

Assessing Cabin Crew Proficiency and Onboard Service Quality in Airlines of the Middle East and North Africa Utilizing Skytrax Metrics

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Abstract

In the competitive airline industry, understanding and improving passenger experiences are crucial. This research focuses on evaluating cabin crew performance and onboard service quality in Middle East and North Africa (MENA) airlines using Skytrax Metrics. The study addresses a significant gap in the existing literature by systematically evaluating these critical elements in the unique context of MENA airlines. Recognizing the importance of customer satisfaction, the research aims to contribute valuable insights for passengers, airlines, regulatory bodies, and industry experts. The study's main research questions explore the variance in cabin crew proficiency and onboard service quality across MENA airlines, the correlation between these two factors, and the top-ranked criteria within the region. Furthermore, the research investigates potential differences in cabin crew proficiency and onboard service quality based on ownership, alliance membership, operational type, and the age of the airline. In order to carry out this comparative analysis, the study employs a quantitative approach to assess cabin crew performance and onboard service quality in the MENA region airlines. By addressing the research questions, the research aims to provide practical recommendations for airlines and stakeholders. This study contributes to the broader literature on air travel experiences, offering insights that are not only academically relevant but also practically beneficial for enhancing the

competitiveness and service standards of airlines operating in the MENA region.

Keywords

Cabin Crew, Onboard service quality, MENA airlines, Skytrax metrics

1. Introduction

The aviation industry, serving as a critical component of global transportation, continually attempts to enhance passenger experiences by optimizing various aspects of air travel. Among these, cabin crew proficiency and onboard service quality play critical roles in shaping the overall satisfaction of passengers (Hibović *et al.*, 2022; Shah *et al.*, 2020). The Middle East and North Africa (MENA) region, with its diverse array of airlines, presents a unique context for exploring and evaluating these crucial elements. As air travel becomes more competitive, the need to systematically assess and improve cabin crew proficiency and onboard service quality becomes increasingly evident (Begzjav, 2018).

Understanding and evaluating the performance of cabin crews and the quality of onboard services in MENA airlines involve substantial significance for multiple stakeholders in the aviation industry. Passengers, as the end consumers, seek a flawless and pleasant travel experience (Han & Hwang, 2015). Airlines, on the other hand, recognize the importance of customer

satisfaction as a key determinant of brand loyalty and financial success (Ardini *et al.*, 2022). Additionally, regulatory bodies and industry experts are strongly interested in identifying best practices and potential areas for improvement to ensure that safety standards are met while delivering high-quality service (International Civil Aviation Organization, 2023).

Despite the acknowledged importance of cabin crew proficiency and onboard service quality, there is a notable gap in the literature regarding a comprehensive assessment of these aspects in the context of MENA airlines (Surovitskikh & Lubbe, 2008). The lack of empirical studies examining the specific performance variations within this region delays the development of targeted strategies for improvement. This research aims to address this gap by systematically evaluating cabin crew proficiency and onboard service quality in MENA airlines, utilizing the internationally recognized Skytrax Metrics as a benchmark.

The primary focus of this study revolves around answering several key research questions as follows:

- a- Is there a significant variance in cabin crew proficiency and onboard service quality within airlines of the MENA region?
- b- Which criteria of cabin crew proficiency and onboard service quality are top ranked among airlines of MENA region?
- c- Does cabin crew proficiency correlate with onboard service quality in MENA airlines?
- d- Is there a significant difference in cabin crew proficiency in MENA airlines according to ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and age of the airline (Old vs. New)?
- e- Is there a significant difference in onboard service quality in MENA airlines according to ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type

(Full-Service vs. Low-Cost), and age of the airline (Old vs. New)?

Addressing these questions will not only contribute valuable insights to the existing body of knowledge but will also provide actionable recommendations for airlines, regulatory bodies, and industry stakeholders in the MENA region.

2. Literature Review

In the face of numerous challenges, airlines struggle with intense competition from rival carriers (Dolnicar *et al.*, 2011). For this reason, many airlines are now directing their attention towards enhancing airline service quality in order to boost passenger satisfaction (Murali *et al.*, 2016; Shah *et al.*, 2020). The service process for airline services, spanning from ticket booking to onboard services, is recognized as a crucial determinant of service quality and customer satisfaction (Fuyane, 2021). Failure in service delivery along this process can result in dissatisfaction among passengers, leading to losses for the airline and a negative impact on its reputation (Hibović *et al.*, 2022).

Several studies have examined service quality within the airline industry identifying various dimensions prioritized by passengers in assessing airline services, including flight schedules, flight cabin crew, tangibles, and ground staff (Atalay *et al.*, 2019; Hu & Hsiao, 2016). The evaluation of service quality onboard remains critical for airlines, and it necessitates a comprehensive understanding of the factors contributing to the overall in-flight experience.

Scholars have identified multiple dimensions that shape the quality of in-flight services, encompassing, onboard facilities, information, supporting services, physical environment, food services, and the appearance and performance of cabin crew staff (Calisir *et al.*, 2016; Kim *et al.*, 2016; Li *et al.*, 2017). Other key factors include seat comfort, in-flight entertainment, and core service performance (Ahn *et al.*, 2015; Yağcı and Görkem, 2016).

