Determination Passenger Satisfaction of a Kuwait Airline Company by Using Multivariate Data Analysis Models

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Abstract

The airline industry has played a basic role in the global economy in serving as a vital ingredient in the tourism industry and stays essential to the conduct of international business. The most worry of any airline company would always be satisfied to their customers' needs and their expectations by providing those benefits and services top of its class.
This study aims to investigate the significantly affected factors towards passenger satisfaction and service quality of Low-Cost Carrier (LCC) and Full Serves Network Carrier (FSNC), airlines companies in Kuwait. In addition, this study aims to determine whether there is any difference between expectation and satisfaction level of LCC and FSNC passengers. Considered factors were determined from SERVQUAL.
The overall objective of this study is analyzed from a different point of views: by deciding the factors that participate in term to reach the passenger satisfaction and service quality in Kuwait Airways from a questionnaire result of the passengers as well as by identifying the relative significance of the customer satisfaction and service quality determinants. Multiple Regression and Ordinal Logistic Regression methods used to analyze the data collected through the questionnaire.

Keywords

Passenger satisfaction, Service quality, Multiple Regression Analysis, Ordinal Logistic Regression, SERVQUA*L*

1. Introduction

"The Art Of Being Happy Is To Be Satisfied With What You Have". The most important point of any organization and company is about fulfilling the customers' needs by providing those benefits and services in a good way. Service quality remains fundamental in reflecting sales profitability and sustainability of the organization and company. This makes attention for the researchers to found the most affected factors that affect the customer satisfaction in service quality. Customer satisfaction is based on the evaluation of service experience. It is also based on experience with the service providers and the outcome of service. (Tanomsin, P., & Chen, C., 2018), argued that "Customer satisfaction refers to the feedback of the customer between the product they get and their expectations". Customers are interested in the value and the quality of the product or service that they receive. Furthermore, it is defined as a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance or outcome with theirs.

Companies whose deal with or center with the customer be a better understanding of the customer's needs and wants. So, when a customer is persuaded with either the product or services it is termed satisfaction. Customer satisfaction plays a big role in any business and it's the main objective of any organization or company. According to (Neil Curry & Yuhui Gao, 2012) "Customers are the single judges of service quality". That means if they perceive bad service, then it is otherwise, if the perception is higher than expectation, then the service is said to be of high quality. Also, it is a marketing term that measures how a company's product or services meet the expectations of the customers.

Customer satisfaction is an important topic to take care of, as it provides a metric for marketers and business owners to improve, maximize the revenue of businesses, and increases the good reputation of the company. Not only this, but it also attracts the new customers to choose your company comfortably. So, CS is the key factor in determining how successful the companies or organization will be in customer relationships; therefore, it is very important to measure it. Measuring customer satisfaction helps organizations or companies to provide how the performance of the organizations goes on and how they provide their products and services (Manani T. O., 2013). So, if companies want to achieve or determine customer satisfaction, they must measure it.

1.1 Problem Statement and Objectives

This study has been done with chosen two airline companies in order to determine the most significant factors that impact passenger satisfaction in the service quality. Airline Company's success comes when they are identifying the needs and desires of customers and then come up with quality service that meets their satisfaction. Therefore, they must consider that service expectations, perception of service, the value of service, and passenger satisfaction have a direct impact on the decision of the passenger. The project was applied in Kuwait by choosing the two airway companies which one of them is *Low-Cost Carrier (LCC)* and the other is *Full Serves Network Carrier (FSNC)*. It is very important to determine the factors that affect passenger satisfaction to meet their satisfaction level with the services they received.

