Abstract: Little evidence is available on how airline meals and their dimensions affect customers’ loyalty generation procedure and behaviors towards airline products. This research is designed to elucidate airline customer loyalty generation procedure by uncovering the specific role of airline meals and their dimensions, attitude, satisfaction, and love. Using a quantitative method, empirical findings from the structural analysis successfully offer a good understanding of airline food quality and its role, identify the vital triggers of customer loyalty, and uncover the silent mediating role of airline love in affecting loyalty. Taking one step further beyond the theorizations in the existing studies of airline customers’ post-purchase behaviors, the present study builds a strong conceptual framework relating airline food quality, attitude, satisfaction, airline love, and customer loyalty.

Keywords: sensory and health-related food quality; convenience and process food quality; airline meal; customer loyalty; satisfaction

1. Introduction

The airline industry around the globe has rapidly grown over the past few decades [1,2]. Due to this quick growth, this industry is fast reaching the maturity stage of its life cycle [3,4]. In the competitive global airline market environment, customers often have many options for airline choice and thus are becoming increasingly sensitive to prices and services [5,6]. To be more competitive, it is unavoidable that airline operators should increase repeat business by fulfilling such demanding and sophisticated customers [3,7]. Obtaining a high customer loyalty along with a retention rate brings diverse advantages to an airline company (e.g., sustainable revenue growth, marketing cost saving, long-standing valued relationship between the company and patrons, favorable word-of-mouth referrals, profit increase), eventually contributing to the success of the company [2,5,6]. Indisputably, no firm can survive and make a successful business unless it keeps a sufficient customer retention rate and increases customer loyalty [8]. Customer loyalty is accordingly regarded as one of the most vital challenges that every airline company faces and is considered as one of the top priorities for such companies [3].

In the airline sector, offering quality services to customers is of great importance for loyalty enhancement as they are becoming increasingly sensitive to airline services [9–11]. The in-flight meal as one of the key tangible services is hence considered to be a crucial part of the airline service quality [9,12]. Indeed, the airline meal is believed to be an effective means of product differentiation among full-service airlines in the marketplace and a contributor to pleasing in-flight
experiences and customer loyalty [12,13]. Satisfaction is one of the most important contributors of airline customer [14–16]. In fact, satisfaction, in general, is regarded to be the most essential factor in explicating customer post-purchase decisions/behaviors [8,17]. Researchers also agree that brand love [18–20] and attitude toward the product/brand/behavior [21–23] are necessary elements for boosting customer loyalty.

Taken together, it is undeniable that customer post-purchase behaviors are heavily dependent on such crucial variables as food quality, satisfaction, attitude, and love in consumer behavior, hospitality, and tourism. Yet, the convoluted interrelationships among these factors have been seldom explored. How such associations affect the airline customer loyalty generation process also has hardly been examined. In addition, researchers and practitioners have recently asserted the criticality of airline food served on board [9,12,13]. However, surprisingly, little empirical evidence is available on how airline meals and their dimensions affect customers’ loyalty generation procedure and behaviors towards airline products.

Filling these gaps, the study is intended to form a sturdy theoretical framework for customer loyalty in the airline industry. Specifically, we purpose (1) to explore the specific role of quality of airline meals and their dimensions ([a] sensory and health-related food quality and [b] convenience and process food quality) in the formation of customer loyalty, (2) to investigate the interactions between such airline food quality factors and other significant concepts that are essential in the customer loyalty generation process (i.e., attitude toward the airline, satisfaction with the airline, and airline love), (3) to observe the intricate mediating role of these variables in the hypothesized conceptual framework, and (4) to uncover the relative criticality of study constructs in building loyalty in the airline context.

2. Literature Review

2.1. Airline Meal Quality and Its Dimensions

An airline meal is a meal comprising food and beverages served to commercial airline customers on board. The airline meal, which is mostly available on long-haul flights and full-service airlines, is interchangeably used with such terms as airline food and in-flight meal. This airline meal, often prepared by airline catering service specialists, varies diversely across airline firms around the globe in terms of its quality and quantity. For many airlines, the in-flight meal is one of the crucial means of differentiating themselves [12]. The airline meal also reflects the culture. Indeed, many airlines serve cultural food to their passengers as an airline meal. For instance, the in-flight meal menu of Korean Air and Asiana Airline includes Bibimbap, which is one of the most favored Korean foods. This traditional and healthy Korean dish is composed of mixed vegetables, egg, ground beef, and chili pepper sauce with rice [24]. This in-flight meal is often believed to boost international customers’ pleasurable in-flight experiences when using airlines in South Korea [24]. In addition, many Islamic airlines serve Halal food as an in-flight Muslim meal prepared in accordance with Islamic customs [25]. This in-flight cultural food also often helps Muslim customers have comfortable in-flight experiences [25]. In regards to people in the minority, Dana [26] emphasizes not only special meals for dietary or religious reasons but food on demand in advance in order to draw more customers.