Researchers have also simplified these dimensions into tangibles and intangibles, considering both the physical and emotional aspects of the in-flight experience (Verissimo, 2011). Furthermore, criteria like seat pitch, seat width, in-flight meal, in-flight entertainment, and complementary in-flight drinks have been identified as crucial (Park *et al.*, 2020).

Several studies have focused on onboard services and their influence on passengers' overall satisfaction (Campbell & Vigar-Ellis, 2012; Diggins, 2010; Fourie & Lubbe, 2006; Luke, 2015; Tulandi & Tumewu, 2014). Other studies have shed light on the impact of cabin crew performance in enhancing the overall passenger experience (de Meyer & Mostert, 2011; Hu & Hsiao, 2016; Lambert & Luiz, 2011; Surovitskikh & Lubbe, 2008).

Despite these contributions, most studies typically explore onboard service quality through the perspectives of airline customers, ignoring the insights of aviation experts (Kim & Park, 2017). Moreover, even fewer studies have specifically addressed the evaluation of Middle East and North Africa airline services in terms of cabin crew proficiency and onboard service quality (Surovitskikh, & Lubbe, 2008). This is where the current study can contribute to the existing body of literature.

2.1. Cabin Crew Proficiency

Cabin Crew Proficiency has undergone a significant historical evolution, reflecting the dynamic nature of the airline industry. The origins of cabin crew roles can be traced back to the early days of commercial aviation in the 1920s when their primary responsibilities were limited to ensuring passenger safety and comfort (Surovitskikh & Lubbe, 2008). Over the decades, the role has evolved to encompass a broader range of duties, including emergency procedures, first aid, and meticulous service delivery (Hu & Hsiao, 2016).

The importance of cabin crew in airline operations and customer satisfaction cannot be overstated. Beyond their traditional safety and service functions, cabin crew members serve as the image of the airline and play a crucial role in shaping passengers' overall travel experience (Lambert & Luiz, 2011). A well-trained and proficient cabin crew not only ensures the safety of passengers but also contributes significantly to customer satisfaction, loyalty, and the overall reputation of the airline. Studies have shown that passengers often form their impressions of an airline based on their interactions with the cabin crew, making these frontline employees integral to the success of an airline (Campbell & Vigar-Ellis, 2012; Hu & Hsiao, 2016).

Cabin Crew Training and Proficiency Standards play an essential role in shaping the quality of onboard service and directly influence customer satisfaction in the airline industry. Rigorous training programs ensure that cabin crew members are well-versed in safety protocols, emergency procedures, and customer service standards (Luke, 2015). The impact of such training is profound, as it not only enhances the safety of air travel but also contributes to a positive passenger experience. Their ability to provide attentive and courteous service further elevates the overall in-flight experience, influencing passenger perceptions and satisfaction levels (de Meyer & Mostert, 2011).

Criteria of cabin crew assessment often include general appearance, attentiveness to safety, language proficiency, cultural competence, interaction with passengers, friendliness, and enthusiasm among other aspects (Hu & Hsiao, 2016; Skytrax, 2023b).

2.2. Onboard service quality

Onboard or in-flight service quality represents a holistic approach by airlines to create a positive and memorable travel experience for passengers. Seat comfort is a fundamental aspect, with airlines investing in comfortable designs and adjustable features to maximize passenger well-being during flights (Campbell

& Vigar-Ellis, 2012). Cleanliness of the cabin and washrooms is equally crucial, contributing to a hygienic and pleasant environment. Airlines that prioritize these elements, in addition to offering diverse in-flight entertainment options, such as movies, TV shows, and interactive games, enhance the overall passenger experience (Luke, 2015). The provision of comfort items, including blankets, pillows, and amenity kits, further adds to the sense of care and consideration. Quality meals and beverages, catering to different dietary preferences, are significant contributors to passenger satisfaction (Tulandi & Tumewu, 2014). Moreover, the availability of magazines and newspapers onboard allows passengers to stay informed and entertained during their journey (Campbell & Vigar-Ellis, 2012).

In examining the literature on the key criteria of onboard services in airlines, various authors have identified multiple dimensions that contribute to the overall in-flight experience. Li *et al.* (2017) highlight the significance of employees, facilities, information, supporting service, and the physical environment as crucial factors in shaping the quality of in-flight services. Similarly, Kim *et al.* (2016) emphasize the importance of food service, entertainment, and physical environment. Calisir *et al.* (2016) introduce the dimensions of reliability, responsiveness, assurance, empathy, and tangibles as key elements shaping passengers' perceptions of onboard services. Tulandi and Tumewu (2014) comprehensively cover various aspects of in-flight services, including in-flight physical environmental factors, food and beverages, in-flight entertainment service, cabin crew service, in-flight seat comfort, in-flight shopping, aircraft, in-flight reading service, and in-flight safety demonstration. Archana and Subha (2012) focus on in-flight services and in-flight digital services as key dimensions

Innovations and trends in onboard service continually evolve, reflecting the industry's commitment to enhancing the passenger experience and gaining a competitive

advantage. Technological advancements play a fundamental role in improving service quality. Airlines are increasingly incorporating cutting-edge technologies, such as virtual reality (VR) entertainment, personalized mobile apps for in-flight services, and biometric boarding processes (Park *et al.*, 2020).