Specific objectives of this study are listed below:

- To identify the relationship or association of the factors that affect the passenger satisfaction by using different statistical methods such as descriptive data analysis, hypothesis test, multiple regression analysis and, logistic analysis
- To identify the degree of "Tangible Features", "Schedules", "Service provided by ground staff", "Service provided by flight attendants", "Online Services" and "Food Services" towards passenger satisfaction for LCC and FSNC passengers.
- To determine whether there is any difference between the effects of the factors on passenger satisfaction of LCC and FSNC passengers,

In this study, there are six hypotheses as listed below have been tested for whether significant or not:

H1: Tangible features are significant on passenger satisfaction in service quality.
H2: Schedules are significant on passenger satisfaction in service quality.
H3: Service provided by ground staff is significant on passenger satisfaction in service quality.
H4: Service provided by flight attendants is significant on passenger satisfaction in service quality.
H5: Online services are significant on passenger satisfaction in service quality.
H6: food services are significant on customer satisfaction in service quality.

The rest of the paper is organized as follows: In Section 2, we mentioned the literature review by identifying the factors and approaches used by various researcher studies to achieve customer satisfaction Section 3 is mainly about the analyzing methods used in this study. Information about the survey that has been held in this study and data collected from respondents and used in the analysis were given in Section 4. In Section 5, we conduct several numerical analysis experiments to illustrate the significant factors and effectiveness of our models. Lastly, in Section 6 we put forward some discussion about analysis results and suggestions to increase the passenger satisfaction level in the airline sector.

2. Literature Review

In this study, a review of the literature is done in two parts. In Section 2.1, used methods and in Section 2.2 factors considered in literature by the researchers will be listed.

2.1 Factors Considered in Literature

Customer experience defined as an evaluation for the product or service that the customer determines are becoming the factors were considered before joining any company to service their needed or purchasing products. Factors are reflected in how customers explain and share their experiences in different forms. It's a good way of figuring out what customers think about products and services. There are many researchers that have been studied this topic and they considered the best factors to come upon with customer satisfaction at airline companies listed as in Table 1.

Table 1. Factors considered in literature

Factors Considered	Cited Articles
• Service quality	(S. O. Adebiyi, 2014) (Manani T. O., 2013)
• Price	(S. O. Adebiyi, 2014) (Manani T. O., 2013)
• Food quantity, Food quality and Timeliness	(Ahmed MB, 2012) (Saha GC, 2009)
• Cleanness	(Manani T. O., 2013)
• Customer service and Online service	(S. O. Adebiyi, 2014) (Manani T. O., 2013)
• Safety, Offers, Gift, Better and different snacks and In-Flight Entertainment	(Chen Y-H T. M.-L., 2011)
• Service quality on in-flight	(Archena R, 2012)
• Service quality on in-flight digital service	(Chen Y-H T. M.-L., 2011)
• Comfortable seat	(Archena R, 2012)
• Employee motivation	(Ahmed MB, 2012)
• On-time flight	(Ban H-J, 2019)

Moreover, there is a study that has been done on service quality and passenger satisfaction by (Archena R, 2012) shows the most affected factors and sub-factors in an airline that was found according to the data analysis from their questionnaire that has been applied to their passengers as shown in Table 2.

Table 2. Factors Considered in Article **(Archena R, 2012)**

Factors	Sub Factors
Service Quality on In-flight Services	• Cuisines Provided • In – Flight child care / Bassinets • Crew friendliness / Language skills • Seat Comfort • Cleanliness of toilets • Newspapers / Airline magazines • On – Board catering • Provision of Pillow / Blankets etc.

Service Quality on In-flight Digital Services	• Music • Inbound – Outbound theatres • Personal Entertainment Appliances • Games
Service Quality on Airline Back office Operations	• Discounts / offers • Choice of aircraft • Online check – in • Online seat booking • Call center facilities • Updating airline website • Reservation/Cancellation facilities

2.2 Methods Applied in Literature

In the literature studied there are many methods were being applied in term to consider the factors that impact the satisfaction of the customer in an airline company. The researcher has been used or applied statistical methods which are listed in Table 3.

