

THE IMPACT OF IN-FLIGHT FOOD AND BEVERAGE QUALITY ON PASSENGER LOYALTY: THE ROLES OF BRAND LOVE AND PRICE REASONABLENESS IN AIRLINE TRAVEL

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ABSTRACT

The quality of food and beverages served on flights is crucial to passengers' overall flight experiences in the aviation industry; however, there is a lack of research on how it affects passenger behaviour. This study examines the impact of airline food and beverage quality on brand love, reasonable prices, and passenger loyalty. Adopting a quantitative method, data were collected using a questionnaire from 270 passengers who had experienced food and beverage services on long-haul flights. The partial least squares structural equation modelling (PLS-SEM) method and a disjoint two-stage approach were employed to assess the measurement and structural model. Results revealed that food and beverage (F&B) quality, brand love, and reasonable prices significantly enhance passenger loyalty. Brand love has the strongest influence on passenger loyalty, and the quality of in-flight food and beverages has a greater impact on brand love compared to reasonable prices. This study enhances the understanding of passenger behaviour in the aviation sector and underscores the significance of food and beverage quality. The theoretical and practical implications within the specific sample of participants have been discussed.

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INTRODUCTION

The airline sector has always been highly competitive, which forces them to search for strategies to improve their competitive advantage and meet the diverse passenger expectations (An & Noh, 2009). Providing exceptional service quality has been a major difference among these strategies, particularly for full-service airlines (Koklic et al., 2017). In this framework, airlines organise their service offerings by considering client demands and needs. Airlines operate in an industry that offers a diverse range of services. These services lead passengers to consider multiple factors simultaneously when choosing an airline. Food and beverage (F&B) services are, along with other offerings by airlines, among the most important elements considered in passenger evaluations. Although F&B quality might not always be considered strong enough to influence purchasing decisions, it is well accepted as an important component of passenger experience (Giritlioglu et al., 2014; Chen & Chang, 2008; Park et al., 2006; Han et al., 2019). Previous research has emphasised the importance of providing quality in-flight F&B (Zahari et al., 2011; An & Noh, 2009; Messner, 2016). Additionally, the expanding global interactions within the airline business, particularly in catering, may lead to rivalries among providers because in-flight catering is essential for passengers (Shehata & Sheded, 2025). Positive opinions of in-flight food and beverage quality can help passengers to deepen their emotional bonds with an airline, therefore supporting brand love and increasing loyalty (Zahari et al., 2011). Brand love refers to the emotional connection that consumers form with a brand, which goes beyond simple satisfaction and leads to stronger loyalty, advocacy, and long-term engagement (Batra et al., 2012). Hence, brand love may be a prerequisite for customer satisfaction and a precursor of brand loyalty (Carroll & Ahuvia, 2006). Airlines that successfully create and foster brand love can expect higher levels of customer retention and advocacy, which are crucial in the highly competitive travel market (Thomson et al., 2005). Nonetheless, there is increasing acknowledgement of the role of onboard flight food and beverage services in influencing passenger experiences; less empirical research has investigated their particular impacts on customer loyalty and brand love (Han et al., 2019; Atalik, Bakır, & Akan, 2019). Although food and beverage options might not directly influence consumer choice, they significantly affect overall satisfaction and brand perception (Namkung & Jang, 2007; Atalik et al., 2019). Researchers have yet to adequately examine the combined impact of food and beverage quality, perceived reasonable prices, and brand love on passenger loyalty. F&B quality is a criterion that should be taken into account for companies trying to ensure customer

satisfaction and loyalty. Unless, it sufficiently preserves client retention and raises customer loyalty, no company can survive in the long run. In this context, it is thought that achieving and maintaining customer loyalty should be considered among the priorities of airline companies. Consequently, airlines have to satisfy consumers' expectations regarding the quality of the food and price. Brand love also develops in great part from perceived pricing fairness. Those who find the airline's prices reasonable are more likely to develop strong emotional ties to the brand, therefore improving their whole loyalty and happiness (Han et al., 2019). Still, earlier studies have not looked at these components taken together under a consistent paradigm. Although consumer-brand connection now mostly consists in brand love, the evolution of this relationship and its possible behavioural consequences is still understudied.

Employing an investigation of the correlations among perceived food and beverage quality, reasonable prices, brand love, and customer loyalty in the airline industry, this paper seeks to address shortcomings in the present research. It emphasises the importance of food quality as a primary determinant of customer loyalty and contributes to the limited body of studies examining the emotional ties between consumers and brands in the airline sector. Given that F&B quality is a higher-order construct, it is also one of the few studies looking at its influence. Regarding this, the major goals of this study are (1) to find how perceived in-flight F&B quality affects perceived reasonable prices, brand love and passenger loyalty. (2) to investigate how passenger loyalty and brand love might be influenced by perceived reasonable prices. Knowing the interactions among these elements can help gain deeper insight into how reasonable prices, brand love, and airline F&B quality shape consumer behaviour. Furthermore, the significance of relevant factors in creating consumer loyalty will have consequences for creating consumer-oriented strategies in the competitive aviation market. At last, this study aims to provide useful advice for airlines implementing consumer-centric policies aiming at raising customer satisfaction and loyalty in a very competitive sector. Grounded in the Expectation-Confirmation Theory (ECT), extensively applied to explain consumer happiness, post-purchase behaviour, and service marketing results, this paper ECT holds that consumer happiness is favourably influenced by the quality of the received service, which in turn determines their intention to recycle the service or buy the product again (Oliver, 1993). Following this theoretical framework, the process suggested in this study – expectation → perception → brand love → loyalty – shows

that consumer perceptions and emotional attachments are shaped by service quality, therefore promoting brand loyalty.