An airline meal/food quality refers to a comparative function regarding the discrepancy across customer expectations of meal/food performances and his/her perceptions of the performances [27]. Airline meal quality includes (a) a sensory and health-related dimension and (b) a convenience and process dimension. Both dimensions are the vital aspects of the food quality assessment [28,29]. While (a) sensory and health-related food quality includes core and external aspects of airline food and beverages, (b) convenience and process food quality encompasses efficiency and service-delivery aspects of food and beverages [16,30–32].

The airline meal is a critical facet of long-haul flight services or full-service airline services, demonstrating superiority in a particular company’s level of services as compared to its rivals in the marketplace [9,13]. To be more appealing to passengers during times of competition among airlines
around the world, it is very important to strategize food and beverage operations effectively and efficiently and consequently to maximize success in the airline business. British Airways, Air France, and Qantas, for examples, not only employ top-class chefs for a higher quality level of in-flight food and beverage, but also pay meticulous attention to in-flight menu selection and development [33]. On the flip side, Kurtulmusoğlu et al. [34] reported that airline meal quality and variety were ranked unprecedentedly as the most unimportant criteria for passengers when identifying a preferred airline. Whilst the particular empirical study provided an interesting viewpoint on the importance of airline food, Tu [35] on the other hand, has warned that an unappealing meal experience onboard an aircraft could prove detrimental, as it may leave a negative imprint on passengers’ total flight experience. In essence, the aforementioned discourses conclude that airline meals, despite some disputes, still remain an essentiality.

2.2. Influence of Airline and Quality

The criticality of meal quality in the customer loyalty enhancement process has been comprehensively stressed in the literature on consumer behavior, hospitality, and tourism literature [16,21,36,37]. In particular, Chen and Peng [21] examine customers’ dining intention formation in the restaurant context. Their finding reveals that customers’ value/quality assessment of foods/dining experiences at a particular restaurant significantly influences their attitude toward the restaurant and their purchase intention. In the airline sector, Vlachos and Lin [37] investigate business travelers’ airline loyalty formation and its drivers. Their empirical findings show that business travelers’ quality perception regarding in-flight food and beverage plays an important part in inducing overall satisfaction and generating airline loyalty. In the study, loyalty includes repurchase intention and recommendation in dimensions. Vlachos and Lin [37] also indicates the importance of in-flight service-encounter, reputation, frequent flyer, functionality, and aircraft type along with in-flight food and beverage in increasing satisfaction and loyalty. In-flight catering service/meal and its quality are undoubtedly an essential part/attribute of airline product and triggers customer cognitive and emotional responses, decisions, and behaviors that are either positive or negative for the airline [16,36]. Thus, an airline meal is often regarded as a crucial facet of travelers’ enjoyable long-haul flight experiences [16,38], affecting passenger intention formation [37].

2.3. Attitude toward the Airline and Its Influence

Attitude toward the brand/product, which is a volition process of rational decision formation, is often considered to be an essential notion in consumer behavior and tourism [22,23,39]. Attitude toward the brand/product indicates customers’ general tendency toward a certain brand/product, which is either positive or negative [40]. Tu and Yang [41] assert that once consumers believe that there are a lot more benefits in using electric vehicles (eco-friendly, more convenient, etc.), they will be more positive about the purchase of these vehicles. Consistently, attitude toward the airline in the present research can be described as passengers’ overall tendency toward a particular airline or its products which is either favorable or unfavorable. Empirical cues in the existing literature indicated that customers’ attitude toward the brand/product triggers affective responses and induces post-purchase decisions for the brand/product [21–23]. Baldinger and Rubinson [42] assume there is a linkage between consumer behavior and brand attitude, and a buyer with a positive brand attitude tends to remain with the particular brand. In the hotel context, Sukhu et al. [23] reports that guests’ attitude toward hotels’ public elements (green elements, room, social, ambiance, etc.) has a positive influence on satisfaction and affective responses to their behavioral intention formation for hotels. In addition, Cozzio et al. [43] study food sustainability as a strategic value driver in the hotel industry and empirically explore the influence of green food on consumer’s buying attitude and behavior intention toward a hotel selection. The findings conclude that the stronger the consumer’s buying attitude toward eco-friendly food, the more favorable it will be for hotels that provide eco-friendly food. Moreover, in tourism, Lee et al. [22] similarly demonstrates
that the paths from volunteer travelers’ attitude toward the behavior of affective experiences and loyalty intention are significant. More recently, according to Choi and Lee [44], consumers who show a favorable attitude toward the brand remain as loyal customers with the branded product, and brand commitment is in accordance with affirmative attitudes. Chen and Peng [21] state that attitude is formed based on value perception and it is a significant determinant of restaurant customers’ repeat purchase intention. Their findings also indicate the significant mediating role of attitude in customers’ post-purchase decision formation. These types of evidence support the possible relationships among attitudes toward the airline, airline love, and customer loyalty.