Table 3. Method Applied in Literatures

Methods Applied in literature	Cited articles
• Survey	(S. O. Adebiyi, 2014)
• Questionnaire	(Ahmed MB, 2012) (Archena R, 2012)
• Multiple Regression Analysis	(Ban H-J, 2019)
• Frequency and Mean	(Ban H-J, 2019) (Manani T. O., 2013)
• Linear Regression Analysis	(Ban H-J, 2019)
• Demographic Analysis and Pie Chart	(Archena R, 2012)
• ANOVA	(Ban H-J, 2019) (Ahmed MB, 2012)
• Hypothesis Test	(S. O. Adebiyi, 2014)

3. Methodology

3.1 Measures of Constructs

The survey questionnaire consists of three sections. The first and second sections consist of respondents' demographic and flight information as; gender, age, nationality, employment status, average monthly income, frequently traveling region, flight frequency, flight type, and ticket booking type via a categorical scale. The last section of the survey was designed to obtain "Importance of the airline services for passengers" and "Grades of the passengers for airline services" toward proposed airline services. Both of these were measured using the 5-point Likert scale. Respondents were asked to indicate their expectation level of each item on the 5-Likert scale anchored by "Not Important (1)" to "Extremely Important (5)" and satisfaction level of each item on the 5-Likert scale anchored by "Strongly Dissatisfied (1)" to "Strongly Satisfied (5)".

The customer satisfaction scale was structured by six dimensions: tangible characteristics, schedule, ground staff, flight attendants, online services, and food services. The questionnaire shows the factors which affect the

respondents with their statement to know the satisfaction level and expectation level as well, the six factors that were considered in this study are the first factor is the tangible characteristic that includes five sub-factors which are seat, atmosphere, environment, renewing the airplane, and the entertainment. Then, the second factor is time management or schedule that also includes five sub-factors schedule flexibility, change flight, luggage delay, proper flight schedule, and on-time departing and arriving. The third factor is staff service responsiveness in the airport that includes communication with passengers, kindness, seeking to help the passengers, knowledge to answer any question, and the ability with dealing emergency situations. The fourth factor is in-flight staff responsiveness in the plane that includes five sub-factors are knowledge to answer any question, ready to help the passengers, several types of in-flight services, the ability with dealing emergencies, and the appearance of the staff. The fifth factor is online services that have the usability of online service, ease of selecting date and time, flexibility to change flight, information is updated, and information is easy to observe. Lastly, the food service factor includes attractiveness, quality, cleanness, the printed menu is the same as the actual foods served, liking the way of how food is prepared.