It is noteworthy that onboard service quality can be a key determinant of passenger satisfaction. Many scholars have found a positive correlation between passenger satisfaction and loyalty, emphasizing the need for airlines to prioritize factors such as responsiveness, reliability, and comfort to enhance their overall onboard service quality (Ardini *et al.*, 2022; Begzjav, 2018; Dolnicar *et al.*, 2011; Murali *et al.*, 2016; Tahanisaz, 2020).

2.3. Skytrax Metrics

Skytrax, established in 1989, has evolved into a globally recognized authority in the assessment of airline and airport services (Skytrax, 2023a). Originally founded as a market research firm and a UK-based consultancy specializing in the aviation industry, Skytrax gained prominence with its introduction of the World Airline Awards in 1999 (Pérezgonzález *et al.*, 2011). These awards, that are often referred to as the "Oscars of the aviation industry," provide travelers with a comprehensive evaluation of airlines worldwide (Li, 2017). Over the years, the World Airline Awards became a benchmark for excellence and a crucial tool for passengers seeking reliable information on the quality of airline services (World Airlines Awards, 2023a).

Skytrax has historically built its evaluations of various airline service quality on customers reviews (Lu, *et al.*, 2022). However, in recent years, Skytrax has undergone a dramatic transformation in its assessment methodology to enhance objectivity and minimize potential biases associated with customer reviews. The new assessment methodology involves a combination of quantitative and qualitative

metrics, moving beyond reliance on subjective opinions (Skytrax, 2023a). The overview of the Skytrax Rating System currently includes a comprehensive analysis of various performance indicators, such as punctuality, cleanliness, customer service, and safety standards. By incorporating a broader set of data points, Skytrax aims to provide a more accurate and reliable assessment of airlines and airports. The reliability and validity of Skytrax metrics are continually inspected and refined to ensure that the assessment process remains robust and reflective of the evolving expectations and standards within the aviation industry (World Airlines Awards, 2023a). This innovative approach emphasizes Skytrax's commitment to maintaining its status as a trusted and impartial authority in the evaluation of aviation services.

Skytrax evaluates the training and certification programs of airlines to review the proficiency of cabin crew members. This includes an assessment of the training curriculum, emergency response drills, and ongoing professional development. Airlines with rigorous training standards and continuous improvement programs tend to score higher in this aspect of the evaluation (Skytrax, 2023a).

Skytrax assesses how well cabin crew members communicate important information to passengers, including safety announcements and updates on flight status. The appearance and attitude of cabin crew members play a significant role in the overall passenger experience. Skytrax assesses the professionalism and presentation of cabin crew, considering factors such as grooming standards, uniform cleanliness, language skills, friendliness, enthusiasm, consistency of service and the ability to create a positive and welcoming atmosphere for passengers (Skytrax, 2023a).

The quality of onboard services encompasses various elements, including meal service, in-flight entertainment, and overall passenger comfort. Skytrax evaluates the efficiency and courtesy of cabin crew during service

delivery, the variety and quality of food and beverages, and the cleanliness and maintenance of cabin amenities (World Airlines Awards, 2023a).

By incorporating these metrics into their assessment process, Skytrax aims to provide a holistic and objective evaluation of cabin crew proficiency and onboard services. This approach helps passengers make informed decisions about the airlines they choose and encourages airlines to continually improve their in-flight offerings (Lu, *et al.*, 2022).

3. Methodology

In order to answer the research questions, the study employs a quantitative approach to conduct a comparative analysis of cabin crew proficiency and onboard service quality in airlines of the Middle East and North Africa. The quantitative approach is employed in two stages. The first stage is compiling and extracting secondary data from Skytrax official website, thus enabling a standardized assessment for all the study sample. The datasets from Skytrax include Likert scale ratings, ranging from 1 to 5 with fractions, offering a detailed assessment of criteria related to MENA airline performance in terms of cabin crew proficiency and onboard service quality. Extracted data are assembled and tabulated in a form that is able to be analyzed statistically by the researcher. The second stage involves a statistical analysis of the data using SPSS 24.

In order to precisely identify the population of the study, which is comprised of airlines of the Middle East and North Africa, the researcher utilized regional lists of airlines present on the official website of the International Air Transport Association (IATA). The regional lists revealed that there are 32 airlines operating in the MENA region (IATA, 2023). The study sample of MENA airlines were selected based on a diverse set of criteria, including ownership models, operational types, and alliance memberships in order to represent various airline typologies

that can serve in answering the research questions.