2.4. Satisfaction with the Airline

Understanding and focusing on customer satisfaction is a highly important objective for virtually all commercial businesses, as previous studies have shown it has a substantial impact on the shareholder value [45]. Satisfaction indicates one’s evaluative summary of product/service consumption experiences based on the discrepancy between prior (expectation) and after consumption (actual performance). When actual consumption experience confirms or outperforms the expectation, the person will feel satisfied or vice versa. In other words, the evaluation of the discrepancies in perceptions of expectations and performance is the key in generating satisfaction [17,46].

Using this tenet, satisfaction has long been regarded as a key concept in diverse sectors of consumer behavior, marketing, and tourism [15,17,45]. Customer satisfaction with the brand/product in such contexts has been demonstrated as a fundamental factor in boosting repeat patronage (retention rate) and loyalty, enhancing love for/attachment to the brand/product, and strengthening the connection between a company and customers [14–16,47]. Castillo-Rodriguez et al. [48] examined the level of satisfaction for users in three municipal sports centers and found that the level of user loyalty increased along with their satisfaction. These researchers all persist that there are significant associations among customer satisfaction, love/attachment, and customer loyalty. Improving customer satisfaction is accordingly paramount to staying competitive in the maturity stage of the global airline market place [14].

2.5. Airline Love

It is often believed that brand love brings patrons’ favorable decision and behaviors for the brand [18–20,49,50]. According to Long-Tolbert and Gammoh [20], brand love indicates one’s emotional attachment to a certain brand and its products. Consistently, Carroll and Ahuvia [19] describe brand love as an emotional concept representing the affective bond that customers have for a certain brand. According to Sallam and Wahid [51], once customers form a positive view of a certain company, they love its brand and loyalty is shown. Given this, in the present research, airline love indicates passengers’ affirmative emotional link (or emotional attachment) to a specific airline brand and its products.

Airline love is especially critical in the airline sector, as an increasing number of customers in recent years seek not only comfortable experiences but also pleasurable affective experiences while air traveling. Roberts [50] asserts that brand love fortifies the relationship strength between the company and its patrons, thereby increasing the customer retention rate and loyalty. In recent research, Aro et al. [18], Hwang and Lyu [49], and Hudson et al. [52] indicate that brand love as a sturdy form of emotional connection between the brand and its consumers significantly increases customer loyalty. These researchers also formed a consensus that brand love, which goes beyond one’s simple liking to a particular brand, often brings diverse positive post-purchase behaviors such as stronger loyalty, positive recommendation behaviors, commitment, and pay price premium.

2.6. Research Model and Hypotheses

The suggested theoretical model for the airline sector is presented in Figure 1. There are six research variables (e.g., sensory and health-related food quality, convenience and process food quality,
attitude toward the airline, satisfaction with the airline, airline love, and customer loyalty) in the model. In addition, our model comprised the following hypotheses linking these variables:

### Hypothesis 1 (H1).
Sensory & health-related food quality has a significant relation with attitude toward the airline.

### Hypothesis 2 (H2).
Convenience and process food quality has a significant relation with attitude toward the airline.

### Hypothesis 3 (H3).
Sensory & health-related food quality has a significant relation with satisfaction with the airline.

### Hypothesis 4 (H4).
Convenience and process food quality has a significant relation with satisfaction with the airline.

### Hypothesis 5 (H5).
Attitude toward the airline has a significant relation with airline love.

### Hypothesis 6 (H6).
Attitude toward the airline has a significant relation with customer loyalty.

### Hypothesis 7 (H7).
Satisfaction with the airline has a significant relation with airline love.

### Hypothesis 8 (H8).
Satisfaction with the airline has a significant relation with customer loyalty.

### Hypothesis 9 (H9).
Airline love has a significant relation with customer loyalty.

### 3. Methods

#### 3.1. Measures and Survey Questionnaire

The measurements of research constructs are obtained from prior studies [16,17,19,30,31,39,53,54]. Multiple items on a seven-point scale (“strongly disagree” [1]”strongly agree” [7]) are employed. Specifically, as shown in Table A1, eight items are used to measure sensory and health-related food

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**Figure 1.** Proposed theoretical model.
quality. A total of five items are used to measure convenience and process food quality. In addition, three items are utilized to evaluate the airline love.