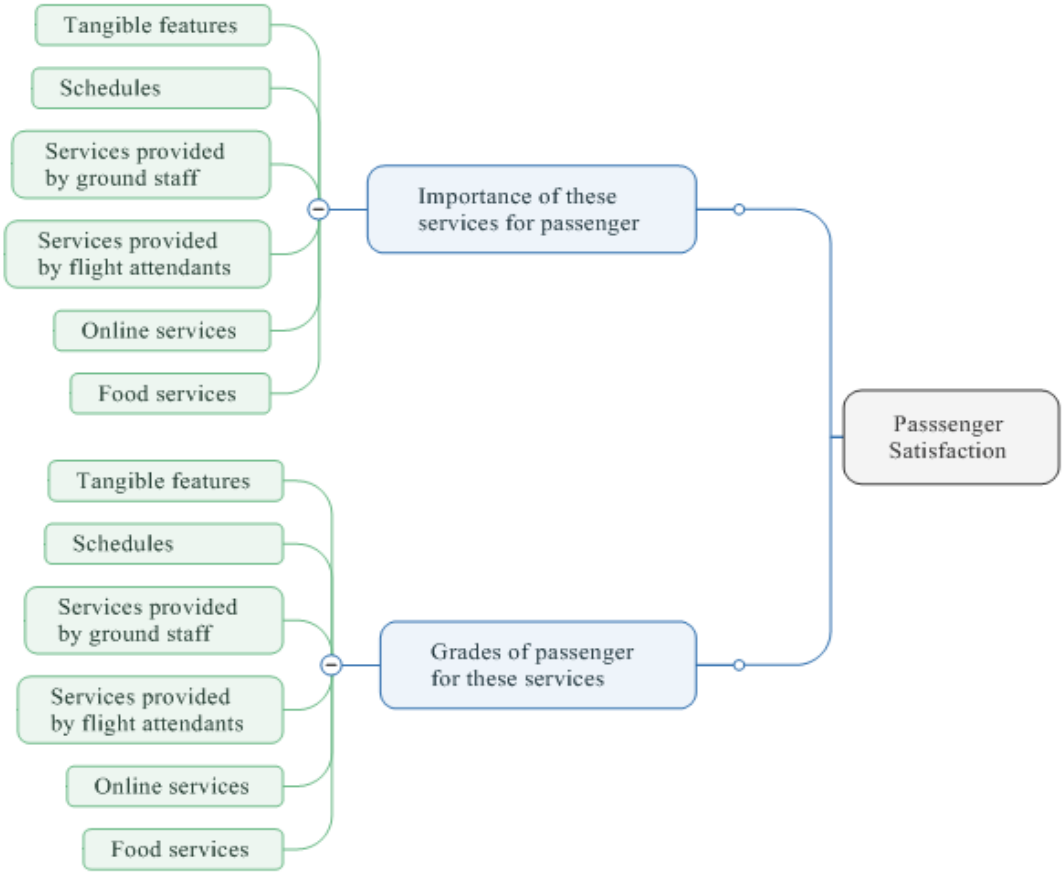

Figure 1. Illustration of proposed method

The model in Figure 1 illustrates the proposed theoretical framework that serves as the main steps for this study. As shown in Figure 1, for calculating the satisfaction level of passengers, the proposed method considers not only the grades of the passengers for these six airline services but also the importance of these services for passengers. The originality of this study is this point. It is very important to consider the importance of the given services to the passengers because the quality level of given service may be very good but it may be not important for the passenger. For example, assume that the quality level of food services of an airline company is very good but it may be not important for passenger. So grades of the passenger for this food service will be 5 (5-Point Likert scale) but the importance of this food service grade will be 1. Or the quality level of given service is very low but importance of this service for the related passenger is very high so the effect this type of cases will be different.

The descriptive data analysis used for summarizing the first and second part of the survey, and for the last part of the survey multiple regression and ordinary logistic regression methods used to determine the relationship between the factors and the response.

3.2 Data Collection and Sample Design

A self-administrated questionnaire survey was conducted for both LCC and FSNC passengers. Respondents were first asked whether they had flown with any one of LCC and FSNC flights; if they replied in the affirmative, they were invited to participate in the questionnaire. The 200 questionnaires were distributed to the target respondents from LCC and FSNC flight passengers.

Table 4. Descriptive analysis for the respondents' demographic profile

		Frequency values of FSNC Respondents		Frequency values of LCC Respondents	
		Frequency	%	Frequency	%
Gender	Female	50	50%	50	50%
	Male	50	50%	50	50%
Age	Less than 20	29	29%	24	24%
	20-40	45	45%	50	50%
	More than 40	26	26%	26	26%
Nationality	Kuwaiti	59	59%	64	64%
	Non-Kuwaiti	41	41%	36	36%
Work Status	Student	34	34%	39	39%
	Working	52	52%	40	40%
	Not-working	14	14%	21	21%
Monthly Income	100-500 KD	49	49%	42	42%
	500-1000 KD	22	22%	29	29%
	Above 1000 KD	29	29%	29	29%
Travel Regularly	Arabian countries	31	31%	32	32%
	Gulf countries	33	33%	32	32%
	International countries	36	36%	36	36%
Times travels in a year	Every month	15	15%	16	16%
	More than once	30	30%	40	40%
	Once a year	55	55%	44	44%
Class of Airline	Business class	24	24%	28	28%
	Economy class	54	54%	44	44%
	First class	22	22%	28	28%
Way of booking ticket	From the company itself	22	22%	26	26%
	Online website	52	52%	42	42%
	Travel agency	26	26%	32	32%

Respondents' demographic profiles were identified in the first part of the questionnaire. Questions about gender, age, nationality, work status, monthly income, frequently traveling region, flight frequency, flight type, and way of

booking tickets were asked. The frequency and percentage value of the respondents for LCC and FSNC passengers are as shown in Table 4.