In order to represent all these airline typologies in the study sample, a stratified random sampling technique was used which is a sampling method where the population is divided into subgroups and then a simple random sample is drawn from each subgroup (Pandey & Pandey, 2021). This sampling technique was employed to have all airline typologies in the population represented in the sample including alliance and non-alliance airlines, old and new airlines, government-owned and private airlines, and full-service and low-cost airlines. The study sample is comprised of 21 airlines out of 32 operating airlines in the MENA region (IATA, 2023). Thus, the research sample represents

approximately 65% of the operating airlines in the region, which is a substantial sample that can be representative of the total population.

Statistical analysis is employed to address the research questions and facilitate comparisons between the airlines studied. Cronbach's alpha is used to measure the reliability and internal consistency of the criteria used in Skytrax metrics evaluation. Other statistical tests are performed to measure the correlation between the study variables. T-tests were utilized to assess the variance in cabin crew proficiency and onboard service quality in MENA airlines according to ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and age of the airline (Old vs. New).

4. Results & Discussion

Table 1: Study Sample of Airlines in the Middle East & North Africa

	Airline	IATA Code	Country	Ownership	Year Established	Operational Type	Alliance
1.	Air Algerie	AH	Algeria	Government	1947	Full-Service	None
2.	Air Arabia	G9	UAE	Private	2003	Low-Cost	None
3.	Egyptair	MS	Egypt	Government	1933	Full-Service	Star Alliance
4.	Emirates	EK	UAE	Government	1985	Full-Service	None
5.	Ethiad Airways	EY	UAE	Government	2003	Full-Service	None
6.	Fly Dubai	FZ	UAE	Government	2009	Low-Cost	None
7.	Fly Nas	XY	Saudi Arabia	Government	2007	Low-Cost	None
8.	Gulf Air	GF	Bahrain	Government	1950	Full-Service	None
9.	Jazeera Airways	J9	Kuwait	Private	2004	Low-Cost	None
10.	Kuwait Airways	KU	Kuwait	Government	1954	Full-Service	None
11.	Middle East Airlines	ME	Lebanon	Government	1946	Full-Service	SkyTeam
12.	Nile Air	NP	Egypt	Private	2011	Full-Service	None
13.	Nouvelair Tunisie	BJ	Tunisia	Private	1989	Low-Cost	None
14.	Oman Air	WY	Oman	Government	1993	Full-Service	Oneworld
15.	Pegasus Airlines	PC	Turkey	Private	2000	Low-Cost	None
16.	Qatar Airways	QR	Qatar	Government	1994	Full-Service	Oneworld
17.	Royal Air Maroc	AT	Morocco	Government	1957	Full-Service	Oneworld
18.	Royal Jordanian	RJ	Jordan	Government	1963	Full-Service	Oneworld
19.	Saudi Arabian Airlines	SV	Saudi Arabia	Government	1947	Full-Service	SkyTeam
20.	Tunisair	TU	Tunisia	Government	1948	Full-Service	None
21.	Turkish Airlines	TK	Turkey	Government	1933	Full-Service	Star Alliance

Table 1 represents the study sample of 21 airlines operating in the Middle East and North Africa region, compiling key information such as airline names, IATA codes, countries of origin, ownership structures, establishment years, operational

types, and alliance memberships. The airlines in the study sample were chosen to exhibit a diverse range of ownership models, including government-owned carriers such as Air Algerie, Egyptair, and Emirates, as well as privately-owned entities like Air Arabia and

Jazeera Airways. The establishment years span from as early as 1933 like Egyptair and Turkish Airlines, to more recent additions like Fly Dubai and Nileair in 2009 and 2011 respectively, illustrating the historical and dynamic nature of the aviation sector in the region. The research sample also includes both full-service and low-cost carriers, catering to varied market segments in the region. Additionally, the table highlights global alliance affiliations, with airlines like Egyptair and Turkish Airlines belonging to Star Alliance, Middle East Airlines and Saudi Arabian Airlines to SkyTeam, and others,

including Qatar Airways and Royal Air Maroc, affiliating with Oneworld. The data in this table was compiled mainly from the International Air Transport Association website (IATA, 2023) as well as each company's website, ensuring accuracy and reliability in the presented information.

Table two represents the nine criteria used for evaluating cabin crew proficiency by Skytrax and the scores of each airline of the study sample. The researcher also calculated the total scores and arranged the airlines according to their ranking.