LITERATURE REVIEW

Airline Business Models, Passenger Types, and Expectations

Airlines operate under various dynamic business models, generally classified as full-service carriers (FSCs), low-cost carriers (LCCs), and hybrids, which incorporate aspects of both archetypes into one design (Chow et al., 2022). Traditionally, the literature has focused on distinguishing between FSCs and LCCs (Doganis, 2019; Francis et al., 2006), while more recent research recognises hybrid and evolving models that blur these distinctions (Mason & Morrison, 2008; Klophaus et al., 2012). Even though network structures such as hub-and-spoke and point-to-point or multi-hub are occasionally brought up (Corbo, 2017; Urban, et al., 2018), the comparison between point-to-point (PP) and hub-and-spoke (HS) is typically the primary focus of the discussion. This body of research suggests that airline business models should be seen as flexible, dynamic responses to shifting consumer preferences and competitive pressures, rather than as rigid categories.

Full-service airlines emphasise a broad range of amenities, such as loyalty programmes, checked baggage, and in-flight meals. In contrast, low-cost carriers offer basic services and charge separately for extras, thereby reducing operating costs (Graham & Vowles, 2006). Scholars note that this cost-driven orientation requires LCCs to continually adapt their service and operational models to remain competitive (Alamdari & Fagan, 2005). For instance, as LCCs in Europe approach growth saturation, they are adopting more adaptable and cost-effective mesh network architectures, rather than expensive hub systems (Klophaus et al., 2012). Moreover, low-cost airlines are now present not only at secondary airports but also at major hubs, directly competing with large airlines (Dobruszkes et al., 2017).

The rapid development of LCCs following aviation deregulation has increased competitive pressure on FSCs (Wang et al., 2025). In response, some FSCs have adopted the Airline-within-Airline (AWA) strategy. While generally unsuccessful in the US and Europe, this approach has seen more success in the Asia-Pacific region (Homsombat et al., 2014; Khan et al., 2022). However, managing different business models within a single airline group continues to present challenges, and strategies for resolving these conflicts are still being debated.

Crucially, the services offered by each business model have a direct impact on consumer expectations. Passengers of FSCs typically expect comprehensive in-flight services, including premium food and beverages, while LCC passengers often have lower service expectations, prioritising price in their decision-making (Dobruszkes et al., 2017). Business travellers tend to value punctuality, comfort, and high service quality to meet their time-sensitive needs, whereas leisure travellers are generally more price-sensitive and willing to accept fewer amenities in exchange for affordability (Chua et al., 2015). Recent studies emphasise that the relationship between passenger profiles and airline business models is not static but evolves with changes in market and competition (Lohmann & Koo, 2013). These evolving expectations may drive airlines to adjust their offerings, including food and beverage quality, to better align with customer profiles and business strategies.

Understanding the connection between airline business models and passenger types is essential for aligning service offerings with consumer expectations, which in turn fosters satisfaction and loyalty in the industry. Therefore, this study selected participants from among passengers using various business models: hybrids, LCCs, and FSCs. The research focuses exclusively on the quality of food and beverages served on long-haul flights and their impact on passenger behaviour. Other factors—such as travel frequency, cabin class, and travel type (international or domestic)—were not considered in this study. It is important to acknowledge that these excluded variables could influence perceptions of quality and satisfaction; thus, all research conclusions and interpretations are strictly limited to the characteristics of the study sample.

Quality of Food and Beverage (F&B)

In the service sector, definitions of service quality have generally focused on the extent to which the services provided meet customer expectations (Parasuraman et al., 1988; Zeithaml et al., 1990; Homburg et al., 2006). Since service products are intangible by nature, evaluating their quality can be challenging, leading consumers to rely on various tangible cues. This is particularly relevant for multi-service airlines, where passengers assess many indications simultaneously. In-flight service is regarded as a representative component of an airline's service. Passengers tend to be highly sensitive to the quality of in-flight service because it is delivered directly through interactive encounters (Han et al., 2014; Lee & Ko, 2016; Lippitt et al., 2023). Among the stages of service delivery, in-flight service involves the longest passenger contact time and offers a unique experience.

Passengers' assessments of the airline's service quality are significantly influenced by the food and beverages served during flights, as it represents the most time-intensive activity involving direct customer interaction (An & Noh, 2009). Flight attendants spend considerable time providing in-flight food and beverage services (Lee & Ko, 2016). Therefore, the in-flight service encounter is a critical touchpoint for airlines aiming to understand passenger needs and deliver expected services.

The term "airline food" refers to the food and beverages served to passengers on board (Han et al., 2019). Airlines offer varied meals in terms of quantity, and for many, F&B serves as an important means of differentiation. In-flight F&B is considered a crucial part of airline service quality, particularly as a basic tangible service. Airline meals are viewed as a strategic tool for product differentiation among full-service carriers, fostering customer loyalty and enhancing the flight experience (Han et al., 2020). Given that in-flight catering significantly influences passengers' judgements of service quality, the entire process from menu planning to food management needs to be carefully managed. Catering is especially critical for long-haul and full-service flights, where it provides a competitive advantage (Park et al., 2006). Although food might not be the primary consideration when choosing an airline, Zahari et al. (2011) argue that in-flight meals can evoke emotional responses and either enhance or detract from the overall flight experience. Han et al. (2019) explain the quality of in-flight food and beverages through three dimensions: core quality, external quality, and delivery quality. Quality of core includes various factors such as flavour, portion size, freshness, ingredient quality, temperature, and nutritional suitability. External quality relates to the appearance of food and beverages, encompassing colour, presentation, and the diversity of the menu. Delivery quality concerns how the service is provided, focusing on accuracy, timeliness, and the professionalism of service staff (Zahari et al., 2011).

During long-haul flights, passengers tend to expect higher-quality in-flight meals. A comparison of the gap between passengers' expectations and perceptions of meal performance helps assess airline meal quality (Parasuraman et al., 1994). Passengers on long flights expect a greater variety of safe, high-quality meals (Laws, 2005). As travellers invest a considerable amount in their flights, they carefully evaluate the quality of the food and beverages provided, assessing whether it is justified by the price paid. Thus, perceived price reasonableness is closely linked to impressions of in-flight food quality (Han et al., 2019). The first hypothesis, based on empirical evidence, is proposed below.

