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An Exploration of Antecedents for Customer Loyalty in the Indian Aviation Industry

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Abstract

The Indian aviation industry's customer loyalty determinants are investigated in this study. The proposed model includes three major phases: (a) questionnaire preparation, (b) data collection, and (c)statistical analysis. Initially, a questionnaire has been prepared, and it has circulated among Indian aviation customers. The questionnaire included the constraints like demographic factors, customer satisfaction, customer loyalty, brand image, and customer enhancement. The survey items were evaluated on a "5-point Likert scale". The responses have been collected from 100 customers from Chennai, including 52 males and 48 women. The collected data has been statistically analyzed using ANOVA and SPSS-AMOS. Some fit index tests, like: "the chi-square/degree of freedom (CMIN/DF), Tucker Lewis Index (TLI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Root Mean Square of Error Approximation (RMSEA)", are chosen in assessing model fit.

Keywords: *Indian Aviation, Customer Loyalty, Brand Image, Customer Engagement, Trust, Perceived Price.*

1. Introduction

In recent years, the growth of the Indian aviation industry has slowed. An in-depth qualitative and quantitative understanding of the aviation industry in India is obtained through the study of several journals, business reports, and related online publications. [1]. It is essential for transporting people or products, domestically or internationally, especially when there are large distances to cover [2]. The strong competition among Indian governments and their supportive policies gave both flights and ships an increase. The first airline to provide affordable prices for both local and international travel, Air Deccan set a new standard for the Indian aviation industry [3]. Customer satisfaction should be improved as a top priority [4], which includes hygiene measures [5] and the integrity of employee services both on the ground and in the air. Customers' top concerns, service, and ticket processes (including bookings, cancellations, and refunds), require extra attention to increasing customer trust. Customers evaluate perceived value by contrasting ticket cost with received service quality. Increased market share, profit, and repurchase behavior would all result from improving customer pleasure, trust, and perceived value, and would ultimately result in the airline's long-term success [6]. Customer trust is a behavior that is based on what customers have received from organizations. Gaining a customer's trust requires listening to what they need, providing services that meet those needs, and treating them with respect. Based on customers' opinions of service quality, each service provider is given a certain amount of trust. Adding trust as a factor to the model illustrates how consumers and manufacturers interact [7][8]. Customer happiness is mostly dependent on the quality of the services provided, which is largely determined by empathy and responsiveness [9].

Onboard services, off-board facilities, and commercial facilities were considered as having different quality parameters. The pre-flight and post-flight services included baggage handling, customer care service, cancellation and refund policy, ticket pricing, flight schedule and safety, and security. The in-flight amenities included seating comfort, cabin cleanliness, infotainment facilities, quality of meals, cabin atmosphere, and airline crew member behavior [10]. The seven sub-dimensions of perceived service quality—"reliability, assurance, responsiveness, employees, facilities, customization, and flight patterns"—are used as an independent variable. The dependent variable is customer loyalty, and the relationship between the independent and dependent variables is mediated by passenger satisfaction (customer loyalty). Thus, the relationship between perceived service quality and customer loyalty to the airlines is mediated by customer satisfaction [11]. Passenger satisfaction and airline loyalty are positively impacted by perceived service quality [12].

The biggest cultural change in marketing theory and practice currently taking place is customer relationship marketing. Customer relationship marketing [13] is crucial to the success of every business in the modern era. Understanding

customers' needs and providing better service to increase customer loyalty and profit can be summed up as the main objective of customer relationship marketing. By satisfying their needs, customer relationship management helps the business develop better relationships with its clients. Customer relationship management, when implemented correctly, not only ensures customer satisfaction but also boosts it, which keeps customers' loyalty [14]. Through the union of earlier writing, the indicators of dependability will be found. Assessing these as the predecessors of devotion within the setting of an aircraft, they will, to begin with, be altogether inspected to pick up related bits of knowledge into the causal relationship both between them and with carrier devotion, and they will at that point be utilized as the input variable for the expectation of dependability [15].

The major contribution of this research work is:

- To undergo a statistical analysis of the customer loyalty exploration in the Indian aviation industry of the antecedents.
- A sample of 100 customers has been considered.
- A questionnaire has been prepared based on the constraints like customer satisfaction, customer loyalty, brand image, and customer engagement.

The final section of the paper is structured into six parts where Section 2 includes works that are related, Section 3 identifies research gaps in those related works, Section 4 illustrates the paper's objectives, Section 5 displays its hypothesis, Section 6 describes the methodology of the suggested system, Section 7 presents the results and their analysis, and the final Section defines the paper's conclusion.

2. Related Works

In 2018, Briliana *et al.* [16] had proposed customer satisfaction was the factor that has the greatest positive impact on both customer engagement and loyalty, making it the most crucial factor in the growth of these two traits. Two people will rate their levels of satisfaction with the same product differently depending on their characteristics, such as specific needs or expectations for service. Customer engagement may rise when passengers have satisfying flight experiences. The degree to which a customer was satisfied with a product or service reflects their expectations and experiences. Expectations take into account both previous and present product evaluations and usage experiences.

In 2020, Ahmed *et al.* [17] illuminated the determinants that results in customer satisfaction and loyalty followed by the financial factors in the aviation industry sorting the customer grievances. According to the findings, the factors that have a significant and positive impact on customer loyalty are resolution of disputes efficiency, responding time, and adaptability to complaints, which have an indirect impact on the airline sector's future financial aspects.

In 2019, Singh *et al.* [18] had investigated the connection between passenger satisfaction and airline service quality. The key determinants of service quality and customer satisfaction were outlined and proposed a model for analyzing customer loyalty and the directional relationships between these two constructs were. It is founded on an empirical analysis of data gathered from 500 passengers in Mumbai, Lucknow, and Delhi. Then looked at the factors that affect airline passenger satisfaction and how the sector has been rated since airlines were deregulated in 2004.

In 2021, Khudhair *et al.* [19] had investigated the relationship between customer satisfaction and airline service quality, and airline customer loyalty. Consumers' price sensitivity concerning airline services was evaluated as a factor that impacts the correlation between service quality provided and customer satisfaction. The objectives were based on an assortment of writing that was accessible in online databases. Auxiliary materials were taken from scholastic works assessed from the inquiry about theme audit and its purposeful to supply a careful assessment of the results.

In 2021, Ramachandran *et al.* [20] had explored the viewpoint of benefit quality and its effect on client fulfillment, particularly within the benefits division, counting the aircraft industry. That was prove that the carrier industry has perceived the significance of benefit quality in accomplishing a genuine and long-lasting competitive advantage. Based on the most noteworthy Cruel Score, Indigo flights are found to be ahead of other flight benefit suppliers in terms of benefit quality traits of tangibles, and the things chosen from these measurements coordinate well together and can be utilized to calculate carrier passengers' impressions. “Tangibility, reliability, responsiveness, assurance, and empathy” are the five dimensions of service quality measured by the SERVQUAL Instrument.