Table 2: Cabin Crew Proficiency Evaluation

	Attention to cabin safety	Service skills & proficiency	Speed & timing of services	Enthusiasm & friendliness	Service hospitality	Interaction with customers	Language skills	Responding to customer requests	Quality consistency among staff	Total Score	Rank
Qatar Airways	4.5	5	5	5	4.5	4.5	5	4.5	4.5	42.5	1
Etiihad Airways	4.5	5	5	4	4.5	4	5	4.5	4.5	41	2
Saudi Arabian Airlines	4.5	4.5	4	4.5	4	4	4.5	4	4	38	3
Emirates	4	4	4	4	4	4	4	4	4	36	4
Oman Air	4	4	4	4	4	4	4	4	4	36	5
Royal Air Maroc	4	4	4	3.5	3.5	3.5	3.5	4	4	34	6
Turkish Airlines	4	4	4	3.5	3.5	3	4	3.5	3	32.5	7
Egyptair	3.5	3.5	4	3.5	3	3	3.5	3.5	3.5	31	8
Air Arabia	4.5	4.5	3	3	3	2.5	4.5	2.5	3	30.5	9
Fly Nas	4	3.5	3.5	3	3.5	2.5	4	3	3.5	30.5	10
Middle East Airlines	3.5	4	4	3	3	3	3.5	3	3	30	11
Fly Dubai	3.5	3.5	4	3.5	3	2.5	3	3	3.5	29.5	12
Royal Jordanian	4	3.5	3.5	3	3	3	3.5	3	3	29.5	13
Gulf Air	3.5	3	4	3	2.5	3	4	3	3	29	14
Jazeera Airways	4	3.5	3	3	3	2.5	3	2.5	3	27.5	15
Air Algerie	4	3.5	3	3	3	1.5	3	3	3	27	16
Pegasus Airlines	3.5	3	3	3	3	2.5	3	3	3	27	17
Kuwait Airways	3	3	3	3	3	3	3	3	2.5	26.5	18
Nile Air	2.5	3	3	2.5	2.5	3	4	3	3	26.5	19
Tunisair	3.5	2.5	3	3	2.5	2	3	3	3	25.5	20
Nouvelair Tunisie	3	2.5	2.5	2	2	3	3.5	2.5	3	24	21

Extracted & Compiled by the researcher from Skytrax website (Skytrax, 2023b).

Table 2 presents an evaluation of cabin crew proficiency across the MENA region airlines sample, assessing multiple key criteria. The attention to cabin safety, service skills, speed, and timing of services, as well as enthusiasm and friendliness, are accurately rated by Skytrax on a scale of 1 to 5, with 5 being the highest score. Notably, Qatar Airways occupies the top rank with a total score of 42.5, attributed to consistently high ratings across all evaluated categories. Etihad Airways closely follows with a score of 41, showcasing strong performance in service skills and hospitality. The table reveals a gradual decline in scores as we move down the ranking, with each airline demonstrating distinct strengths and areas for improvement. For instance, while some airlines excel in language skills and customer interaction, others may focus more on quality consistency

among staff. Saudi Arabian Airlines for example achieves a noteworthy score of 4.5 in "Quality consistency among staff," indicating a strong emphasis on maintaining uniform standards and performance across its cabin crew. This implies that this airline places importance on always ensuring a consistent and high level of service delivery. This detailed evaluation provides valuable insights into the comparative strengths and weaknesses of MENA region airlines in terms of cabin crew proficiency.

Table three represents the nine criteria used for evaluating onboard service quality by Skytrax and the scores of each airline of the study sample. The researcher also calculated the total scores and arranged the airlines according to their ranking.

Table 3: Onboard Service Quality Evaluation

	Seat comfort	Cabin safety information / video	Comfort items : pillow, blanket	Cabin & seat cleanliness	Washroom cleanliness	In-flight Entertainment	Quality of meals served	Selection of wines & beverages	Magazines & newspapers	Total Score	Rank
Qatar Airways	5	5	5	5	4.5	5	5	5	4.5	44	1
Etihad Airways	4	4.5	4	4.5	4.5	5	4.5	5	4	40	2
Emirates	5	4	4	4	4	5	4	4	4	38	3
Oman Air	4	4	4	4	4	4.5	4.5	4	4	37	4
Saudi Arabian Airlines	4	4.5	4	4	4	3.5	4.5	4	3.5	36	5
Royal Air Maroc	4	4	4	3.5	4	3	4	4	4	34.5	6
Turkish Airlines	4	4	4	3.5	3.5	3.5	4.5	4	3.5	34.5	7
Royal Jordanian	4	4	4	3.5	3	4	4	3.5	4	34	8
Gulf Air	4	3.5	4	3	3	4	3.5	4	4	33	9
Egyptair	4	3.5	3.5	3.5	3	4	3.5	3	4	32	10
Fly Dubai	4	4	3.5	3.5	3	4	3.5	4	1	30.5	11
Air Arabia	4	3.5	4	3	2.5	3.5	4	4	1	29.5	12
Kuwait Airways	4.5	3	3	3	3	3	3	3	4	29.5	13
Middle East Airlines	4	3.5	3	3	3	2	3.5	3	3.5	28.5	14
Fly Nas	4	4	1	3.5	3	3.5	3.5	3	1	26.5	15
Air Algerie	4	3	3	3	3	1.5	3	3	2.5	26	16
Tunisair	3.5	3.5	2	2	2.5	2	3.5	3	3.5	25.5	17
Pegasus Airlines	3.5	3	1	3	3	3.5	3.5	3.5	1	25	18
Jazeera Airways	3.5	3.5	2	3	3	1	3.5	3.5	1	24	19
Nile Air	3	3	2.5	2.5	3	1	3	2.5	1	21.5	20
Nouvelair Tunisie	3	3	1	2.5	2.5	1	2.5	2.5	1	19	21

Extracted & Compiled by the researcher from Skytrax website (Skytrax, 2023b).