H1: The perceived quality of food and beverages positively and directly affects perceived reasonable prices.

As a fundamental tangible service, in-flight F&B plays an essential role in shaping airline service quality (Han et al., 2020). The importance of F&B services in influencing passengers' emotional and cognitive responses, behaviours, and choices has been highlighted (Vlachos & Lin, 2014; Zahari et al., 2011). Airline meals are effective tools for product differentiation among full-service carriers and contribute to positive in-flight experiences and loyalty (Park et al., 2006; Han et al., 2020). The second hypothesis is formulated as follows:

H2: The perceived quality of food and beverages positively and directly affects brand love.

Brands that satisfy their customers tend to foster stronger emotional bonds and loyalty (Machado et al., 2019). Airline F&B service, being a critical part of the flying experience, significantly affects passengers' perceptions. Although the primary function of airlines is transportation, it remains essential to investigate whether the quality of supplementary services like food and beverages can build emotional bonds and brand love. Few empirical studies explored the influence of in-flight catering on customer loyalty. However, Vlachos and Lin (2014) emphasise that F&B quality significantly shapes passengers' loyalty. Positive F&B experiences lead to favourable emotions and sympathetic attitudes toward airlines, thereby contributing to loyalty formation. Thus, the third hypothesis is presented:

H3: The perceived in-flight food and beverage quality positively influences airline loyalty.

Reasonable Prices

Price is considered by consumers as a "sacrifice" made to obtain a good or service during the purchasing process (Zeithaml, 1988). Since price represents a direct financial outflow, it strongly influences purchase decisions (Han & Hyun, 2015). Therefore, consumers often expect prices to be reasonable. Consumers' judgements about price reasonableness are based on comparisons between reference prices and actual prices (Oh, 2000). The reference price, which is stored in the consumer's mind from prior experiences, serves as a benchmark for future evaluations. If the current price is lower than the reference price, consumers are more likely to

perceive it as reasonable; if it is higher, they are more likely to perceive it as unreasonable (Chua, 2015).

Reasonable pricing enhances positive evaluations of products or services while influencing future behavioural intentions (Yu, 2020). A multitude of studies have shown that perceived price reasonableness plays a critical role in consumer decision-making (Oh, 2000; Han & Kim, 2009; Ryu & Han, 2010). In the highly competitive airline market, passengers, who often have many options, exhibit high sensitivity to price and service factors (Hwang & Choi, 2018). Travellers make reasonable choices and pay great attention to pricing concerns (Han et al., 2019). Previous studies repeatedly show that travel decisions mostly depend on pricing (Gursoy et al., 2005; Kurtulmuşoğlu et al., 2016), so influencing satisfaction and loyalty (Akamavi et al., 2015). When consumers assess their experiences, reasonable pricing is a major standard (Han & Kim, 2009; Varki & Colgate, 2001). Setiawan et al. (2020) and Han et al. (2019) contend that passengers' level of travel experience satisfaction is much influenced by appropriate pricing. Furthermore, consumers who feel pricing is unfair may engage in negative behaviour such as negative word-of-mouth (Oliver & Swan, 1989) or competitor switching. Beyond only pleasure, the view of price influences stronger emotional ties as well. Brand love, a profound emotional attachment, is typically reserved for brands perceived as irreplaceable and significant to the consumer's identity (Nguyen & Feng, 2021). Thus, the fourth hypothesis is constructed:

H4: Perceived reasonable prices positively and directly affect brand love.

Previous studies indicate that pricing is a crucial factor for travellers (Gursoy et al., 2005; Kurtulmuşoğlu et al., 2016). As a result, it is anticipated that price will play a significant role in shaping passengers' decision-making processes and determining their choice of airline. According to Sallam and Wahid (2015), when customers have a positive opinion about a particular firm, they like that brand and have a sense of loyalty towards it. If an airline company is perceived to offer reasonable prices, which is a critical factor, it will foster a positive attitude among consumers towards the company. Presuming that this scenario fosters passenger loyalty, the following hypothesis is formulated.

H5: Perceived reasonable prices positively and directly affect passenger loyalty.

Brand Love

Brand love originates from the psychological idea of interpersonal love (Thomson et al., 2005). Carroll and Ahuvia (2006) coined the term "brand love" to define the extent of a customer's loyalty to a brand. It refers to the profound emotional relationship that a satisfied consumer has towards a particular brand (Carroll & Ahuvia, 2006). According to Bergkvist and Bech-Larsen (2010), brand love is a behaviour that stems from an individual's adoration for a brand. Customers' brand loyalty triggers it, making it one of the primary elements that contribute to brand power (Bazi et al., 2023). It is also suggested that brand love is a helpful concept for forecasting or clarifying satisfied customers' post-consumption (Hsu, 2023). Given that brand love is an emotional connection that customers develop with a brand as a result of their interactions with it (Albert & Merunka, 2013), customers are said to be more likely to demand a brand they like, which fosters brand loyalty (Roy et al., 2016). It has been proposed that customers are intensely loyal to their preferred brands (Batra et al., 2012) and are determined to keep their connection with them intact. Falling in love with a specific brand signifies a favourable sentiment that evolves, accompanied by favourable assessments of the brand, resulting in consumer passion that endures in the long term (Al-Haddad, 2019).