- 50% of the respondents were male while females consisted of 50 %of the total respondents.
- There were 29% of the passengers falling into category age of less than 20 years. While 45% are between 20 to 40 years old. This category of age which is 20-40 years old likes to travel more than once a year to have a vacation or study abroad. In addition, 26% of passengers are above 40 years old.
- The majority of the respondents were Kuwaiti passengers were represented 59% of the sample size and Non-Kuwaiti respondents represented 41% of the sample size.
- Table results have shown that the working status of respondents constituted the highest frequency which was 52%, followed by the students for 34% and the not-working statues category has shown the lowest frequency which was14%.
- The analysis has shown that the highest percentage of respondents whose their income 100-500 KD which is 49%. While their income is low they were paid a ticket for travel with FSNC company. Moreover, the percentage respondents' of 500-1000 KD income is 22% and the income of above 1000 KD of respondents' was 29%. This shows us that ticket price is not the most important factor for the passengers; they want to feel satisfied with their services.
- 36% is the highest percentage of respondents who chose international countries to travel it by FSNC. That's denoted passengers prefer to choose it for long trips. Also, they prefer to choose it for short trips where 33% of respondents chose Gulf countries. Lastly, there were 31% of passengers chose Arabian countries to travel by choosing it.
- There was 55% percent of the respondents who were travelling once in a year which is for a family vacation. Followed by, 30% percent of the respondents who were traveling more than once in a year for their business and works. Besides, there was 15% percent of the respondents who traveling every month.
- There was 54% percent of the respondents were taking the economy class when they traveling with FSNC. That indicates they feel satisfied with the services at lowest class in it. Then, 24% of the respondents were taking a business class. Besides, 22% of the respondents were taking first-class travel with it.
- There were 22% of the respondents prefer booked via the airline company office and 52% of the respondents preferred through the online website. Besides, 26% of the respondents have booked through the travel agents

3.3 Data Analysis

Confirmatory factor analysis and hypothesis testing were conducted to check the significant factors that affect passenger satisfaction. (Jill Collis & Roger Hussey, 2014) says that "Statistical techniques are used in confirmatory data to design conclusions about a population from quantitative data collected from a sample". Thus, knowing the factors helps to determine the relationship between the factors and customer satisfaction by using statistical analysis. Moreover, to determine how well the model fits the data and normality distribution R-squared, ANOVA Table, Hypothesis Test, Multiple Regression Analysis and Ordinal Logistic Regression Analysis helps to analyze that.

There are six hypotheses test that has been derived in this research study namely as it shown in Table 6. Then, after having six hypotheses study test and knowing the P-Value obtained of each factor by ANOVA test both helps to test the relationship between the factors and the passenger satisfaction of FSNC and LCC passengers.

Multiple regression equation was used to calculate the coefficient of each factor. A multiple regression equation is a statistical technique that used to come up with an equation that relates a single continuous dependent variable to two or more independent variables. Multiple regressions would be calculated using this particular formula as shown in equation 1:

$$Y= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots \quad (1)$$

where Y represents the dependent variable [output], α represents the intercept or constant, and β the partial regression coefficients were represent the expected change in the dependent variable, where it is changed by one unit and other independent variables are held constants.

By using Equation 1 it is easy to predict the outcome of a dependent variable from the behavior of independent variables and knowing how the data are fit to the response. From the coefficient number of the factors, it can show the effectiveness of factors on customer satisfaction. Calculated coefficient values were listed in Table 7, 8, 9, and 10.

