Hofstede's cultural dimensions theory, Türkiye exhibits a cultural profile characterized by high uncertainty avoidance and strong collectivism (Hofstede Insights, 2023). These traits significantly influence the communication styles and interaction patterns of cabin crew. For instance, high uncertainty avoidance may lead cabin crew members to place greater emphasis on pre-structured communication protocols, while collectivism fosters collaboration and solidarity within teams. However, the frequent encounters with passengers from diverse cultural backgrounds on international flights indicate that these traits may also lead to conflicts or misunderstandings. Additionally, findings from the GLOBE (Global Leadership and Organizational Behaviour Effectiveness) study, a comprehensive international research project

examining leadership, organizational culture, and national culture across 62 societies, provide valuable insights into how cultural norms influence leadership perceptions and communication styles in Türkiye (House et al., 2004). Türkiye's cultural profile suggests that cabin crew members tend to adopt a more empathetic and relationship-oriented communication style. However, this approach may present challenges when interacting with passengers from cultures with a high degree of individualism.

The study aims to examine the intercultural communication apprehension of cabin crew members working on international flights in Turkish airlines in terms of intercultural sensitivity and perceived stress levels. The effects of intercultural sensitivity and perceived stress on intercultural communication apprehension were investigated, and differences were evaluated based on the sociodemographic characteristics of the cabin crew. The findings of the study are expected to contribute to strategic decision-making processes aimed at enhancing the intercultural communication skills of cabin crew members in the aviation industry. A comprehensive examination of the relationships among intercultural sensitivity, communication apprehension, and perceived stress will facilitate the development of effective strategies for managing these factors.

1. METHODOLOGY

The study used a survey research design, a descriptive research approach aimed at identifying the current state of a phenomenon and collecting data related to it within a specific timeframe (Creswell, 2014). It also employed a cross-sectional research design, as the data were collected at a single point in time, which is a common method in social science research for examining relationships among variables (Spector, 2019). The data collection method utilized was an online survey, which is commonly applied in social sciences due to its efficiency in reaching a broad participant base quickly and effectively (Sue & Ritter, 2012). Considering the irregular working hours of cabin crew members, the online survey method provided flexibility in terms of time and location, enhancing the feasibility of the data collection process.

1.1. Research Questions and Hypotheses

The aviation industry, as one of the most dynamic environments where individuals from various cultural backgrounds converge, highlights the critical importance of intercultural sensitivity and communication skills for cabin crew members. Given their direct interaction with passengers during flights, cabin crew occupy a central position in intercultural interactions. Intercultural sensitivity is defined as a core competency enabling individuals to understand and effectively manage different cultural norms, values, and communication styles (Spitzberg & Changnon, 2009). The aviation industry demands not only intercultural communication skills but also resilience to cope with intense work demands. Research indicates that challenges in intercultural interactions can exacerbate psychosocial factors such as communication apprehension and perceived stress (Friedman et al., 2000). Effective stress management plays a vital role in maintaining the professional performance of cabin crew members and ensuring passenger satisfaction. In high-demand sectors, psychological resilience and emotional intelligence act as significant buffers against such challenges (Goleman, 1995). Developing intercultural communication skills not only enhances individual professional performance but also contributes to maintaining the competitive advantage of airlines (Thomas, 2006). Understanding the differences in intercultural sensitivity, communication apprehension, and perceived stress levels based on the sociodemographic characteristics of cabin crew can facilitate the more effective management of intercultural processes (Hammer, 2009). Sociodemographic factors such as age, experience, and cultural background are emphasized in the literature as influencing individuals' intercultural sensitivity and communication skills (Deardorff, 2006). Focusing on these core issues, the study aims to provide a roadmap for developing effective strategies for managing intercultural differences. Accordingly, the following research questions (RQs) were developed, and the corresponding hypotheses are presented in Table 1:

RQ1: Are there significant differences in intercultural sensitivity, communication apprehension, and perceived stress levels among cabin crew members based on their sociodemographic characteristics (gender, education level, experience, and average flight frequency)?