Brand love, as defined by Batra et al. (2012), is a relationship in which consumers have a deep and lasting affinity for a brand (Langner et al., 2016). It also results in critical consumer responses that have significant consequences for businesses, builds trust, shields brands from negative emotions, boosts brand loyalty, encourages consumers to pay a higher price, and gives them the motivation to maintain a relationship (Carroll & Ahuvia, 2006; Batra et al., 2012). Customers may be more likely to use and exhibit brand loyalty if they like a particular brand. They might want to spend more money to buy the brand and spread more favourable word-of-mouth (WOM). Prior research has demonstrated that brand love leads to positive decisions and behaviours of customers towards the brand (Han et al., 2020). According to Boubker and Naoui (2022), brand loyalty is positively impacted by brand love. This shows that a customer who has a connection with a particular brand is likely to be loyal (Boubker & Naoui, 2022). According to the studies, brand love is a crucial component in building customer loyalty (Aro et al., 2018). Hollebeek (2011) emphasised that a strong emotional connection to a brand can also result in brand loyalty, that consumers will assess brands more highly as a result of these emotional ties (Lou & Xie, 2021), and that these strong feelings will result in brand loyalty (Lee et al., 2010). It has been observed that many studies

recognise brand loyalty as a fundamental consequence of brand love (Aro et al., 2018; Albert & Merunka, 2013; Robertson et al., 2022). The next hypothesis is formed as follows:

H6: Brand love positively and directly affects passenger loyalty.

Loyalty

According to Oliver (1999), loyalty is characterised as a strong desire to keep buying or using a favoured product or service in the future. This shows a long-standing dedication to constantly buying a favoured service (Boubker and Naoui 2022). According to Auh and Johnson (2005), loyalty is a construct that combines behaviour and attitude. It is generally believed to be the anticipation or propensity of customers to repurchase a good or service. It is defined as a strong inclination to consistently utilise a favourite brand or service going forward, resulting in recurrent brand purchases even in the face of situational influences and marketing initiatives that could alter behaviour (Oliver, 1999). The concept is associated with consumers repurchasing the same brand without much thought because of their habits, comfort, and love for that brand (Kang et al., 2015). When a business offers its clients greater value than its rivals, brand loyalty results. In other words, the greater and more favourable the disparity between the quality provided and the cost, the greater the value obtained (Zeithaml, 1988). Oliver (1999) characterised brand loyalty as a profound commitment to repeatedly purchasing a preferred product or service in the future, regardless of external influences or promotional efforts that might encourage switching behaviours. In addition, it has been stated that it affects purchase intention and word-of-mouth communication, and it is considered one of the important criteria that provide a competitive advantage in the airline sector (Civelek & Ertemel, 2019; Shehata et al., 2025). Brand loyalty is known to be critical to long-term profitability (Chaudhuri & Holbrook, 2001), and it is recognised as one of the most vital challenges and top priorities facing every airline (Han & Hwang, 2015). In the airline industry, as passengers are becoming increasingly sensitive to airline services, providing them with quality services is of extreme importance to increase loyalty.

METHODOLOGY

This study aims to determine the factors affecting passenger loyalty in airlines. This framework investigated the relationships among the perceived quality of in-flight F&B, reasonable prices, brand love, and passenger loyalty. In addition, F&B quality offered by airlines, which

consists of three sub-dimensions as core, external and delivery qualities, is examined in the second-order construct and its role in price reasonableness, brand love, and loyalty is tried to be revealed.

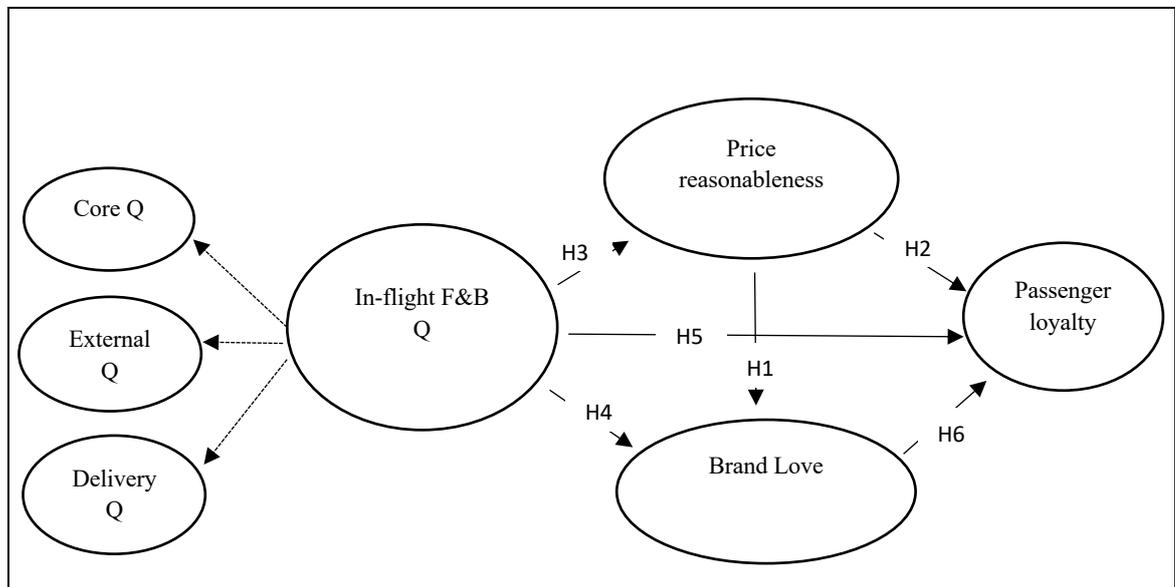


Figure 1. Proposed model

Sample Design and Data Collection

A quantitative method was adopted, and a self-administered questionnaire was utilised to gather data. The target population for this study was passengers aged 18 and over who had previously experienced in-flight F&B services on long-haul flights. An online questionnaire was distributed to participants via convenience and snowball sampling methods, inviting those who had undertaken a long-haul journey and consumed an aeroplane meal in the preceding year to participate through the provided link. Participants were instructed to complete the questionnaire regarding their experience with the long-haul flight after reviewing the study description. Based on this process, data were collected between January and May and reached a total of 270 participants, a sample size that meets the minimum requirement for Partial Least Squares Structural Equation Modelling (PLS-SEM), based on the recommendation of having at least 10 responses per model indicator (Peng & Lai, 2012).