The Ordinal Logistic Regression analysis method is the one another method used for the analysis of the survey data. Ordinal Logistic Regression is a statistical model that is used to predict the behavior of ordinal level-dependent variables which is the output with a set of independent variables which are the factors. Moreover, to determine how well the model fits the data, Ordinal Logistic Regression results help to analyze that by the goodness of fit analysis. The Ordinal Logistic Regression model helps to predict and estimate the relationship between the dependent variable and independent variable by the coefficient of the factors and the p-value.

As it is shown in Table 5 the goodness of fit result which contains Pearson and Deviance Chi-square test helps to determine whether the model is good to fit the data by knowing the p-value and it should be greater than $\alpha = 0.05$ which means not significant effect. So, since is that the p-value of the Deviance Chi-square test = 1.000 and greater than $\alpha = 0.05$ the model is good to fit the data collected which means that the test is fitted the main objective.

Table 5. Goodness-of-Fit Tests results

Method	Chi-Square	DF	P-value
Pearson	12998.6	8433	0.000
Deviance	786.9	8433	1.000

Table 6 shows the hypothesis tests proposed in this study.

Table 6. Six hypothesis study test

Factors Considered	Hypotheses Test Ho: Null Hypothesis Ha: Alternative Hypothesis
F1-Tangible Characteristics	H0: There is no significant effect and positive relationship between Tangible Characteristics and customer satisfaction in service quality. H1: There is a significant effect and positive relationship between Tangible Characteristics and customer satisfaction in service quality.
F2-Time Management	H0: There is no significant effect and positive relationship between Time Management and customer satisfaction in service quality. H2: There is a significant effect and positive relationship between Time Management and customer satisfaction in service quality.
F3-Services Provided by Airport Staffs (SA)	H0: There is no significant effect and positive relationship between (SA) and customer satisfaction in service quality. H3: There is a significant effect and positive relationship between (SA) and customer satisfaction in service quality.
F4-Services Provided by Flight Attendants [Plane]. (SP)	H0: There is no significant effect and positive relationship between (SP) and customer satisfaction in service quality. H4: There is a significant effect and positive relationship (SP) and customer satisfaction in service quality.

F5-Online Services	H0: There is no significant effect and positive relationship between Online Services and customer satisfaction in service quality.. H5: There is a significant effect and positive relationship between Online Services and customer satisfaction in service quality.
F6-Food Services	H0: There is no significant effect and positive relationship between Food Services and customer satisfaction in service quality. H6: There is a significant effect and positive relationship between Food Services and customer satisfaction in service quality.

5. Results and Discussion

Analysis of Variance is a statistical analysis that tests the degree of differences between two or more groups of an experiment. The results are shown in a tabular form in Tables 7, 8, 9, and 10. The ANOVA table helps to display the statistics that used to test hypotheses which is in this project considered as the relationship between the factors and customer satisfaction. To interpreted ANOVA table is by obtained P-Value so, if the gained P-value from the ANOVA table is less than or equivalent or closer to the level of significance ($p<0.05$), the null hypothesis (Ho) gets rejected and concluded that all the population's means are not equal. On the other hand, if the gained P-value from the ANOVA table is greater than the level of significance ($p>0.05$), the null hypothesis (Ho) fails to rejected and concluded that all the population means are equal.

Multiple Linear Regression Analysis Results for FSNC passengers' data are shown in Table 7.