RQ2: What statistical relationships exist among intercultural sensitivity, perceived stress, and intercultural communication apprehension within the cabin crew?

Table 1. Research Hypotheses

H1a. There is a significant difference in the IS levels based on the gender of cabin crew members.
H1b. There is a significant difference in the PS levels based on the gender of cabin crew members.
H1c. There is a significant difference in the ICA levels based on the gender of cabin crew members.
H2a. There is a significant difference in the IS levels based on the education level of cabin crew members.
H2b. There is a significant difference in the PS levels based on the education level of cabin crew members.
H2c. There is a significant difference in the ICA levels based on the education level of cabin crew members.
H3a. There is a significant difference in the IS levels based on the experience of cabin crew members.
H3b. There is a significant difference in the PS levels based on the experience of cabin crew members.
H3c. There is a significant difference in the ICA levels based on the experience of cabin crew members.
H4a. There is a significant difference in the IS levels based on the flight frequency of cabin crew members.
H4b. There is a significant difference in the PS levels based on the flight frequency of cabin crew members.
H4c. There is a significant difference in the ICA levels based on the flight frequency of cabin crew members.
H5a. The IS levels of cabin crew members have a negative and significant effect on the ICA.
H5b. The IS levels of cabin crew members have a negative and significant effect on the PS levels.
H5c. The PS levels of cabin crew members have a positive and significant effect on the ICA.
H5d. The PS acts as a mediator in the relationship between IS and ICA among cabin crew members.

IS= Intercultural Sensitivity; ICA= Intercultural Communication Apprehension; PS= Perceived Stress

1.2. Sample of the Study

The sample of the study consisted of cabin crew members working for airline companies in Türkiye who operate on international flights. An a priori power analysis was conducted using G*Power 3.1.9.7 software (Faul et al., 2007) to determine the required sample size. The analysis for one-way analysis of variance (ANOVA) targeted a medium effect size (Cohen's $f = 0.25$), a 5% significance level ($\alpha = 0.05$), and 80% statistical power ($1-\beta = 0.80$). The calculation, based on a five-group structure to assess differences in intercultural sensitivity, communication apprehension, and perceived stress, indicated that a minimum of 200 participants were required, approximately 40 per group (Denominator $df = 195$). The data collection was executed among 405 cabin crew members. The sample size was determined to be adequate for the statistical analyses.

1.3. Data Collection Tools

Sociodemographic Information Form: The form was designed to collect basic information about the cabin crew members, including gender, age, education level, professional title, and work experience. Additionally, questions regarding the average number of international flights per month and the most frequently traveled regions within the past month were included.

Intercultural Communication Apprehension Scale (ICAS): To measure communication apprehension among cabin crew members, the ICAS developed by Neuliep and McCroskey (1997) was utilized. The Turkish adaptation was performed by Ay, Kavuran, and Türkoğlu (2018). In a revision by Türkoğlu, Kavuran, and Ay (2022), the scale was reduced from 14 to 12 items, with a reported Cronbach's alpha reliability coefficient of 0.88. The ICAS uses a 5-point Likert.

Intercultural Sensitivity Scale (ISS): The ISS, developed by Chen and Starosta (2000), was employed to assess cabin crew members' sensitivity to cultural differences and perspectives of individuals from different cultures. Originally comprising 24 items and five sub-factors, the Turkish adaptation by Üstün (2011) revised the scale into a single-factor structure with 23 items. The Cronbach's alpha reliability coefficient for the Turkish version was found to be 0.90. The scale employs a 5-point Likert.

Perceived Stress Scale (PSS): To evaluate the stress levels of cabin crew members, the PSS developed by Cohen, Kamarck, and Mermelstein (1983) and adapted into Turkish by Bilge et al. (2009) was used. The Cronbach's alpha reliability coefficient for the Turkish version was calculated as 0.81. The scale consists of 8 items and uses a 5-point Likert.