Of the 270 respondents, 47.4% (128) were female, and 52.6% (142) were male. The age distribution was as follows: 40.4% were aged 29–39, 28.5% were 18–28, 27.4% were 40–49, and 3.7% were 50–59. Regarding

marital status, 55.6% of the participants were married. Educational backgrounds varied, with 53.0% holding a bachelor's degree, 28.5% a master's degree, and 10.4% having completed their education at the pre-graduate level. Airline use was for various purposes: 42.6% for vacations, 22.6% for visiting family/relatives, 16.3% for business, 10.7% for education, and 7.8% for other reasons.

Research Instrument

A five-point Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree), was used to evaluate the research constructs. Derived from validated measurements in current literature were the measuring instruments. While brand love and passenger loyalty were customised from Han et al. (2020), F&B quality and reasonable costs constructs were modified from Han et al. (2019). Using three sub-dimensions—core quality (7 items), external quality (3 items), and delivery quality (5 items)—F&B quality was evaluated. Two items were used to test reasonable prices; three items for each were used to measure brand love and passenger loyalty.

Analytical Methods

This study evaluated the measurement and structural models using PLS-SEM. PLS-SEM is good for smaller sample numbers and non-normally distributed data (Hair et al., 2016) and is especially appropriate for complicated models including several structural links. The capacity of PLS-SEM to manage both formative and reflective constructs concurrently, which is necessary for the research approach applied in this study, supported the choice to employ PLS-SEM additionally (Henseler et al., 2009).

This study used the disjoint two-stage technique. First-order structure scores were computed in the first stage; path coefficients for the higher-order construct were found in the second stage using these scores as guides (Hair et al., 2011). This method guaranteed a complete investigation of the links between F&B quality, reasonable prices, brand love, and passenger loyalty by allowing a strong analysis of both first-order and higher-order components.

Ethical Considerations

Ethical clearance for the current study was obtained from İskenderun Technical University's Ethics Committee. The goals of the study, the

voluntary character of their participation, and the confidentiality of their answers were fully explained to the participants. Before data collection, every participant consent was obtained and all of the responses were de-identified during the data analysis process.

FINDINGS

Validity and Reliability Assessment of Measurement Model

Using the Sarstedt et al. (2022) and Hair et al. (2022) recommended techniques, the measuring model was investigated. As part of the reflective measurement model assessment process, the validity and dependability of the measures were evaluated. The loadings of the indicators should be greater than 0.6. Furthermore, both alpha and composite reliability must be above the threshold of 0.7 to indicate internal consistency reliability. Besides, AVE needs to exceed 0.70 and 0.50, respectively, which represents the overall variance in the indicators explained by the latent construct (Hair et al., 2016). Table 1 demonstrates that all the values exceeded the suggested threshold.

Table 1. Convergent Validity

	Outer Loadings	Cronbach Alfa	CR (rho_a)	CR (rho_c)	AVE
Core Quality		0.900	0.903	0.922	0.628
CQ1	0.829				
CQ2	0.685				
CQ3	0.820				
CQ4	0.816				
CQ5	0.753				
CQ6	0.815				
CQ7	0.821				
External Quality		0.810	0.814	0.887	0.724
EQ1	0.832				
EQ2	0.862				
EQ3	0.858				
Delivery Quality		0.886	0.891	0.916	0.687
DQ1	0.801				
DQ2	0.785				
DQ3	0.844				
DQ4	0.860				
DQ5	0.851				
Price Reasonableness		0.938	0.941	0.970	0.941
PR1	0.968				

PR2	0.972				
B.Love		0.894	0.895	0.934	0.826
BL1	0.910				
BL2	0.929				
BL3	0.887				
P.Loyalty		0.941	0.946	0.962	0.895
LY1	0.958				
LY2	0.954				
LY3	0.926				

CQ: Core Quality, EQ: External Quality, DQ: Delivery Quality, BL: Brand Love, PR: Price Reasonableness, LY: Loyalty

Furthermore, the discriminant validity of the measurement model was evaluated using the Fornell-Larcker criterion, heterotrait-monotrait ratio values, and cross-loading values (Henseler et al., 2015; Hair et al., 2017; Fornell & Larcker, 1981). Table 2 demonstrates that each construct has strong discriminant validity when the square root of the AVE (diagonal values) is bigger than the related correlation coefficients.

Table 2. Discriminant Validity-Fornell-Larcker

	CQ	EQ	DQ	BL	PR	LY
CQ	0.793*					
EQ	0.705	0.851				
DQ	0.711	0.641	0.829			
BL	0.723	0.593	0.622	0.909		
PR	0.432	0.439	0.398	0.495	0.970	
LY	0.687	0.604	0.565	0.800	0.564	0.946

CQ: Core Quality, EQ: External Quality, DQ: Delivery Quality, BL: Brand Love, PR: Price Reasonableness, LY: Loyalty

* indicates square root of AVE values

Moreover, as indicated in Table 3, HTMT's assessment of discriminant validity revealed that all variables had a value of less than 0.90 (Gold et al., 2001).

Table 3. Discriminant Validity- HTMT

	CQ	EQ	BL	LY	PR	DQ
CQ						
EQ	0.824					
BL	0.804	0.693				
LY	0.743	0.684	0.870			
PR	0.471	0.500	0.541	0.596		
DQ	0.791	0.754	0.694	0.616	0.428	

CQ: Core Quality, EQ: External Quality, DQ: Delivery Quality, BL: Brand Love, PR: Price Reasonableness, LY: Loyalty

The loadings across the columns of Table 4 show that the loadings of an indicator on its own build are always greater than all of its cross-loadings with other constructions. These findings demonstrate that the measurement model has acceptable discriminant and convergent validity.