In 2018, Tsafarakis *et al.* [21] had demonstrated how MUSA (Multicriteria Satisfaction) has been used to gauge passenger fulfillment and highlight the crucial service areas that require development. The method's application in airline passenger satisfaction surveys enables

evaluation of overall and partial levels of satisfaction as well as identification of the sturdy and feeble points of the specific airline. In addition to focusing on a vivid analysis of customer satisfaction data, the provided results also can evaluate an integrated benchmarking system. They can provide a comprehensive information set in this way, which includes "value functions, criteria weights, average satisfaction, demanding, and improvement indices, as well as action diagrams".

In 2019, Prentice *et al.* [22] had focused on the airline industry, and examined how client and firm-based components are related to client engagement by drawing on a present conceptual model of customer engagement. Firm-based factors such as inflight service quality are compared to customer-based factors such as brand experience and brand love. The findings reveal a strong correlation between customer-based factors and customer engagement. Particularly, brand experience influences customer engagement both directly and indirectly.

In 2020, Shah *et al.* [23] had gathered information from passengers of Pakistan International Airline (PIA) by SERVQUAL and evaluated how well airline services are perceived. It looks into how different aspects of service quality affect passengers' behavioral intentions when a mediator was present. Data was gathered from respondents in PIA's domestic and international waiting lounges via an adopted SERVQUAL instrument. Through "reliability statistics, correlation analysis, and hierarchal regression analysis", the data is examined.

3. Research Gap

With raising competition and expanded accessibility of comparable benefit offerings, most aircraft nowadays are seen to be battling with issues related to holding clients. The carriers have set out upon the openings by advertising reduced admissions and presenting client devotion programs to hold their clients. Building more grounded connections with visit flyers may be a commerce challenge that aircraft are confronting. Hence, the display thinks about points to survey the client dependability of the flying industry and recommend suitable measures. A larger set of characteristics may need to be investigated, and pre-flight performance through passengers who complete their journey is omitted [4]. A more representative population can be neglected by using a larger sample size at more than one location [7] Using interpretive and in-depth information about variables that are skipped, qualitative or mixed mode methods to assess customer satisfaction may use customer discussions [9] To gain a thorough understanding of the airline corporation reputation building process, a similarity between FSCs and LCCs must be formed.

4. Objectives

The wide inquiries about the objectives of this study are as takes after:

- To understand how the Indian aviation industry views customer loyalty.
- To determine the level of airline company customer loyalty in India.
- To identify the areas in which airline companies should concentrate their efforts to win over customers.

5. Hypothesis

To empirically test the conceptual model for customer retention, eleven hypotheses were formulated to determine if the variables discussed in the literature were viable:

Hypothesis 1: Customer satisfaction is influenced favorably by customer expectations.
Hypothesis 2: Customer satisfaction is positively impacted by perceived price.
Hypothesis 3: Customer loyalty benefits from customer satisfaction.
Hypothesis 4: Brand image is benefited from customer satisfaction.
Hypothesis 5: Customer engagement benefits from customer satisfaction.
Hypothesis 6: Customer loyalty is influenced favorably by brand image.
Hypothesis 7: Customer loyalty benefits from customer engagement.
Hypothesis 8: Customer satisfaction and the physical environment are closely related.
Hypothesis 9: Customer satisfaction and service quality have a significant relationship.
Hypothesis 10: Customer satisfaction and trust are closely related.

6. Proposed Methodology

The current study is descriptive because it focuses on evaluating customer loyalty in the current aviation business environment. With a customer-centric approach, it seeks to comprehend and quantify client loyalty in the context of the aviation business. A questionnaire has been created, and 100 participants from Chennai have received a copy. The survey items were evaluated

on a "5-point Likert scale". Using SPSS-AMOS, the regression weights, intercepts, and variances were examined before addressing the study's core question and hypotheses. Moreover, the survey was partitioned into three fundamental areas: Section A, which included the demographic variables such as "gender, age group, nationality, marital status, the highest level of education, occupation, financial earnings (monthly)" and Section B, that comprised of several items to measure; "Physical Environment (PE), Service Quality (SQ), Trust (TR), Customer expectation (CE), Perceived price (PP), Customer satisfaction (CS), Brand image (BI), Customer engagement (CEB), Customer loyalty (CL)" and Section C, the constructs considered for questionnaire preparation is: "Physical Environment (PE), Service Quality (SQ), Trust (TR), Customer expectation (CE), Perceived price (PP), Customer satisfaction (CS), Brand image (BI), Customer engagement (CEB), Customer loyalty (CL)", respectively, has been used for data collection. Cronbach's Alpha was used to analyze the questionnaire's reliability. The ANOVA method will be used for the statistical analysis. Further research has been done to clarify how much each construct (i.e., independent variable) contributes to variation in customer loyalty after establishing the positive association between the components included in this study. The study is done based on two frameworks: Framework 1 depicts the hypothesis "H3, H4, H5, H6, H7" which is shown in Figure 1, and Framework 2 depicts the "H1, H2, H8, H9, H10" which is shown in Figure 2.

Framework 1:

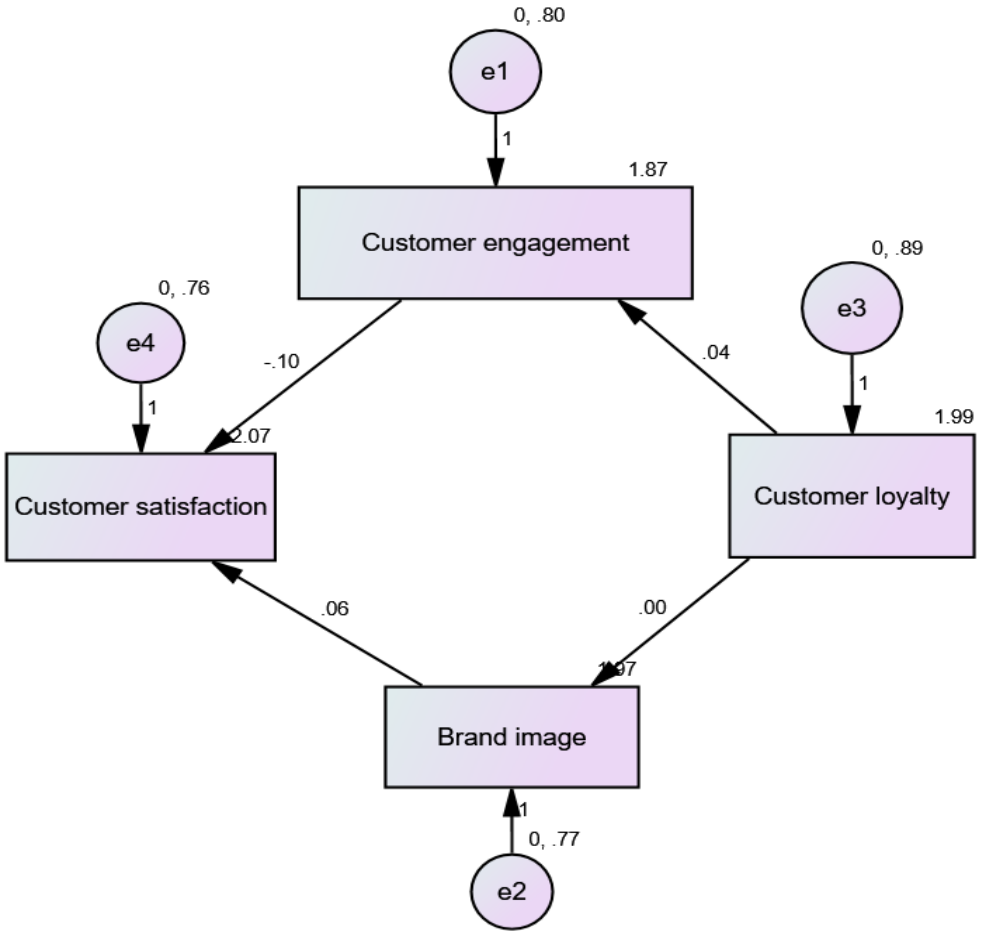

Figure 1: Framework 1 drawn based on hypothesis, "H3, H4, H5, H6, H7"