In the study, the Cronbach's alpha for the Intercultural Sensitivity scale was 0.867, the perceived stress scale was 0.781, and the intercultural communication apprehension scale was 0.889. The Cronbach's alpha values for all three scales exceeded the threshold of 0.70, demonstrating high internal consistency and reliability for measuring their respective constructs (Field, 2018).

1.4. Statistical Analysis

The collected data were analyzed comprehensively using Statistical Package for the Social Sciences (SPSS) v27 software. Descriptive statistics were used alongside independent t-tests and one-way ANOVA to examine significant differences between groups. Normality tests were performed to assess data distribution, and Cronbach's alpha coefficient was utilized to measure internal consistency. Correlation and regression analyses were conducted to explore relationships between variables in greater detail. The mediation analyses were conducted using Hayes' Process macro (v4.2).

1.5. Ethical Approval

The study was conducted based on voluntary participation. Cabin crew members were informed about the study's purpose, duration, confidentiality policy, and the voluntary nature of their participation. The study was approved for ethical suitability by the Ethics Committee of the International Science and Technology University with decision number 202411-02, dated 8 November 2024.

2. FINDINGS

2.1. Descriptive Statistics

Table 2 presents the sociodemographic characteristics of the participants included in the study. The majority of the participants were female (76.3%), while male participants accounted for 23.7%. The largest age group was 26–35 years, representing 46.9% of the total sample, followed by those aged 36–45 (24.2%) and 18–25 (23.0%), with a smaller proportion aged above 45 (5.9%).

In terms of education level, 51.4% of the participants held a bachelor's degree, while 26.2% had an associate degree, and 12.1% reported postgraduate education. High school graduates comprised 10.4% of the sample. Regarding professional titles, the majority of the participants were cabin crew (69.1%), followed by senior cabin crew (19.5%), and pursers (11.4%). Experience levels among the participants showed that 44.2% had less than two years of professional experience, 13.6% had 3–5 years, 16.3% had 6–10 years, 12.3% had 11–15 years, and 13.6% had more than 15 years of experience.

International flight frequency data revealed that 37.0% of the cabin crew reported flying internationally 1–10 times, 31.6% flew 11–20 times, and 31.4% flew more than 20 times. Europe was the most frequently reported international flight region by cabin crew members (61.0%), followed by Asia (14.1%), America (2.5%), and other regions (22.5%).

Table 2. Sociodemographic Characteristics of the Participants

		Frequency	Percent
Gender	Female	309	76.3
	Male	96	23.7
Age	18-25	93	23.0
	26-35	190	46.9
	36-45	98	24.2
	> 45	24	5.9
Education Level	High School	42	10.4
	Associate Degree	106	26.2
	Bachelor's Degree	208	51.4
	Postgraduate	49	12.1
Title	Cabin Crew	280	69.1
	Senior Cabin Crew	79	19.5
	Purser	46	11.4
Experience	< 2 years	179	44.2
	3-5 years	55	13.6

	6-10 years	66	16.3
	11-15 years	50	12.3
	> 15 years	55	13.6
Average International Flight Frequency (Monthly)	1-10	150	37.0
	11-20	128	31.6
	>20	127	31.4
International Flight Region	Europe	247	61.0
	America	10	2.5
	Asia	57	14.1
	Other	91	22.5
Total		405	100.0

2.2. Key Findings of the Scales (Mean, Normality, Correlation)

Table 3 shows the mean (M), standard error (se), skewness, and kurtosis values for the three scales, which are intercultural sensitivity, perceived stress, and intercultural communication apprehension. The mean values indicated that participants scored high on intercultural sensitivity ($M = 4.1466$, $se = .01796$) and low on both perceived stress ($M = 2.1262$, $se = .02712$) and intercultural communication apprehension ($M = 1.7146$, $se = .02244$). These findings suggest that the cabin crew members demonstrated high levels of intercultural sensitivity while experiencing lower stress and reduced intercultural communication apprehension, highlighting their positive adaptability in international contexts.