Table 7. Multiple Linear Regression Analysis Results for FSNC passengers' data

Full Serves Network Carrier Airline (FSNC)				
	Multiple Linear Regression			
	Coefficient	**p-value**	**Significance**	**Hypothesis Test**
F1	0.16	0.08	Significant	Accepted
F2	0.215	0.026	Significant	Accepted
F3	0.228	0.005	Significant	Accepted
F4	0.26	0.001	Significant	Accepted
F5	0.176	0.017	Significant	Accepted
F6	0.064	0.434	Not Significant	Rejected

F1: Tangible Characteristics, F2: Time Management, F3: Services Provided by Airport Staffs, F4: Services Provided by Flight Attendants [Plane]
F5: Online Services, F6: Food Services, Level of significance = 0.05

The test study shows that there is a relationship and significant impact in FSNC flight company services such as time management, Services Provided by Airport Staffs, Services Provided by Flight Attendants [Plane], and online service. However, tangible characteristics, and food service factor shows that there is no relationship between the factors and the customer.

Based on, the major findings in the whole analysis procedure the tangible characteristics services must be provided to the customers who travel via FSNC flight company. The reason for saying that is because the tangible characteristics will influence customer satisfaction and it is highly related to them based on the test. Moreover, most of the respondent age is between 20 and 40 as mentioned in the descriptive data analysis part; this means they have a huge impact on tangible characteristics. However, based on the P-value for this factor $0.08>0.05$ the alternative hypothesis will be rejected but the difference between the P-value for the factor and the significant value is slightly different, tangible characteristics can be taken into consideration, and also it can be considered as an important factor.

However, the food service factor test shows that it is not significant to customer satisfaction, and the P-value is far away from the significant level. Since the descriptive analysis data part shows most of the respondents prefer to travel short distances like from Kuwait to Dubai, Qatar, Saudi Arabia, etc. that the trip might take only a few hours then the respondent does not care too much about the food service factor, unlike the other factors. To conclude the most significant factors to the least important one is In-flight staff responsiveness (plane), staff responsiveness (Airport), online service, time management, tangible characteristics, and food service, respectively.

Table 8. Ordinal Logistic Regression Analysis Results for FSNC passengers' data

Full Serves Network Carrier Airline (FSNC)				
	Ordinal Logistic Regression			
	Coefficient	**p-value**	**Significance**	**Hypothesis Test**
F1	0.287	0.034	Significant	Accepted
F2	0.305	0.017	Significant	Accepted
F3	0.261	0.001	Significant	Accepted
F4	0.244	0.001	Significant	Accepted
F5	0.232	0.024	Significant	Accepted
F6	0.263	0.885	Not Significant	Rejected

F1: Tangible Characteristics, F2: Time Management, F3: Services Provided by Airport Staffs, F4: Services Provided by Flight Attendants [Plane]
F5: Online Services, F6: Food Services, Level of significance = 0.05

The Multiple Linear Regression equation obtained from Multiple Regression analysis is shown in Equation 2. The coefficient of the factors gives information about the importance of the significant factors. For FSNC passengers, the most important factor is "Services Provided by Flight Attendants [Plane]" (0.26) and the least important factor is "Online Services" (0.176).

$$\text{FSNC Passenger Satisfaction} = 0.865 + 0.1604\,F1 + 0.2153\,F2 + 0.2282\,F3 + 0.2598\,F4 + 0.1759\,F5 \quad (2)$$

Ordinal Logistic Regression Analysis Results for FSNC passengers' data are shown in Table 8. Similar to Multiple Regression analysis results Ordinal Logistic Regression method also gives similar results. Results show that FSNC passengers do not consider the Food Service quality too much. The most important factor is "Time Management" and the least important factor is "Online Services".

Table 9. Multiple Linear Regression Analysis Results for LCC passengers' data

Low Cost Carrier Airline (LCC)				
	Multiple Linear Regression			
	Coefficient	**p-value**	**Significance**	**Hypothesis Test**
F1	0.196	0.003	Significant	Accepted
F2	0.126	0.081	Significant	Accepted
F3	0.201	0.004	Significant	Accepted
F4	0.149	0.04	Significant	Accepted
F5	0.162	0.018	Significant	Accepted
F6	0.03	0.548	Not Significant	Rejected