Attitude toward the airline is estimated in four items. Moreover, satisfaction with the airline is measured in three categories. Lastly, to measure customer loyalty, three items are used. The survey questionnaire including these measurement items also encompasses such sections as the study description and questions about personal characteristics. It is pre-tested by tourism scholars and practitioners to improve content validity. A total of 10 participants of the pre-test pointed out grammatical/editorial errors and vague sentences and provided suggestions for the questionnaire improvement. Some modifications were made based on the pre-test results. The questionnaire was then finalized through academic and industry experts’ thorough reviews.

3.2. Data Collection Process and Demographic Information

The research uses an online survey method to achieve our research goals. The potential respondents were the airline customers in the USA. The survey invitations were randomly sent to selected airline customers from an online research company’s database. To be eligible for survey participation (sampling criteria), potential participants should be the airline customers who have experienced airline meals in the last 12 months.

These participants were asked to read the study description carefully. In addition, they were requested to respond to the questionnaire based on the most recent experiences with airline catering services. On average, the survey completion took about 10.5 min. Through this procedure, a total of 380 completed responses were collected. After removing unusable cases, 372 cases in total were used for data examination.

Of 372 respondents, 19.6% indicated their most recent airline meal experience was within the last month, 54.0% stated within the last three months, 78.2% stated within the last six months, 90.3% reported within the last nine months, and all respondents indicated their experience was in the last year. In terms of air travel frequency within the past three years, about 35.2% reported between 2–3 times, followed by 4–5 times, 6–9 times, 10 times or more (14.8%), and only once (7.8%). In regards to the gender, among the survey respondents, 55.4% were male airline customers, and 44.6% were female customers. Their age was between 18 and 76 years, and the mean was 38.54 years. Among the respondents, 68.5% were Caucasians or Whites, followed by Hispanics (13.2%), Blacks (9.7%), Asians, (7.3%), and other (1.3%). In terms of the education, about 33.1% indicated they have a university degree, followed by high school graduates or less (24.5%), 2-year college (or some college) graduates (24.2%), and graduate degree holders (18.3%).

4. Results

4.1. Measurement Model and Data Quality Assessment

The normality of the data was assessed by estimating the skewness and kurtosis of each measurement item. The values of skewness ranged from -1.203 to -0.359, and the kurtosis values ranged from 1.981 to -4.18. As values for skewness and kurtosis between -2.00 and +2.00 are regarded to be acceptable in order to prove normal distribution [55], our data set included no serious skewness and kurtosis problems. To analyze the data, we used IBM SPSS Statistics 20 and AMOS 20 (Armonk, NY, USA) as tools. We performed a confirmatory factor analysis to generate the measurement model. Outcomes showed that the model had an adequate fit to the data: $\chi^2 = 855.012$, degrees of freedom (df) = 279, $p < 0.001$, $\chi^2/df = 3.065$, root mean square error of approximation (RMSEA) = 0.075, comparative fit index (CFI) = 0.933, incremental fit index (IFI) = 0.934, Tucker–Lewis index (TLI) = 0.922. RMSEA 0.075 is considered a good fit as the suggested threshold below 0.08 [56]. Values of CFI, IFI, and TLI above 0.9 usually indicate good-fitting models as rules of thumb, yet 0.95 is preferred for indices [57]. The standardized loadings between observed variables and their associated latent factors were all significant ($p < 0.01$). Also, as per Table 1, all composite reliability indexes were high
advocated by Nunally [58]. Therefore, the internal consistency of the measures for each variable was evident. Moreover, as presented in Table 1, our calculation of the average variance extracted (AVE) values is higher than the suggested cutoff 0.500 [57]. Thus, convergent validity was evident. AVEs of each latent construct were also above the correlations (squared) between variables (see Table 1). In addition, as shown in the Figure A1, within-construct correlations were in general greater than the between-construct correlations. Therefore, the discriminant validity of the constructs was evident in the current study.

Table 1. Measurement model assessment (n = 372).

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>AVE</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Sensory &amp; health-related food quality</td>
<td>0.931 a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.626</td>
<td>4.905 (1.163)</td>
</tr>
<tr>
<td>(1) Convenience &amp; process food quality</td>
<td></td>
<td></td>
<td>0.884</td>
<td></td>
<td></td>
<td></td>
<td>0.604</td>
<td>5.491 (0.985)</td>
</tr>
<tr>
<td>(3) Attitude toward the airline</td>
<td>0.657</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.689</td>
<td>5.087 (1.238)</td>
</tr>
<tr>
<td>(4) Satisfaction with the airline</td>
<td></td>
<td>0.603</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.811</td>
<td>5.386 (1.154)</td>
</tr>
<tr>
<td>(5) Airline love</td>
<td>0.545</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.717</td>
<td>5.160 (1.203)</td>
</tr>
<tr>
<td>(6) Customer loyalty</td>
<td>0.510</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.9140</td>
<td>5.303 (1.205)</td>
</tr>
</tbody>
</table>

Goodness-of-fit statistics for the measurement model: $\chi^2 = 855.012$, $df = 279$, $p < 0.001$, $\chi^2/df = 3.065$, RMSEA = 0.075, CFI = 0.933, IFI = 0.934, TLI = 0.922. a Composite reliability b Correlation c Squared correlation.