The skewness and kurtosis values for all constructs were within the acceptable range for normality. Specifically, intercultural sensitivity exhibited slight negative skewness (-.238) and moderate kurtosis (.773), perceived stress showed positive skewness (.701) and higher kurtosis (1.404), and intercultural communication apprehension displayed near symmetry in skewness (-.014) with slight negative kurtosis (-.713). These results suggest the data approximated a normal distribution, satisfying the assumption of normality required for parametric analyses (Tabachnick & Fidell, 2019).

Table 3. Mean, Standard Error (se), and Skewness- Kurtosis Values

	Mean	se	Skewness	Kurtosis
Intercultural Sensitivity	4.1466	.01796	-.238	.773
Perceived Stress	2.1262	.02712	.701	1.404
Intercultural Communication Apprehension	1.7146	.02244	-.014	-.713

Table 4 presents the correlation analysis among intercultural sensitivity, perceived stress, and intercultural communication apprehension. A weak negative relationship was found between intercultural sensitivity and perceived stress ($r = -0.264$, $p < 0.01$). A strong negative relationship was observed between intercultural sensitivity and intercultural communication apprehension ($r = -0.789$, $p < 0.01$). Additionally, a moderate positive relationship was identified between perceived stress and intercultural communication apprehension ($r = 0.344$, $p < 0.01$). All correlations were statistically significant.

Table 4. Correlation Analysis

	IS	PS	ICA
IS	1		
PS	-.264**	1	
ICA	-.789**	.344**	1

** $p < 0.01$

IS= Intercultural Sensitivity; PS= Perceived Stress; ICA= Intercultural Communication Apprehension

2.3. Findings Based on Gender, Education Level, Experience, and International Flight Frequency

Table 5 presents the gender-based findings of cabin crew regarding intercultural sensitivity, perceived stress, and intercultural communication apprehension. For intercultural sensitivity, no significant difference was observed between female ($M = 4.1441$) and male ($M = 4.1549$) cabin crew members ($t = -0.256$, $df = 403$, $p = 0.798$). This suggests that gender did not play a significant role in determining levels of intercultural sensitivity. When examining perceived stress, a significant difference was identified between female ($M =$

2.1659) and male ($M = 1.9987$) cabin crew members ($t = 2.927$, $df = 190.299$, $p = 0.004$). Female cabin crew reported slightly higher levels of perceived stress compared to their male counterparts. Intercultural communication apprehension also revealed a significant gender difference. Male cabin crew members ($M = 1.6354$) scored slightly lower than female cabin crew members ($M = 1.7392$) in intercultural communication apprehension ($t = 1.974$, $df = 403$, $p = 0.049$). This finding indicates that male cabin crew members experience marginally less intercultural communication apprehension compared to their female counterparts. Based on these findings, hypotheses 1b and 1c were supported and accepted, while hypothesis 1a was not supported.

Table 5. Gender-Based Findings

	Gender	Mean	Sd.	t	df	p
Intercultural Sensitivity	Female	309	4.1441	-.256	403	.798
	Male	96	4.1549			
Perceived Stress	Female	309	2.1659	2.927	190.299	.004*
	Male	96	1.9987			
Intercultural Communication Apprehension	Female	309	1.7392	1.974	403	.049*
	Male	96	1.6354			

* $p < .05$

Table 6 presents education level-based findings for cabin crew regarding intercultural sensitivity, perceived stress, and intercultural communication apprehension. For intercultural sensitivity, no significant differences were found among education levels ($F = 0.713$, $p = 0.545$), indicating that education level did not significantly affect intercultural sensitivity. Similarly, no significant differences were observed for perceived stress across education levels ($F = 1.360$, $p = 0.258$), suggesting that perceived stress levels were not influenced by educational background. For intercultural communication apprehension, the results also showed no significant differences between education groups ($F = 1.274$, $p = 0.283$), indicating that education level did not significantly affect intercultural communication apprehension. Based on these findings, hypotheses 2a, 2b, and 2c were not supported.