Framework 2:

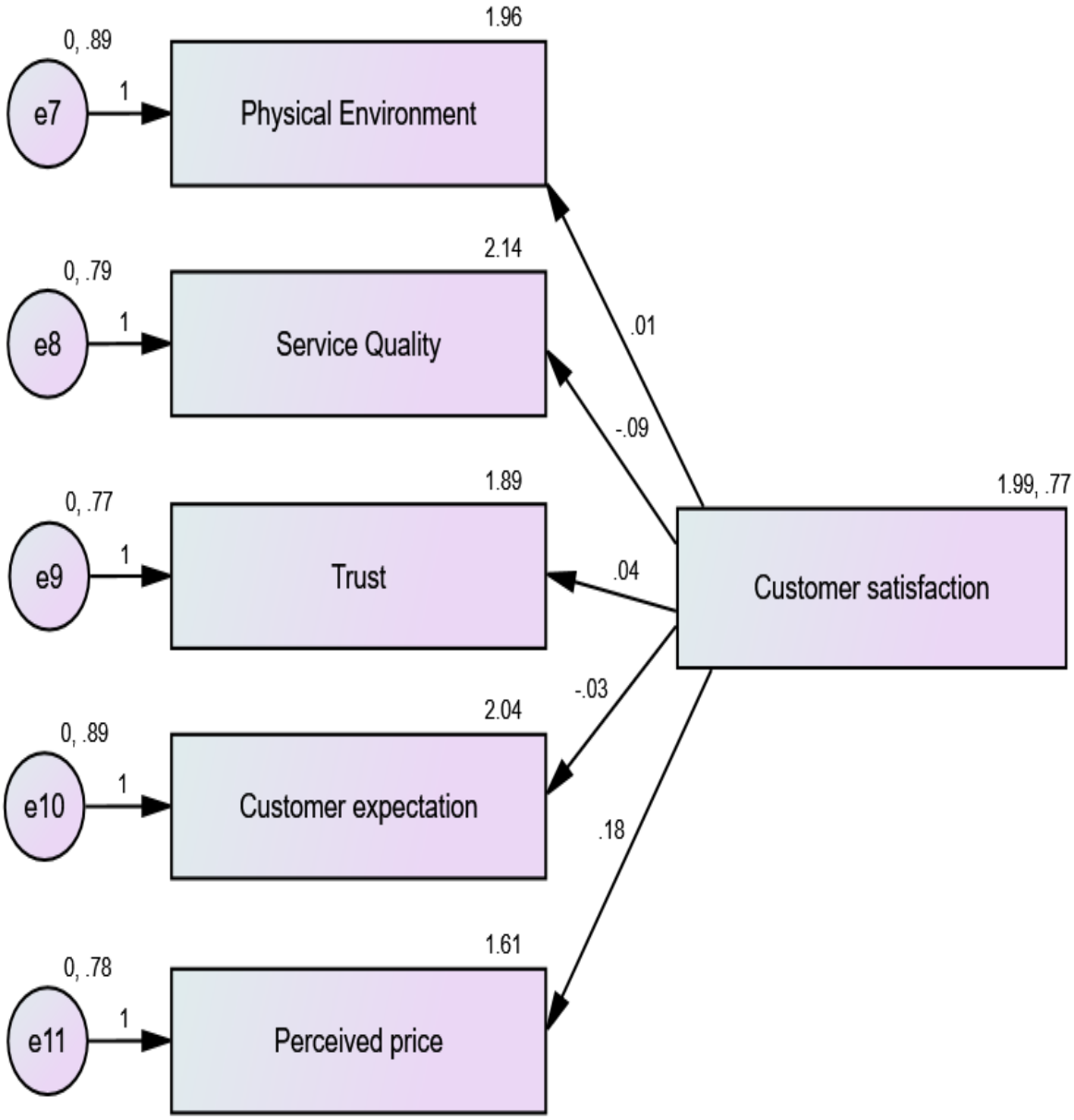

Figure 2: Framework 2 drawn based on hypothesis, "H1, H2, H8, H9, H10"

Hypothesis 1:

"Customer satisfaction is influenced favorably by customer expectations"

Client joy and desires are firmly connected. When a client anticipates something from a trade but does not get it, they are less fulfilled. On the other side, they could be more joyful in case they have humble desires of commerce and are astounded and enchanted than if they had tall trusts and feel let down. Curiously, businesses can't continuously figure out what their clients will need from them, hence instruments for getting and examining input are ordinarily pivotal. A shopper's degree of pleasure frequently depends on his or her expectations of a business. Somebody might not be fulfilled, for the occasion, in case he/she expects quickly to benefit from trade but instep runs into troubles with the arrange handling. He can also feel disappointed if he thinks a company will offer a high-grade product yet his purchase appears to be of low quality. A consumer

may also be unsatisfied with a firm if he thinks his business is valued but the business shows that it is not by allowing its personnel to ignore him, act rudely, or disregard concerns.

Hypothesis 2:

"Customer satisfaction is positively impacted by perceived price"

Agreeing to promote language, seen esteem alludes to how well an item or benefit meets a customer's needs and desires, especially when compared to its competitors. By laying out the qualities that set an item separated from the competition, showcasing specialists endeavor to alter how customers see the esteem of an item. A customer's supposition of the merits or engaging quality of a great or benefit, especially in comparison to that of a match, is known as seen esteem. In other words, if buyers encounter higher and way better values and preferences, they will moreover feel more fulfilled.

Hypothesis 3:

"Customer loyalty benefits from customer satisfaction"

On the shining side, dependability strongly rises when fulfillment comes to a specific point; then again, when fulfillment fell to a certain level, dependability is strongly diminished. Decreased showcasing costs, higher deals, and lower working costs all contribute to the progressed benefit of devotion. Faithful clients are more likely to create more buys and are less slanted to switch brands due to estimating. They will take an interest in admonitory sheets, create trade referrals, and spread positive word of mouth.