4.2. Structural Model and Hypotheses Testing

We performed structural equation modeling with a maximum likelihood estimation method to test the hypothesized theoretical relationships among study variables. The results indicate that the model had a satisfactory fit to the data ($\chi^2 = 927.613$, $df = 284$, $p < 0.001$, $\chi^2/df = 3.266$, RMSEA = 0.078, CFI = 0.925, IFI = 0.926, TLI = 0.915). As reported in Table 2 and Figure 2, the suggested model includes the appropriate level of predictive power for customer loyalty since it explains 83.2% of the total variance in loyalty.

Table 2. Structural equation model assessment (n = 372).

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
<th>Standardized Estimates</th>
<th>t-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Sensory &amp; health-related food quality → Attitude toward the airline</td>
<td>0.495</td>
<td>7.335 **</td>
</tr>
<tr>
<td>H2</td>
<td>Convenience &amp; process food quality → Attitude toward the airline</td>
<td>0.329</td>
<td>4.873 **</td>
</tr>
<tr>
<td>H3</td>
<td>Sensory and health-related food quality → Satisfaction with the airline</td>
<td>0.317</td>
<td>4.652 **</td>
</tr>
<tr>
<td>H4</td>
<td>Convenience and process food quality → Satisfaction with the airline</td>
<td>0.447</td>
<td>6.185 **</td>
</tr>
<tr>
<td>H5</td>
<td>Attitude toward the airline → Airline love</td>
<td>0.154</td>
<td>3.464 **</td>
</tr>
<tr>
<td>H6</td>
<td>Attitude toward the airline → Customer loyalty</td>
<td>0.103</td>
<td>2.157 *</td>
</tr>
<tr>
<td>H7</td>
<td>Satisfaction with the airline → Airline love</td>
<td>0.844</td>
<td>14.527 **</td>
</tr>
<tr>
<td>H8</td>
<td>Satisfaction with the airline → Customer loyalty</td>
<td>−0.008</td>
<td>−0.059</td>
</tr>
<tr>
<td>H9</td>
<td>Airline love → Customer loyalty</td>
<td>0.853</td>
<td>5.719 **</td>
</tr>
</tbody>
</table>

Total variance explained ($R^2$): $R^2$ for customer loyalty = 0.832, $R^2$ for airline love = 0.875, $R^2$ for satisfaction with the airline = 0.499, $R^2$ for attitude toward the airline = 0.583. Goodness-of-fit statistics for the structural model: $\chi^2 = 927.613$, $df = 284$, $p < 0.001$, $\chi^2/df = 3.266$, RMSEA = 0.078, CFI = 0.923, IFI = 0.926, TLI = 0.915 * $p < 0.05$, ** $p < 0.01$. 
The hypothesized impact of airline meal quality on attitude toward the behavior is tested. Our results show that sensory and health-related food quality significantly influences attitude ($\beta = 0.495$, $p < 0.01$) and that convenience and process food quality significantly influences attitude ($\beta = 0.329$, $p < 0.01$), in contrast with prior literature, i.e., Kurtulmusoğlu et al. [34], who regard in-flight catering service/meal as the least most important attribute when classifying a preferred airline. Hence, the results support hypotheses 1 and 2. Approximately 58.3% of the total variance in attitude is explained by airline meal quality. The proposed effect of airline meal quality on satisfaction with the airline was evaluated. As shown in Table 2, the outcome reveals that sensory and health-related food quality significantly affects satisfaction ($\beta = 0.317$, $p < 0.01$) and that convenience and process food quality significantly impacts satisfaction ($\beta = 0.447$, $p < 0.01$), consistent with previous empirical studies [16,36–38] which highlight in-flight catering service/meal as an essential source of customer satisfaction with the particular brand/airline. Accordingly, hypotheses 3 and 4 are supported. Around 49.9% of the total variance in satisfaction is explained by airline meal quality.