Table 6. Education Level-Based Findings

		n	Mean	sd	se	F	p	Dif.
Intercultural Sensitivity	High School	42	4.0983	.35153	.05424	.713	.545	
	Associate Degree	106	4.1198	.37798	.03671			
	Bachelor's Degree	208	4.1622	.36123	.02505			
	Postgraduate	49	4.1801	.33514	.04788			
Perceived Stress	High School	42	1.9940	.49996	.07715	1.360	.258	
	Associate Degree	106	2.1014	.44223	.04295			
	Bachelor's Degree	208	2.1460	.56594	.03924			
	Postgraduate	49	2.2092	.67767	.09681			
Intercultural Communication Apprehension	High School	42	1.7024	.38482	.05938	1.274	.283	
	Associate Degree	106	1.7862	.45687	.04438			
	Bachelor's Degree	208	1.6927	.45484	.03154			
	Postgraduate	49	1.6633	.47445	.06778			

Table 7 presents experience-based findings for cabin crew regarding intercultural sensitivity, perceived stress, and intercultural communication apprehension. The analysis shows no significant differences in intercultural sensitivity levels among different experience groups ($F = 1.593$, $p = 0.175$). Perceived stress levels, however, differ significantly based on experience ($F = 3.318$, $p = 0.011$). Post hoc analysis indicates that cabin crew members with 3-5 years of experience report significantly lower perceived stress compared to those with 11-15 years and more than 15 years of experience. In terms of intercultural communication apprehension, no significant differences are observed between experience groups ($F = 1.857$, $p = 0.117$). Based on these results, hypotheses 3a and 3c were not supported, while hypothesis 3b was supported.

Table 7. Experience-Based Findings

		n	Mean	sd	se	F	p	Dif.
Intercultural Sensitivity	< 2	179	4.1858	.37785	.02824	1.593	.175	
	3-5	55	4.1794	.35697	.04813			
	6-10	66	4.0850	.31762	.03910			
	11-15	50	4.0843	.33499	.04737			
	> 15	55	4.1170	.37447	.05049			
Perceived Stress	< 2	179	2.0894	.55685	.04162	3.318	.011*	“3-5” < “11-15”; “3-5” < “>15”
	3-5	55	1.9455	.43285	.05837			
	6-10	66	2.1780	.58139	.07156			
	11-15	50	2.2425	.55925	.07909			
	> 15	55	2.2591	.50681	.06834			
Intercultural Communication Apprehension	< 2	179	1.6671	.44400	.03319	1.857	.117	
	3-5	55	1.6727	.49088	.06619			
	6-10	66	1.7917	.41635	.05125			
	11-15	50	1.8250	.44264	.06260			
	> 15	55	1.7182	.46990	.06336			

*p< .05

Table 8 presents international flight frequency-based findings for cabin crew regarding intercultural sensitivity, perceived stress, and intercultural communication apprehension. No significant differences were observed in intercultural sensitivity levels among flight frequency groups ($F = 0.335$, $p = 0.716$). Perceived stress levels also did not show significant differences across groups ($F = 0.891$, $p = 0.411$). Similarly, intercultural communication apprehension did not significantly differ based on international flight frequency ($F = 0.088$, $p = 0.915$). Based on these findings, hypotheses 4a, 4b, and 4c were not supported.

Table 8. International Flight Frequency- Based Findings

		n	Mean	sd	se	F	p	Dif.
Intercultural Sensitivity	1-10	150	4.1568	.38832	.03171	.335	.716	
	11-20	128	4.1250	.35866	.03170			
	>20	127	4.1565	.33163	.02943			
Perceived Stress	1-10	150	2.0875	.55634	.04542	.891	.411	
	11-20	128	2.1230	.53655	.04743			
	>20	127	2.1752	.54287	.04817			
Intercultural Communication Apprehension	1-10	150	1.7078	.46830	.03824	.088	.915	
	11-20	128	1.7285	.44494	.03933			
	>20	127	1.7087	.44132	.03916			