Hypothesis 4:

"Brand image is benefited by customer satisfaction"

Client bliss is vital since it helps in issue understanding, anticipates churn, and recognizes fulfilled clients who may turn into evangelists and advocates. It's a vital stage within the handle of expanding client fulfillment, developing client dependability, and cultivating positive word-of-mouth. Credibility and equity are increased through brand image. Consumers will be more likely to remember the brand and what it stands for if you can consistently deliver on the brand promise while maintaining a positive brand image. Positive brand perception has been shown to increase consumer loyalty, leading them to repurchase more goods and services and to suggest them to others, up to 41.8% of the time.

Hypothesis 5:

"Customer engagement benefits from customer satisfaction"

Client engagement is the continuous development of an alliance between a vendor and the client which broadens far more than the exchange. It's a thinking, progressing procedure utilized by commerce to include esteem all through each client engagement and enhance reliability. Despite some similarities, consumer engagement is distinct from customer competence or satisfaction . It is important to understand that customer competence refers to the judgement that customers draw about a company based on everything they encounter. Contrarily, customer satisfaction measures how much customers enjoy or detest the goods or services. Both are vital when communicating with clients, but giving a customized reply and building up an affinity moreover require tuning in. An effective capacity that impacts the general client involvement is successful tuning in. The better a salesperson can listen, the more effectively they may personalize a solution based on the specific job position, issues, and desired outcomes of the customer.

Hypothesis 6:

"Customer loyalty is influenced favorably by brand image"

Profits are mostly derived from loyal customers, who also lower total marketing expenses and promote the company everywhere they go. In essence, they leave the doors open and the lights on. In the end, each customer's interactions—both positive and negative—have an impact on brand image. Consider brand image as the consumer's perception of a brand's identity and core values. No matter what a business does, it cannot immediately alter its reputation. For instance, firms can foster transactional loyalty by providing customers with lower prices, discounts, and rewards programs. It has been found that having a great brand picture can increment customer devotion and get them to purchase more items or propose them to others by up to 41.8%. Also, it illustrates a 35.8% positive relationship between brand picture and customer dependability.

Hypothesis 7:

"Customer loyalty benefits from customer engagement"

The simplest definition of loyalty engagement is the interaction you have with a

consumer to maintain their interest in the good or service. Customer engagement involves communicating with customers beyond the crucial touchpoints in their journey, going beyond simply guiding them down the marketing funnel. When it comes to making decisions, successful customer interaction will keep the brand at the forefront of the customer's mind. Customers who are devoted to a brand are more likely to shop there and shell out a quarter more cash. Despite a negative experience, forty-six percent of customers who are loyal to a brand continue to make purchases. With an upsurge of five percent in client retention, benefits boost by 25%. To attain the most excellent conceivable client encounter, both sometime recently and after the deal, a client engagement methodology streamlines intelligence and exercises. The procedure uses a variety of communication methods to forge connections with clients, boost client happiness, and actively grow the clientele.

Hypothesis 8:

"Customer satisfaction and the physical environment are closely related"

While the service is of a satisfactory caliber, the degree of total customer satisfaction and subsequent patron behavior may be greatly influenced by the pleasantness of the physical surroundings, including decor, artifacts, layout, and music. An organization must offer products and services that accommodate particular levels of customer perceived value to achieve customer satisfaction. Customers are happy, for instance, when they feel that the quality of the services meets their expectations. Building strong client relationships also depends on their ability to keep their workers happy. Customer loyalty may result from high levels of customer satisfaction. People engage with their physical surroundings through the water they drink, the homes they reside in, and the vehicles they use to go to work and school. A deprived physical environment may make it more problematic for families, neighbors, and even individuals to live long and healthy lives.

Hypothesis 9:

"Customer satisfaction and service quality have a significant relationship"

Client care and benefit fabulousness are seen as basic commerce variables since they have a noteworthy effect on how well a firm keeps up its client base through benefits. Strong service quality is anticipated to lead to customer satisfaction, which will boost customer loyalty and retention. Client fulfillment through high-quality administrations increments the firms' capacity to compete within the showcase. By perceiving benefit issues and creating measurements for benefit exhibitions, results, and client fulfillment, tall benefit quality can be accomplished. Customers' satisfaction is influenced by service quality, and it is recommended that four aspects of service quality—"reliability, responsiveness, assurance, and empathy"—be increased to raise customer satisfaction.

Hypothesis 10:

"Customer satisfaction and trust are closely related"

Customer happiness has a positive impact on loyalty. The degree to which customers are satisfied is influenced by their expectations. Customers eventually develop a sense of trust and satisfaction in the brand when their expectations are met. Therefore, whether or not someone is satisfied depends on the relationship between the anticipated outcome and the actual value. Consumers' mental representations of a brand are put together into an emotional brand image. Consumer loyalty may be impacted by it. When brands and consumers interact through the brand's products and services, they develop a bond over shared emotional experiences. The motivations behind purchases are thought to be heavily influenced by emotions. Further evidence that trust is based on satisfaction can be found in the strong correlation between consumer happiness and faith. When customers are satisfied, they become more loyal to a brand. A loyal customer base increases sales and profitability. Customer satisfaction serves as a bridge between superior customer service and customer loyalty.

7. Results And Discussion

To test the proposed hypotheses in this study, statistical analysis was performed. The customer-centric approach helped us in understanding and measure customer loyalty within the aviation industry. A circle represents the estimation error, which is one for each observed variable. In assessing model fit, some metrics for fit tests, such as "CMIN/DF, TLI, IFI, NFI, and RMSEA," are used. To reduce reliance on test results, the advised appropriate value of the chi-square statistic CMIN/DF, should be as high as 5. However, the IFI, NFI, and TLI cut-off focuses range from zero to one.

7.1 Results From Spss-Amos

7.1.1 Regression Weights

The weight of the regression for a specific record reflects the impact of the observation on the calculated model parameters. The size field in a bubble visualization is an illustration of a regression weight field. Regression weights for frameworks 1 and 2 is shown in Table 1 and Table 2, respectively.

Table 1: Regression weights for framework 1

Regression weights 1	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	P-value
CS<--CEB	-0.099	0.000	0.103	0.017	0.019	-0.540	0.351	0.308
CS<--BI	0.059	0.001	0.105	-0.023	0.059	-0.395	0.508	0.553
CEB<--CL	0.045	0.000	0.098	0.009	0.040	-0.346	0.473	0.640
BI<--CL	-0.001	0.001	0.096	0.014	0.015	-0.529	0.454	0.997

The value of regression weights is higher in the case of Customer Satisfaction is less than the Customer Engagement condition for mean, S.E., and kurtosis, and higher in case of the Customer Satisfaction is less than the Brand Image condition for Skewness. The value of Customer satisfaction when compared with customer engagement and brand image, is found that the p-value is greater than 0.05 means that there is no statistical significance in the difference between the group means. The value of customer loyalty is found to have a p-value that is greater than or equal to 0.05 when compared to customer engagement and brand image, indicating that there is no statistically significant difference between the group means.