F1: Tangible Characteristics, F2: Time Management, F3: Services Provided by Airport Staffs, F4: Services Provided by Flight Attendants [Plane]
F5: Online Services, F6: Food Services, Level of significance: 0.05

Multiple Linear Regression Analysis Results for LCC passengers' data are shown in Table 9. Similar to the FSNC passengers' analysis results LCC passengers ignore the quality level of Food Services. As seen in Equation 3, the most important factor that LCC passengers consider is Service Provided by Airport Stuff (Regression coefficient:0.201 and p-value: 0.004*)* and the least important factor Service Provided by Flight Attendants (Regression coefficient:0.0.149 and p-value: 0.04). Multiple Linear Regression equation for LCC passengers is as shown below:

$$\text{LCC Passenger Satisfaction} = 0.29 + 0.196\,F1 + 0.126\,F2 + 0.201\,F3 + 0.149\,F4 + 0.162\,F5 \quad (3)$$

Table 10. Ordinal Logistic Regression Analysis Results for LCC passengers' data

	Low Cost Carrier Airline (LCC)			
	Ordinal Logistic Regression			
	Coefficient	**p-value**	**Significance**	**Hypothesis Test**
F1	0.337	0.143	Not Significant	Rejected
F2	0.352	0.074	Significant	Accepted
F3	0.379	0.052	Significant	Accepted
F4	0.399	0.044	Significant	Accepted
F5	0.356	0.006	Significant	Accepted
F6	0.258	0.859	Not Significant	Rejected

F1: Tangible Characteristics, F2: Time Management, F3: Services Provided by Airport Staffs, F4: Services Provided by Flight Attendants [Plane]
F5: Online Services, F6: Food Services, Level of significance: 0.05

Ordinal Logistic Regression Analysis Results for LCC passengers' data are shown in Table 10. Similar to the previous analysis results passengers do not consider the Food Service quality. Ordinal Logistic Regression results show that the most important factor for LCC passengers is "Service Provided by Flight Attendants" and the least important factor is the "Time Management".

6. Conclusion

To sum up, the data was collected from the questionnaire that was distributed to the respondents. The considered factors are tangible characteristics, time management, staff responsiveness in (airport), in-flight staff responsiveness (plane), online services, and food these factors are related to SERVQUAL study; that helps to establish the important factor that influences the satisfaction and expectation level of the respondents. Therefore, by using the Microsoft Excel Program and Minitab Program to apply Multiple Regression Analysis and Ordinal Logistic Regression to determine the most significant factors are staff responsiveness in (airport), in-flight staff responsiveness (plane), online service, time management, and tangible characteristics.

Findings of this study revealed that:

- Both LCC and FSNC passengers do not give importance to the quality level of Food Services.
- Time management and Service Provided by Flight Attendants factors are the most important factors for FSNC passengers. FSNC company managers should assure on-time departure and arrival. They should also give importance to the quality level of in-flight services and perform service right the first time.
- LCC passengers do not give too much importance to Service Provided by Flight Attendants factor but Service Provided by Airport Stuff factor is the most important factor.
- LCC passengers are not as sensitive as FSNC passengers for the Time Management factor.
- Facilities were also a very important factor for FSNC passengers. FSNC airline companies should make improvements in the modernization of their facilities.

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Biographies

Ayat Dashti, Danah Alahmed, Eman Alshammeri, Rawan AlAjlan, Zainab Alameer are recently graduated students from the American University of Middle East (AUM) which is located in Kuwait with a major in Industrial Engineering. Moreover, during their study bachelor's in engineering, they had been able to work with many computer software such as; AutoCAD, MATLAB, Minitab, Arena, Jack, Lingo, SPSS, and MS. However, they worked on many course projects and they have participated in academic activates for their projects. The course projects that they have done were in production course, manufacturing process, safety, simulation, quality control, six sigma, ergonomics, and operation research. In addition to that, they worked on their graduation project which is presented in this paper and aiming to publish it.

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