Table 4. Discriminant Validity- Cross Loadings

	CQ	EQ	DQ	BL	PR	LY
CQ1	0.829	0.517	0.542	0.625	0.354	0.595
CQ2	0.685	0.505	0.445	0.476	0.325	0.491
CQ3	0.820	0.613	0.627	0.632	0.342	0.574
CQ4	0.816	0.603	0.602	0.568	0.310	0.564
CQ5	0.753	0.546	0.634	0.555	0.371	0.523
CQ6	0.815	0.530	0.578	0.610	0.279	0.548
CQ7	0.821	0.595	0.505	0.527	0.421	0.505
EQ1	0.659	0.832	0.578	0.513	0.350	0.551
EQ2	0.567	0.862	0.592	0.461	0.332	0.438
EQ3	0.569	0.858	0.475	0.531	0.430	0.540
DQ1	0.587	0.467	0.801	0.522	0.331	0.463
DQ2	0.594	0.497	0.785	0.454	0.215	0.465
DQ3	0.671	0.659	0.844	0.555	0.402	0.515
DQ4	0.519	0.482	0.860	0.469	0.272	0.420
DQ5	0.563	0.531	0.851	0.559	0.395	0.470
BL1	0.686	0.490	0.616	0.910	0.379	0.719
BL2	0.675	0.536	0.540	0.929	0.409	0.753
BL3	0.609	0.591	0.540	0.887	0.564	0.708
PR1	0.404	0.412	0.392	0.464	0.968	0.520
PR2	0.435	0.440	0.380	0.495	0.972	0.573
LY1	0.682	0.586	0.538	0.786	0.591	0.958
LY2	0.670	0.606	0.556	0.774	0.535	0.954
LY3	0.591	0.517	0.509	0.706	0.467	0.926

CQ: Core Quality, EQ: External Quality, DQ: Delivery Quality, BL: Brand Love, PR: Price Reasonableness, LY: Loyalty

The quality of measurement for the higher-order construct was evaluated. The weights of the first-order structures were classified as second-order constructions. The validity of the higher-order constructions was investigated; outer weights turned out to be all significant (Hair et al., 2016). For every lower construct, outer loads exceeded 0.50 (Sarstedt et al., 2022). To evaluate multicollinearity, the variance inflation factor (VIF) for the first-order factors was computed. VIF values of the first-order structures lie below 5 (Hair et al., 2016). Table 5 shows no multicollinearity between the constructions, and all first-order dimensions generating F&B quality

were identified to be significant. Han et al. (2019) thus define F&B quality as a second-order component with three dimensions: exterior, core, and delivery quality.

Table 5. Higher-order construct validity

Higher-order construct	Weights of the first-order constructs on in-flight F&B Quality	Outer Weight	T-value	P value	Outer loadings	VIF
In-flight	CQ -> F&B Quality	0.626	6.607	0.000	0.963	2.566
F&B	EQ -> F&B Quality	0.272	3.471	0.001	0.844	2.156
Quality	DQ -> F&B Quality	0.204	2.149	0.032	0.823	2.194

CQ: Core Quality, EQ: External Quality, DQ: Delivery Quality

Structural Model

Following the measurement model, SmartPLS 4 ran the PLS algorithm's structural model and hypothesis evaluation (Ringle et al., 2022). Using 5000 bootstrapping repetitions, the path coefficients' significance was examined (Chin et al., 2008). The R^2 statistic is the main way to assess the explanatory ability of the model. Additionally, the goodness-of-fit index (GoF), introduced by Tenenhaus et al. (2005), serves as a supplementary diagnostic tool for assessing model fit. The cut-off values for evaluating the GoF analysis results, as provided by Hoffmann and Birnbrich (2012), are as follows: GoF analysis: GoF = 0.10 (small); GoF = 0.25 (medium); GoF = 0.36 (large). A GoF value of 0.62 was found for the entire model in this study, indicating an exceptionally strong model fit. In relation to model validity, Hair et al. (2017) categorised the endogenous latent variables based on their R-square values as follows: 0.75 signifies a strong relationship, 0.50 indicates a moderate relationship, and 0.25 reflects a weak relationship. Reasonable pricing and the quality of the F&B offered during flights accounted for 57.6% ($R^2 = 0.576$) of the variance in the dependent variable of brand love. 69.7% ($R^2 = 0.697$) of the variance in the dependent variable of passenger loyalty is explained by reasonable prices and in-flight food & beverage quality, and brand love. Lastly, 22.2% ($R^2 = 0.222$) of the variance in the dependent variable, price reasonableness, is accounted for by the quality of in-flight F&B. In addition to R^2 , the f^2 value also shows the effect of each independent variable on the explained variance ratio (Hair et al., 2017). The modest, medium, and large effects of the external latent variable are represented by values of 0.02, 0.15, and 0.35 in the evaluation of f^2 (Cohen, 1988). Table 6 also indicates the f^2 values on brand love, price reasonableness (f^2 0.065) has a low effect, while in-flight F&B quality (f^2

0.780) has a large effect. Also, price reasonableness (f^2 0.089) and in-flight F&B quality (f^2 0.066) have a low impact on passenger loyalty, while brand love (f^2 0.417) has a large impact. In addition, in-flight F&B quality (f^2 0.286) has an above-medium impact on the price reasonableness. Another GoF indicator in the partial least squares method is the normative fit index (NFI) and SRMR values (Hair et al., 2017). While SRMR value less than 0.080 indicates that the model fit is achieved (Sarstedt et al., 2017), NFI value close to 1 indicates that the model has a good fit. With an SRMR value of 0.044 and an NFI value of 0.887, the model utilised in this investigation shows a good fit.