Table 2: Regression weights for framework 2

Regression weights 2	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	P
PE<--CS	0.014	0.003	0.109	-0.039	-0.005	-0.422	0.412	0.905
SQ<--CS	-0.094	0.003	0.104	-0.036	-0.013	-0.569	0.334	0.370
T<--CS	0.038	0.002	0.103	0.007	0.020	-0.362	0.463	0.701
CE<--CS	-0.027	0.002	0.112	-0.046	-0.019	-0.462	0.377	0.809
PP<--CS	0.179	0.002	0.104	-0.027	0.067	-0.236	0.609	0.074

The mean value is higher when the value of PE is less than CS, the SE value is higher when the PE is less than CS and when the SQ is less than CS, and the Skewness and Kurtosis are higher when T is less than CS. The value of customer satisfaction when compared with the physical environment, service quality, trust, customer expectation, and the perceived price p-value is found to be greater than 0.05, implying that the difference between the group means that it isn't considered to be statistically significant.

7.1.2 Intercepts

In a multiple regression analysis, The expected value of the dependent variable is represented by the intercept when each of the independent variables are equivalent to a value of 0. The magnitude of the intercept can be estimated and reported in the SPSS-AMOS output. It can be used in the interpretation of the model, along with the other coefficients and statistics.

Table 3: Intercepts for framework 1

Intercepts	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	p-value
CEB	1.872	0.001	0.216	-0.001	0.071	0.942	2.829	>0.01
BI	1.971	0.001	0.212	-0.007	0.016	1.078	3.089	>0.01
CL	1.990	0.000	0.097	0.038	0.069	1.552	2.468	>0.01
CS	2.069	0.001	0.275	0.010	0.084	0.793	3.424	>0.01

Intercepts for framework 1 are shown in Table 3. For the intercepts, in the case of mean, SD, and Kurtosis, customer satisfaction shows the highest values and in case of the kurtosis, customer loyalty has the highest value. While evaluating the value of customer engagement, brand image, customer loyalty, and customer satisfaction, the difference between the group means is discovered to be statistically significant because the p-value is under the value of 0.05.

Table 4: Intercepts for framework 2

Intercepts	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	p-value
T	1.892	0.005	0.224	0.013	0.032	0.991	2.805	>0.01
SQ	2.150	0.007	0.226	0.011	-0.025	1.305	3.034	>0.01
PE	1.963	0.007	0.239	-0.016	0.019	1.104	2.894	>0.01
CE	2.042	0.004	0.244	0.018	-0.006	1.084	2.945	>0.01
PP	1.615	0.004	0.224	-0.025	0.103	0.711	2.596	>0.01

Intercepts for framework 2 are shown in Table 4.The mean and SE have the highest values in SQ, the Se has the highest values in PE, the SD and Skewness has the highest values in the CE and the Kurtosis has the highest value in the PP. While evaluating the value of trust, service quality, physical environment, customer expectation, and perceived price, found the difference between the group means is discovered to be statistically significant because the p-value is under the value of 0.05.

7.1.3 Variances

The variance is used to quantify variability. It is calculated as the sum of the proportional deviations from the mean. The level of variability in the data set is revealed by variance. When the statistics are less regular, the variance is greater in comparison to the mean. Variances for frameworks 1 and 2 is shown in Tables 5 and 6, respectively.

Table 5: Variances for framework 1

Variances	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	p-value
e3	0.936	0.001	0.137	0.567	0.544	0.543	1.854	>0.01
e1	0.848	0.001	0.126	0.613	0.750	0.476	1.705	>0.01
e2	0.818	0.001	0.121	0.612	0.677	0.462	1.585	>0.01
e4	0.817	0.001	0.121	0.599	0.653	0.432	1.522	>0.01

The highest mean and SD values were seen in the error value of Customer loyalty and the highest Skewness and kurtosis values are seen in Customer satisfaction. While evaluating the error value of customer engagement, brand image, customer loyalty, and customer satisfaction, it is found that the p-value which is below than 0.05 which indicates that the difference between the group means is statistically significant.

Table 6: Variances for framework 2

Variances	Mean	S.E.	S.D.	Skewness	Kurtosis	Min	Max	p-value
CS	0.807	0.002	0.116	0.549	0.512	0.485	1.441	>0.01
e7	0.946	0.003	0.137	0.489	0.383	0.547	1.771	>0.01
e8	0.838	0.003	0.124	0.610	0.624	0.497	1.471	>0.01
e9	0.816	0.003	0.120	0.591	0.605	0.471	1.489	>0.01
e10	0.949	0.004	0.140	0.694	0.998	0.566	1.727	>0.01
e11	0.834	0.003	0.122	0.586	0.476	0.507	1.410	>0.01

The error value of the perceived price shows the highest value in all variances. While evaluating customer satisfaction and the error value of trust, service quality, physical environment, customer expectation, and perceived price, it is found that the p-value which is lower than 0.05 which indicates that the difference between the group means is statistically significant.

7.1.4 CMIN

A difference between the measured items and the predicted findings is assessed using the Chi-square value, also known as CMIN. In other words, CMIN demonstrates whether the gathered information and fictitious model are appropriate for the analysis. Tables 7 and 8 show the CMIN for Structures one and two respectively.

Table 7: CMIN for framework 1

Model 1	NPAR	P	CMIN	DF	CMIN/DF
Default model	12	0.122	4.200	2	2.100
Saturated model	14	0.000	0.000	0	0
Independence model	8	0.475	5.556	6	0.926

For the default model, the CMIN/DF has the highest value. For the saturated model, the NPAR has the highest value. For the Independence model, the CMIN, DF, and P have the highest values. The p-value in CMIN of framework 1 is less than 0.05 which indicates that the difference between the group means is statistically significant.

Table 8: CMIN for framework 2

Model 2	NPAR	P	CMIN	DF	CMIN/DF
Default model	17	0.531	9.017	10	0.902
Saturated model	27	0.000	0.000	0	0
Independence model	12	0.588	13.190	15	0.879

For the default model, the CMIN/DF has the highest value. For the saturated model, the NPAR has the highest value. For the Independence model, the CMIN, DF, and P have the highest values. The p-value in CMIN of framework 2 is less than 0.05 in the saturated model which indicates that the difference between the group means is statistically significant and not less than 0.05 in the default and according to an independence model, there is not a statistically significant distinction between the group means.

7.1.5 Baseline Comparisons (Bc)

For each analysis, AMOS automatically fits the default, saturated, and independence models, which are referred to as BC. Tables 9 and 10 show the BC for Frameworks 1 and 2.

Table 9: BC for framework 1

Model 1	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2
Default model	.244	-1.268	.381	15.870
Saturated model	1.000		1.000	

The Table 9 composed of several parameters, such as NFI, RFI (relative fit index), IFI, TLI, Delta1, Delta2, Rho1, and Rho2. The "Default model" has values of .244 for NFI, -1.268 for Delta1, .381 for Rho1, and 15.870 for IFI. The "Saturated model" has a value of 1.000 for all parameters. The predefined model for the BC showed all of the most significant values.