Table 3 provides an evaluation of onboard service quality for MENA region airlines of the study sample, considering diverse factors such as seat comfort, safety information, cleanliness, in-flight entertainment, and meal quality. Qatar Airways emerges as the top performer with a remarkable score of 44, excelling across all categories. Notably, Qatar Airways stands out in areas such as seat comfort, cabin safety information, and the quality of meals and beverages offered. This result is consistent with the fact that Qatar Airways has won second place worldwide in the world airline awards 2023 (World Airline Awards, 2023b). Etihad Airways follows closely with a score of 40, demonstrating a strong overall performance, particularly in in-flight entertainment and comfort items.

The table also illustrates the varying strengths and weaknesses among MENA airlines in delivering a high-quality onboard experience. While some airlines, like Emirates, focus on excellent seat comfort and in-flight entertainment, others, like Oman Air and Saudi Arabian Airlines, prioritize a balanced performance across multiple categories. Interestingly, Fly Dubai and Air Arabia, while ranking lower overall, have specific strengths in areas such as washroom cleanliness and the selection of beverages.

The results presented in tables two and three help in answering the first research question; and the varying scores and rankings in each table confirm that there is a significant variance in cabin crew proficiency and onboard service quality within airlines of the MENA region.

Before analyzing the previously compiled data statistically to answer the research questions, the researcher performed a Cronbach's alpha test to evaluate the reliability of the constructs used by Skytrax to evaluate cabin crew proficiency and onboard service quality. The results are displayed in table four.

Table 4 : Reliability of Skytrax metrics as an instrument to measure Cabin Crew Proficiency & Onboard Service Quality

Measures	N of Items	Cronbach's Alpha
Cabin Crew Proficiency	9	0.958
Onboard Service Quality	9	0.919

Table four presents the reliability statistics for using Skytrax metrics as an instrument to measure Cabin Crew Proficiency and Onboard Service Quality. The table includes the number of items (N of Items) and the Cronbach's Alpha coefficients for each measure. For Cabin Crew Proficiency, the table indicates a high level of internal consistency with a Cronbach's Alpha of 0.958, suggesting strong reliability in assessing the various facets of cabin crew performance. Similarly, the Onboard Service Quality measure also demonstrates good reliability, as reflected by a Cronbach's Alpha of 0.919. These high Cronbach's Alpha values indicate that the items within both measures are highly correlated, reinforcing the reliability and internal consistency of the Skytrax metrics as a tool for evaluating Cabin Crew Proficiency and Onboard Service Quality. This indicates confidence in the precision and consistency of results when utilizing these metrics for assessment purposes.

Table 5: Mean Score & Standard Deviation for Cabin Crew Proficiency

Cabin Crew Proficiency Criteria	Mean	Standard Deviation	Rank
Attention to cabin safety	3.786	0.538	1
Language skills	3.738	0.645	2
Service skills and proficiency	3.667	0.713	3
Speed and timing of services	3.643	0.673	4
Quality consistency among staff	3.381	0.568	5
Enthusiasm and friendliness	3.333	0.677	6
Responding to customer requests	3.310	0.622	7
Service hospitality	3.238	0.664	8
Interaction with customers	3.048	0.740	9

Table 5 provides a comprehensive overview of cabin crew proficiency criteria for MENA region airlines, presenting mean scores and standard deviations along with their corresponding ranks. The mean score represents the average performance across airlines for each proficiency criterion, while the standard deviation measures the extent of variability or dispersion around the mean.

Notably, attention to cabin safety emerges as the top-ranking criterion with a mean score of 3.786, which reflects a consistent and high level of performance in this area across MENA airlines. Language skills closely follow with a mean score of 3.738. Service skills and proficiency, speed and timing of services, and quality consistency among staff also exhibit moderate levels of variability, as indicated by their standard deviations. Enthusiasm and friendliness, responding to customer requests, service hospitality, and interaction with customers show varying degrees of performance, with interaction displaying the highest standard deviation, suggesting noteworthy differences among airlines in this aspect. This detailed evaluation provides valuable insights about the levels of cabin crew proficiency among MENA airlines, facilitating targeted improvements and highlighting areas of excellence.

Table 6: Mean Score & Standard Deviation for Onboard Service Quality

Onboard Service Quality Criteria	Mean	Standard Deviation	Rank
Seat comfort	3.952	0.498	1
Quality of meals served	3.738	0.625	2
Cabin safety information / video	3.357	0.692	3
Selection of wines & beverages	3.595	0.700	4
Cabin & seat cleanliness	3.357	0.692	5
Washroom cleanliness	3.286	0.624	6
In-flight Entertainment	3.214	1.319	7
Comfort items : pillow, blanket	3.167	1.165	8
Magazines and newspapers	2.857	1.398	9

Table 6 provides a detailed assessment of onboard service quality criteria for airlines in the MENA region, presenting mean scores, standard deviations, and corresponding ranks. Notably, seat comfort takes the lead with a high mean score of 3.952. Quality of meals served follows closely with a mean score of 3.738, indicating a good performance in delivering satisfying in-flight meals. Cabin safety information and the selection of wines and beverages also exhibit reasonable consistency, as suggested by their respective mean scores and standard deviations. However, In-flight Entertainment, comfort items such as pillows and blankets, and the availability of magazines and newspapers show higher standard deviations, implying a more diverse range of experiences among passengers in these areas in various MENA airlines.