2.4. Regression Analysis

Table 9 presents the results of the regression analyses conducted to examine the effects of intercultural sensitivity on intercultural communication apprehension and perceived stress, as well as the effect of perceived stress on intercultural communication apprehension. The findings reveal that intercultural sensitivity accounts for 78.9% of the variance in intercultural communication apprehension ($\beta = -0.789$, $t = -25.801$, $p < 0.001$). Accordingly, Hypothesis 5a was supported, indicating that intercultural sensitivity has a significant and negative impact on intercultural communication apprehension. Additionally, intercultural sensitivity was found to significantly and negatively predict perceived stress ($\beta = -0.264$, $t = -5.487$, $p < 0.001$), supporting Hypothesis 5b. This suggests that individuals with higher levels of intercultural sensitivity tend to experience lower levels of perceived stress. Finally, the analysis demonstrated that perceived stress significantly and positively affects intercultural communication apprehension ($\beta = 0.344$, $t = 7.355$, $p < 0.001$), providing support for Hypothesis 5c. These findings highlight the mediating role of perceived stress in the relationship between intercultural sensitivity and intercultural communication apprehension.

Table 9. Results of Regression Analyses Examining the Relationships Between Intercultural Sensitivity, Perceived Stress, and Intercultural Communication Apprehension

Model	Unstandardized Coefficients		Standardized Coefficients	t	p
	b	se	β		
Intercultural Sensitivity on Intercultural Communication Apprehension					
<i>(Constant)</i>	5.805	.159			
Intercultural Sensitivity	-.986	.038	-0.789	-25.801	.000
<i>Dependent Variable: Intercultural Communication Apprehension</i>					
Intercultural Sensitivity on Perceived Stress					
<i>(Constant)</i>	3.778	.302			
Intercultural Sensitivity	-.398	.073	- 0.264	-5.487	.000
<i>Dependent Variable: Perceived Stress</i>					
Perceived Stress on Intercultural Communication Apprehension					
<i>(Constant)</i>	1.109	.085			
Perceived Stress	.285	.039	0.344	7.355	.000
<i>Dependent Variable: Intercultural Communication Apprehension</i>					

The mediation analyses were conducted using Hayes' (2022) Process macro (v4.2) in SPSS (v27). Statistical significance was determined by BootLLCI and BootULCI values, which must both be positive or negative. A confidence interval including zero indicates insignificance (Hayes, 2022; MacKinnon, Lockwood, & Williams, 2004).

Table 10 presents the results of the mediating analysis. The total effect of intercultural sensitivity on intercultural communication apprehension was found to be statistically significant ($b = -.989$; $se = .038$; $\beta = -.789$; $p < .001$; 95% CI $[-1.062, -.911]$). Similarly, the direct effect of intercultural sensitivity on intercultural communication apprehension was also found to be significant ($b = -.938$; $se = .039$; $\beta = -.751$; $p < .001$; 95% CI $[-1.014, -.862]$). The indirect effect of intercultural sensitivity on intercultural communication apprehension revealed that perceived stress significantly mediated this relationship ($b = -.048$; $se = .014$; $\beta = -.038$; 95% BCA CI $[-.079, -.023]$). This result indicates that the relationship between intercultural sensitivity and intercultural communication apprehension is mediated by perceived stress, which serves as a significant mediating variable. Based on these findings, Hypothesis 5d of the research hypotheses was supported and accepted.

Table 10. Mediating Effect

Total effect of Intercultural Sensitivity on Intercultural Communication Apprehension							
	b	se	β	t	p	LLCI	ULCI
	-.986	.038	-.789	-25.801	.000	-1.062	-.911
Direct effect of Intercultural Sensitivity on Intercultural Communication Apprehension							
	b	se	β	t	p	LLCI	ULCI
	-.938	.039	-.751	-24.292	.000	-1.014	-.862
Indirect effect of Intercultural Sensitivity on Intercultural Communication Apprehension							
	b	se	β			LLCI	ULCI
PS	-.048	.014	-.038			-.079	-.023

4. DISCUSSION

The study aimed to examine the levels of intercultural sensitivity, perceived stress, and intercultural communication apprehension among cabin crew working in the aviation sector. It also aimed to understand the relationships between these variables and the effects of sociodemographic factors. The findings align with some existing perspectives in the literature, while the unsupported hypotheses open new topics for discussion.