Table 10: BC for framework 2

Model 2	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2
Default model	.316	-.025	1.308	.185
Saturated model	1.000		1.000	

The "Default model" has values of .316 for NFI, -.025 for RFI, 1.308 for IFI, and .185 for TLI. The "Saturated model" has a value of 1.000 for NFI, 0 for RFI, 1.000 for IFI, and 0 for TLI. In the case of the BC all the highest values were seen in the default model.

7.1.6 Parsimony-Adjusted Measures (Pam)

Relative fit indices called PAM indices are modifications to the majority of the fit indices discussed above. By penalising less parsimonious models, the changes aim to support quicker conceptual methods over advanced ones. As the degree of model complexity rises, the model's fit index declines. Tables 11 and 12 show PAM for Frameworks 1 and 2, respectively.

Table 11: PAM for framework 1

Model 1	PNFI	PRATIO
Default model	.081	.333
Independence model	.000	1.000

In the context of the provided information, "PAM for framework 1" would likely refer to the application of the PAM framework to the data and parameters of the first model, the "Default model" which has a PNFI (Probability of None Future Purchase) of 0.081 and a PRATIO (Purchase Ratio) of 0.333. Comparing this model to the "Independence model" which has a PNFI of 0.000

and a PRATIO of 1.000, it can be seen that the "Default model" has a higher PNFI and lower PRATIO, indicating that it is less successful in predicting future purchases and retaining customers.

Table 12: PAM for framework 2

Model 2	PRATIO	PNFI
Default model	.667	.211
Independence model	1.000	.000

"PAM for framework 2" would refer to the application of the Probabilistic Affinity Model to the data and parameters of the second model, the "Default model" which has a PRATIO of 0.667 and a PNFI of 0.211. Comparing this model to the "Independence model" which has a PRATIO of 1.000 and a PNFI of 0.000, it can be seen that the "Default model" has a lower PRATIO and higher PNFI, indicating that it is less successful in predicting future purchases and retaining customers than the independence model ..

7.1.7 NCP

NCP, or non-centrality parameter, is a measure of how incorrect a null hypothesis is. The non-centrality parameter outlines how far apart the H1 and H0 values are. In this context, the focal point of the t distribution is the distribution focused on the assumption of a null value, serves as the standard sample distribution for hypothesis testing. NCP for frameworks 1 and 2 is shown in Tables 13 and 14, respectively.

Table 13: NCP for framework 1

Model 1	NCP	HI 90
Default model	2.200	12.284
Independence model	.000	9.309

In the context of the provided information, "NCP for framework 1" is being used to compare the "Default model" and "Independence model" in terms of their NCP values and the 90% confidence interval for NCP. The "Default model" has an NCP value of 2.200 with a HI 90 of 12.284, while the "Independence model" has an NCP value of 0.000 with a HI 90 of 9.309. This suggests that the "Default model" is better at correctly classifying the positive class compared to the "Independence model" as it has a higher NCP value. The HI 90 is also higher for Default Model, which indicates that the estimate of the performance of this model is more uncertain.

Table 14: NCP for framework 2

Model 2	HI 90
Default model	10.099
Independence model	10.537

In this case, the HI 90, which is the upper bound of the 90% confidence interval for NCP is provided. The "Default model" has an HI 90 of 10.099 while the "Independence model" has an HI 90 of 10.537. The HI 90 is higher for the Independence Model, which indicates that the estimate of the performance of this model is more uncertain. However, it should be noted that without the NCP values, it is not possible to compare the performance of these models as NCP values are not provided.

7.1.8 FMIN

Under the premise that the fitted model is accurate, FMIN is only presented when CMIN has a chi-square distribution. Tables 15 and 16 show the FMIN for Frameworks 1 and 2, respectively.

Table 15: FMIN for framework 1

Model 1	FMIN	F0	HI 90
Default model	.042	.022	.124
Independence model	.056	.000	.094

In the context of the provided information, "Model 1" is being compared to the "Default model" and "Independence model" in terms of FMIN, F0 and HI 90. It suggests that the "Default model" is better at correctly classifying the negative class when the predicted probability of the negative class is the lowest among all classes, as it has a higher FMIN value. However, the "Independence model" is better at correctly classifying the negative class when the predicted probability of the negative class is exactly 0 as it has a higher F0 value. The HI 90 is higher for Default Model, which indicates that the estimate of the performance of this model is more uncertain.

Table 16: FMIN for framework 2

Model 2	FMIN	HI 90
Default model	.091	.102
Independence model	.133	.106

The "Default model" has an FMIN of 0.091 and a HI 90 of 0.102 while the "Independence model" has an FMIN of 0.133 and a HI 90 of 0.106. This suggests that the "Independence model" is better at correctly classifying the negative class when the predicted probability of the negative class is the lowest among all classes, as it has a higher FMIN value compared to the "Default model". The HI 90 is higher for Default Model, which indicates that the estimate of the performance of this model is more uncertain. However, it should be noted that the interpretation of these measures is dependent on the specific problem and threshold used to calculate them.

7.1.9 Root Mean Square Error of Approximation (RMSEA)

The RMSEA is an indicator modified for parsimony. Values that are nearer to 0 indicate a good fit. Tables 17 and 18 show the RMSEA for Frameworks 1 and 2, respectively.

Table 17: RMSEA for framework 1

Model 1	RMSEA	HI 90	PCLOSE
Default model	.105	.249	.186
Independence model	.000	.125	.621

The "Default model" has an RMSEA of 0.105, a HI 90 of 0.249, and a PCLOSE of 0.186, while the "Independence model" has an RMSEA of 0.000, a HI 90 of 0.125, and a PCLOSE of 0.621. This suggests "Independence model" has a better fit to the data as it has a lower RMSEA and HI 90 and a higher PCLOSE. The "Default model" has a higher HI 90, indicating more uncertainty in the estimate of its performance.

Table 18: RMSEA for framework 2

Model 2	HI 90	PCLOSE
Default model	.101	.710
Independence model	.084	.788

The "Default model" has an HI 90 of 0.101, and a PCLOSE of 0.710, while the "Independence model" has an HI 90 of 0.084, and a PCLOSE of 0.788. This suggests that the "Independence model" has a better fit to the data as it has a lower HI 90 and a higher PCLOSE. The "Default model" has a lower PCLOSE, indicating that the model is less likely to fit well to the data. However, it should be noted that the interpretation of these measures is dependent on the specific problem and threshold used to calculate them.

7.1.10 Akaike Information Criterion (AIC)

The AIC is a metric for assessing the efficacy of a statistical model for a given data sample. The AIC is a score that may be expressed as a single number that is used to assess which model fits the data set the best. Tables 19 and 20 show the AIC for Frameworks 1 and 2, respectively.

Table 19: AIC for framework 1

Model 1	AIC	BCC
Default model	28.200	29.476
Saturated model	28.000	29.489
Independence model	21.556	22.407

In the context of the provided information, "Model 1" is being compared to the "Default model", "Saturated model" and "Independence model" in terms of AIC and BIC. The "Default model" has an AIC of 28.200 and a BIC of 29.476, while the "Saturated model" has an AIC of 28.000 and a BIC of 29.489, and "Independence model" has an AIC of 21.556 and a BIC of 22.407. This suggests that the "Independence model" has the best model fit, as it has the ideal balance of goodness of fit and complexity, with the smallest both AIC and BIC values of the three models.