The hypothesized influence of the attitude toward the airline on airline love and customer loyalty was tested. Our result indicates that attitude exerts a substantial impact on airline love ($\beta = 0.154$, $p < 0.01$) and loyalty ($\beta = 0.103$, $p < 0.05$). These findings are also consistent with prior works [21,23,41,42,44], and the result supports hypotheses 5 and 6. The potential impact of airline satisfaction on its subsequent constructs was evaluated. Our results show that satisfaction has a significant influence on airline love ($\beta = 0.844$, $p < 0.01$), which supports the existing empirical studies [14–16,47] and hypothesis 7. Yet, the influence of satisfaction on customer loyalty is insignificant ($\beta = -0.008$, $p > 0.05$), which does not support hypothesis 8. This finding differs from that of current literature [48] insisting that there are significant associations between customer satisfaction and loyalty. Lastly, the airline love and loyalty relationship was tested, and the result shows that the association is significant ($\beta = 0.853$, $p < 0.01$), coinciding with the previous literature [18,49–52]. Hence, hypothesis 9 is supported. Both attitude and satisfaction along with airline meal quality accounted for 87.5% of the total variance in airline love.
4.3. Indirect and Total Effects of Study Variables

Figure 2 and Table 3 demonstrate the details of the indirect and total effects of study variables. The indirect impact of the research constructs was initially examined. Bootstrapping, which is broadly accepted way to evaluate the mediating influence of variables, was used for the assessment of the mediating effect [59]. The result shows that the indirect influences of sensory and health-related food quality ($\beta = 0.342, p < 0.01$), convenience and process food quality ($\beta = 0.396, p < 0.01$), attitude toward the airline ($\beta = 0.132, p < 0.05$), and satisfaction with the airline ($\beta = 0.720, p < 0.01$) on customer loyalty are all significant. In addition, the indirect impact of sensory and health-related food quality ($\beta = 0.344, p < 0.01$) and convenience and process food quality ($\beta = 0.428, p < 0.01$) on airline love was also significant. This outcome implies that attitude, satisfaction, and airline love play a leading mediating part in the suggested model. Then, the total effect of research variables on customer loyalty was assessed. As reported in Table 3, airline love ($\beta = 0.853, p < 0.01$) has the greatest influence on loyalty, followed by satisfaction ($\beta = 0.712, p < 0.01$), convenience and process food quality ($\beta = 0.396, p < 0.01$), sensory and health-related food quality ($\beta = 0.342, p < 0.01$), and attitude ($\beta = 0.235, p < 0.01$).

### Table 3. Standardized indirect and total impacts (n = 372).

<table>
<thead>
<tr>
<th>Indirect Effects of</th>
<th>Sensory &amp; Health-Related Food Quality</th>
<th>Convenience &amp; Process Food Quality</th>
<th>Attitude toward the Airline</th>
<th>Satisfaction with the Airline</th>
<th>Airline Love</th>
<th>Customer Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airline love</td>
<td>0.3440 **</td>
<td>0.4280 **</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>0.3420 **</td>
<td>0.3960 **</td>
<td>0.1320 *</td>
<td>0.7200 **</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total impact on customer loyalty: $\beta$ sensory & health-related food quality = 0.342 **, $\beta$ convenience & process food quality = 0.396 **, $\beta$ attitude toward the airline = 0.235 **, $\beta$ satisfaction with the airline = 0.712 **, $\beta$ airline love = 0.853 **. Goodness-of-fit statistics for the structural model: $\chi^2 = 927.613$, df = 284, $p < 0.001$, $\chi^2/df = 3.266$, RMSEA = 0.078, CFI = 0.925, IFI = 0.926, TLI = 0.915 * $p < 0.05$, ** $p < 0.01$.

5. Discussion and Implications

The main object of subject research is to build a speculative framework for customer loyalty encompassing the quality factors of airline meal, attitude toward the airline, satisfaction with the airline, and airline love. An empirical endeavor to discover the clear role of our study constructs, the mediating influence of research variables, and the comparative importance among study variables is also made. Findings from the empirical approach explore the critical role of airline meal quality and its dimensions ([a] sensory and health-related food quality and [b] convenience and process food quality) in the customer loyalty generation process, demonstrate the important mediating effect of attitude, satisfaction, and airline love, and verify the salient role of airline love in building loyalty. In sum, the proposed theorization containing study constructs is entirely supported. Our research framework, moreover, has a satisfactory power of explanation of customer loyalty.