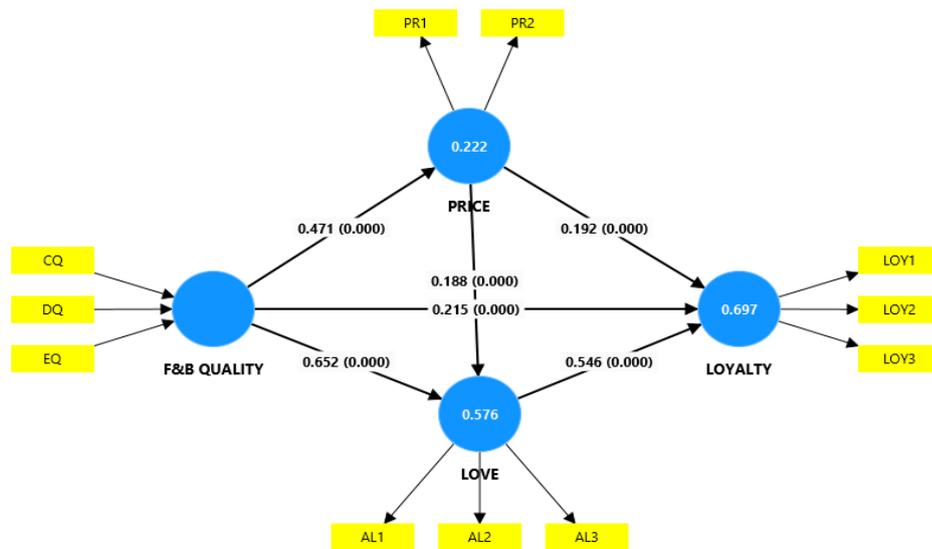


Figure 2. Structural Model

Table 6 provides a summary of the findings from the structural model and hypothesis testing. The results indicate that all six hypotheses are supported, showing significant relationships between the variables in the proposed model. The results reveal a positive, although moderate, relationship between perceived reasonable prices and brand love ($\beta = 0.188$, $p = 0.065$). This suggests that when passengers perceive the prices as reasonable, it enhances their emotional attachment to the airline brand, although the effect is not as strong as other variables in the model. Reasonable prices were found to positively influence passenger loyalty ($\beta = 0.192$, $p = 0.089$), suggesting that passengers who perceive the prices as fair are more likely to remain loyal to the airline. However, the relationship is also moderate, indicating that other factors might play a more substantial role in fostering loyalty. A strong positive relationship was found between in-flight F&B quality and perceived reasonable prices ($\beta = 0.471$, $p = 0.286$), indicating that the quality of food and beverage offered on flights strongly influences how passengers perceive the prices as reasonable. This suggests

that high-quality in-flight services contribute to the overall perception of value. In-flight F&B quality was found to have a significant positive impact on brand love ($\beta = 0.652$, $p = 0.780$). This relationship demonstrates that passengers who experience high-quality food and beverage services on flights tend to develop a stronger emotional connection to the airline brand.

The quality of in-flight F&B also positively and significantly influences loyalty ($\beta = 0.215$, $p = 0.066$). This noteworthy outcome underscores the significance of food and beverage services in fostering consumer loyalty, although to a smaller extent than brand love. This study's other major finding is that it plays a role in establishing loyal clients beyond price affordability. This level of impact, even if slightly more than reasonable prices, could be a notable result. Finally, brand love has a strong and significant impact on loyalty ($\beta = 0.546$, $p = 0.417$), indicating that passengers who have a positive emotional connection with the brand are more likely to demonstrate loyalty to the airline. These findings highlight that in-flight F&B quality and perceived reasonable prices play significant roles in shaping both brand love and passenger loyalty. The results also show the interdependence of these constructs, where in-flight F&B quality directly influences both price perception and emotional attachment to the brand, and brand love, in turn, strongly impacts loyalty.

Table 6. Results of hypotheses.

	β	R ²	t-statistics	VIF	f ²	Result
H1 Price Reasonableness → Brand Love	0.188	0.576	3.638	1.286	0.065	Supported
H2 Price Reasonableness → Loyalty	0.192	0.697	4.071	1.369	0.089	Supported
H3 In-flight F&B Quality → Price Reasonableness	0.471	0.222	10.116	1.000	0.286	Supported
H4 In-flight F&B quality → Brand Love	0.652	0.576	14.360	1.286	0.780	Supported
H5 In-flight F&B quality → Loyalty	0.215	0.697	3.540	2.288	0.066	Supported
H6 Brand Love → Loyalty	0.546	0.697	9.848	2.360	0.417	Supported

* $p > .01$

DISCUSSION AND CONCLUSION

This study advances knowledge of the interactions among in-flight F&B quality, brand love, reasonable prices, and passenger loyalty in long-haul flights. Empirically studying the interaction among these dimensions provides a deeper understanding of consumer behaviour in the aviation sector. The study's findings showed that in-flight F&B quality, brand love, and reasonable prices are antecedents of passenger loyalty (H2, H5, H6). These results are in line with earlier studies (Aro et al., 2018; Chen & Peng,

2014). Still, brand love is the factor most influencing passenger loyalty. This result indicates that brand love is a better indicator of passenger loyalty since it shows that it has more power than reasonable prices and in-flight F&B quality in predicting loyalty. Although the literature has underlined the need for reasonable prices on consumer behaviour very extensively (Han et al., 2019; Setiawan et al., 2020), some research reveals that its influence on customers' behavioural intentions is minor. For example, Han et al. (2019) empirically confirmed that satisfaction has the greatest impact on re-flying intention, while price reasonableness has the least. Similarly, Calisir et al. (2016) discovered that passenger happiness is more impacted by service quality than by acceptable prices. In contrast, some studies discovered that brand love had a significant impact on passenger loyalty (Roy et al., 2013; Albert & Merunka, 2013; Aro et al., 2018; Carroll & Ahuvia, 2006; Baubker & Naoui, 2022). These findings indicate that brand love is an emotion-based mechanism that strengthens the effects of reasonable prices and F&B quality on loyalty. This also makes a unique contribution to the literature as it is the first to holistically evaluate both rational (price) and sensory/emotional (F&B, brand love) dimensions.