The findings indicate that cabin crew members demonstrate a high degree of intercultural sensitivity, a finding that is consistent with the existing literature (Semchuchot, Soontornnaruerangsee, & Bodhisuwan, 2021). This high level of sensitivity can be attributed to the nature of the cabin crew's work, which involves

frequent interactions with passengers from diverse cultural backgrounds. Conversely, the comparatively low levels of perceived stress observed in the study contrast with the findings from previous research (Kumari & Aithal, 2022). While some studies have suggested that the high-pressure environment of the aviation industry leads to increased work stress among cabin crew (Elwezza, Elbadry, & Talaat, 2020; Griffiths & Powell, 2012; Muchinsky, 2000), the results of the study indicate that cabin crew members manage these challenges effectively. This phenomenon may be attributed to the development of effective coping mechanisms and emotional resilience over time, enabling them to maintain low levels of stress despite the demanding nature of their occupation. Furthermore, the study found that communication apprehension levels were low, suggesting that cabin crew members feel confident in their ability to engage effectively with passengers from diverse cultural backgrounds. This further supports the idea that their intercultural sensitivity contributes to reducing apprehension in communication.

The study revealed significant differences in perceived stress (H1b) and intercultural communication apprehension (H1c) levels based on gender among cabin crew. This finding is supported by the literature. Females exhibit significantly higher levels of apprehension and are more prone to difficulty in handling adverse life events than males (Defares, 1984; McLean et al., 2011). Females experience higher stress levels than males, often utilizing emotion-focused coping strategies (Matud, 2004). Gender roles and traits, particularly masculinity, play a significant role in these differences (Mayor, 2015). Moreover, females are more vulnerable to stress-induced hyperarousal (Bangasser, Eck, & Sanchez, 2018) and tend to experience more intense negative emotions, such as fear, irritability, and confusion, when faced with stress compared to males (Kelly et al., 2008). However, the non-significance of gender on intercultural sensitivity (H1a) aligns with Spitzberg and Changnon's (2009) view that intercultural sensitivity can be developed based on factors other than individual differences.

The non-significance of differences in intercultural sensitivity, perceived stress, and intercultural communication apprehension levels based on educational attainment (H2a, H2b, H2c) highlights the ongoing inconsistencies reported in the literature (Deardorff, 2006). The impact of education is thought to become more pronounced when combined with practical experience or professional development programs. Specifically, the role of applied training alongside theoretical knowledge in developing intercultural sensitivity is emphasized (Fantini, 2009). Studies show that intercultural training programs effectively enhance individuals' cultural awareness and sensitivity (Paige & Goode, 2009).

The impact of experience on perceived stress (H3b) indicates that cabin crew with diverse experiences are more capable of coping with such pressures effectively. This finding is consistent with Goleman's (1995) views on the role of emotional intelligence in stress management. However, similar to existing studies (Nanakorn, 2011), the non-significance of differences in intercultural sensitivity and intercultural communication apprehension based on experience (H3a, H3c) highlights the need for structured training programs in addition to experience for the development of these competencies (Bennett, 1986; Milhouse, 1996; Xiaoyan, Zainudin, & Yaakup, 2024).

The non-significance of differences in any variable based on flight frequency (H4a, H4b, H4c) can be attributed to the ability of cabin crew to adapt to intensive work conditions and normalize them. This finding supports Thomas's (2006) view that intercultural skills are not fixed but can be learned, and aligns with the work of Soria and Troisi (2014) and Wattanavorakijkul (2020), who suggest that more exposure does not necessarily lead to greater intercultural competency. On the other hand, the non-significance of flight frequency on the variables may suggest that stress and cultural interactions in the work environment are perceived as routine by employees (Karatepe & Uludağ, 2008). The consistently high work tempo and demanding international flight schedules may enhance the adaptation skills of the cabin crew. However, it should also be noted that this adjustment process may lead to negative outcomes such as burnout and job dissatisfaction (Maslach & Leiter, 1997).