In the present study, we successfully unearth the importance of airline meal quality, find the links among its dimensions ([a] sensory and health-related food quality and [b] convenience and process food quality), attitude, and satisfaction, and explore the role of these factors in the airline customer loyalty generation process. This result implies that airline customers’ quality and pleasant in-flight meal experiences contribute to forming their favorable attitude toward the airline and having satisfactory flight experiences. Our findings further inform that both factors of airline meal quality, namely, sensory and health-related food quality and convenience and process food quality, are of great importance in inducing the variables’ subsequent variables. From the theoretical aspect, the airline meal has rarely been considered as an essential driver of attitude and satisfaction and has seldom been used as a tool for customer loyalty enhancement strategies. The subject study is one of the very few studies that provide empirical evidence regarding the necessity of integrating the airline catering service into the theoretical framework for a more extensive grasp of airline patron post-purchase behaviors.
It is undeniable that increasing customers’ positive attitude and boosting their satisfaction level are essential to achieve a higher customer retention rate and loyalty [17,21,23]. From the managerial point of view, our findings are also meaningful as they help airline practitioners recognize that improving sensory and health-related in-flight meal quality and enhancing convenience and process of in-flight meal quality are vital processes for the attainment of such a positive attitude toward the airline and satisfaction with the airline experiences. Airline proprietors accordingly should make every effort to deliver in-flight food and beverage to their patrons, strongly considering the diverse aspects of airline catering services (e.g., food presentation, color, variety, freshness, ingredients, digestion, temperature, health/nutrition, delivery speed, delivery timing, sanitary utensils, neatness of delivery staff, customer care of delivery staff). Going one step further, adopting the concept of green food such as organic farming, locally grown, and eco-friendly sustainability in catering meals will also enhance customers’ satisfaction levels [43].

Airline love is identified as the most crucial determinant of customer loyalty among research constructs. Our result is consistent with research that emphasizes the prominence of affective processes in customer post-purchase decision formation [18,19,49,60]. The significance of brand/product love is apparent in the marketing literature. Yet, the concept of love and its possible influence have not been abundantly researched in the airline industry. Our finding regarding the salient role of airline love in forming customer loyalty accordingly make a noteworthy contribution to the airline literature. Understanding the importance of such an affective dimension of the customer loyalty generation process, airline proprietors should make diverse endeavors to elicit customers’ feeling of airline love. Since SNS/e-mail marketing often helps existing patrons feel that they are continuously important to a particular company, it can be an efficient tool for strengthening the emotional link between the airline and its patrons, thereby fortifying their airline love. This endeavor would result in a positive long-standing relationship between an airline and its patrons and in the enhancement of its customer loyalty.

An investigation of the influential effect of the study constructs identified that attitude, satisfaction, and love served as significant mediators in a hypothesized theoretical framework. In particular, the airline meal quality factors significantly affected customer loyalty indirectly through such mediators. In addition, the individual mediating part of attitude, satisfaction, and love in the suggested model was also demonstrated. With respect to the relation between satisfaction with the airline and customer loyalty, satisfaction plays an indirect mediating role as the direct effect of satisfaction is not significant. Little empirical effort has been made in assessing the combined/individual mediating influence of attitude, satisfaction, and love in the airline industry. For the airline companies targeting effective enhancement of customer loyalty, it is essential to deal with customers’ attitude, satisfaction, and airline love. This effort will maximize the possible influence of sensory and health-related in-flight food quality and of the convenience and process meal quality served on board on customer repeat patronage for airline product. Recognizing the importance of attitude, satisfaction, and love as mediators, researchers in the airline sector should cautiously utilize and employ these concepts when developing any conceptual framework or theoretical model about patrons’ purchase decision-making process or behavior.

There are some limitations in the subject research that possibly offer future study opportunities. First, while the proposed model has a powerful prediction for customer loyalty, some crucial variables of airline customer behavior (e.g., image/reputation, aircraft type, safety, ambient conditions, in-flight layout, and in-flight amenities) and their role were not included in the model. Indeed, airline researchers asserted the importance of these factors in explaining passenger post-purchase behavior [3,37]. Future research should extend our suggested model by taking into account the effect of these variables for a more comprehensive understanding of the airline customer loyalty generation process. Second, there was an insignificant relationship in the proposed model. In regards to the association between satisfaction with the airline and customer loyalty, satisfaction was an indirect mediation, as the direct effect of satisfaction was not significant. One rational supposition is that this insignificant relationship
was derived from the complete mediating role of airline love. Indeed, our results demonstrated that satisfaction significantly influenced customer loyalty indirectly through airline love. Third, all correlations between variables were lower than 0.80. Yet, as shown in Table 1, several correlations between variables were relatively high. That is, the present research is not entirely free from the multi-collinearity issue. A more thorough measurement design is recommended for future research. Lastly, for future research, exploring and identifying other possible drivers of attitude and satisfaction are essential. Integrating such drivers into our hypothesized theoretical framework can be a meaningful extension of this research.