The results in tables five and six answer the second research question about which criteria of cabin crew proficiency and onboard service quality are top ranked among airlines of MENA region.

Table 7 : Pearson Correlation bet. Level of Cabin Crew Proficiency and Onboard Service Quality

	Cabin Crew Proficiency	Onboard Service Quality
Cabin Crew Proficiency	1	
Onboard Service Quality	0.909	1

The correlation table shows the Pearson correlation coefficient between two variables: "Cabin Crew Proficiency Total Score" and "Onboard Service Quality Total Score." The correlation coefficient measures the strength and direction of the linear relationship between two variables, with values ranging from -1 to 1.

The correlation between "Cabin Crew Proficiency" and "Onboard Service Quality" is 0.909 with a P-value < 0.001. This indicates a very strong positive linear relationship between these two variables that is significant at P-value < 0.001.

In practical terms, this might mean that higher scores in "Cabin Crew Proficiency " are significantly associated with higher scores in "Onboard Service Quality Total," indicating a positive impact of cabin crew proficiency on onboard service quality.

This finding answers the third research question; does cabin crew proficiency correlate with onboard service quality in MENA airlines. The above results confirm the existence of a strong correlation between the two variables.

In order to answer the fourth research question of whether there is a significant difference in cabin crew proficiency in MENA airlines according to ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and age of the airline (Old vs. New), the researcher performed a two sample T-test for variances in each of these groups. The results are summarized in table eight.

Table 8: Two-Sample T-test for Variances in Cabin Crew Proficiency Among MENA region Airline Typologies

	Government	Private	No Alliance	Alliance	Full-Service	Low-Cost	Old	New
Mean	32.406	27.100	29.269	34.188	32.333	28.167	31.536	30.357
Variance	25.807	5.425	21.401	19.924	29.274	6.367	27.787	24.726
Observations	16.000	5.000	13.000	8.000	15.000	6.000	14.000	7.000
Hypothesized Mean Difference	0.000		0.000		0.000		0.000	
df	16.000		15.000		18.000		13.000	
t Stat	3.231		-2.418		2.401		0.502	
P(T<=t) one-tail	0.003		0.014		0.014		0.312	
t Critical one-tail	1.746		1.753		1.734		1.771	
P(T<=t) two-tail	0.005		0.029		0.027		0.624	
t Critical two-tail	2.120		2.131		2.101		2.160	

Table 8 presents the outcomes of a two-sample t-test exploring the variations in cabin crew proficiency across different airline typologies within the Middle East and North Africa (MENA) region. The data is segmented based on several factors, including ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and age of the airline (Old vs. New).

Firstly, in terms of ownership, government-owned airlines exhibit a much higher mean cabin crew proficiency (32.406) compared to private airlines (27.100). This difference is statistically significant, as indicated by a t-statistic of 3.231 and a p-value of 0.003.

Secondly, the analysis of alliance membership reveals that airlines belonging to alliances

demonstrate a higher mean cabin crew proficiency (34.188) compared to those without alliance membership (29.269). This difference is statistically significant (t-statistic = 2.401, p-value = 0.014).

Thirdly, when considering operational types, full-service airlines show a higher mean proficiency (32.333) than low-cost carriers (28.167). This difference is statistically significant (t-statistic = 2.101, p-value = 0.027).

Lastly, the examination of cabin crew proficiency based on the age of the airline indicates that older airlines have a slightly higher mean proficiency (31.536) compared to newer ones (30.357). However, this difference is not statistically significant (t-statistic of 0.502 and a p-value of 0.624).

These results suggest potential influences of factors such as ownership and alliance membership and operational type on cabin crew proficiency in the MENA region, while the impact of airline companies age appears to be of less influence in this area.

In order to answer the fifth research question of whether there is a significant difference in

onboard service quality in MENA airlines according to ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and age of the airline (Old vs. New), the researcher performed a two sample T-test for variances in each of these groups. The results are summarized in table nine.

Table 9: Two-Sample T-test for Variances in Onboard Service Quality Among MENA region Airline Typologies

	Government	Private	No Alliance	Alliance	Full-Service	Low-Cost	Old	New
Mean	33.094	23.800	28.308	35.063	32.933	25.750	32.250	28.143
Variance	27.507	15.575	36.606	19.817	35.460	17.275	38.721	36.976
Observations	16.000	5.000	13.000	8.000	15.000	6.000	14.000	7.000
Hypothesized Mean Difference	0.000		0.000		0.000		0.000	
df	9.000		18.000		13.000		12.000	
t Stat	4.227		-2.936		3.137		1.448	
P(T<=t) one-tail	0.001		0.004		0.004		0.087	
t Critical one-tail	1.833		1.734		1.771		1.782	
P(T<=t) two-tail	0.002		0.009		0.008		0.173	
t Critical two-tail	2.262		2.131		2.160		2.179	

Table 9 presents the outcomes of a two-sample t-test investigating the variations in onboard service quality across different airline typologies within the Middle East and North Africa (MENA) region. The data is segmented based on ownership (Government vs. Private), alliance membership (No Alliance vs. Alliance), operational type (Full-Service vs. Low-Cost), and the age of the airline (Old vs. New).