The negative effect of intercultural sensitivity on intercultural communication apprehension (H5a) and perceived stress (H5b) indicates the role of this competency in reducing conflict and apprehension (Hammer, 2009). In a study conducted by Chen (2010), a significant and negative relationship was found between

intercultural sensitivity and intercultural communication apprehension. Similar findings are also reported in the literature (Dong, 2018; Suthatorn & Charoensukmongkol, 2018; Yenphech et al., 2022). These findings align with the results of the study, supporting the apprehension-reducing effect of intercultural sensitivity. The positive effect of perceived stress on intercultural communication apprehension (H5c) demonstrates that a reduction in stress responses leads to improved communication skills and positive attitudes (Friedman et al., 2000; Hirokawa, Yagi, & Miyata, 2008). Çeken and Ünsal (2023) identified several workplace-related factors through qualitative interviews with cabin crew -such as poor relationships, status differences, fear of negative labeling, and workload - that may influence interpersonal dynamics in the cabin environment. While the study does not provide a direct correlation between these factors and stress, it is possible that such conditions could contribute to elevated stress levels, thereby increasing the likelihood of communication apprehension in intercultural settings. Finally, the mediating role of perceived stress between intercultural sensitivity and intercultural communication apprehension (H5d) makes a significant contribution to the literature. This finding extends the studies of Goleman (1995) and Hammer (2009), which emphasize the importance of psychosocial factors and emphasizes the need to place greater emphasis on stress management in organizational training programs.

CONCLUSION

The findings of the study reveal various factors influencing the levels of intercultural sensitivity, perceived stress, and intercultural communication apprehension among cabin crew working in the aviation sector. The research particularly highlights the significant effect of gender on perceived stress and communication apprehension. Additionally, the high levels of intercultural sensitivity, coupled with comparatively low levels of perceived stress and communication apprehension, demonstrate the critical role of these factors across the sector. The stress- and apprehension-reducing effects of intercultural sensitivity further highlight its importance in the profession. The study shows that the impact of factors such as education and experience on individuals' intercultural sensitivity and communication skills is limited. This suggests that structured training programs, coupled with systematically provided opportunities for personal development, may be more effective in enhancing these competencies. Furthermore, the mediating role of stress between intercultural sensitivity and communication apprehension highlights the importance of stress management strategies for the professional performance and psychological well-being of cabin crew.

However, the study has some limitations. While the use of an online survey facilitated data collection under the challenging working conditions of cabin crew members, certain limitations remained. The cabin crew's demanding work schedules and irregular working hours made it difficult to fully control the effects of these factors on perceived stress and communication apprehension levels. This indicates the need for further research to examine the potential impact of working conditions on these outcomes in greater depth. Additionally, the data collection method (survey or self-reported approaches) may have introduced biases in participants' responses, such as social desirability bias or perceived pressure, which could affect the accuracy of measurements, particularly for subjective variables like stress and apprehension levels.

In this context, the aviation sector should provide both practical and theoretical training to enhance intercultural sensitivity among cabin crew. Stress management programs should be developed at both individual and organizational levels to reduce perceived stress. Particularly, supportive policies and practices aimed at reducing perceived stress and communication apprehension among female cabin crew members should be adopted. A long-term monitoring and feedback mechanism should be established to evaluate the effectiveness of training programs and ensure the continuous development of cabin crew members' intercultural competencies. These recommendations can enhance intercultural communication and cabin crew satisfaction in the aviation sector while also improving the passenger experience. In addition to these sector-based recommendations, future research should further explore the complex relationships among intercultural sensitivity, stress, and communication apprehension using different methodological approaches, such as longitudinal or mixed-method studies. Researchers may also examine how other psychological or organizational variables (e.g., resilience, job satisfaction, or organizational climate) interact with these

constructs. Moreover, comparative studies between different cultural or airline contexts may help to generalize the findings and enrich the understanding of intercultural communication in aviation.

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