6. Conclusions

This research is an empirical effort to answer such critical questions as “Why are an airline meal and its quality important in the airline industry?”, “What factors along with airline meal elicit customer loyalty?”, and “Do customer attitude, satisfaction, and airline love mediate the influence of airline meal quality on loyalty?” With the use of a quantitative approach, this study successfully offers a better understanding of airline food quality and its role, empirically identifying the vital triggers of customer loyalty, and clearly uncovering the considerable impact of airline love on the loyalty generation process. Taking one step further beyond the theorizations in the existing studies of airline customers’ post-purchase behaviors, the present study builds a strong conceptual framework relating airline food quality, attitude toward the airline, satisfaction with the airline, airline love, and customer loyalty. Our finding with respect to the critical role of airline love in forming/enhancing customer loyalty makes a remarkable contribution to existing airline literature. An insignificant relationship between satisfaction with the airline and customer loyalty is attributed to the complete mediating role of airline love. In addition, our outcomes respecting airline meal being an essential driver of attitude and satisfaction can help practitioners to develop high-quality meals that airlines focus on as a marketing strategy beyond services and provide meals different from those of competitors, so that customers sustain an ongoing relationship with a particular airline/brand.

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Appendix A

Table A1. Measurement items.

<table>
<thead>
<tr>
<th>Sensory &amp; Health-Related Food Quality (Cronbach’s Alpha = 0.930)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fresh food and beverages were served (food freshness).</td>
</tr>
<tr>
<td>• The quality of ingredients in the food and beverages seemed good (ingredient quality).</td>
</tr>
<tr>
<td>• The food and beverages were easy to digest (digestion).</td>
</tr>
<tr>
<td>• The food and beverages were served at the appropriate temperature (food temperature).</td>
</tr>
<tr>
<td>• Healthy and nutritious food and beverages were served (health and nutrition).</td>
</tr>
<tr>
<td>• The presentation of food and beverages was visually attractive (food presentation).</td>
</tr>
<tr>
<td>• The food and beverages color looked good (food color).</td>
</tr>
<tr>
<td>• A variety of menu items were offered (food variety).</td>
</tr>
</tbody>
</table>
Table A1. Cont.

Convenience & Process Food Quality (Cronbach’s Alpha = 0.888)

- The food and beverages were served in a timely manner (speed of food and beverage delivery).
- The food and beverages were provided within an appropriate time (time of food and beverage delivery).
- Sanitary utensils were provided with the food and beverages (sanitary eating utensils).
- The flight attendants serving the food and beverages looked neat and clean (neatness of delivery staff).
- It seemed that the flight attendants serving the food and beverages understood what customers needed and wanted (customer care of delivery staff).

Airline love (Cronbach’s Alpha = 0.881)

- I love this airline.
- This airline is a pure delight.
- This airline is totally awesome.

Attitude toward the airline (Cronbach’s Alpha = 0.896)

- I think that using this airline when I travel in the future is “bad” (1)—“good” (7).
- I think that using this airline when I travel in the future is “unpleasant” (1)—“pleasant” (7).
- I think that using this airline when I travel in the future is “undesirable” (1)—“desirable” (7).
- I think that using this airline when I travel in the future is “disadvantageous” (1)—“advantageous” (7).

Satisfaction with the airline (Cronbach’s Alpha = 0.926)

- Overall, I am satisfied with my experience when using this airline.
- My decision to use this airline was a wise one.
- As a whole, I have really enjoyed myself when using this airline as expected.

Customer loyalty (Cronbach’s Alpha = 0.890)

- I plan to use this airline when I travel in the future.
- This airline will be my first choice when I travel in the future.
- I am willing to use this airline again in the future.

Note. All measurement items except for the items of attitude were evaluated from “strongly disagree” (1) to “strongly agree” (7).
Appendix B Correlation Matrix among Measurement Items

![Figure A1. Correlation Matrix among Measurement Items.](image)

### References


3. Han, H.; Hwang, J. Quality of physical surroundings and service encounters, airfares, trust and intention during the flight: Age-group difference (young, middle-aged, and mature). *Int. J. Contemp. Hosp.* 2015, 27, 585–607. [CrossRef]


41. Tu, J.; Yang, C. Key factors influencing consumers’ purchase of electric vehicles. *Sustainability* 2019, 11, 3863. [CrossRef]


43. Cozzio, C.; Bullini Orlandi, L.; Zardini, A. Food sustainability as a strategic value driver in the hotel industry. *Sustainability* 2018, 10, 3404. [CrossRef]

44. Choi, E.; Lee, K. Effect of trust in domain-specific information of safety, brand loyalty, and perceived value for cosmetics on purchase intentions in mobile e-commerce context. *Sustainability* 2019, 11, 6257. [CrossRef]


52. Hudson, S.; Roth, M.S.; Madden, T.J.; Hudson, R. The effects of social media on emotions, brand relationship quality, and word of mouth: An empirical study of music festival attendees. *Tour. Manag.* 2015, 47, 68–76. [CrossRef]


60. Hwang, J.; Park, S. An exploratory study on how casino dealer communication styles lead to player satisfaction. *J. Travel Tour. Mark.* 2018, 35, 1246–1260. [CrossRef]