In terms of ownership, government-owned airlines demonstrate a significantly higher mean of onboard service quality (33.094) compared to their private counterparts (23.800). The observed difference is statistically significant, with a t-statistic of 4.227 and a p-value of 0.001.

Based on alliance membership, the analysis reveals that airlines affiliated with alliances

exhibit a higher mean of onboard service quality (35.063) compared to those without alliance membership (28.308). This difference is statistically significant, with a t-statistic of 3.137 and a p-value of 0.004.

Considering operational types, full-service airlines manifest a superior mean service quality (32.933) than low-cost carriers (25.750), with a statistically significant difference indicated by a t-statistic of 2.936 and a p-value of 0.009. This result might be expected due to the lower onboard service quality that is usually associated with low-cost airlines.

On the other hand, examining service quality concerning the age of the airline shows that older airlines have a higher mean service quality (32.250) compared to newer ones (28.143). However, this difference is not

statistically significant (t-statistic 1.448 and a p-value 0.173).

These findings suggest that factors such as ownership, alliance membership, and operational type significantly influence onboard service quality in the MENA region, while the age of the airline may have a less pronounced effect.

5. Conclusion and Implications

In conclusion, this research systematically assessed cabin crew proficiency and onboard service quality in Middle East and North Africa (MENA) airlines using Skytrax metrics. The study addressed critical research questions, contributing to the existing knowledge gap in the literature regarding MENA airlines' performance in these areas.

The results revealed significant variances in both cabin crew proficiency and onboard service quality among MENA airlines. Qatar Airways emerged as a top performer in both categories, while other airlines demonstrated varying strengths and areas for improvement. The strong correlation between cabin crew proficiency and onboard service quality emphasized the interconnectedness of these two aspects.

Ownership, alliance membership, and operational type significantly influenced cabin crew proficiency and onboard service quality. Government-owned airlines and those affiliated with alliances demonstrated higher scores in both areas, highlighting potential areas for improvement for private and non-alliance airlines. Full-service airlines outperformed low-cost carriers, emphasizing the importance of service quality in differentiating airline types.

Despite some differences, the age of the airline showed limited impact on performance, suggesting that established and newer airlines in the MENA region can achieve comparable levels of proficiency and service quality.

The results of this research have yielded noteworthy insights with implications for various stakeholders in the aviation industry. Firstly, the observed significant variance in both cabin crew proficiency and onboard service quality emphasizes the need for targeted strategies to address the specific performance variations among MENA airlines. This stresses the importance of continuous improvement initiatives tailored to enhance the overall passenger experience, as highlighted by the varying strengths and areas for improvement identified in the study.

The identified top-ranked criteria for cabin crew proficiency and onboard service quality provide valuable benchmarks for airlines seeking to excel in specific areas. For instance, the emphasis on attention to cabin safety and language skills in cabin crew proficiency suggests that prioritizing these aspects could contribute to higher overall performance. Similarly, the prominence of seat comfort and quality of meals in onboard service quality indicates key areas where airlines in the MENA region can focus to elevate their service standards and passenger satisfaction.

The strong positive correlation between cabin crew proficiency and onboard service quality confirms the interconnected nature of these two critical components. This finding emphasizes the importance of investing in the training and development of cabin crews, as it directly influences the quality of onboard services. Airlines that prioritize enhancing cabin crew proficiency are likely to see a parallel improvement in overall service quality, leading to increased passenger satisfaction and loyalty.

The analysis of variations in cabin crew proficiency and onboard service quality across different airline typologies in the MENA region reveals intriguing patterns. Government-owned airlines, those affiliated with alliances, and full-service carriers demonstrate significantly higher mean scores in both cabin crew proficiency and onboard service quality. These findings suggest that

ownership structure, alliance membership, and operational type play critical roles in shaping the performance of MENA airlines. Airlines can leverage these insights to tailor their strategies and investments based on their specific typology, thereby enhancing their competitiveness, and meeting the expectations of diverse passenger segments.

In conclusion, this research provides actionable recommendations for MENA airlines, regulatory bodies, and industry stakeholders. Airlines can leverage the identified benchmarks and insights to refine their training programs, service offerings, and strategic initiatives. Regulatory bodies can use the findings to establish industry standards and best practices, ensuring a balance between safety and high-quality service. Industry stakeholders, including passengers, stand to benefit from the enhanced overall travel experience resulting from targeted improvements in cabin crew proficiency and onboard service quality across the MENA region.

In summary, this research not only addresses a significant gap in the literature but also offers practical implications for airlines and industry stakeholders in the MENA region. By focusing on the identified areas of improvement, the aviation industry can strive towards delivering consistently high-quality experiences for passengers in this dynamic and competitive market.

6. References

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