Table 20: AIC for framework 2

Model 2	AIC	BCC
Default model	43.017	45.604
Saturated model	54.000	58.109
Independence model	37.190	39.016

The "Default model" has an AIC of 43.017 and a BIC of 45.604, while the "Saturated model" has an AIC of 54.000 and a BIC of 58.109, and "Independence model" has an AIC of 37.190 and a BIC of 39.016. This suggests that the "Independence model" has the best model fit, it has the ideal balance of goodness of fit and complexity, with the smallest both AIC and BIC values of the three models.

7.1.11 ECVI

Every time AIC is recorded, ECVI, a constant multiple of AIC, can also be reported. Amos only reports it, though, if the fitted model is accurate and CMIN has a chi-square distribution. To calculate an ECVI confidence interval, this presumption is required. Tables 21 and 22 show the FMIN for Frameworks 1 and 2, respectively.

Table 21: ECVI for framework 1

Model 1	ECVI	LO 90	HI 90	MECVI
Default model	.285	.263	.387	.298
Saturated model	.283	.283	.283	.298
Independence model	.218	.222	.316	.226

In Model 1, the "Saturated model" and "Default model" have very similar ECVI values of 0.283 and 0.285 respectively, and both models have a MECVI value of 0.298. This suggests that these models have similar performance, and both are able to correctly classify the positive class more accurately than a random classifier. However, the "Saturated model" has a tighter 90% confidence interval (0.283, 0.283) as compared to the "Default model" (0.263, 0.387), indicating that the estimate of the "Saturated model" is more certain. The "Independence model" has the lowest ECVI value of 0.218 among the three models, and a MECVI of 0.226, indicating that it is less able to correctly classify the positive class compared to the other two models. Additionally, the 90% confidence interval (0.222, 0.316) for "Independence model" is wider than the other two models, indicating more uncertainty in the estimate of its performance.

Table 22: ECVI for framework 2

Model 2	ECVI	LO 90	HI 90	MECVI
Default model	.435	.444	.546	.461
Saturated model	.545	.545	.545	.587
Independence model	.376	.394	.500	.394

In the context of the provided information, "Model 2" is compared to the "Default model", "Saturated model" and "Independence model" in terms of these four performance measures. The "Default model" has an ECVI of 0.435, with a 90% confidence interval of (0.444, 0.546) and a MECVI of 0.461. The "Saturated model" has an ECVI of 0.545, with a 90% confidence interval of (0.545, 0.545) and a MECVI of 0.587. The "Independence model" has an ECVI of 0.376, with a 90% confidence interval of (0.394, 0.500) and a MECVI of 0.394.

7.1.12 HOELTER

If the fitted model is accurate, HOELTER is only reported when CMIN has a chi-square distribution. This is due to the fact that HOELTER is useless unless it can test the null assumption that the framework is accurate. Tables 23 and 24 show HOELTER for frameworks 1 and 2, respectively.

Table 23: HOELTER for framework 1

Model 1	HOELTER.05	HOELTER.01
Default model	142	218
Independence model	225	300

The HOELTER.05 and HOELTER.01 performance measures for the "Default model" and "Independence model" in Model 1 indicate that the "Independence model" is better at identifying rare events (HOELTER.05 = 225) and very rare events (HOELTER.01 = 300) than the "Default model" (HOELTER.05 = 142, HOELTER.01 = 218). This suggests that the "Independence model" has a higher sensitivity to rare events and is able to more accurately predict the positive class when the actual positive rate is low.

Table 24: HOELTER for framework 2

Model 2	HOELTER.05	HOELTER.01
Default model	202	255
Independence model	188	230

In the context of the provided information, "Model 2" is compared to the "Default model" and "Independence model" in terms of these two performance measures. The "Default model" has a HOELTER.05 of 202 and a HOELTER.01 of 255, while the "Independence model" has a HOELTER.05 of 188 and a HOELTER.01 of 230. This suggests that the "Default model" is better than the "Independence model" in identifying rare events, but worse in identifying very rare events.

7.2 Results From Anova

An ANOVA evaluation is a form of statistical procedure that examines for variance-based average variations to determine the fact that there is indeed a difference that is statistically significant between two or more group categories. The segregation of the variable that is independent into more than one group is another important aspect of ANOVA.

7.2.1 ANOVA Table on the basis of Gender

Table 25: Gender-Based Classification

GENDER-BASED			MEAN SQUARE	F	SIG.
Physical Environment * Gender	Between Groups	(Combined)	1.221	1.363	.246
	Within Groups		.896		
	Total				
Service Quality * Gender	Between Groups	(Combined)	2.616	3.319	.072
	Within Groups		.788		
	Total				
Trust * Gender	Between Groups	(Combined)	.083	.106	.745
	Within Groups		.784		
	Total				
Customer expectation * Gender	Between Groups	(Combined)	.496	.550	.460
	Within Groups		.903		
	Total				
Perceived price * Gender	Between Groups	(Combined)	.508	.619	.433
	Within Groups		.820		
	Total				
Customer satisfaction * Gender	Between Groups	(Combined)	.254	.325	.570
	Within Groups		.783		

	Total				
Customer engagement * Gender	Between Groups	(Combined)	2.616	3.319	.072
	Within Groups		.788		
	Total				
Brand image * Gender	Between Groups	(Combined)	.083	.106	.745
	Within Groups		.784		
	Total				
Customer loyalty * Gender	Between Groups	(Combined)	.496	.550	.460
	Within Groups		.903		
	Total				

The ANOVA table on the basis of Gender is shown in Table 25. The highest mean square value among all the categories used to categorize things based on gender is shown by service quality and customer involvement, indicating that both are significantly influenced by gender.

7.2.2 ANOVA table on the basis of Age

Table 26: Occupation-Based Classification

AGE-BASED			MEAN SQUARE	F	SIG.
Physical Environment * Age	Between Groups	(Combined)	.855	.950	.420
	Within Groups		.900		
	Total				
Service Quality * Age	Between Groups	(Combined)	.557	.684	.564
	Within Groups		.814		
	Total				
Trust * Age	Between Groups	(Combined)	.538	.687	.562
	Within Groups		.784		
	Total				
Customer expectation * Age	Between Groups	(Combined)	.097	.105	.957
	Within Groups		.924		
	Total				
Perceived price * Age	Between Groups	(Combined)	1.502	1.887	.137
	Within Groups		.796		
	Total				
Customer satisfaction * Age	Between Groups	(Combined)	.296	.373	.773

	Within Groups		.793		
	Total				
Customer engagement * Age	Between Groups	(Combined)	.557	.684	.564
	Within Groups		.814		
	Total				
Brand image * Age	Between Groups	(Combined)	.538	.687	.562
	Within Groups		.784		
	Total				
Customer loyalty * Age	Between Groups	(Combined)	.097	.105	.957
	Within Groups		.924		
	Total				

The ANOVA table on the basis of Education is shown in Table 26. According to all age-based categorizations, perceived pricing has the greatest mean square value, indicating that the age of the individual has a significant impact on the customer's perception of price.