Another finding of the study showed that while in-flight F&B quality positively influences perceived reasonable prices, perceived reasonable prices and in-flight F&B quality positively affect brand love (H1, H3, H4). Furthermore, it was revealed that F&B quality has a higher power than perceived reasonable prices in predicting brand love, which constitutes a relatively new result. From a theoretical standpoint, this study provides a comprehensive model that illustrates why improving the quality of F&B served on long-haul flights is essential for building passenger loyalty and brand love. The existing empirical studies indicate that satisfaction, brand experience, and brand trust are significant drivers of brand love (Al-Haddad, 2019; Pabla & Soch, 2023). In contrast, price is regarded as a less influential factor in determining behavioural intentions (Varki & Colgate, 2001). This study uniquely demonstrates that the quality of F&B offerings in long-haul flights has a more significant impact on brand love than the perception of reasonable prices, while also positively influencing the perception of reasonable prices. Although this finding is quite striking, further research is necessary across various samples. Because the diverse expectations of passengers emphasise the need to tailor airline services, such as food and beverage quality, to align with the airline's business model and passenger demographics. It is well-established that customer satisfaction is largely influenced by the quality of airline services and price, which subsequently enhances customer loyalty to airline companies (Shen

& Yahya, 2021). However, F&B quality has often been overlooked in the airline marketing context. In particular, for full-service airlines, the quality of in-flight catering is considered a vital component of overall service quality (Park et al., 2006). This aspect is crucial, as it significantly affects the overall flight experience of passengers (Laws, 2005).

The study incorporates the quality of in-flight food and beverages (F&B) as a central element in customer loyalty, a topic primarily examined in the airline literature with price reasonableness or service quality. In this respect, it addresses customer experience more holistically. Furthermore, modelling the F&B as a higher-order construct more strongly validates the multidimensional nature of the concept theoretically (core, external and delivery). This also contributes methodologically to future studies. While most research examines airline loyalty based on satisfaction, price, or overall service quality, this study investigated the strategic importance of food and beverage service. Also, this study examines the relationship between service quality, reasonable prices, and brand love, specifically in relation to the in-flight experience, since this is an area that has been scarcely studied in the literature, new conceptual models can be developed in this context.

Managerial Implications

Understanding the impact of F&B quality on the overall flight experience provides a comprehensive view of the services airlines should provide to passengers. High-quality F&B can significantly enhance passengers' flight experiences, boost brand love, and increase loyalty. In contrast, unattractive food and beverages can detract from the overall flight experience (Tu, 1997; Vlachos & Lin, 2014; Han et al., 2020). Since meals on planes leave a lasting impression on passengers (Zahari et al., 2011), food and beverage may help them connect emotionally with the brand. In the long run, this leads to brand loyalty because it helps people love the brand.

The present study shows how important it is for airlines to focus on food and beverage services during flights to build brand loyalty and emotional connections with customers. Airlines should view food and beverage service, especially on long-haul flights, not as a cost factor but as a strategic source of value that enhances brand love and loyalty. This is important because food and beverage services during flights build brand loyalty and create emotional connections with customers. Because a strong emotional bond is a significant determinant of desired post-consumption behaviours of satisfied customers (Nikhashemi et al., 2019), and numerous studies are showing that brand love leads to brand loyalty (Carroll &

Ahuvia, 2006; Roberts, 2006; Boubker & Naoui, 2022; Albert & Merunka, 2013; Aro et al., 2018; Roy et al., 2013; Hegner et al., 2017; Nawaz et al., 2020).

The results of this study confirm that in-flight F&B quality plays a key role in shaping brand love, which in turn contributes to loyalty for passengers experiencing F&B services on long-haul flights. In light of these findings, this study provides actionable guidance for airline managers aiming to enhance brand love and passenger loyalty. By prioritising improvements in the core, external, and delivery aspects of in-flight F&B, airlines can strengthen emotional connections with passengers, thereby fostering long-term loyalty. Specifically, managers are advised to ensure high standards of food presentation, portioning, freshness, and nutritional value (core quality), maintain visual appeal, variety, and aesthetic presentation (external quality) and minimize service delivery errors, including crew neatness, attentive service, and timely delivery (delivery quality). Elements such as presentation style, menu design, and the reflection of local cultural flavours can create an emotional connection between passengers and the brand. This bond has a strong impact on repeat purchase and loyalty. Just as Bennett and Rundle-Thiele (2002) state, airlines need not only to offer a variety of food and beverage options to achieve desired results and satisfy customers, but also keep up with industry developments and incorporate innovative ideas into in-flight food and beverage services. Instead of price competition, making the passenger feel the value of the service they receive for the price they pay (e.g., high-quality food, personalised service) contributes to the passenger finding the price reasonable and remaining loyal to the brand. Also, the findings indicate that brand love is significant in increasing loyalty. Therefore, loyalty programs of airlines should focus not only on earning points/miles but also on creating emotional connections (e.g., special menus, food and beverages tailored to personal preferences).

By considering these suggestions, long-haul airlines' managers can not only enhance passenger satisfaction but also strengthen brand love, encourage repeat travel, and increase advocacy behaviours, thereby securing lasting customer relationships.

Limitations and Future Research

The present study also has some limitations, like many prior studies, such as the relatively small sample size of 270 respondents. According to Bentler and Chou (1987), this sample size meets the requirements for structural equation modelling (approximately 5–10 observations per parameter).

Nevertheless, it is recommended that future research test the model with a larger sample size to further develop the theoretical framework proposed in this study. This study did not take into account the frequency of travel (frequent or one-time flyers), passenger (business, economy, etc.), or flying type (international or domestic flyers). In this study, the emphasis is specifically on the quality of food and beverages served on long-haul flights and their influence on passenger behaviour. As a result, all conclusions and interpretations derived from the research are assessed solely within the confines of the sample characteristics. While long flights are a sample of deeper and more intense passenger experiences, future research could benefit from the applicability of this model across various airline segments, a more comprehensive approach including distinct business models, types of flights, and categories of passengers. Particularly in terms of incorporating such distinctions could enhance the generalisability of the findings and provide more comprehensive insights.

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