7.2.3 ANOVA table on the basis of Marital Status

Table 27: Marital Status-Based Classification

MARITAL STATUS-BASED			MEAN SQUARE	F	SIG.
Physical Environment * Marital Status	Between Groups	(Combined)	.622	.688	.505
	Within Groups		.905		
	Total				
Service Quality * Marital Status	Between Groups	(Combined)	.857	1.065	.349
	Within Groups		.805		
	Total				
Trust * Marital Status	Between Groups	(Combined)	.969	1.253	.290
	Within Groups		.773		
	Total				
Customer expectation * Marital Status	Between Groups	(Combined)	.123	.135	.874
	Within Groups		.915		
	Total				
Perceived price * Marital Status	Between Groups	(Combined)	.008	.009	.991
	Within Groups		.834		
	Total				
Customer satisfaction *	Between Groups	(Combined)	.820	1.055	.352

Marital Status	Within Groups		.777		
	Total				
Customer engagement * Marital Status	Between Groups	(Combined)	.857	1.065	.349
	Within Groups		.805		
	Total				
Brand image * Marital Status	Between Groups	(Combined)	.969	1.253	.290
	Within Groups		.773		
	Total				
Customer loyalty * Marital Status	Between Groups	(Combined)	.123	.135	.874
	Within Groups		.915		
	Total				

The ANOVA table on the basis of Marital status is shown in Table 27. Brand image has the greatest mean square value across all categories created based on marital status, demonstrating that it is more significant for those who need the product depending on their marital status.

7.2.4 ANOVA table on the basis of Education

Table 28: Education-Based Classification

EDUCATION-BASED			Mean Square	F	Sig.
Physical Environment * Education	Between Groups	(Combined)	.487	.535	.660
	Within Groups		.912		
	Total				
Service Quality * Education	Between Groups	(Combined)	1.988	2.583	.058
	Within Groups		.770		
	Total				
Trust * Education	Between Groups	(Combined)	1.951	2.636	.054
	Within Groups		.740		
	Total				
Customer expectation * Education	Between Groups	(Combined)	.865	.961	.414
	Within Groups		.900		
	Total				
Perceived price * Education	Between Groups	(Combined)	.433	.522	.668
	Within Groups		.829		
	Total				
Customer satisfaction *	Between Groups	(Combined)	.302	.382	.766

Education	Within Groups		.793		
	Total				
Customer engagement * Education	Between Groups	(Combined)	1.988	2.583	.058
	Within Groups		.770		
	Total				
Brand image * Education	Between Groups	(Combined)	1.951	2.636	.054
	Within Groups		.740		
	Total				
Customer loyalty * Education	Between Groups	(Combined)	.865	.961	.414
	Within Groups		.900		
	Total				

The ANOVA table on the basis of Education is shown in Table 28. Service quality and customer involvement have the highest mean square values of all the categories used to group items based on education, showing that both are heavily influenced by it.

7.2.5 ANOVA table on the basis of Occupation

Table 29: Occupation-Based Classification

OCCUPATION-BASED			MEAN SQUARE	F	SIG.
Physical Environment * Occupation	Between Groups	(Combined)	.487	.535	.660
	Within Groups		.912		
	Total				
Service Quality * Occupation	Between Groups	(Combined)	1.988	2.583	.058
	Within Groups		.770		
	Total				
Trust * Occupation	Between Groups	(Combined)	1.951	2.636	.054
	Within Groups		.740		
	Total				
Customer expectation * Occupation	Between Groups	(Combined)	.865	.961	.414
	Within Groups		.900		
	Total				
Perceived price * Occupation	Between Groups	(Combined)	.433	.522	.668
	Within Groups		.829		
	Total				

Customer satisfaction * Occupation	Between Groups	(Combined)	.302	.382	.766
	Within Groups		.793		
	Total				
Customer engagement * Occupation	Between Groups	(Combined)	1.988	2.583	.058
	Within Groups		.770		
	Total				
Brand image * Occupation	Between Groups	(Combined)	1.951	2.636	.054
	Within Groups		.740		
	Total				
Customer loyalty * Occupation	Between Groups	(Combined)	.865	.961	.414
	Within Groups		.900		
	Total				

The ANOVA table on the basis of Occupation is shown in Table 29. Service quality and customer involvement have the highest mean square values of all the categories created based on the occupation of the individual, indicating that they are both strongly dependent on one another.

7.2.6 ANOVA table on the basis of Earning

Table 30: Earning-Based Classification

EARNING-BASED			MEAN SQUARE	F	SIG.
Physical Environment * Earning	Between Groups	(Combined)	.961	1.073	.374
	Within Groups		.896		
	Total				
Service Quality * Earning	Between Groups	(Combined)	.641	.788	.536
	Within Groups		.813		
	Total				
Trust * Earning	Between Groups	(Combined)	.610	.778	.542
	Within Groups		.784		
	Total				
Customer expectation * Earning	Between Groups	(Combined)	.693	.764	.551
	Within Groups		.908		
	Total				
Perceived price * Earning	Between Groups	(Combined)	.375	.449	.773
	Within Groups		.836		

	Total				
Customer satisfaction * Earning	Between Groups	(Combined)	.282	.353	.841
	Within Groups		.799		
	Total				
Customer engagement * Earning	Between Groups	(Combined)	.641	.788	.536
	Within Groups		.813		
	Total				
Brand image * Earning	Between Groups	(Combined)	.610	.778	.542
	Within Groups		.784		
	Total				
Customer loyalty * Earning	Between Groups	(Combined)	.693	.764	.551
	Within Groups		.908		
	Total				

The ANOVA table based on Earnings is shown in Table 30. Physical Environments is the most popular category among all those based on earning level, and as a result, it has the greatest mean square value. This is because people are less likely to get sick when their environment is clean and they can maintain good hygiene. Healthy living and an active lifestyle are both possible. They will remain physically fit, and it will lengthen their life.

8. Conclusion

This study aimed to investigate client loyalty in the Indian aviation sector. The subjects of this study are people living in India. The proposed model had three main stages: (a) creating the questionnaire, (b) gathering the data, and (c) performing the statistical analysis. The questionnaire has been initially produced and distributed. 100 person from Chennai who responded to the survey provided their thoughts. SPSS-AMOS and ANOVA have been used to analyze the gathered data. According to the results of the current study, customer loyalty is a behavioral outcome that dominates over advocacy as an attitudinal end. It is crucial to develop in customers a strong sense of positivity that will serve as a foundation for their future purchasing decisions. Customer loyalty has a direct correlation to a company's profitability because it is well known that keeping current customers costs much less than finding new ones. The airlines should make sure that customer messages are timely and pertinent, that customer encounters with airline staff are cordial and compassionate, and that customers have a positive perception of the brand. The airlines that put all the parts together will ultimately succeed in gaining and keeping customer loyalty.

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Not Applicable

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Conflicts of Interest

The authors declare that they have no conflict of interest.

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